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## The Dodd-Frank Act's Impact on Systemically Important Financial Institutions

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*University of Mississippi. Sally McDonnell Barksdale Honors College*

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The Dodd-Frank Act's Impact on Systemically Important Financial Institutions

by  
Andrew Wilkes

A thesis submitted to the faculty of the University of Mississippi in partial fulfillment of  
the requirements of the Sally McDonnell Barksdale Honors College.

Oxford  
May 2016

Approved by

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Advisor: Professor Bonnie Van Ness

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## Dedication Page

I would like to dedicate this project to my Mom whose unwavering strength through cancer treatment is simply inspiring.

## ACKNOWLEDGEMENTS

I am grateful to my advisor, Dr. Bonnie Van Ness, for her tremendous guidance and support. She consistently allowed this paper to be my own work, but steered me in the right direction whenever she thought I needed it.

I would also like to thank the Sally McDonnell Barksdale Honors College for granting me the Extraordinary Student Fellowship Award to study for a summer at The London School of Economics. Because of the grant, I was able to deepen my knowledge in finance and economics and gain a once in a lifetime experience.

## ABSTRACT

ANDREW WILKES: The Dodd-Frank Act's Impact on Systemically Important Financial Institutions

(Under the direction of Bonnie Van Ness)

Following the financial crisis of 2008, President Barack Obama signed into effect the Dodd-Frank Wall Street Reform and Consumer Protection Act on July 21, 2010. The Act contains stated goals of eliminating too big to fail and promote financial stability. In this paper, I analyze the impacts of new regulations on systemically important financial institutions.

In Chapter one, I briefly review U.S. financial regulation and the financial crisis of 2008. In Chapter two, I identify how increasing capital requirements affects banks. This thesis then examines how the Order of Liquidation Authority and its Single Point of Entry Strategy has unintended consequences of encouraging too big to fail. Finally, in Chapter IV I look at why the Volcker Rule was passed and the subsequent impacts of increased compliance costs to firms and decreased profitability from prohibiting proprietary trading.

In conclusion, I find that the Dodd Frank Act has not accomplished its intended goals and, furthermore, has several negative implications. This thesis highlights key areas in which the Dodd Frank Act impacts systemically important financial institutions.

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## Chapter 1: Background

### Intentions of the Dodd Frank Act

On January 5, 2010, Congress passed the Dodd-Frank Wall Street Reform and Consumer Protection Act and President Barack Obama signed the legislation into federal law on July 21, 2010. More commonly referred to as “Dodd-Frank”, the act is more than 360,000 words in length and creates 398 new rules (McLaughlin & Greene, 2012). Dodd-Frank was initially proposed by the Obama administration in June of 2009 and on December 2, 2009 the bill was introduced to the House of Representatives by then Financial Services Committee Chairman Barney Frank and former Federal Reserve Chairman Chris Dodd (Library of Congress, 2010). In response to the Financial Crisis of 2008, Congress drafted Dodd-Frank with the following intent:

- 1) “To promote the financial stability of the United States by improving accountability and transparency in the financial system
- 2) To end ‘too big to fail’
- 3) To protect the American taxpayer by ending bailouts
- 4) To protect consumers from abusive financial services practices” (Dodd-Frank Wall Street Reform and Consumer Protection Act, 2010)

## The Role of Government in Financial Regulation

Financial market crises have been a byproduct of financial markets for centuries. As explained by Reinhart and Rogoff (2009), financial market crises occur on a regular basis with similar causes. Fundamentally, the role of the government is to draft legislation that will protect consumers and provide stability in the financial system. According to Cooley & Walter (2011), “There are four pillars of effective regulatory architecture that are common across all financial systems. Good architecture should (1) encourage innovation and efficiency, (2) provide transparency, (3) ensure safety and soundness, (4) promote competitiveness in global markets”. However, drafting legislation that discourages misconduct, implements systematic stability and promotes financial efficiency and innovation can lead to difficult decisions by policymakers. Policy decisions will influence economic output and because of the role of intermediate financial firms as the primary allocator of capital to businesses in the economy, legislative failure quickly has consequences on the private sector of the economy. Therefore, gauging whether regulations are effective can be complicated because we know that insufficient regulation can lead to crises and overregulation comes with a cost to economic output. So, striking a balance between the two extremes is ideal when drafting financial regulations (Cooley & Walter, 2011).

Frequently mentioned is the term large and complex financial institutions. Large and complex financial institutions are banks that have total U.S.-held assets above \$50 billion and are designated as systemically important financial institutions. One issue for these large institutions is how the firms develop complex financial products that can expose unintended risks to investors. Many consumers lack the basic financial knowledge

to understand the differences between basic financial products, such as stocks and bonds (Lusardi, 2008, p. 7). Braunstein & Welch (2002) explained in a Federal Reserve Bulletin the factors that have led to a complex marketplace, which makes it more difficult for consumers to make effective financial decisions, “The forces of technology and market innovation, driven by increased competition, have resulted in a sophisticated industry in which consumers are offered a broad spectrum of services by a wide array of providers” (pp. 445-446). Even when disclosures on financial products are federally mandated, consumers still struggle with an overload of information and they end up focusing only on a few pieces of information that is easily understood (Bar-Gill & Warren, 2008, pp. 1-101).

### Brief History of Financial Regulation in the United States

Since the beginning of the U.S. financial system in the late 18<sup>th</sup> century, the U.S. has experienced a multitude of financial panics and crashes. One of the first examples of distress in U.S. financial history is the Panic of 1792. The panic occurred when the newly formed credit expansion by the Bank of the United States caused a bank run after US bank stocks defaulted on their loans. Although the government did not develop new laws in response to this financial crisis, other crises over the recent past have led to new laws (Reinhart & Rogoff, 2009). In the article, “A Brief History of Financial Regulation in the United States”, Alejandro Komai and Gary Richardson (2011) summarize the complexity of financial regulation.

*“In the United States today, the system of financial regulation is complex and fragmented. Responsibility to regulate the financial services industry is split between about a dozen federal agencies, hundreds of state agen-*

*cies, and numerous industry-sponsored self-governing associations. Regulatory jurisdictions often overlap, so that most financial firms report to multiple regulators; but gaps exist in the supervisory structure, so that some firms report to few, and at times, no regulator. The overlapping jumble of standards; laws; and federal, state, and private jurisdictions can confuse even the most sophisticated student of the system. At times, it can be unclear exactly who regulates whom, what rules apply in which instances, and where to turn for a resolution of these questions. This confusion occasionally inhibits innovation in the financial services industry and investments in some sectors of the economy. At other times, this confusion enables firms and investors to fly under the radar and profit from regulatory arbitrage. Whether this confusion promotes economic growth or causes economic instability is an open question” (Komai & Richardson, 2011).*

### Banking Act of 1863

The Banking Act of 1863 shaped today’s national banking system by establishing a system of national banks and laid the groundwork for a uniform U.S banking policy. The main objective of the 1863 act was to create a nationwide banking system that made loans to the government to pay for the Civil War. The act established the Office of the Comptroller of the Currency (OCC), which gave the federal government an active role in the supervision of commercial banks. The OCC would be in charge of examining, chartering, and supervising all national banks (Gale Encyclopaedia of U.S Economic History , 2000).

### 1933 Banking Act (Glass-Steagall)

Until the 1930s, there was little regulation of the financial system. The 1920s saw a rapid credit expansion that led to (among other things) the failure of the banking system when over 4,000 banks went bankrupt between 1929 and 1932 (Acharya, Adler, Richardson, & Roubini, 2011, p. 13). The public policy response to this crisis was The Banking Act of 1933 (Glass-Steagall). The Glass-Steagall Act established the Federal Deposit Insurance Corporation (FDIC), which addressed the issue of bank runs by protecting depositors by up to \$2,500 (currently \$250,000) if a bank failed. To protect consumers, Congress created the FDIC to “*maintain stability and public confidence in the nation’s financial system by:*

- *insuring deposits*
- *examining and supervising financial institutions for safety and soundness and consumer protection*
- *making large and complex financial institutions resolvable and*
- *managing receiverships”* (FDIC, 2015).

The Glass-Steagall Act also required the separation of risky capital markets from commercial banks. The act limited commercial banks to lending and investing in municipal bonds and government securities-other capital activities, such as underwriting or selling of securities, were allowed only in investment banks.

The Glass-Steagall Act’s approach to financial regulation focused on three core steps:

- *“Identify market failure*
- *Address the market failure through a government intervention*

- *Recognize and contain the direct costs of intervention, as well as the indirect costs due to moral hazard arising from the intervention (Acharya, Adler, Richardson, & Roubini, 2011)."*

#### Financial Services Modernization Act of 1999 (Gramm-Leach-Bliley Act)

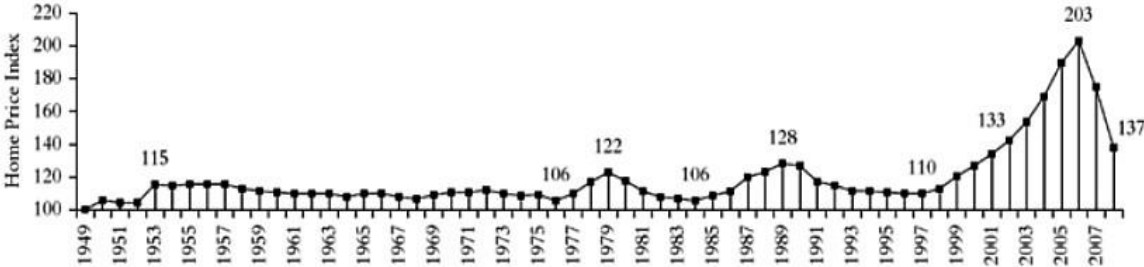
The Graham-Leach-Bliley Act was enacted on November 12, 1999 by Congress. The act repeals the section of the Glass-Steagall Act that prohibits any one institution from acting as a combination of a commercial bank, investment bank or insurance company. Empirical studies show that the passage of the act reduces exposure to systematic risk across the financial services industry. In a 2004 study in the *Journal of Economics and Finance*, Mamun, Hassan, and Lai found Gramm-Leach-Bliley Act reduces systematic risk in the financial system by providing better guidelines for a combination of a brokerage, insurance, and banking to manage risk more effectively (Mamun, Hassan, & Lai, 2004). Mamun, Hassan, and Lai found the act has three main components which allows banks to mitigate risk more efficiently by:

- 1) Creating a "Financial Holding Company", which allows companies to engage in a list of financial activities, but only if the institution is well capitalized up to the FDIC's Community Reinvestment Exam standards, and
- 2) Providing the Federal Reserve with the data to access risk across an entire platform, and
- 3) Forbidding the sharing of important consumer privacy data and requiring institutions to protect information collected about individuals.

## The Financial Crisis of 2008

The financial crisis, which started in the summer of 2007 and ended in the fall of 2008, destroyed an estimated \$34.4 trillion in wealth globally (Rooselvelt Institute, 2010). One of the main contributing factors that caused this enormous loss of wealth was the buildup of the housing market and the subsequent decline in housing values after a widespread default on mortgages. A common gauge of U.S. housing prices is the Federal Housing Finance Agency U.S. Home Price Index, which adjusts housing prices for inflation. As shown in Figure 1, during the 50-year period of 1947-1997, the US housing index rose 10 percent to 110. The 1997 home price index of 110 means that the housing market is 10 percent above the rate of inflation. However, for the period of nine years between 1997-2006, the US housing index soared 74 percent higher than the inflation rate, thus suggesting a real estate bubble in the U.S. (Schiller, 2015).

**Figure 1: Federal Housing Finance Agency U.S Home Price Index**

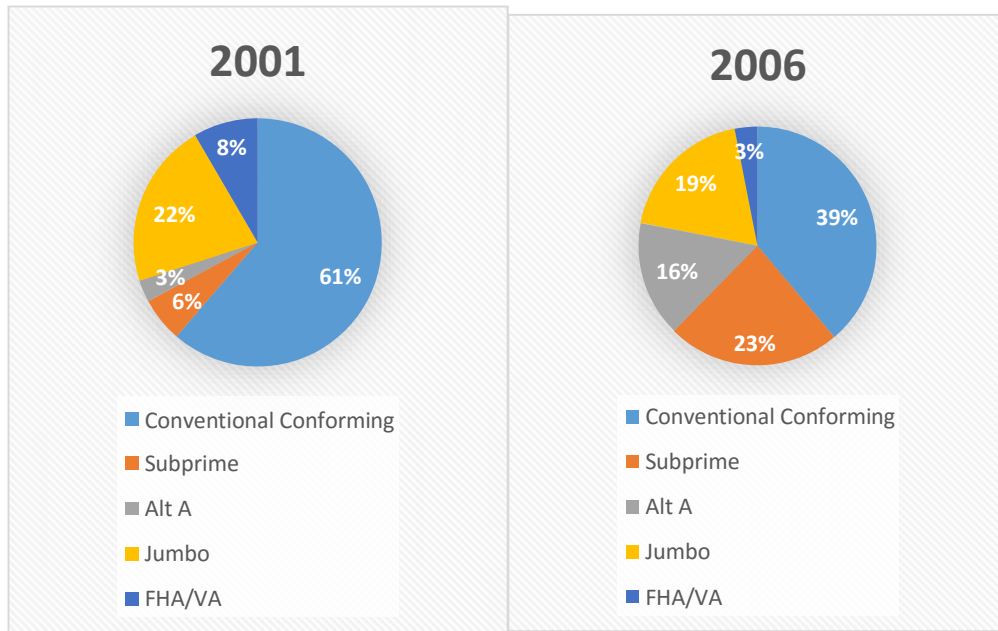


Source: Schiller, Robert; [www.irrationalexuberance.com](http://www.irrationalexuberance.com)



The dramatic increase in housing prices was largely driven by the increase in demand for houses. Figure 2 shows an enormous amount of mortgages were issued as subprime from 2001-2006, largely due to the low interest rate environment and relaxed mortgage lending standards (Pozen, 2010). A sub-prime mortgage is a loan to a home buyer who cannot meet the credit standards normally required to obtain a prime mortgage (Investopedia, 2015). By 2007, the value of subprime mortgages in the US was an estimated 1.3 trillion. Figure 2 shows the number of subprime mortgage originations increased from 6% to 23% in the five-year period from 2001-2006 (Pozen, 2010).

**Figure 2: Mortgage Origination by Loan Type 2001-2006**



Source: Pozen (2010)

The riskiness of the subprime lending market created an avenue for investment banks to construct a product that would produce higher returns based on the higher risk of owning subprime loans. Bank lenders sold the mortgages to Fannie Mae and Freddie Mac, who subsequently packaged the mortgages as investable products called Mortgage Backed Securities (MBS). A MBS is a type of asset backed security that is secured by a mortgage or a collection of mortgages (Investopedia, 2015).

In the early 2000s, MBSs saw an increase in demand, thus incentivizing lenders to offer loans to borrowers who have weak credit histories (subprime borrowers). Because subprime mortgages carry more default risk, most mortgage contracts contain adjustable interest rates. Adjustable mortgage rates are structured with a two year fixed interest rate followed by an adjustment upward by two or more percentage points. Between 2003-2007 over 75 percent of subprime mortgage loans contained adjustable rates (Mayer, Pence, & Sherlund, 2008). As the adjustable rates rose in 2005-2008 on the subprime borrowers, subprime default rose sharply to 18.7% by the second half of 2008 (Pozen, 2010). Consequently, the value of the underlying assets in the MBS products began to decrease as the delinquency rates increased on the subprime loans. As the demand for subprime mortgages to securitize hit all-time highs, mortgage lenders turned to investment banks for credit lines to have the capital to meet the demand of subprime originations.

As shown in Table 1, many investment banks made massive investments in the profitable MBS market and consequently became highly exposed to the housing market (Tavakoli, 2007). The strategy of increasing leverage to invest in mortgage backed securities proved profitable during the housing boom, but when mortgages started defaulting and housing prices began declining, many large financial institutions suffered significant

losses. Table 2 shows of the top eight MBS underwriters in 2005-2006, three failed and subsequently were bought out as shown in the following tables. Bank of America purchased Country Wide and Merrill Lynch, and JP Morgan purchased Bear Stearns.

The aftermath of the housing crash resulted in a significant amount of bank losses. Table 3 shows the subprime losses for investment banks between April 2008 and September 2008. Subprime losses for banks totaled \$501 billion from April to September 2008. Also, losses for U.S. investment banks rose 162% and other global bank losses increased 167%. As the financial sector experienced massive losses, the rest of the global economy suffered as a result. U.S. GDP in the first quarter 2009 fell 6.3% and global market capitalization fell a staggering \$16.4 trillion from 2007 to 2009 (Roosevelt Institute, 2010). As the global economy went into panic, the US government developed a \$700 billion stimulus package titled the Troubled Asset Relief Program (TARP) to buy illiquid MBSs.

**Table 1: Mortgage Backed Securities Underwriters in Peak Year 2005-2006**

Rank	Firm	Two Year Totals (USD)
1	Lehman Brothers	\$ 106,444,600,000
2	RBS Greenwich Capital	\$ 99,346,200,000
3	Countrywide Securities	\$ 74,533,600,000
4	Morgan Stanley	\$ 74,275,800,000
5	Credit Suisse First Boston	\$ 73,367,000,000
6	Merrill Lynch	\$ 67,550,600,000
7	Bear Stearns	\$ 60,816,100,000
8	Goldman Sachs	\$ 52,810,200,000
Source: Inside Mortgage Finance		

**Table 2: Consolidation of Banks During the 2008 Financial Crisis**

<u>Investment Bank</u>	<u>Status</u>
Merrill Lynch	Merged with Bank of America
Solomon Brothers	Merged with Citi Group
Morgan Stanley	Bank Holding Status: \$9 Billion capital injection by Mitsubishi Capital
Bear Stearns	Merged with JP Morgan
Lehman Brothers	Bankruptcy
Goldman Sachs	Bank Holding Status: \$6 Billion capital injection by Warren Buffet
Source: MacPhee Williams, Structured to Fail: Implosion of the Global Economy	

**Table 3: Subprime Bank Losses During the 2008 Financial Crash**

<b>Losses During Financial Crash of 2008 (billions of dollars)</b>		
<b>Bank</b>	<b>Losses to April 2008</b>	<b>Losses to September 2008</b>
Bank of America/Merrill Lynch	\$34.4	\$73.0
Citigroup/Salomon Bros.	\$20.0	\$55.1
Morgan Stanley	\$9.4	\$14.4
J.P. Morgan Chase	\$1.6	\$14.3
Bear Stearns	\$2.6	\$3.2
Lehman Brothers	\$1.5	\$8.0
U.S. Investment Banking Losses	\$69.5	\$168.0
Other Global Bank Losses	\$124.5	\$333.0
Total Global Bank Losses	\$194.0	\$501.0
Source: Bloomberg		

## New Financial Reform

The onset of the 2008 financial crises brought many topics to the forefront of financial legislation arguments. Eventually, U.S. Congress passed into law the Dodd-Frank Wall Street Reform and Consumer Protection Act. In the following chapters we will examine the impact of the Dodd-Frank Act on systemically important financial institutions.

## Chapter 2: Title I

Title I of the Dodd-Frank Act does the following:

- Creates the Financial Stability Oversight Council
- Creates the Office of Financial Research
- Expands the authority of the Board of Governors of the Federal Reserve System

### Creation of the Financial Stability Oversight Council (FSOC)

The FSOC was created to serve as a systematic risk regulator and respond to the concerns about the bailout of financial institutions that are “too big to fail”. The main purpose of the FSOC is

*(A) to identify risks to the financial stability of the United States that could arise from the material financial distress or failure, or ongoing activities, of large, interconnected bank holding companies or nonbank financial companies, or that could arise outside the financial services marketplace;*

*(B) to promote market discipline, by eliminating expectations on the part of shareholders, creditors, and counterparties of such companies that the Government will shield them from losses in the event of failure; and*

*(C) to respond to emerging threats to the stability of the United States financial system (US Congress, 2010).*

Essentially, the FSOC is tasked with identifying and managing risks to the financial stability of the United States. The FSOC will monitor and regulate all SIFIs.



## Title I's Impact

### **Bank Holding Companies and Systemically Important Financial Institutions**

Title I seeks to expand bank's capital buffers to maintain an additional layer of capital to provide banks with sufficient capital to withstand economic stress. The Dodd-Frank Act adds to Basel III capital requirements and requires banks to provide minimum leverage and capital ratios. Title I Section 171 of the Act summarizes the purpose of leverage and capital ratios:

*“The appropriate Federal banking agencies shall establish minimum leverage capital requirements on a consolidated basis for insured depository institutions, depository institution holding companies, and nonbank financial companies supervised by the Board of Governors. The minimum leverage capital requirements established under this paragraph shall not be less than the generally applicable leverage capital requirements, which shall serve as a floor for any capital requirements that the agency may require, nor quantitatively lower than the generally applicable leverage capital requirements that were in effect for insured depository institutions as of the date of enactment of this Act”* (US Congress, 2010).

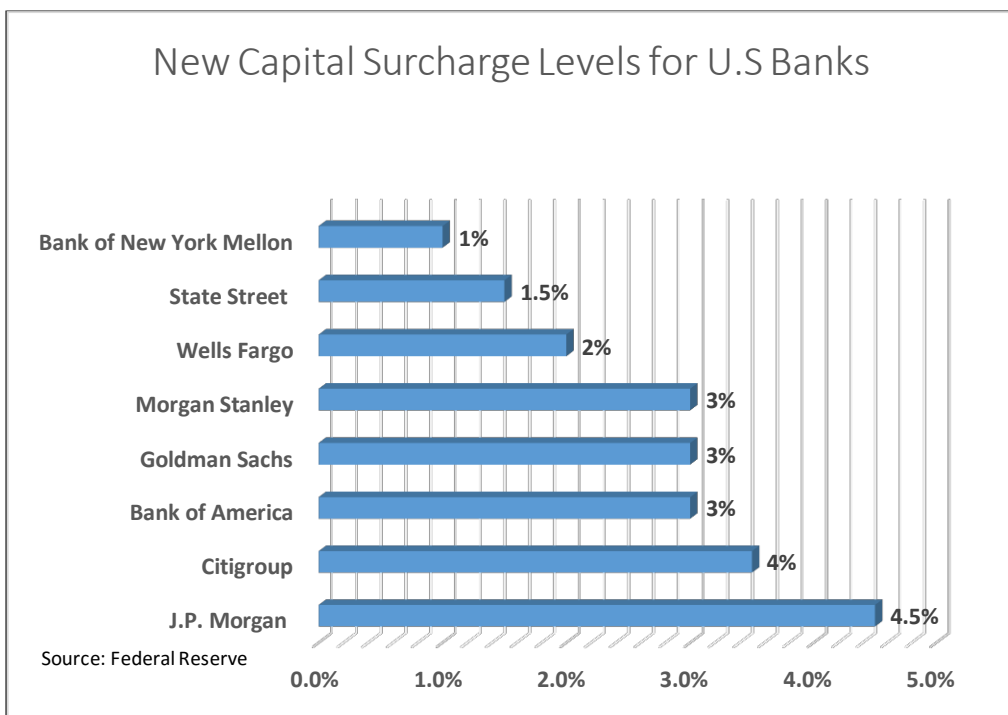
Basel III, enacted in 2013, is a banking regulatory framework for members of the Banking Committee on Banking Supervision (the U.S. is a member), which nearly doubled the capital requirements for the global member banks. The Dodd-Frank Act requires U.S. banks to adhere to more stringent capital requirements than its global competitors by raising the minimum capital ratio to 15 percent (eight percent in Basel III). However, with the increase in capital requirements

there are many trade-offs that affect economic goals, such as economic growth (Elliott, Salloy, & Santos, 2012). These increased capital requirements from Title I affect SIFIs in four ways: capital surcharges, tax effects, capital raising, and shadow banking.

### Capital Surcharge

The first notable aspect impacting large firms is the capital surcharge rule. The Dodd-Frank capital requirements implements the Basel Committee's related standard in the US and adds an additional layer of capital requirements (in addition to the 15 percent required) for global systemically important banks GSIBs (see Figure 3) as a surcharge for their reliance on short-term wholesale funding. The rule affects systemically important U.S. bank holding companies that are designated as a GSIB requires implementing the increased capital requirements based on the firm's total risk-weighted assets. Currently, the Board of Governors of the Federal Reserve has identified eight U.S institutions as GSIBs: Bank of America Corporation; The Bank of New York Mellon Corporation; Citigroup, Inc.; The Goldman Sachs Group, Inc.; JPMorgan Chase & Co.; Morgan Stanley; State Street Corporation; and Wells Fargo & Company (Board of Governors of the Federal Reserve, 2015).

**Figure 3: New Capital Surcharge Levels for U.S. Banks**



A study by Kashyap et al. (2010) using U.S empirical data suggests that higher bank capital leads to lower riskiness of bank assets and concludes that there is a direct correlation between equity risk and bank leverage. This study shows that banks can reduce systemic risk with higher capital reserves. More recently, a study by Martinez-Miera and Suarez (2014) confirmed Kashyap's conclusion by showing how capital requirements can be helpful in reducing systemic risk-taking and thus decrease the cost and frequency of systemic crises. According to Martinez-Miera and Suarez, the data suggest that the bank's heightened capital requirements produce a lower loss of bank capital by reducing the proportion of resources going into inefficient investments.

#### Tax Effect

According to the United States Financial Accounting Standards Board (FASB), corporate interest payments are tax deductible while dividend payments are not (Financial Accounting Standards Board, 1979). Hence, U.S. tax laws dramatically favor debt to equity as the total after-tax cost of financing a company could be lower with higher levels of debt and lower levels of equity (Elliott, Higher Bank Capital Requirements Would Come at a Price, 2013). The positive net effect from the tax deduction benefit to debt is one noteworthy reason why banks fund with much more debt and deposits than equity.

In a seminal study on the cost of equity, Modigliani and Miller (1958) conclude that, under specific conditions, such as perfect markets and no taxes, a company's capital structure is irrelevant to the firm's weighted average cost of capital. That is, when there are no added tax benefits from interest payments from increasing debt to equity ratios,

weighted average cost of capital will not change. Furthermore, since increased levels of debt carries zero benefits, the capital structure is irrelevant to a company's stock price.

However, in a realistic setting, higher equity levels increase a bank's costs. As equity rises, the after tax cost of funding increases. Title I of the Dodd-Frank Act increases the capital requirements for firms by seven percent. It is my opinion that the costs of higher capital requirements outweigh the benefits of increased equity capital. The increase in costs from the capital requirements will continue to create a negative drag on the economy and force banks to take an offsetting action of some kind, such as increasing service rates or cutting expenses (Assessing the Cost of Financial Regulation , 2012).

### Capital Acquisition

Contrary to the assumptions of Modigliani and Miller (1958), companies incur transaction costs when raising funds. In order to satisfy increased capital requirements, banks will need to raise capital ratios by issuing new shares, retaining profits and not pay dividends, or reduce its assets. Each method of raising additional equity has direct negative impacts. By halting dividend payments, shareholder's total return will decrease. The forced reduction of assets will result in assets being sold at a reduced fair market price. Lastly, issuing new equity is generally viewed unfavorably for two main reasons: it is costly and investors require a discount for the secondary offerings (Martynova, 2015). Continuing, we will look into the direct costs associated with raising capital by issuing new shares.

First, Myers (1977) showed that equity may be costly because extra equity increases downside risks for bank shareholders. As a result, the cost of additional equity in-

creases the value of debtholders claim on the bank. Consequently, raising additional equity also decreases the value of existing equity, making shareholders reluctant to issue new equity (Martynova, 2015).

Secondly, data suggests an even more drastic effect of capital requirements is that secondary stock offerings typically come at a discount. This theory is proven by Myers and Majluf (1984) in a study presented in the *Journal of Financial Economics*, which concludes that markets require an equity premium upon new equity issuances due to “asymmetric information”. Asymmetric information is a term used by Myers and Majluf to describe the fact that managers have superior information. As a result of “asymmetric information” in equity markets, the decision to issue stock reduces stock price.

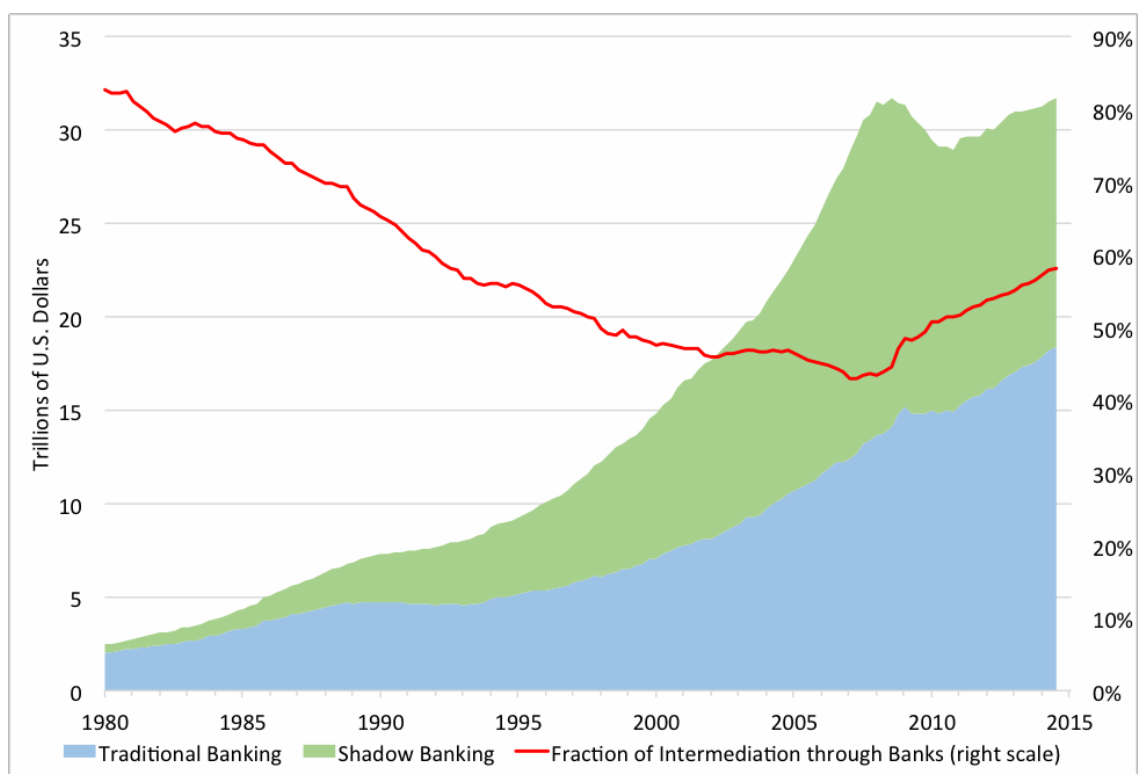
Taking a long term view of the effects of capital requirements lead me to conclude that the increased leverage ratios would limit a bank’s ability to raise capital in a cost effective manner. The additional required capital will cause a negative effect to bank’s profitability, which would likely result in a banks passing costs to shareholders and customers.

### Shadow Banking

As legislators institute higher capital requirements for banks, one option banks may consider is investing in shadow banking activities. Shadow banking is a term used to describe financial activities performed by regulated firms, which go largely unregulated, such as structured investment vehicles, securitizations, repos, money markets and certain types of derivatives (Elliott, 2013). In a study on shadow banking, Guillaume Plantin (2014) concluded that the increase in shadow banking liabilities is leading to overall

larger risk taking by financial institutions. Figure 4 shows how shadow banking experienced a pull back during the financial crisis, but as of 2015 shadow banking in the financial system has retreated to similar levels as before 2009. I believe that increasing capital requirements will continue to incentivize banks to increase their exposure to shadow banking activities in search of return on equity.

**Figure 4: U.S. Shadow Banking, Traditional Banking & Financial Intermediation (trillions of dollars), 1980-2015**

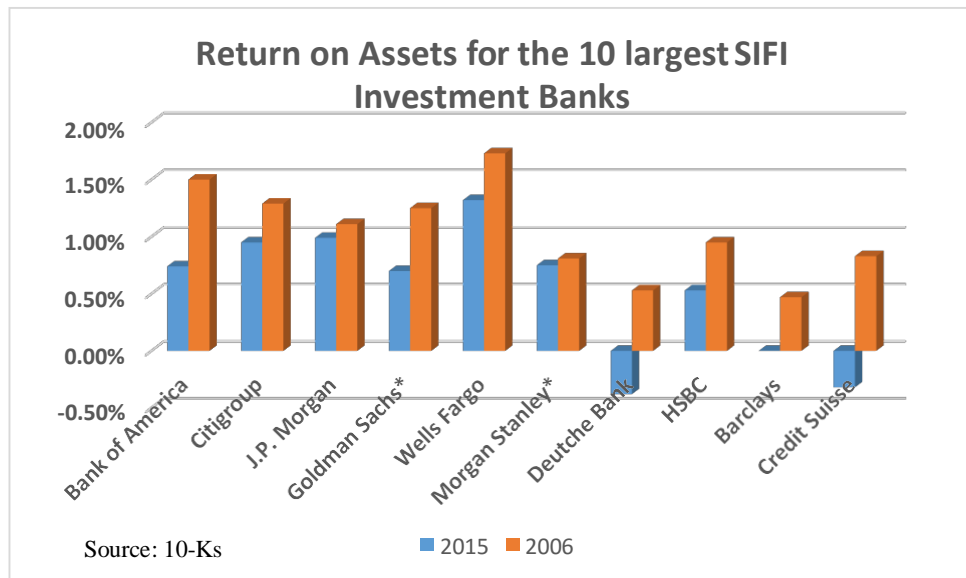


Source: Updated version of Figure 1 from Zoltan Pozsar, Tobias Adrian, Adam Ashcraft and Hayley Boesky, “[Shadow Banking](#),” Federal Reserve Bank of New York Staff Paper No. 458,

In the current Dodd-Frank regulatory environment, SIFIs are struggling to return to pre-crisis levels of return on asset. Figure 5 compares return on assets for the 10 largest banks from before the financial crisis in 2006 to four years after the passage of the Dodd-Frank Act at the end 2014. Figure 5 shows that the top 10 largest banks, all under the SIFI designation, have return on assets lower than 2006 levels. In order to compensate for the less profitable environment, I believe that we will see banks continue search for increased return in the shadow banking sector.



**Figure 5: Return on Assets for the 10 Largest SIFI Banks**



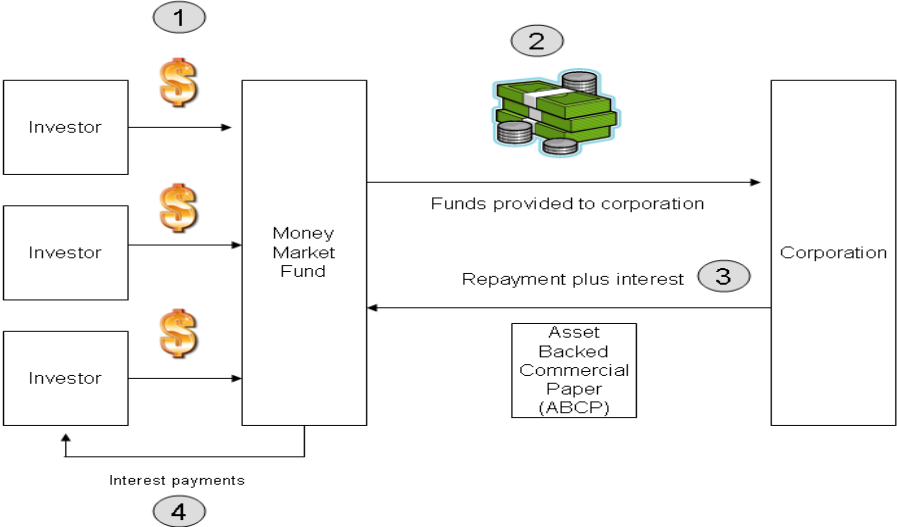
Most researchers agree that the growth of shadow banking is mostly driven by regulatory arbitrage (Acharya, Schnabl, & Suarez, 2010). Regulatory arbitrage is defined as a practice whereby firms capitalize on loopholes in regulations to circumvent unfavorable regulation (Investopedia). By entering into shadow banking activities, such as money markets, banks are able to refinance assets. Money market funds buy short term investments such as treasury bills, and company short term debt or trade receivables and use those funds to buy longer maturity assets. These unregulated money market funds are now more highly levered than traditional banks. The money market funds are more levered in a sense of how they behave as a fund. For example, in a report by the Washington Bureau Chief for Financial Information, Rex Nutting (2013), describes money market funds by saying, “At a 20-to-1 leverage ratio, a bank could stomach losses up to 5%. But a money-market fund behaves as if it were leveraged 200-to-1; a loss of just 0.5% can break the buck and trigger a bank run”.

To understand how increasing the leverage of money market funds affects corporations, Figure 6 graphically explains the process how money flows from investors to corporations through money market funds. Investors seeking a low risk investment may put money into money market funds rather than having their cash in a traditional bank account. The money market fund then provides funding to corporations and receives repayment for those loans in the form of interest payments. As the unregulated activities of money market funds become riskier, the funds corporations receive become riskier. As shadow banking activities increase, so does the leverage of the loans to money market funds, consequently, causing SIFIs to become riskier.

**Figure 6: Understanding the Money Market Funding Engine**

**Understanding the Money Market Funding Engine**

Money markets are important intermediaries, gathering investor funds which are then provided to corporations. During September 2008, investors withdrew unusual amounts of cash from Money Market Funds, forcing them to stop lending or increase the rate of interest charged to corporations.



## Chapter 3: Title II

### Systematic Risk in the Financial System

The financial crisis revealed weakness in the financial system, such as how the failure of large institutions can have a broader impact on other financial firms and the broader economy. The Dodd-Frank Act designates these large firms as systemically important financial institutions (SIFIs). These banks are known as SIFIs because of their size, complexity, and systemic interconnectedness. This designation heightens the firm's degree of being "too-big-to fail" (Laeven & Fabian, 2014). Contradictory to the mission of the Dodd-Frank Act, the SIFI designation signals that government will intervene in a situation where failure is imminent (Pierce & Broughel, 2012).

Financial firms are connected in a variety of ways and their interconnectedness can be beneficial to the financial system under normal conditions. For example, the banks can be used to diversify risk by making loans among themselves (interbank lending). However, in times of distress in the financial sector, outstanding commitments between banks cannot be quickly restructured and may cause a transferring of risks between the banks attempting to diversify their risk. For example, during the recent crisis, the failure of Lehman Brothers and its bonds led to the bankruptcy of the Reserve Primary Fund (money market fund). The Reserve Primary Fund's investors lost money as the value of each dollar in the fund fell below \$1 (net asset value of a money market is normally at \$1 or higher) (Bernard, 2008).

## Creation of Order of Liquidation Authority

Traditionally, when large nonbank financial institutions become financially distressed and are on the verge of default there are two viable options to avoid a financial panic, 1) the government can provide a bailout or 2) the firm can file for bankruptcy (Pierce & Broughel, 2012). The Dodd-Frank Act establishes a third alternative named the Orderly Liquidation Authority (OLA).

When Lehman Brothers failed in 2008, the firm went through a liquidation of the firm's assets in bankruptcy court. Just days after filing for Chapter 11 bankruptcy, Lehman sold its investment banking business to Barclays and its investment management business to two private equity firms. This financing allowed Lehman to continue to hold a valuable portfolio of loans and assets for another year and allow for Lehman to sell its remaining assets in the market at prices that correlated more with market value instead of dumping its assets in a distressed financial fire-sale (Skeel, *The New Financial Deal*, 2011, pp. 30-31).

The purpose of Title II is outlined in section 204 of the Dodd-Frank Act:

*(a) PURPOSE OF ORDERLY LIQUIDATION AUTHORITY. —It is the purpose of this title to provide the necessary authority to liquidate failing financial companies that pose a significant risk to the financial stability of the United States in a manner that mitigates such risk and minimizes moral hazard. The authority provided in this title shall be exercised in the manner that best fulfills such purpose, so that—*

*(1) creditors and shareholders will bear the losses of the financial company;*

*(2) management responsible for the condition of the financial company will not be retained; and*

*the Corporation and other appropriate agencies will take all steps necessary and appropriate to assure that all parties, including management, directors, and third parties, having responsibility for the condition of the financial company bear losses consistent with their responsibility, including actions for damages, restitution, and recoupment of compensation and other gains not compatible with such responsibility.*

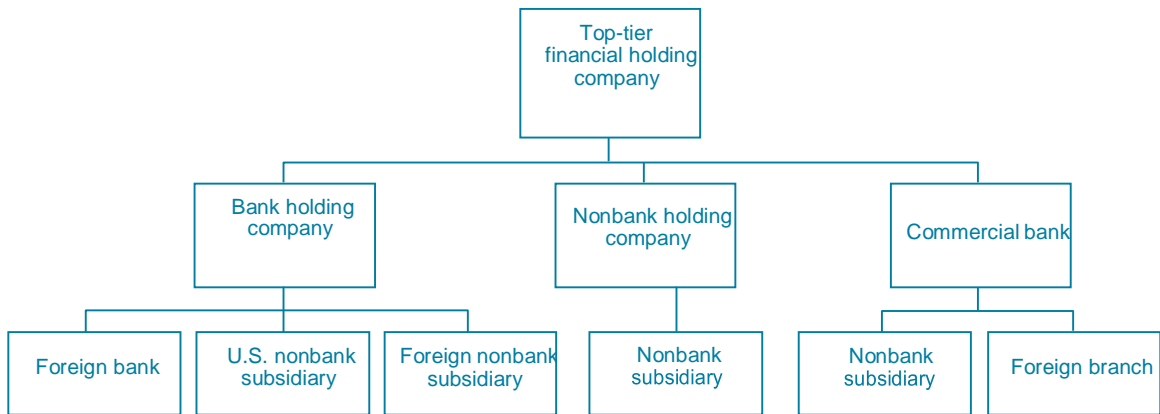
The orderly liquidation process is a new form of bankruptcy, controlled by government agencies. When a systemically important financial institution is nearing bankruptcy, the OLA process will initiate once approved by a two-thirds vote from the Federal Reserve Board, a two-thirds vote from the FDIC, and the secretary of the Treasury. The failing firm is then designated a Covered Financial Company (CFC) (United States Congress, 2010). OLA then gives the Federal Deposit Insurance Corporation (FDIC) control of the liquidation process for a CFC. The FDIC is the government agency that provides member banking institutions with guaranteed capital for its depositors up to \$250,000. Title II gives regulators broad control of the CFC designation process and government regulators can choose to dissolve companies without any objection from the institution's creditors.

## Single Point of Entry Strategy

The process of the Order Liquidation Authority rule was met with much debate. So, in 2013, the FDIC released a resolution to provide guidance on the process of OLA titled, *Resolution of a Systemically Important Financial Institution: The Single Point of Entry Strategy (SPOE)*. The single point of entry strategy is effectively the process of the FDIC entering only at the holding company level of a failing SIFI, while keeping most or all of the firm's subsidiaries intact.

The procedure is laid out in the FDIC's resolution draft. First, the parent holding company of a failing firm will be placed into FDIC receivership while its subsidiaries remain open and continue operations (Federal Register, 2013). The restructuring is done at the holding company level because U.S. financial firms are structured in a way (different from European banks) that allows short term debt and much of the firm's operations to be down streamed to its hundreds or thousands of subsidiaries. Bank holding companies hold relatively few assets, the assets held include cash and stock of their subsidiaries. Figure 7 shows a graphical representation of the structure of large U.S financial institutions.

**Figure 7: Structure of Large and Complex Financial Institutions in the U.S.**

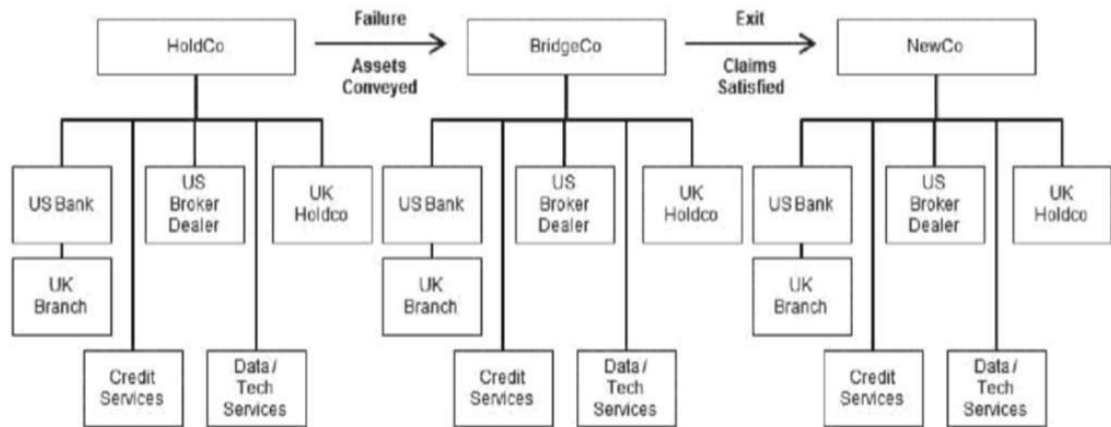


Source: Federal Reserve Bank of New York



The initial step of the resolution process continues as the assets, secured debt, and short term debt of the parent holding company are transferred to a new FDIC created “bridge financial company.” The failing bank holding company, in exchange, receives all of the equity in the new company. The equity in the new FDIC controlled company is the primary asset available to the failing holding company to satisfy its obligations of shareholder equity and liabilities. These obligations are satisfied through a process called “securities-for-claim, which is explained in the FDIC’s resolution document: *“through a securities-for-claims exchange the claims of creditors in the receivership would be satisfied by issuance of securities representing debt and equity of the new holding company”* (Federal Register, 2013). Figure 8 gives a graphical representation of the single point of entry resolution process. In summary, a “bridge financial company” is created to allow the FDIC to purchase assets and assume liabilities from the CFC. The FDIC may also use the “bridge financial company” to inject capital into the CFC to maintain operations during the liquidation process ( Federal Deposit Insurance Corporation, 2013).

**Figure 8: Single Point of Entry Strategy**



Source: Al Evanoff, Douglas, *The New International Financial System: Analyzing the Cumulative Impact of Regulatory Reform*

## Title II's Impact

Title II impacts systemically important financial institutions by ordering a new form of bankruptcy, OLA. I find that OLA and the FDIC's single point of entry strategy does not adhere to the Dodd Frank Act's mission of ending "too big to fail", but rather increases the likely hood of a firm becoming "too big to fail".

### 'Too Big to Fail'

One of the most criticized impacts of the Single Point of Entry Strategy (SPOE) is that it will increase the possibility of a large and complex financial institution being too big to fail (TBTF). Critics point out the negative effects of a bank holding company being designated a covered financial company (CFC) and being placed into FDIC receivership. For example, while all of the CFC's subsidiaries are fully operational, short term creditors will be protected. SPOE incentives an increase reliance on short term liabilities because under SPOE, the FDIC's bridge holding company assumes all of the CFC's short term debt. Furthermore, protected short term creditors would include its unregulated shadow banking liabilities, thus, incentivizing firms to use more short-term debt (shadow liabilities included), increases the riskiness of the firm (Wilmarth Jr., 2015).

The single point of resolution strategy relies on funding from two sources to protect the short term creditors. First, each firm in the SPOE process issues long term "bail-in" debt. A bail-in bond is an agreement by creditors to roll over short-term claims or to engage in formal debt restructuring with a troubled company. Debt restructuring is when creditors with claims coming due are asked to defer repayment deadlines and in some

cases reduce their claims (Setser, 2004). However, the issue comes whenever the FDIC converts the failing firm's bail-in bonds to equity. Because SPOE forces CFCs to issue bail-in bonds, private market bondholders will experience losses that could have been avoided in a normal bankruptcy (Wilmarth Jr., 2015). Also, the holders of the bail-in bonds will be the investors who are investing in the private markets (Federal Register, 2013). By having retail investors buy CFC's bail-in bonds essentially "bails out" failing banks, increasing the notion of too big to fail.

Secondly, if adequate funding cannot come from private markets, the FDIC states it "*might provide guarantees or temporary secured advances from the Orderly Liquidation Fund (OLF) to the bridge financial company soon after its formation.*" The Orderly Liquidation Fund is established in the SPOE resolution to serve as a back-up source of liquidity support (Federal Register, 2013). If the FDIC uses the OLF, it will have to be funded, which essentially leaves U.S. taxpayers liable for the funding.

The 1991 FDIC Improvement Act requires that the FDIC use the lowest cost method in resolving a bank failure (Federal Register , 1991). In the past, failing large and complex financial institutions have avoided bankruptcy by being acquired by larger healthier firms (i.e. Merrill Lynch, Washington Mutual, Salomon Brothers). As stated by Kupiec & Wallison (2014) "bank purchases are not only the least-cost method, but have the additional benefit that they avoid disruption in the banking services that would be associated with a depositor payout and liquidation of the failing bank's assets." Using SPOE forces a failing firm to forego being acquired. Hotchkiss and Mooradian (1998) used empirical evidence from 55 Chapter 11 bankruptcy takeovers to provide evidence that takeovers can facilitate the efficient redeployment of assets of bankrupt firms. So,

bypassing bankruptcy (and the possibility of a successful acquisition) will have a large impact on systemically important financial institutions.

## Chapter 4: Title IV

### Implementation of Volcker Rule

Former Federal Reserve Chairman Paul Volcker has long been an advocate of limiting the risks that large and complex financial institutions (LCFIs) can take. During the legislative process for the Dodd-Frank Act, Volcker proposed that banks be prohibited from engaging in proprietary trading, commodity speculation. In addition to the rules introduced by Volcker, Title IV (the Volcker Rule) limits sponsorship of private equity funds or hedge funds to 3% ownership of the fund's total value. This proposal faced much debate as the LCFIs were reluctant to sell their profitable proprietary trading divisions. According to estimates from Standard & Poor's, losses stemming from the implementation of the Volcker Rule for the eight largest U.S. Banks could be as much as \$10 billion in total yearly pretax profit (Standard & Poor's Rating Services, 2013).

However, eventually the Volcker rule was passed and its restrictions phased in over seven years. The Volcker Rule states:

*“(1) PROHIBITION.—Unless otherwise provided in this section, a banking entity shall not— “(A) engage in proprietary trading; or “(B) acquire or retain any equity, partnership, or other ownership interest in or sponsor a hedge fund or a private equity fund.*

*“(2) NONBANK FINANCIAL COMPANIES SUPERVISED BY THE BOARD.—Any nonbank financial company supervised by the Board that engages in proprietary trading or takes or retains any*

*equity, partnership, or other ownership interest in or sponsors a hedge fund or a private equity fund shall be subject, by rule, as provided in subsection (b)(2), to additional capital requirements for and additional quantitative limits with regards to such proprietary trading and taking or retaining any equity, partnership, or other ownership interest in or sponsorship of a hedge fund or a private equity fund, except that permitted activities as described in subsection (d) shall not be subject to the additional capital and additional quantitative limits except as provided in subsection (d)(3), as if the nonbank financial company supervised by the Board were a banking entity.*

The legislation became effective on April 1<sup>st</sup>, 2014 and the date to adhere to the proprietary trading rule was set to be by July 21<sup>st</sup>, 2015 and the “covered funds” (hedge funds and private equity funds) rule by July 21<sup>st</sup>, 2017 (Heltman, 2014).

After much criticism from banks regarding the implementation of the Title IV, in 2013 the Securities and Exchange Commission issued ‘The Final Rule’ focusing solely on the Volcker Rule. In summary, the final draft restricts systemically important financial institutions from:

- *“engaging in short-term proprietary trading of securities, derivatives, commodity futures and options on these instruments for their own account.*

• *And the sum of the banking entity's ownership interests in the co-investment fund and the related covered fund should not exceed 3% of the sum of the ownership interests held by all investors in the co-investment fund and related covered fund (Department of the Treasury, 2013)."*

This rule is the closest provision to the reinstatement of the Glass-Steagall Act of 1933, which separated commercial and investment banking. Although well intended, the Volcker rule is regarded by many as the most controversial of the numerous rules in the Dodd Frank Act's overhaul of financial regulation. The initial proposals of the Volcker Rule spawned more than 18,000 comment letters to the SEC (Puzzanghera, 2015).

Part of the controversy regarding the implementation of the rule is the ambiguous direction of the law. The three main issues in implementing the rule was concluded by the FSOC and was summarized by Charles Whitehead (2011) in his research paper titled, *The Volcker Rule and Evolving Financial Markets*:

- 1) *"Regulators must draw a line between permitted activities and proprietary trading. Too narrow a definition of proprietary trading will undercut the Volcker Rule, and too broad a definition may weaken the financial markets.*
- 2) *Regulators must account for differences in assets and markets, as well as among banks and traders. The FSOC Study, therefore, recommends a tailored approach to implementation, relying on banks (subject to regulatory approval) to create their own compliance programs and metrics. In order to minimize the risk of unfair advantage, regulators must also be able to compare trading practices from firm to firm and across different business units.*



3) *Regulations must adapt over time to a fluid and changing marketplace. Innovation can result in strategies that circumvent the Volcker Rule, but innovation can also be slowed, even when consistent with the Rule, if it falls outside of whatever regulatory standards have been introduced (Whitehead, 2011)."*

### Why the Law Was Passed

After the recent crisis, Congress sought to create regulations to provide the retail customer more protection from risks involved in banking activities. As quoted by Paul Volcker, "If you are going to be a commercial bank, with all the protections that implies, you shouldn't be doing this stuff and if you are doing this stuff, you shouldn't be a commercial bank." Although it is widely accepted that proprietary trading was not a major cause of concern during the crisis, Congress still set out to limit a bank's permissible activities. As U.S Treasury Secretary Timothy Geithner said, in a testimony before the Congressional Oversight Panel, "most of the losses that were material did not come from [proprietary trading] activities." Paul Volcker, the main advocate for the ban on proprietary trading, also admitted that proprietary trading was not central to the crisis and is quoted in a 2010 address at the Peterson Institute for International Economics saying, "Particularly, proprietary trading in banks was there but not central" to the crisis. The FSOC argues that proprietary trading results in a conflict of interests internally among banks and is not suited to completely fulfil their obligations to clients (Financial Stability Oversight Council , 2011). Proponents of the Volcker rule expressed that the commercial side of investment banks would have to choose between traditional banking or proprietary trading and will return to the sound services of accepting deposits and taking loans (Skeel, The New Financial Deal , 2011, pp. 86-87).

## Title IV's Impact

The Volcker Rule is primed to have a significant impact on SIFIs. The FSOC projects the costs associated with the 'Final Rule' to be between \$412 million to \$4.3 billion, which does not include indirect costs such as decreased market liquidity and the impact that the rule will have on the value of assets (Financial Stability Oversight Council , 2011). Most notably, I see two ways Title IV will impact systemically important financial institutions: 1) Increased compliance costs, 2) decreased profitability.

## Compliance Costs

The Final Rule of Title IV requires banking entities to implement a six-point program for the 46 banks overseen by the OCC, who have at least \$50 billion in trading assets and liabilities (Department of the Treasury, 2014). The goal of Section 619 Appendix B is to “maintain, establish, and enforce an enhanced compliance program”. The required program is summarized by Morrison & Foerster LLP:

- Written policies and procedures reasonably designed to document, describe, monitor and limit proprietary trading activities, and activities and investments with respect to covered fund activities, to ensure that all activities and investments conducted by the banking entity comply with the Volcker Rule and the Final Rule;
- A system of internal controls reasonably designed to monitor compliance with the Volcker Rule, and to prevent the occurrence of activities or investments that are prohibited by the Rule;

- A management framework that delineates responsibility and accountability for compliance with the Volcker Rule and includes appropriate management review of trading limits, strategies, hedging activities, investments and incentive compensation, among other things;
- Independent testing and audit of the effectiveness of the compliance program. The testing may be conducted by “qualified” personnel of either the banking entity or an outside party;
- Training for trading personnel and managers, as well as other “appropriate” personnel, to appropriately implement and enforce the compliance program; and
- Records sufficient to demonstrate compliance with the Volcker Rule, which records must be provided to the regulator upon request and retained for five years” (Morrison & Foerster LLC, 2014).

As a result of this mandated compliance program, the Office of the Comptroller of Currency released a study that revealed costs associated with compliance and reporting requirements will have a market value effect between \$402 million and \$541 million in each year through at least 2017 (Office of the Comptroller of Currency, 2011). Because of this regulatory compliance issue, large market makers such as Goldman Sachs and JP Morgan have forced large banks to close or sell whole divisions. To analyze the various increases in compliance costs, I gathered reported compliance costs from eight of the ten largest financial institutions, which is shown on the following two pages.

### **JPMorgan**

JPMorgan added 8,000 compliance staff in 2013 and spent an extra \$1 billion on compliance related costs (J.P. Morgan Chase & Co., 2015).

### **Deutsche Bank**

Deutsche's 2014 annual report included \$1.48 billion in regulatory related spending (Deutsche Bank AG, 2015).

### **Citigroup**

Citi estimated its regulatory and compliance costs have grown approximately 10% annually since 2011 and reported that its expenses increased by \$5.1 billion, driven by legal expenses, regulatory and compliance costs (Citigroup, 2015).

### **Wells Fargo**

Wells Fargo saw a 7% increase in professional services to 2.7 billion "due to continued investments in their professional delivery system and increased risk management infrastructure to meet increased regulatory and compliance requirements (Wells Fargo & Company, 2015)."

### **UBS**

UBS had regulatory costs of \$946m in 2014 (UBS AG, 2015).

### **Bank of America**

Bank of America doubled its audit oversight staff in 2014 (Bank of America Corp, 2015).

### **HSBC**

HSBC added 5,000 compliance staff (HSBC Bank plc, 2015).

### **Morgan Stanley**

Morgan Stanley legal and compliance costs increased by 15% in 2014 from 2013 (Morgan Stanley Inc., 2015).

### Profitability

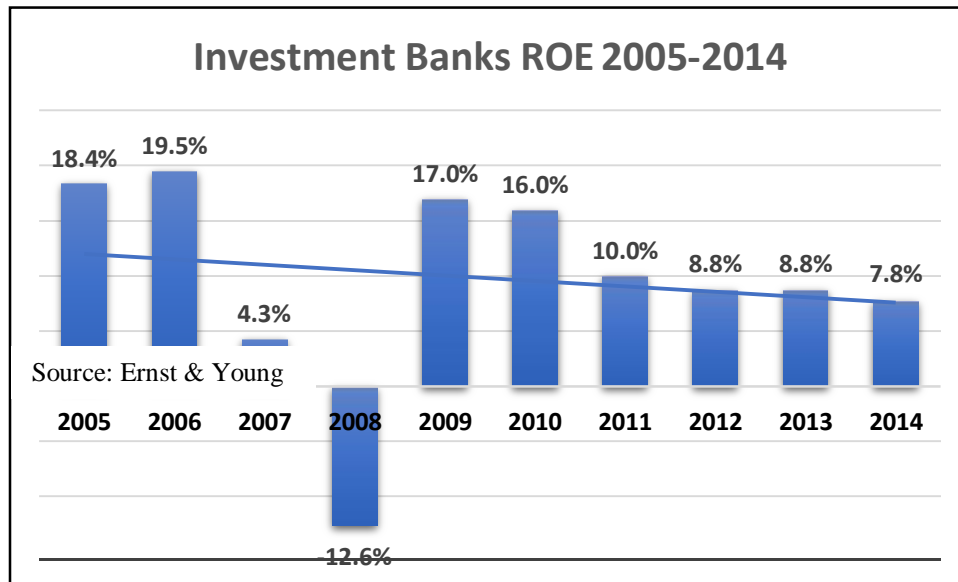
As mentioned earlier, yearly pre-tax profits could be affected by as much as 10 percent, according to Standard & Poor's. Due to the increased compliance cost mentioned in the previous section along with shutting down proprietary trading divisions, banks will face challenging profitability environments. For instance, J.P. Morgan estimates that the direct costs of the Volcker Rule for them will be \$400-\$600 million annually (J.P. Morgan Chase & Co., 2015). Furthermore, according to Bloomberg (2014), Goldman Sachs generated about 10 percent of its total revenue from proprietary trading. Even in the volatile market conditions of 2009, six of the ten largest U.S. banks each produced about \$5 billion in revenue from proprietary trading alone.

Next, additional costs in compliance and reduced trading revenues at major banks have shown to have a dramatic effect on bank's return on equity (ROE). A 2015 study by Ernst & Young on the profitability of major U.S. banks confirms the fact that U.S. banks

are struggling to meet the industry standard of 15 percent ROE. Using data from the Ernst & Young study, Figure 9 shows the declining ROE of major investment banks in the U.S. ROE has declined or remained unchanged every year since the financial crisis. I believe it is important to note the dramatic decline in ROE after the implementation of the Dodd-Frank Act in 2010. Since 2010, major U.S. bank's ROE have been cut in half down to below eight percent from pre-Dodd-Frank levels of 16 and 17 percent.

As a result of declining profitability, the increased probability of default becomes an area of concern. Sohhyun Chung (2013) derived a theoretical model of 12 large U.S. banks to test default probability under Volcker Rule limitations. Chung finds that default probability increases because the banks' profitable operations are cut. Furthermore, even when the model of default probability was tested under small percentages of alpha (alpha occurs when returns are greater than market return) the model still showed increased default risk (lower risk taking occurs with smaller alphas). Because of the increase in default probability among banks, I believe the Volcker Rule is harming the U.S. financial system by demoting stability.

**Figure 9: Investment Bank ROE for 2005-2014**



## Conclusion

Based on my research of the Dodd-Frank Act, systemically important financial institutions will see some form of financial burden due to new regulations. Increasing capital requirements have a distinct cost/benefit conflict. Increased capital promotes firm stability, however, consequences of Title I include additional surcharges, loss of tax benefits of debt, costs associated with acquiring more capital, and increased investments in risky shadow banking activities. The Orderly Liquidation Authority created in Title II and its single point of entry strategy increases the riskiness of a firm by incentivizing the accumulation of short-term debt because the FDIC will assume the short term debt of a defaulting firm. Title IV dramatically increases compliance costs while decreasing the profitability of operations by banning proprietary trading.

There are benefits to new regulation, however, the burden imposed on systemically important financial institutions are too costly. The Dodd-Frank Act has well intended goals to promote market stability, but I believe the rules in place do not help to reach the stated goals of the Dodd-Frank Act.



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