

**Spring 2013
Industry Study**

Final Report
Financial Services Industry



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FINANCIAL SERVICES 2013

ABSTRACT: Five years after the financial meltdown of 2008 many of the fundamental questions that emerged in the wake of the mortgage crisis remain unanswered. Although Congress and the Administration have attempted to address the conditions that contributed to the crisis, no consensus has emerged on the level of vulnerability the industry poses to national interests. The Eisenhower School Financial Services Industry Study set out to examine whether current legislation is adequate to ensure the parallel goals of safeguarding the stability of U.S. financial markets and ensuring that the financial sector can provide the capital flows and liquidity necessary to provide for national economic security objectives. This paper asserts that the industry is on a sustainable path, and indeed quite profitable for several large firms. At the same time, the study group concluded that the increasingly concentrated nature of segments of the industry requires attention from regulators and policymakers to ensure the public interests in financial stability and efficient capital markets.

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PLACES VISITED

Domestic:

Bank of America, Charlotte, NC

Wells Fargo, Charlotte, NC

American Securities Capital Partners, New York City, NY

CITIC Securities International USA, New York City, NY

Federal Reserve Bank of New York, New York City, NY

Financial Times, New York City, NY

Goldman Sachs, New York City, NY

JPMorgan Chase & Co., New York City, NY

Knight Global Capital, Jersey City, NJ

Moody's Investor Service, New York City, NY

New York Stock Exchange (NYSE) Euronext, New York City, NY

United Services Automobile Association (USAA), San Antonio, TX

Central Intelligence Agency (CIA), Washington, DC

Consumer Financial Protection Bureau (CFPB), Washington, DC

Freddie Mac, McLean, VA

Federal Reserve Board, Washington, DC

Federal Deposit Insurance Company (FDIC), Washington, DC

Morgan Stanley, Washington, DC

Pentagon Federal Credit Union, Alexandria, VA

The Carlyle Group, Washington, DC

United States Commodities Future Trading Commission (CFTC), Washington, DC

United States Department of State, Washington, DC

United States Security and Exchange Commission (SEC), Washington, DC

United States Senate Banking Committee, Washington, DC

United States Treasury, Washington, DC

Wall Street Journal, Washington, DC

International:

None

Introduction

A healthy economy is an instrument of power in its own right and a critical enabler of other instruments of power, including the military. It is also a fundamental objective of national strategy. The financial services industry is both a source and indicator of economic health and touches every sector of the U.S. economy. It acts as a catalyst for firms, states, and municipalities and underpins the nation's economy and national security. Financial services firms provide liquidity, advisory services, and facilitate mergers and acquisitions for the Defense Industrial Base. The financial services industry contributes to economic growth by enabling the flow of capital necessary for job creation, infrastructure investment, and research and development. It provides tax revenue necessary to implement national security objectives.

The financial services industry is one of the most heavily regulated sectors of the U.S. economy. Historically, the U.S. government has sought to ensure the stability of the financial services industry with a regulatory structure that has attempted to balance the need for well-regulated markets and a banking sector that can innovate and create wealth. Since the Great Depression, the federal government has periodically intervened in the markets to either address financial crises or perceived threats to the financial stability of the nation, or to encourage the industry to fuel economic growth. One such measure, the repeal of the Banking Act of 1933, introduced structural changes in the industry that some observers believe contributed to the financial crisis of 2008. Following the crisis, policymakers responded by passing the 2010 Wall Street Reform and Consumer Protection Act (known as "Dodd-Frank") intended to strengthen U.S. financial markets, ensure financial stability, and limit systemic risk.¹ The provisions of Dodd-Frank are broad and have the potential to transform large segments of the financial services industry. The full impact of the act, however, remains unclear as its implementation remains incomplete.

This study provides an overview of the commercial and investment banking industries as core components of the financial services sector in the context of a dynamic regulatory environment. It outlines the current state of these industries, their future outlooks, and the challenge of regulating markets to provide for both financial stability and economic growth. The study highlights that the commercial and investment banking segments of the financial services sector are profitable and are contributing to the growth of the national economy.

The study considers the potential implications of three broadly correlated trends: 1) the relatively high degree of concentration in the industry; 2) the fact that the largest firms are often relatively more profitable than much of the rest of the industry; and, 3) the concern that the failure of one or more of these firms could imperil the financial system and national economy. The remainder of the study explores these and other challenges facing the industry and offers recommendations in two forms: 1) policy recommendations; and, 2) emerging issues we assessed could merit additional attention from policymakers. Industry study participants examined the financial services industry from the perspective of national security professionals, in the context of the Eisenhower School mission of evaluating the capabilities of industry to support national strategy. These observations and recommendations were informed by high-level access to regulators, policymakers, industry leaders, and media observers. These recommendations are intended as a good-faith contribution to the dialogue about how to strike the right balance between government regulation, innovation, and risk-taking, so that the financial services industry will continue to contribute to American prosperity and national security, while maintaining the resiliency and stability of the industry and economy as a whole.

Industry Defined

A broad range of industries comprise the U.S. financial services sector, including banks, credit unions, credit card companies, insurance companies, consumer finance companies, investment funds, and government-sponsored enterprises. The sector facilitates commercial transactions in the United States and around the world. The United States has a global competitive advantage because the financial services sector generates the largest and most liquid financial markets in the world.² Domestically, the sector ranks fourth in size among 19 private U.S. sectors and directly contributes eight percent to Gross Domestic Product (GDP).³ The financial services sector enables growth in other sectors, including manufacturing, real estate, and construction by providing capital to fund investment and expansion activities.

This study explores two discrete segments within the financial services sector, commercial banking and investment banking, because of their importance to the health of the U.S. economy as illustrated by their role in the U.S. recent financial crisis. Commercial banks (NAICS code 52211) are entities that provide commercial, industrial, and consumer loans to retail and business clients. These banks “generate the majority of their revenue by accepting customer deposits and then lending these deposits out to individuals and businesses at a set interest rate.”⁴ Major commercial banks include Wells Fargo, JP Morgan Chase, Bank of America, and Citigroup.⁵ Investment banks (NAICS code 52311) include, “firms and individuals that provide a diverse range of securities services including investment banking and broker-dealer trading services. They also offer banking and wealth management services and engage in proprietary trading (trading their own capital for a profit) to varying degrees. Investment banking services include securities underwriting and corporate financial services while trading services include market-making and broker-dealer services.”⁶ Major investment banks include Bank of America, Goldman Sachs, JP Morgan Chase, Morgan Stanley, and Citigroup.⁷

Current Condition Analyzed through the S-C-P Model

This section provides an assessment of the economic health of both the commercial and investment banking industries using the Structure-Conduct-Performance (S-C-P) model, as it is employed at the Eisenhower School.⁸ The analysis assesses potential tension that can result as firms and the government try to balance firm and economic value. In working to achieve firm value, banks in this industry seek to maximize profits that allow them to innovate, to attract and retain investors, and ultimately to survive in the market. The government, on the other hand, provides oversight and regulation in an attempt to mitigate market failure by incentivizing firms to make decisions that maximize overall growth in GDP.

Structure (S of the S-C-P Model)

This industry study utilized two key tools, the competition spectrum and Porter’s Five Forces, to assess the health of the commercial and investment banking segments.⁹ Due to structural differences between the commercial and investment banking industries, this study analyzes each segment separately when appropriate.

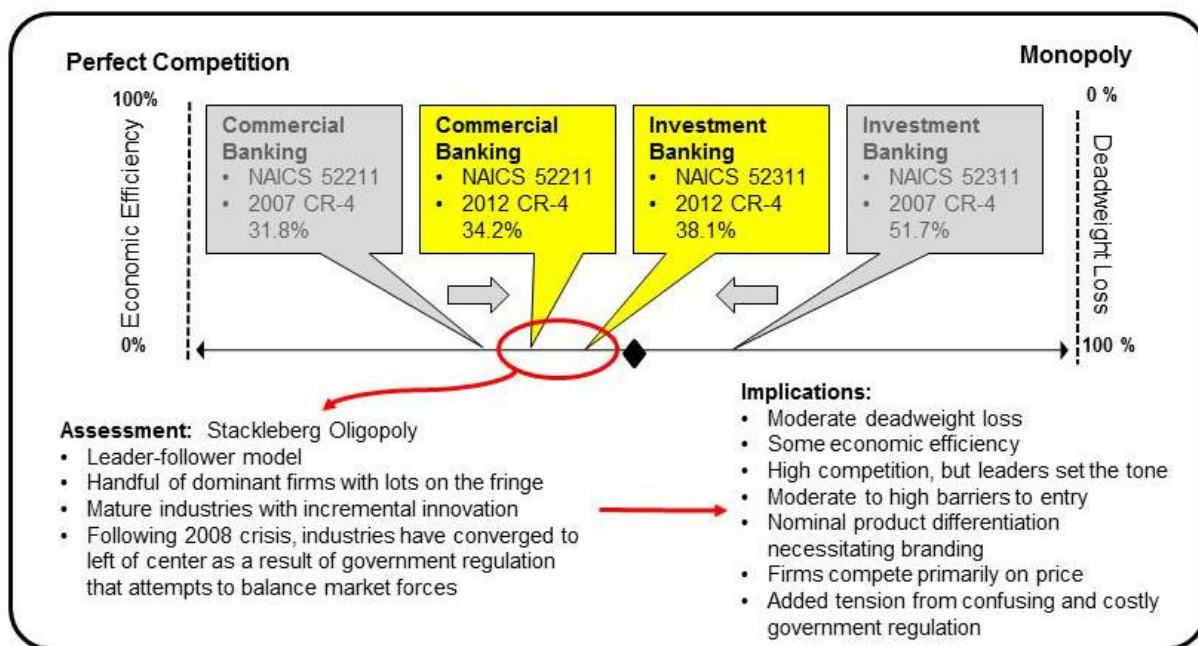
The competition spectrum can help inform different types of analysis. It can also help economists and analysts identify potential market failures. It is useful for policymakers and others interested in the “placement” of an industry on the spectrum between perfect competition and monopolies. This in turn can help inform decisions about the need for legislation, regulation or other policy steps to shift the placement of the industry on this spectrum.

Porter's Five Forces is an analytical model that can be used to assess long term profit potential within an industry, which competitive forces are most influential on firm profitability, and how profit is divided among firms. The model can assist firms as they develop strategies to leverage competitive forces to best situate themselves within the market and maximize profit.

Structure Considered through Competition Spectrum Analysis

Figure One depicts the position of commercial and investment banking industries along the competition spectrum. By using the combined market share of the top four firms in each industry for 2007 and 2012 (known as a CR-4 analysis), this analysis finds that the commercial banking concentration increased from 31.8 percent in 2007 to 34.2 percent in 2012, while the investment banking concentration decreased from 51.7 percent in 2007 to 38.1 percent in 2012.¹⁰ This suggests that the industries have converged since the 2008 financial crisis to the left of center between perfectly competitive and monopolistic markets. It also appears that commercial and investment banks operate in competitive (Stackelberg) oligopoly market structures as characterized by a handful of dominant firms that provide market leadership, from price setting to innovation, within mature and highly competitive industries consisting of thousands of companies. Respectively, the commercial and investment banking industries have 6,235 and 9,049 operating businesses.¹¹ A competitive oligopoly implies that firms experience moderate economic inefficiency and deadweight loss, heavy competition, moderate to high barriers to entry, and corporate strategies focused on price and nominal product differentiation achieved through brand and reputation building.¹² It also suggests that complex and costly government regulations create tension. While further elements of the S-C-P model will also examine this preliminary analysis, from a purely economic point of view, there may be indicators that one or more market failures could exist in these industries. In such cases, policymakers sometimes try to influence the market to achieve a balance between economic and firm value. Later, the paper will assess the implications of such actions.

Figure One: Competition Spectrum



Structure Considered Using Five Forces Analysis

Porter's Five Forces can be used to evaluate the profit potential for the commercial and investment banking industries and identify which levers firms can use to craft effective strategies to achieve their goals. As shown in Table One, two factors (threat of new entrants and threat of substitutes) suggest profit potential is high, while three other factors (bargaining power of buyers, supplier power, and degree of rivalry) suggest reduced profit potential. The performance analysis will attempt to validate these findings and address two key questions:

1. Do market failures in these industries translate to excessive profit-taking among firms?
2. Do industry leaders enjoy substantially higher profits than smaller firms?

Table One. Five Forces Analysis

- **Threat of New Entrants:** New entrants to any industry change the competitive landscape by exerting pressure on existing market shares, price, and investment costs. Commercial banks are subject to a medium and steady threat based on significant government regulation and oversight that has increased already substantial capital and operational requirements.¹³ Investment banks are subject to a low threat due to increasing barriers to entry from rising capital requirements and start-up costs.¹⁴ Low and medium threats indicate a low volume of new entrants, meaning existing firms do not face significant risk from losing market share and profits to a growing industry. This means that *profit potential is high*.
- **Bargaining Power of Buyers:** Negotiating leverage allows buyers to realize more value by forcing costs and prices down, and by demanding better and more comprehensive product offerings.¹⁵ Low switching costs across the financial services sector indicate that buyers can play the field, which allows them to exert influence on both commercial and investment banking firms. For these industries, the bargaining power of buyers constitutes a medium and steady threat. Price sensitivity, low switching costs, and limited product differentiation make it fairly easy for customers to take their business elsewhere, thereby *reducing profit potential*. Not all buyers switch, however, because of real or perceived benefits associated with the reputations of certain firms, particularly the largest.
- **Threat of Substitutes:** "A substitute performs the same or a similar function as an industry's product by a different means."¹⁶ If the threat is high, profitability suffers and results in increased investment in marketing and product differentiation. In both industries, the threat of substitute products is assessed as moderately low and thus the *potential for profits is high*.
- **Supplier Power:** The power of suppliers can impact the cost structure of the industry for which they provide products or services. For example, the need for a highly educated labor pool can limit profits, especially when it is difficult to pass on costs to consumers.¹⁷ Supplier power is assessed as moderately high in both industries since there is significant demand for both talented labor and a continuing need for innovative, highly complex and capable information, communication, and technology systems. Such demand increases overhead costs that *reduces profit potential*.
- **Degree of Rivalry:** Intense price discounting, new product offerings, customer service initiatives, and intensity of advertising and brand/reputational maintenance are all indicators of the degree of rivalry and competition in both industries. In addition, significant barriers to exit can increase rivalry as rivals have no choice but to seek to capture and maintain market share and profitability. In both industries, the degree of rivalry is assessed as high and increasing. "Competitive conditions are likely to continue to intensify as merger activity in the financial services industry produces larger, better-capitalized and more geographically diverse companies capable of offering a wider array of financial products and services at more competitive prices."¹⁸ As this degree of rivalry continues and increases, it will exert more pricing pressure on the industry, which *reduces profit potential* and underscores the need for product differentiation.

Conduct (The C in the S-C-P Model)

A conduct analysis assesses whether firms within an industry are executing successful business strategies and projects where market forces may take the industry on the competition spectrum. Typically, firms develop strategies based on two key tools: price and differentiation.¹⁹ In a Stackelberg oligopoly, industry leaders set the standards for both price and service levels. Volatility in the market and intense competition characterize this model and could be a factor limiting profit potential. Thus, some firms avoid competing solely on price and instead seek to grow profits by:

- Gaining market share through mergers and acquisition; and,
- Growing/maintaining investor and customer base through brand and reputation building.

These strategies appear to be moderately successful for commercial and investment banks. Within the commercial banking industry, the market share for the top four firms has increased 2.4 percent since 2007 and the number of customers and deposits has also grown thanks to a recovering economy, substantial investments in brand and reputation building, and government stimulus.²⁰ As a result, revenues have grown 3.2 percent annually over the past five years, while profits and losses vary from firm to firm as they continue to write off “toxic assets” from the 2008 financial crisis.²¹ The outlook for investment banks appears less certain. Market share for the top four firms has dropped 13.6 percent since 2007. While the stock market appears to be rebounding with a Dow Jones Industrial Average higher than pre-recession levels, some have noted that the volume of trades has sometimes been lower than pre-crisis levels.²² Revenues have grown a modest 2.8 percent annually over the past five years, but profits appear to have declined on a year-on-year basis at many top firms.²³

These developments have come as some firms continue to focus on mergers and acquisitions to grow market share, along with brand/reputation building to maintain and grow their customer base. A continuation of this trend could shift both commercial and investment banking closer to a more monopolistic market structure. Economic theory suggests that such a development would decrease economic efficiency in the market, despite the benefit to some large firms. Such consolidation should be a factor that policymakers consider as they weigh the merits of changes in law or regulation designed to maintain competition and stability in these two market segments.

Performance (The P in the S-C-P Model)

The industry study conducted a preliminary analysis of financial data and compared it with the preceding analysis of structure and conduct. This effort considered several measures of operational efficiency, financial strength, profitability, investor confidence, and management effectiveness across the six major firms, as well as the industry average and the Standard & Poor (S&P) 500 average. Table Two summarizes these data points and the team’s analysis.²⁴

The data appear to confirm the popular impression that many of the largest firms in the industry are quite profitable, especially when compared with the broader S&P 500.²⁵ As noted in earlier analysis, however, profitability varies among the top firms with only half exceeding the industry average. This data also reveal substantial variation among the top firms in terms of their debt to equity ratios, price to earning ratios, ratios and return on investment, even if their Earnings Before Interest, Taxes and Depreciation (EBITD) margins were relatively consistent. Detailed technical analysis is beyond the scope of this industry study. Nonetheless, we concluded that the overall profitability of the largest firms could reasonably be used to inform policy recommendations later in the report. In contrast, the team determined that caution was in order to

ensure the largest firms are not viewed as a monolith, as sometimes portrayed in the popular media. Indeed, while the EBITD margins for many firms were relatively uniform, there appear to be important differences among firms in terms degree of leverage, return levels, and investor perceptions of firm values.

Table Two. Commercial and Investment Banking Performance Metrics

Metric	Bank of America (BAC)	Citigroup (C)	Goldman Sachs (GS)	JP Morgan Chase (JPM)	Morgan Stanley (MS)	Wells Fargo (WFC)	Industry	S&P 500
Asset Turnover	0	0	0	0	0	0.1	0	0.4
Total Debt to Equity	1.47	1.49	2.93	1.66	3.12	1.27	1.27	0.87
EBITD Margin	20	32.2	45	41.2	22.6	40.9	36.3	20.2
P/E Ratio	41.7	18.5	10.7	9	46.7	11	15.8	17.7
Return on Investment	1.1	2	3.1	5.8	0.7	8.5	3	8.9

- **Asset Turnover:** The asset turnover metric measures a firm's ability to generate revenue using its assets. "It also indicates pricing strategy: companies with low profit margins tend to have high asset turnover, while those with high profit margins have low asset turnover."²⁶ The negligible asset turnover of 0 and 0.1 across these firms appears correlated with profit.
- **Total Debt to Equity:** Debt to equity divides total liabilities by stockholders' equity to assess a firm's financial leverage. High debt to equity shows that a firm finances its growth with debt at the risk of incurring additional interest expense that reduces profits. The top six firms are heavily leveraged with total debt to equity figures equaling or exceeding both industry and S&P 500 averages. While capital-intensive industries tend to have a ratio above two and leveraging is critical for financial services firms to generate large amounts of capital, the 2008 crisis introduced a dialogue over the appropriate amount of leverage in order to reduce systemic risk.²⁷ The amount of leverage appears to be correlated not only to the amount of risk, but also to the amount of profit these firms make. The study group considered this relationship to be relevant in formulating its policy recommendations.
- **Earnings Before Interest, Tax, and Depreciation (EBITD) Margin:** The EBITD margin deducts expenses (excluding taxes, interest, and depreciation) from revenues to arrive at a common measure of profit. The data demonstrates: (1) that, by this measure, the industry is quite profitable with an average EBITD of 36.3 compared to the S&P 500 average of 20.2; and, (2) while the top firms are performing well in relation to the S&P 500 average, there are clear leaders in terms of profitability across these firms when compared to the industry average.
- **Price to Earning (P/E) Ratio:** A measure of investor confidence, the P/E ratio compares a firm's current share price to its per-share earnings. A higher number relative to other firms within the same industry signals that investors are expecting higher earnings growth in the future. P/E ratios for the top six firms appear to be inversely related to their EBITD margins, suggesting that investors may believe that firms still emerging from the 2008 crisis are on track to execute more profitable strategies.
- **Return on Investment (ROI):** ROI can indicate the success with which management executes its strategy in relation to other firms within an industry. Because industries operate under unique conditions, it may be more valuable to compare firms within the industry. The S&P 500 average is noted for its potential comparative value.

Preliminary Conclusions Drawn from the S-C-P Model

In synthesizing our S-C-P model analysis, the industry study concluded that the commercial and investment banking industries are viable, but issues exist that may require action by firms and policymakers in coming years. Through market forces and both government action and self-regulation, industries have converged to a slightly left of middle position on the competition

spectrum. This suggests a generally optimal convergence of economic and firm value; there are sufficiently high profits to incentivize firms to remain in the market, encourage innovation, and contribute to national economic growth.

One area that may require additional attention is the apparent correlation between the profitability of several of the largest firms and relatively high levels of market concentration. Several of these large firms appear to be executing strategies designed to grow profits by increasing volume in terms of market share and client activity. If the government determines these profits to be “excessive,” it must carefully consider the impact of more regulation on the many smaller and less profitable firms within these industries. Additional regulation could inadvertently lead to increased market concentration, as bigger firms are better able to spread compliance costs across their larger enterprises. This could lead to more consolidation and a shift towards the monopolistic end of the competition spectrum, suggesting a loss of economic efficiency. In addition, such an evolution would likely prolong and potentially aggravate the vigorous “Too Big to Fail” debate. Some argue that larger firms increase economies of scale, improve products, and reduce costs. Others believe further consolidation allows surviving firms to act as price-setters, and – potentially – to engage in riskier behaviors because they are “Too Big to Fail” and are implicitly backed by the government.

Rendering judgment on the validity of such arguments is beyond the scope of this paper. It may be worth noting, however, that during our interactions with firms, these issues of competition, concentration, and the costs of regulation were frequent topics of discussion. We attempted to synthesize these anecdotal comments with the structured analysis conducted through the S-C-P model to inform the policy recommendations contained later in this paper.

Outlook

While the U.S. economy is recovering, e.g., all major U.S. indices have set new records of trading activity, the first quarter 2013 GDP reports showed only 2.5 percent growth, lower than the anticipated 3.0 percent growth.²⁸ Unemployment has also steadily decreased, though not as quickly as in previous post-recessionary periods. According to the *IBISWorld* market research firm, overall “U.S. economic growth is expected to occur at a relatively slow rate, as consumption growth across the entire economy slows from deleveraging and stagnant wages.”²⁹ While revenues in the commercial and banking segments of the U.S. financial services sector have suffered during this economic crisis, this paper’s S-C-P analysis demonstrates that both industries are viable and generally profitable. Revenues in both will improve as the economy grows. Nonetheless, challenges remain. The implementation of new government regulation, international competition, cyber threats, and other risks will require attention from the sector in the coming years. At the same time, policymakers and industry leaders will need to cooperate to identify emerging market failures and preemptively develop, implement, and assess appropriate policy responses.

From 1854 to 2009, the United States experienced 33 measurable economic cycles of expansion and contraction.³⁰ On average, it has taken 17.5 months to contract and slightly over 38 months to recover, with one full cycle lasting approximately five years (56 months).³¹ The U.S. commercial banking industry is currently in a “mature” phase of its economic life cycle as “characterized by mergers and acquisitions, steady growth, more regulation, a smaller number of banks, market saturation, and intense product competition.”³² The U.S. investment banking industry, on the other hand, is in a “declining phase...characterized by slow industry growth, declining participation, and market saturation.”³³ Following the recession of 2008, business activity and trading have remained below pre-recessionary levels.³⁴ Nevertheless, securities

markets and corporate profits have begun a moderate recovery. While lower than they have been historically, *IBISWorld* projects that corporate revenues for commercial and investment banks, a key indicator of market performance and business activity levels, will rise at an annualized rate of 5.0 and 3.2 percent, respectively.³⁵ This may stimulate business activity as corporations begin spending capital accumulated over the past five years.³⁶ These effects, compounded by firm consolidation, reduced profitability, and tighter regulation lead to an extended outlook that predicts a much shallower growth rate than historically expected.

Government regulation, specifically Dodd-Frank, has a major impact on the outlook of the investment and commercial banking industries. Uncertainty within the regulatory environment will remain the foremost short term political challenge for both industries. The lack of clarity regarding the promulgation of Dodd-Frank provisions represents a drag on banks with ambiguity over future compliance expenditures hampering firms' ability to engage in strategic planning and investment. Compliance costs and political lobbying efforts will remain significant overhead expenditures, especially for leading firms. These costs reinforce already high barriers to entry in these industries and limit competition as smaller entities may not be able to either enter or remain in this trade space.

The current tightening of the regulatory cycle is likely to remain in place through the remainder of the current Administration. The pace of the economic recovery and political objectives of future administrations will dictate how soon the regulatory cycle will tilt back toward less stringent oversight. Increased growth rates and/or interest rates would also likely reduce political demands for regulation. However, if Dodd-Frank becomes fully promulgated, its provisions will likely remain in force over the longer term.

Another important factor when considering the outlook for the industries is how the global financial crisis has impacted social trust and harmed the reputation of banks in the eyes of the public.³⁷ Firms recognize this problem and some have attempted to rehabilitate their standing through public relations efforts. Recent innovations like mobile banking may help improve attitudes toward banks and improve their reputations as institutions seeking to serve differentiated customer interests. Nonetheless, serious reputational risk remains. One emerging threat is the risk associated with cyber-attacks on banks. Every institution we visited cited cyber security as an enormous concern and a focus of intense effort. Both theft of information and denial of service could significantly damage the reputations of banks.

Despite regulatory and reputational concerns, U.S. commercial and investment banks are well positioned to remain global leaders in international markets. These industries grew at an annual rate of 3.7 percent between 2007 and 2011. In comparison, the European and Asia-Pacific industry groups grew at 3.4 and 11.1 percent respectively over the same period.³⁸ The performance of the U.S. industry is forecast to accelerate, with an anticipated average growth of 6.8 percent for the five-year period 2011 – 2016. Comparatively, the European and Asia-Pacific industry groups are projected to grow an average of 2.6 and 9.3 percent respectively.³⁹ U.S. firms also enjoy structural advantages over foreign competitors suggesting that they are well placed to compete over the long term. U.S. firms operate within mature, transparent political and financial systems in which the interests of the financial services industry are well represented. While other economies such as China and India enjoy higher economic growth rates, their underdeveloped financial systems and legal frameworks are unlikely to provide investors with the level of transparency and security necessary to pose a significant threat to U.S. firms. The ongoing sovereign debt crisis in Europe suggests the dollar will remain unchallenged as the global reserve currency for the foreseeable future, reinforcing the competitiveness of U.S. firms. As a result,

foreign direct and portfolio investors will likely continue to view the United States as the world's safest market, contributing to the competitive positioning of U.S. financial firms.

Despite challenges, the commercial and investment banking industries will maintain their performance advantages for the foreseeable future. High profit margins, huge economies of scale among the top firms, increasing consolidation, and technological advantages suggest that U.S. banks will continue to set global industry standards in technical and product innovation over the near and medium term. The remainder of this paper will examine these and other issues identified during our research and field studies, and offer some preliminary recommendations the team believes could help commercial and investment banks remain competitive, strengthening the U.S. economy and national security.

Challenges and Recommendations

The Enduring Effort to Build Resilience in the US Financial Services Industry

Resilient systems are flexible and adaptable. However, unknown risks and vulnerabilities threaten even the most resilient systems.⁴⁰ Since the 2008 financial crisis, the U.S. government has sought to support the “adaptive resilience” of the financial services sector by addressing risks that may threaten the overall integrity of the U.S. financial system and cause economic crises.⁴¹ Identifying systemic fragility from this broader perspective rather than separately addressing the challenges facing the many components of the financial services industry allows government regulators the opportunity to counter potential threats before they endanger not just the financial markets, but the U.S. economic system, and potentially U.S. national security. While numerous risks exist in the financial services sector, this section considers three pivotal areas where structural fragility or regulatory weakness is already present and, based on our field study, potentially growing. These areas include systemically important financial institutions (SIFIs), government sponsored enterprises (GSEs), and the global interconnectedness of financial markets. The following section will examine the perennial tension between the need for well-regulated markets and the goal of minimizing interference in the ability of the financial services industry to generate wealth. Where appropriate, we have suggested recommendations that may improve systemic resiliency.

Key Issue: Systemically Important Financial Institutions

Dodd-Frank seeks enhanced prudential review of both large bank and non-bank financial institutions because of a perception that their size, interconnectedness, and influence on capital markets and the supply of credit could create vulnerabilities for the U.S. and global financial systems. The failure of a SIFI could lead to the collapse of other financial institutions, impacting not only American consumers, but the U.S. and other economies.⁴² While interconnectedness is essential for banks to diversify risk and maximize liquidity, industry has consolidated to such an extent that the failure of one large firm could lead to the collapse of other financial entities.⁴³ In part, this is a result of widespread counterparty or default risk associated with SIFIs. Because firms are often highly leveraged, or indebted to a creditor counterparty, the failure of one institution could jeopardize the viability of its counterparties.⁴⁴ During the 2008 financial crises, defaults of highly leveraged firms transmitted losses to their network of creditors. Confronted by catastrophic losses, creditors became less willing to extend credit, resulting in a tightening of the credit supply and accelerating recessionary pressures.

The financial crisis engendered a vigorous debate on how to regulate SIFIs, also known by the monikers “too big to fail” (TBTF) or “too big to save.” Advocates have proposed a broad

range of policy options. Some observers have argued that the perception the government is unwilling to allow a SIFI to fail creates a moral hazard for the banks – firms that are confident of a bailout are more likely to engage in risky behavior – and have called for the breakup of large institutions. Others have advocated a laissez-faire approach to the markets. However, most new regulation has sought to increase resiliency by combining incentives for large financial institutions to avoid excessive risk, while introducing mechanisms to mitigate the systemic impact of any future failures. For example, a recent draft Senate bill called the Terminating Bailouts for Taxpayer Fairness Act seeks to implement capital requirements of 15 percent for banks with assets of more than \$500 million, while regional banks at eight percent.⁴⁵ The provisions of the bill could simplify the regulatory structure by eliminating complex calculations and by including all investment instruments involving banks on the balance sheet. At the same time, it is not clear what impact it would have on U.S. participation in the Basel III framework, a voluntary international banking accord.

The industry study found that considerable debate exists about increasing capital and liquidity requirements for all financial institutions, including whether there should be more stringent requirements on SIFIs. Any changes, however well-intentioned, could have far reaching implications, particularly if they lead to a permanent segregation of the industry into two categories of SIFI and non-SIFI firms. Furthermore, such measures could put the U.S. out of step with its G-7 partners if they set the U.S. on a course that differs profoundly from the Basel III.

Recommendation #1: Ensure any New Requirements beyond Basel III are Coordinated Globally and Debated Transparently, Recognizing Competing Interests

The industry study recommends that before making any fundamental changes to capital and liquidity requirements, regulators and policymakers should facilitate a lengthier and more transparent period of public discussion about the potential implications of such decisions. This could involve Congressional hearings that feature SIFIs, representatives of non-SIFI institutions, and other experts. The policy discussion should focus on the potential benefits and risks of any new requirements, with a particular focus on: 1) the future of the industry if a split between SIFI and non-SIFI entities becomes further institutionalized; and, 2) potential risks for the United States if it deviates from the Basel III framework.

Key Issue: Government Sponsored Enterprises (GSE)

Elements of risk reside within the complexities of every bank balance sheet, but it is the interaction of these risks with government macroeconomic policies that establishes the potential for severe economic consequences. This type of fragility exists within the secondary mortgage market even as it is a tremendous source of vitality for the US economy. A severely disrupted secondary mortgage market could clog liquidity in the capital markets and stall a still vulnerable housing market. These concerns were expressed repeatedly during visits to key institutional participants in the secondary mortgage market.

The secondary mortgage market provides liquidity for trillions of dollars that would otherwise tie up bank capital during lengthy mortgage loan amortization. Banks have been able to originate and service mortgage loans, while capital is able to move back into the lending pool through the transmission of millions of mortgages packaged into bonds (Mortgage Backed Securities – MBS) for fixed income investors that are guaranteed against default either explicitly through the government-owned corporation Ginnie Mae or implicitly through GSEs Fannie Mae

and Freddie Mac. The vital liquidity provided by the secondary mortgage market that fuels the flow of capital between lending institutions and consumers and bolsters the national economy requires counterparty investors attracted to the low risk and steady yields associated with mortgage bonds. This market's vitality has been a focus of government efforts since 2008, and no single mechanism more aptly demonstrates those government efforts than quantitative easing.

As a component of quantitative easing (QE) aimed at resuscitating the housing market, the Federal Reserve has assumed the role of primary purchaser of mortgage backed securities in the secondary market; and, through the Treasury's conservatorship of Fannie Mae and Freddie Mac, the primary generator of mortgage backed securities. As concerns mount regarding the growing national debt, the prospect of inflation, and the risk of moral hazard associated with GSEs' implicit guarantee, debate continues about how the government should attempt to end its role in this system. The exit of such a powerful force in the secondary mortgage market introduces a potential void which, if left unfilled by wary investors, sets preconditions for macroeconomic stress.

It seems likely that interest rates will rise in coming years. How quickly rates rise and to what level will define the investment landscape. In such a landscape, the large institutional investors seeking lower risk, lower yield investment vehicles such as MBS may be driven to invest elsewhere as rising interest rates and inflation cheapen the value of existing MBS bonds. If rates rise rapidly, both homebuyers and MBS bond investors could begin to avoid this market as interest rate risk will be more difficult to price. This price and yield volatility could produce a flight to other fixed income investments such as treasuries for many institutional investors. Such a flight away would stall secondary mortgage markets and create liquidity risk as lenders would be forced to carry the larger burden of credit and interest rate risk over the longer term.

While debate continues over the ultimate role of GSEs in the secondary mortgage market, the current federal conservatorship of Fannie Mae and Freddie Mac continues to be the primary source of MBS generation in that market. If the federal role ends, this would likely increase uncertainty for institutional investors and increase the stress on private lending institutions involved in residential mortgage lending. Without federal MBS guarantees to investors, private issuers of MBS will require increasingly strict bank lending requirements and standards. While tighter lending practices are not necessarily counterproductive, loans structured to support the longstanding American institution of homeownership such as the 30 year mortgage may be jeopardized. Shifts away from affordable monthly mortgage payments provide the preconditions for tectonic economic effects.

Recommendation #2: A Clear, Minimally Disruptive QE Exit Strategy

As QE purchases represent \$45 billion of monthly MBS purchases, the Federal Reserve's eventual exit from this role must be carefully considered, well timed, and clearly communicated in advance so as not to disrupt the vital secondary mortgage market and risk lapsing into a liquidity crisis. Chairman Bernanke has placed significant emphasis on transparent communication of intent as a way of increasing the effectiveness of the Federal Reserve's efforts to promote financial stability. Thus far, his focus on effective communication has had an enormous effect on reducing uncertainty throughout most financial sectors. In particular, fixed income markets and lending institutions have reacted positively to even negative economic news when it has been aggressively accompanied by assuaging Federal Reserve statements promising mitigation plans. Because the Federal Reserve's exit from quantitative easing equates to the disappearance of substantial amounts of capital from the secondary mortgage market, its plan to do so must also be transparent to allow other market participants to prepare for that disruption.

Additionally, the exit would ideally occur with only small incremental changes to the Fed's targeted interest rate. These actions would create an investment landscape that does not drive investors away from MBS purchases. In conjunction with the following recommendation, private investors could seamlessly assume the Federal Reserve's current role in the secondary mortgage market.

Recommendation #3: Incentivize Private Investment in the Secondary Market

Private investment should replace QE MBS purchases. In order to navigate the minefield of an exit from QE, while likely raising interest rates and maintaining a healthy secondary mortgage market, provisions of fiscal policy should include incentives targeted at the private institutions likely to assume the roles of MBS generation and investment. Without willing private investors to replace the \$45 billion of federal agency MBS purchases, liquidity via transmission through the secondary mortgage market would be jeopardized. Incentivization must attract low risk/low yield investors without perpetuating the costly federal guarantees against default implicit through Fannie Mae and Freddie Mac MBS. The removal of this implicit federal backstop without proper incentives will drive lower risk investors elsewhere. Likewise, incentives similar to those offered by Treasury Inflation Protected Securities will attract much needed lower yield seeking investors into the MBS market.

Key Issue: Global Interconnectedness

The global nature of financial services also creates both opportunities and potential risk for the U.S. financial services sector. Many U.S. investment and commercial banks operate globally, and play important roles in the global economy by enabling investments and facilitating international commerce. Nonetheless, several related systemic risks could adversely affect the health of the U.S. financial services industry. These include: 1) risks related to the adverse economic conditions at the global, regional, or national levels; 2) potential vulnerabilities associated with U.S. economic interdependence with China; and, 3) risks related to the Euro.

First, the interconnected nature of the financial services industry means that adverse economic conditions abroad could adversely impact U.S. investment and commercial banks, even as the U.S. economy is growing. For example, if a U.S. bank had major financial interests in an Asian country that currency speculators bet against, the U.S. bank could incur losses that may jeopardize the ability of the U.S. firm to fulfill its commitments to U.S. shareholders or clients. Thus, global involvement of U.S. financial service firms could be considered healthy diversification, or an example of systemic risk, depending on developments in the world economy. To increase resiliency and mitigate these risks, regulators and oversight bodies will have to ensure that they fully consider international exposure.

Second, there are potential opportunities and vulnerabilities associated with the nature of U.S. economic interdependence with China. As China becomes richer, the potential exists that the U.S. will be able to export more goods and services to China and the economic relationship will grow more balanced. This in turn creates additional opportunities for the U.S. financial services industry. If the Chinese economy slows, these opportunities could diminish. Perhaps more importantly, China plays an important role in the market for U.S. Treasury bonds used to finance U.S. federal deficit spending. Were the Chinese to decide – for either political or economic reasons – to attempt to manipulate this market, it could affect U.S. interest rates, with important implications for the U.S. financial services industry, and the U.S. economy writ large. This potential vulnerability again highlights the potential benefits of political compromise on issues

related to the U.S. federal budget.

Finally, ongoing instability in the European Union (EU) and its member states is likely to continue or worsen in the coming one-to-three years, potentially threatening both the nascent U.S. economic recovery and the stability of the U.S. financial services industry in particular. These risks stem from the fragility of the EU's overall institutional design, and most particularly with the Economic and Monetary Union (EMU) that underpins the Euro currency. The EU could preempt some of this risk with quick, decisive policy action, but such action is uncertain. U.S. policymakers could offer useful advice and support, but with its credibility undermined in certain elements of the European polity, there appears to be relatively little chance the United States will decisively influence EU policy-making in the near term. Rather, the United States will likely regain influence as it resolves its own fiscal challenges, or when the European crisis becomes so grave it threatens the global economy.

Recommendation #4: Strengthen International Cooperation on Financial Stability

Strengthen cooperation between the new Financial Stability Oversight Council (FSOC) and counterpart entities in other large countries, with a focus on long-term strategic risks that may be developing in the international financial services industry. The focus of such cooperation would not be the health of the global economy, per se, as that is currently within the remit of numerous other forums and meetings. Rather, it would be to look several steps ahead and determine if strategic, systemic risks may be emerging in the system that policymakers may need to address at both international and domestic levels. Once risks are identified, the FSOC could provide more explicit recommendations to policymakers and industry to address issues the FSOC believes could have industry-wide implications. Through the issuance of new rules and the sophisticated use of FSOC reports on emerging international risks (both public and inter-agency), the US financial services sector would be less likely to become overexposed internationally in ways that could affect the entire sector, and the economy as a whole.

Enduring Tension between Open Markets and Regulation in the Financial Services Industry

All industries are subject to a tension between the goals of well-regulated markets and encouraging firms to create wealth. This tension is pronounced in the financial services sector, which has been subjected to wide swings in its regulatory environment during recent decades. This cyclical process has been motivated by the critical issues at stake. Whereas in other industries regulatory overreach or inattention may result in negative consequences to a specific sector, poor regulation of the financial services industry can result in dire consequences for the U.S. economy as a whole. The failure of government policies to strike the right balance has the potential to impact the economic prospects of American people for generations.

As a consequence of these risks, policymakers have historically been prone to reactive rather than proactive regulation within the financial services sector. In the wake of banking crises and failures, legislators have tended to react quickly to increase oversight and regulatory powers of the federal government. Industry leaders often criticize the resulting laws as onerous and stifling of the industry. In periods of rapid economic growth, policymakers have acted equally decisively to dismantle government oversight authorities with the goal of maximizing the wealth creation potential of the financial markets. While this oscillation is a manifestation of the political process, the risk and potential inherent in financial markets have sometimes amplified the severity of the policy cycle, causing regular and deep fluctuations in the regulatory environments not experienced by other industries.

In addition to rapid policy flux, the tension between financial stability goals and the desire to avoid interference in markets has resulted in a patchwork of regulatory agencies that some commentators have characterized as ill-suited to a modern financial system and plagued by bureaucratic overlap and gaps in jurisdiction. As successive bouts of legislation have established new agencies, the authorities of legacy regulators have either been circumscribed to smaller segments or shared with new entities. The complexity of this regulatory structure has imposed compliance burdens on industry and at times has undercut the intent of policymakers. One consequence of this reactive legislative process has been the hasty codification of laws intended to address public concerns regarding the conduct of financial services firms. These laws often have unanticipated impacts on markets. As these second order effects become clear and time passes, and political pressure to address perceived improprieties by financial services firms has lessened and legislators have historically scaled back regulation.

The financial services sector is currently at such a juncture. The Dodd-Frank Act granted broad new federal oversight authorities to the federal government. However, the scope and reach of the law is such that a many of its provisions have yet to be written into regulations, including such major provisions as the Volcker Rule banning proprietary trading (the practice of using deposits to invest on behalf of the firm), provisions governing the extraterritoriality of U.S. securities regulations, revised liquidity and capital requirements and short term debt limits. This lag in regulation promulgation results from both the sheer volume of Dodd-Frank provisions and the contentious nature of certain sections.

Some believe this regulatory ambiguity exerts a significant drag on industry. Industry interlocutors interviewed as part of this industry study almost unanimously noted that uncertainty over the scope and timeline of Dodd-Frank implementation was an impediment to strategic planning. New rules governing capital requirements and proprietary trading could require significant adjustments to the business plans of banks and securities firms. Extraterritorial application of rules on securities trading would impact the operations of investment banks. Prolonged uncertainty over the future regulatory climate does not appear to serve the interests of industry, consumers or the U.S. government and hinders the ability of financial services firms to recover from the financial crisis and serve as efficient conduits of capital and credit for the Defense Industrial Base and other sectors crucial to national security.

The lack of adequate funding for regulatory agencies is a corollary problem that has hampered the ability of industry and academics to render a judgment on the efficacy of Dodd-Frank provisions. Some regulators appear to be understaffed and ill-equipped to monitor the rapidly evolving technical innovations in the markets. A common theme during our engagements with regulators was that government agencies that are not self-funded are challenged to effectively exercise their supervisory mandates at current appropriation levels.

While swings of the regulatory pendulum are a part of the U.S. political system, it seems advisable for policymakers to not subject industry to prolonged periods of uncertainty during a drawn out promulgation process, or to neuter the authorities of regulators as a consequence of fiscal debates. Based on our interactions with industry and government, it seems imperative that existing statutes be implemented quickly and fully and that regulators be given the resources to enact the law in an effective manner. Only then will financial services firms have the certainty to plan for the future with a measure of confidence. Full implementation will also allow for informed debate on the efficacy of the law and whether certain provisions should be amended or repealed through the legislative process. To that end, this paper makes the following recommendations to promote a more stable and transparent oversight climate.

Recommendation #5: Support Regulators

Despite the challenges of sequestration, Congress and the Administration should immediately devote additional resources to financial services regulators to enable the federal rulemaking process to promulgate Dodd-Frank regulations quickly and in their entirety. While extensive public comment periods are important to demonstrate responsiveness to industry concerns, extended public review periods do not appear to be required by the Administrative Procedure Act and may undermine the industry concerns they ostensibly seek to protect.

Recommendation #6: Allow SEC and CFTC Self-Funding

Next, the Administration and Congress should extend to the Securities and Exchange Commission and the Commodity Futures Trading Commission the same self-funding provisions accorded to the Federal Deposit Insurance Corporation (FDIC) and Financial Industry Regulatory Authority (FINRA). It will only be possible to judge the merits of Dodd-Frank when regulators are granted the stable revenue stream necessary to fully implement its provisions. Allowing financial regulators to fund their own operations through fees and fines will eliminate the problem of cyclical enforcement. If it is later determined that the regulators are exacting too heavy a toll on industry the problem can be corrected by curtailing their authorities through the legislative process, rather than relying on the budget process.

Conclusion

This paper sought to examine the current state of the commercial and investment banking segments of the U.S. financial services industry five years after the 2008 financial crisis, using the tools and methods of the Dwight D. Eisenhower School for National Security and Resource Strategy at National Defense University. Given this context, the national security professionals who composed the industry study team had the great benefit of being “outsiders” as they met with a broad array of regulators, private firms, media members, and other observers of the financial services industry. The team received candid input as we sought to objectively assess the state of industry and consider related implications for U.S. national security.

Repeatedly, our visits and engagements focused our attention on three broadly correlated trends: 1) the relatively high degree of concentration in certain segments of the industry; 2) the fact the largest firms are arguably quite profitable; and, 3) the concern that the failure of one or more of these firms could imperil the financial system and the national economy.

In the main body of this report, the team sought to offer reasonable recommendations that could help the U.S. financial services industry remain a dynamic and innovative component of the national economy, while ensuring it is open to new or emerging competitors and postured to remain resilient despite the complex international economic situation. The appendix to this report provides additional context, perspective and recommendations on other contemporary issues in the industry. The Eisenhower School Financial Services Industry Study hopes this report will offer a useful perspective on the important role of this industry for national security, and some modest suggestions on how policymakers, regulators and industry could work together to meet identified challenges and ensure the industry remains healthy for years to come.

Appendix – Context and Additional Issues

Context: A Brief Survey of U.S. Financial Regulation

The extent and nature of the U.S. government's role in regulating the financial services sector has fluctuated with historical developments. Since the 1913 creation of the Federal Reserve System, there has been general consensus across the political spectrum that it is appropriate for the U.S. government to exercise some degree of oversight over U.S. financial markets. The two major waves of financial oversight legislation followed severe financial crises that propelled bipartisan interest in addressing financial services practices perceived to have contributed to the crises. After the stock market crash of 1929 ushered in the Great Depression, policymakers established a strong regulatory architecture that segregated market segments.

The Banking Act of 1933, crafted by Senator Carter Glass (D-VA) and Congressman Henry Steagall (D-ALA)⁴⁶ (also known as the Glass-Steagall Act) created the Federal Deposit Insurance Corporation (FDIC) to provide a guarantee for bank depositors and to prevent bank runs resulting from fears of bank defaults. The Glass-Steagall Act, in response to the promotion of investments by the banks that had contributed to the crash, created statutory separations between investment and commercial banking activities. It also formally capped interest rate returns on deposits which had significant consequences in future market developments. Prior to the 1929 stock market crash state banking, securities and insurance oversight agencies performed most regulation of financial markets. In the wake of the crash a consensus emerged that the interconnected nature of financial markets and their potential to impact the national economy required the federal government to exercise oversight over financial markets. In addition to Glass-Steagall, the Securities Exchange Act of 1934, the Federal Credit Union Act of 1934 and the Commodity Exchange Act of 1936 established the patchwork of federal regulatory agencies that remains in place today. This wave of financial oversight legislation created the federal banking regulatory system divided between the FDIC, Office of the Comptroller of the Currency, and the National Credit Union Association. Statutes from this era also established the Securities and Exchange Commission (SEC) responsible for overseeing stock and options markets and the predecessor of the Commodity Futures Trading Commission (CFTC) with jurisdiction over the trade in futures.

As financial markets developed over successive decades, the majority of the Glass-Steagall restrictions on banking activity were slowly dismantled. The development of money market funds, the shadow banking system, and a growing competitive disparity between the investment and commercial banking industries led the Federal Reserve in 1986 to revise its interpretation of Glass-Steagall allowing for commercial banks to engage in speculative investments within certain limits. By the late 1990s, the U.S. government had effectively ceased to implement Glass-Steagall through the systematic retraction of related regulations.⁴⁷ In November 1999, the passage of the Financial Services Modernization Act of 1999 (Gramm-Leach-Bliley Act) formally repealed most Glass-Steagall restrictions on banking practices.

Like Glass-Steagall in the 1930's, the 2010 passage of the Dodd-Frank Wall Street Reform and Consumer Protection Act was a reaction to a financial crisis, and enacted enhanced government oversight and regulatory powers over financial markets. Among several new regulatory entities created by Dodd-Frank, the Financial Stability Oversight Council (FSOC) has the most far-reaching mandate. The FSOC is consultative council charged with identifying and addressing "emerging threats to financial stability."⁴⁸ The legislation also created the Consumer Financial Protection Bureau (CFPB) to which it granted the authority to safeguard the interests of consumers of financial services products and began operations in 2011.⁴⁹

Issue: Credit Reporting Agencies

Credit Reporting Agencies (CRAs) play a critical mediating role for the financial industry. “Generally, a credit rating is an assessment of the likelihood that a particular financial instrument, such as a corporate bond or mortgage backed security, may default or incur losses.”⁵⁰ Many firms and individuals rely heavily on the opinions of these agencies in making investment decisions. Historically, the rating agencies have generally encouraged the perception that the higher their rating on a security, the less risk it poses for investors. “The Credit Rating Agency Reform Act of 2006 (Agency Act) was introduced to help foster accountability, transparency, and competition among Credit Rating Agencies.”⁵¹ However, some observers have noted that the government has not dedicated the necessary resources to implement the provisions of the CRA Reform Act.

A number of analysts have asserted that the CRAs contributed to the financial crisis by awarding overly favorable ratings to risky securities. In the months following the collapse of Lehman Brothers, thousands of securities that had received an AAA by the major credit rating agencies entered default. Observers have suggested that profit motivations began to impact the integrity of CRA opinions in the period leading up to the crisis. Supporters of Dodd-Frank asserted that one of the motivations behind the legislation was to establish a regulatory framework for the CRA industry.

While some concerns over CRA business practices and compensation have been addressed by provisions of Dodd-Frank, the question of accountability for past CRA actions may be the subject of further legislation and possible litigation. “It was not in the short term economic interest of either Moody's or S&P, however, to provide accurate credit ratings for high risk RMBS and CDO securities, because doing so would have hurt their own revenues.”⁵² Institutional investors who are not permitted to own low-rated securities, must have the confidence the high ratings assigned by CRAs are reliable. Attempts to regulate the CRA industry are complex given that such measures could potentially impinge on First Amendment protections. The Department of Justice has initiated a civil complaint against Standard and Poors alleging that “S&P’s desire for increased revenue and market share...led to S&P to downplay and disregard the true extent of the credit risks posed by the investments it was rating.”⁵³

Recommendation: Policymakers should consider developing new mechanisms to increase transparency and competition in the CRA industry and ensure investors understand the relationships between CRAs and their clients.

Issue: Corporate Governance and Compensation

The practice of awarding bonuses, stock options, long-term incentive plans, employee benefits, paid expenses, and resignation packages for performance is a common practice in financial institutions, especially at the executive levels. Originally, the practice of rewarding employee performance by offering monetary incentives was justified by academic work on principal-agent contracts, which argued these performance bonuses would better align the interests of managers and shareholders.⁵⁴ The 2008 financial crisis revealed that financial sector compensation practices can create incentives for excessive risk-taking in the short-term that poses systemic risks to the financial system as a whole.

During corporate governance and leadership discussions, executive compensation practices are often singled out as one of the most problematic elements of the incentive system; some argue they contribute to the accumulation of enormous amounts of risk on bank balance sheets.⁵⁵

Financial sector compensation is designed to encourage competition and attracts highly talented people. Analysts have argued that this approach has encouraged some traders to produce analysis and products that create the appearance of superior performance while obscuring long term risk. New products are often so mathematically complex that they can be difficult and costly to monitor risk and related activity directly.⁵⁶

Recommendation: *Regulatory agencies should finish promulgation of Dodd-Frank rules related to compensation. Policymakers should more directly establish disincentives to illicit or overly risky behavior by establishing clear and simple rules that hold corporate officers and board members responsible if they knowingly ignore questionable activity and/or fail to exercise due diligence over activities legally proven to be illicit.*

Issue: High Frequency Trading (HFT)

The investment and commercial banking industries are in a period of strategic transformation that will impact the long-term viability and sustainability of the industry as a whole. A key challenge confronting the industry is the question of whether HFT and over-the-counter derivatives (OTC) pose threats to the integrity of the U.S. financial system. Industry leaders undermined public trust in the wake of the financial crisis when they acknowledged an incomplete understanding of the risk profile of their own firms' complex products and analytic models.⁵⁷ Despite the reforms instituted in the wake of the crisis, the practice of HFT remains a source of potentially opaque risk to the financial system.⁵⁸ HFT trading currently accounts for 70 percent of the volume trading on U.S. exchanges.⁵⁹ Supporters claim that HFT provides liquidity to the markets and lowers volatility, making markets more efficient and reducing trading costs to investors. Critics posit that as exchanges have competed for HFT volume they have been able to obtain better fee structures, faster order interfaces, faster price feeds, and the co-location products, all of which generates an unfair competitive landscape and essentially allows for insider-trading. Many also blame a recent proliferation of short duration "flash crashes" on the practice of HFT and believe it is a serious systemic risk affecting the U.S. financial system.⁶⁰

HFT highlights both the resiliency and fragility of the financial services industry. On the one hand it is highly innovative and adaptable. On the other, when innovation outpaces regulation it is difficult the government to assess risks to financial stability.

Recommendation: *Policymakers should fund additional independent research on the effect of HFT on the market. Studies should examine whether the U.S. government should prohibit exchanges from collaborating with HFTs to gain an unfair advantage and should examine appropriate enforcement actions against those that do. To ensure against market abuse, the U.S. government must reassess the equity market fee structure between HFTs and the exchanges. The U.S. government should consider requiring an "assessment period" between the creation of an HFT algorithm and implementation of the algorithm to determine effects and risks.*

Issue: Over-the-Counter Derivatives (OTC)

Unlike the recently developed technological risks posed by HFT, risk in the derivatives markets has evolved over decades. Derivatives were conceived as tools to hedge risk associated with agricultural commodities, but have expanded so that today, "most derivatives are linked to

financial variables, such as interest rates, foreign exchange, stock prices and indices, and the creditworthiness of issuers of bonds. The market is measured in the hundreds of trillions of dollars, and billions of contracts are traded annually.”⁶¹ Unlike stock options and futures contracts which are traded on formal exchanges under the oversight of the SEC and CFTC respectively, swaps contracts are concluded by private parties outside of formal exchanges in transactions known as OTC trades. As such they have been exempt from regulation.⁶²

As OTCs developed, many analysts viewed them as a “beneficial financial innovation that distributed financial risk more efficiently and made the financial system more stable, resilient, and resistant to shocks.”⁶³ Since the financial crisis analysts have engaged in a debate over the value of OTCs. Some assert that the volatility, complexity, and lack of transparency associated with OTCs, combined with a lack of regulatory oversight, contributed to the 2008 crisis.⁶⁴ The opaque nature of these transactions can contribute to systemic risk and impact not only the integrity of the financial services industry, but also health of the national economy.⁶⁵ Losses incurred in the speculative markets in 2008 impacted liquidity and credit and undermined the soundness of many firms, including those in the defense industrial base.

Dodd Frank attempts to address the risks in OTCs by closing the regulatory gap previously existing around OTC. It seeks to mandate standardized central clearing and exchange trading to increase the transparency of the trade, to require data collection and reporting of trades again to increase transparency and allow regulatory oversight, ensuring capital adequacy of swap participants and establishing a formal code of conduct.⁶⁶ As the regulatory lead, the CFTC faces the challenge of being “tasked with regulating the swaps markets with an estimated notional value of approximately \$300 trillion – roughly eight times the size of the regulated futures markets.⁶⁷ Budgetary and staffing constraints, implementation delays, industry and market responses and technological challenges all indicate that legislation is being challenged by current events. Consistency of regulatory enforcement is also an issue as commissions have indicated that some enforcement delay is expected specific to certain rules, and that some rules may never be enforced.⁶⁸ Given the regulatory uncertainty, some swaps firms have opted to register as futures exchanges instead of waiting for new swap rules.⁶⁹

Recommendations: Policymakers should consider providing additional resources for the CFTC to regulate the OTC derivatives markets more effectively, particularly if the earlier recommendation to allow the CFTC to self-fund is not enacted. CFTC should seek to ensure the OTC markets are transparent so that it is clear who all active participants are, including shadow banking entities.

Issue: Dark Pools

Unlike HFT and OTC derivatives, which the government is seeking to regulate more closely, dark pools are currently unregulated exchanges in the capital markets where buyers and sellers can trade stocks anonymously. The use of dark pools has risen substantially and the percentage of stock trading taking place away from regulated exchanges is at all-time highs. According to Rosenblatt Securities, dark pools have accounted for 40 percent of all trades on some days this year, up from an average of 16 percent five years ago.⁷⁰ Regulated exchanges, like the NYSE, claim that dark pools have an unfair competitive advantage because they are not subject to the regulatory burdens faced by regulated exchanges. Private trading complicates price transparency, makes it difficult for individual investors to participate in the market, and according to a recent Australian study, increases trading costs.⁷¹

Recommendation: Regulators should consider whether additional reporting requirements should be instituted for dark pools to a governmental regulating body that would not release the information to the public. Government regulators should study the work done in Australia and Canada on regulation of dark pools and consider whether there are lessons for the U.S.

Issue – Student Loan-Backed Securities (SLAB)

Debate over the existence of an “education bubble” in the United States has prompted speculation that SLAB may be a source of near term risk to the U.S. financial system.⁷² Some aspects of the one trillion dollar student loan market bear resemblance to conditions preceding the collapse of the mortgage backed security market in 2007-2008. High investor demand for riskier products, loans originated with low underwriting standards, and rapidly increasing delinquency rates draw troubling parallels to conditions that generated the U.S. financial crisis. The SLAB market differs from the MBS market of the early 2000s in fundamental ways and, under current conditions, is unlikely to be the source of systemic instability. Most importantly, the SLAB volume is a fraction of the size of the tens of trillions of dollars’ worth of mortgage backed securities traded each year in the period preceding the financial crisis.⁷³ A majority of the one trillion dollars of outstanding student debt consists of non-securitized government-backed student loans issued under legacy federal education subsidy programs. Securitized loans issued by private lenders total only \$140 billion. Although the relatively small size of total SLAB volume suggests that even widespread default is unlikely to pose a systemic risk to the U.S. financial system, the damage of such a scenario could be compounded if brokers amplify the risks by developing extensive SLAB-based derivative products and shorting mechanisms.

Recommendation: Federal regulators should closely monitor the development of SLAB-based derivatives to ensure they do not develop pockets of low visibility leverage within the financial system. Federal regulators should study the effects of securitized debt that have controllable variable levels of supply and demand, and commensurately, shifting values of return on investment such as student loans or mortgages.

BIBLIOGRAPHY

- Adams, Becket. "It's Official: Feds Sue Famed Ratings Agency S&P-the Same One that Downgraded the U.S." *The Blaze* (February 5, 2013). <http://www.theblaze.com/stories/2013/02/05/its-official-feds-sue-famed-ratings-agency-sp>.
- Bank for International Settlements. "Guidance to Assess the Systemic Importance of Financial Institutions, Markets and Instruments: Initial Considerations." (2009). <http://www.bis.org/publ/othp07.pdf>.
- Berg, Gerald. "Markets, Competition, and Industry Analysis: Modern Views in a New Economy." reprinted in National Defense University, Dwight D. Eisenhower School of National Security and Resource Strategy, Academic Year 2013, Industry Studies Handbook, 33-60, Washington D.C., National Defense University, 2013. http://ndu.blackboard.com/bbcswebdav/pid-473884-dt-content-rid-798878_2/xid-798878_2.
- Brush, Silla. "Dodd-Frank Swap Rules Delayed as Agency Eases Transition," *Bloomberg News*, December 7, 2012. <http://www.bloomberg.com/news/2012-12-06/cftc-said-to-consider-six-month-delay-in-cross-border-rules-1-.html>.
- Chan, Sewell. "Financial Crisis Was Avoidable, Inquiry Finds." *The New York Times*, January 25, 2011. <http://www.nytimes.com/2011/01/26/business/economy/26inquiry.html>.
- Clementi, Gian Luca and Thomas Cooley. "Executive Compensation: Facts" (2010): 3, <http://pages.stern.nyu.edu/~gclement/Papers/facts.pdf>.
- Consumer Financial Protection Bureau. www.consumerfinance.gov
- Cox, Jeff. "The Economy May Stink, but the Market Doesn't Care." *CNBC*, April 26, 2013. <http://www.cnbc.com/id/100679267>.
- Davies, Anthony and James R. Harrigan. "Why the Education Bubble Will be Worse than the Housing Bubble." *US News*, June 12, 2012. <http://www.usnews.com/opinion/blogs/economic-intelligence/2012/06/12/the-government-shouldnt-subsidize-higher-education>.
- Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010. Public Law no. 111–203 (2010). <http://www.gpo.gov/fdsys/pkg/PLAW-111publ203/pdf/PLAW-111publ203.pdf>.
- Dudley, William. "Reforming the OCT Derivatives Market." Remarks at the Harvard Law School Symposium on Building the Financial System of the 21st Century, Boston, MA, March 22, 2012. <http://www.newyorkfed.org/newsevents/speeches/dud120322.htm>.
- Elliott, Douglas and Robert Litan. "Identifying and Regulating Systemically Important Financial Institutions: The Risks of Under and Over Identification and Regulation." (2011). http://www.brookings.edu/~media/research/files/papers/2011/1/16-regulating-sifis-elliott-litan/0116_regulating_sifis_elliott_litan.pdf.
- Foulon, Mark. "Essentials of Business Strategy." Class lecture, Industry Analytics from Dwight D. Eisenhower School for National Security and Resource Strategy, National Defense University, Washington D.C., February 8, 2013.
- Frontline. "Mr. Weill Goes to Washington – The Long Demise of Glass-Steagall." (2003). <http://www.pbs.org/wgbh/pages/frontline/shows/wallstreet/weill/>. Accessed March 15, 2013.
- Gray, Joanna. "Toward a More Resilient Financial System?" *Seattle University Law Review*. 36, no. 2 (March 2013): 804, <http://digitalcommons.law.seattleu.edu/cgi/viewcontent.cgi?article=2156&context=sulr>

- Investopedia. "Dictionary." <http://www.investopedia.com/dictionary>.
- Jose, Eben. "Bank on It: After a Roller Coaster Ride, Returning Confidence Will Revive Industry Revenue." IBISWorld Industry Report 52211: Commercial Banking in the US, February (2013): 5. <http://clients1.ibisworld.com/reports/us/industry/default.aspx?entid=1288>.
- Jose, Eben. "Charge It: A Return to Spending and Household Debt Will Stimulate Industry Growth." IBISWorld Industry Report 56145: Credit Bureaus and Rating Agencies, October (2012): 35. <http://clients1.ibisworld.com/reports/us/industry/default.aspx?entid=1475>.
- Kelly, Doug. "High and Low: A Strengthened Economy Will Aid Demand, but Regulators Will Hurt Growth." IBISWorld Industry Report 52311: Investment Banking & Securities Dealing in the US, February, (2013): 2. <http://clients1.ibisworld.com/reports/us/industry/default.aspx?entid=1307>.
- MarketLine. "MarketLine Industry Profile: Banks in the United States." *MarketLine*, June (2012):5. <http://advantage.marketline.com.ezproxy6.ndu.edu/Product?pid=MLIP0525-0011>, Accessed March 29, 2013.
- McCarthy, Douglas. "Market and Competition 2." Class lecture, Industry Analytics from Dwight D. Eisenhower School for National Security and Resource Strategy, National Defense University, Washington D.C., January 22, 2013.
- McCarthy, Douglas. "Industry Context." Class lecture, Industry Analytics from Dwight D. Eisenhower School for National Security and Resource Strategy, National Defense University, Washington D.C., January 29, 2013.
- Miller, Rena and Kathleen Ann Ruane, "The Dodd-Frank Wall Street Reform and Consumer Protection Act: Title VII, Derivatives," Congressional Research Service Report (November 6, 2012): 1, http://assets.opencrs.com/rpts/R41398_20121106.pdf.
- National Bureau of Economic Research. "US Business Cycle Expansions and Contractions." <http://www.nber.org/cycles/cyclesmain.html>, *National Bureau of Economic Research*, Accessed April 23, 2012.
- Noe, Thomas and H. Peyton Young. "The Limits to Compensation in the Financial Sector." University of Oxford Department of Economics Discussion Paper Series, 635 (2012): 1. <http://www.economics.ox.ac.uk/materials/papers/12477/paper635.pdf>.
- Patterson, Scott. *Dark Pools: The Rise of Machine Traders and the Rigging of the U.S. Stock Market*. New York: Random House, Inc., 2012.
- Popper, Nathaniel and Christopher Leonard. "High-Speed Traders Profit at Expense of Ordinary Investor, a Study Says." *New York Times*. December 3, 2012. http://www.nytimes.com/2012/12/04/business/high-speed-trades-hurt-investors-a-study-says.html?ref=business&_r=0.
- Popper, Nathaniel. "As Market Heats Up, Trading Slips into Shadows." *New York Times*, March 31, 2013. <http://www.nytimes.com/2013/04/01/business/as-market-heats-up-trading-slips-into-shadows.html?pagewanted=all>.
- Porter, Michael. "The Five Competitive Forces that Shape Strategy." *Harvard Business Review* January(2008). <http://hbr.org/2008/01/the-five-competitive-forces-that-shape-strategy/ar/1>.
- Raskin, Sarah. "Reflections on Reputation and Its Consequences." Lecture, Banking Outlook Conference from Federal Reserve of Atlanta, Atlanta, GA, February 23, 2013. <http://www.federalreserve.gov/newsevents/speech/raskin20130228a.htm>.

- Ruth, Simon, Rachel Louise Ensign, and Al Yoon. "Student-Loan Securities Stay Hot – Investors' Hunger for Returns is Driving Demand Even as More Borrowers Fall Behind on Payments," *Wall Street Journal*, (March 4, 2013): C1.
- Securities and Exchange Commission. "Regulation of Exchange and Alternative Trading Systems." Final Rule, <http://www.sec.gov/rules/final/34-40760.txt>
- Select USA. "The Financial Services Industry in the United States." Select USA, <http://selectusa.commerce.gov/industry-snapshots/financial-services-industry-united-states>.
- The Street. "Company Profiles and Ratio Comparisons." *The Street*. <http://www.thestreet.com/markets>, Accessed May 15, 2013.
- U.S. Commodity Futures Trading Commission. "Executive Summary." *CFTC FY 2013 President's Budget and Performance Plan*. <http://www.cftc.gov/reports/presbudget/2013/2013presidentsbudget02.html>.
- U.S. Department of Commerce, Bureau of Economic Analysis. "Gross Domestic Product (GDP) by Industry Data." Bureau of Economic Analysis, http://www.bea.gov/industry/gdpbyind_data.htm.
- U.S. Department of Commerce, U.S. Census Bureau. "All Sectors: Geographic Area Series: Economy-Wide Key Statistics:2007-2010 Economic Census." American Fact Finder, http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2007_US_00A1&prodType=table
- U.S. Department of the Treasury, "Financial Stability Oversight Council: About FSOC." <http://www.treasury.gov/initiatives/fsoc/about/Pages/default.aspx>.
- U.S. Senate, Permanent Subcommittee on Investigations. "Wall Street and the Financial Crisis: Anatomy of a Financial Collapse." Report prepared by Majority and Minority Staff, (April 13, 2011): 33, http://www.hsgac.senate.gov/imo/media/doc/Financial_Crisis/FinancialCrisisReport.pdf?attempt=2.
- U.S. Senate, Committee on Banking, Housing, and Urban Affairs. "Brief Summary of the Dodd-Frank Wall Street Reform and Consumer Protection Act." http://www.banking.senate.gov/public/_files/070110_Dodd_Frank_Wall_Street_Reform_comprehensive_summary_Final.pdf.
- U.S. Senate. "Ending To Big To Fail: Terminating Bailouts for Taxpayer Fairness Act Bill Summary." <http://www.brown.senate.gov/download/tbtf-bill-summary>
- Wrigley, Neil and Les Dolega. "Resilience, Fragility, and Adaptation: New Evidence on the Performance of UK High Streets During Global Economic Crisis and Its Policy Implications." *Environment and Planning* 43, no. 10 (2011): 2337-2363. <http://eprints.soton.ac.uk/202255/>.
- Yellen, Janet. "Interconnectedness and Systemic Risk: Lessons from the Financial Crisis and Policy Implications." Remarks at the American Economic Association/American Finance Association Joint Luncheon, San Diego, CA, January 4, 2013. <http://www.federalreserve.gov/newsevents/speech/yellen20130104a.htm>.

ENDNOTES

¹ There are a variety of definitions of systemic risk, but this paper uses Douglas Elliot and the Bank for International Settlement definition of an event or series of events the consequences of which are large enough to “have the potential to have serious negative consequences for the real economy.” Douglas Elliott and Robert Litan, “Identifying and Regulating Systemically Important Financial Institutions: The Risks of Under and Over Identification and Regulation,” (January 16, 2011): 2, www.brookings.edu; Bank for International Settlements, *Guidance to Assess the Systemic Importance of Financial Institutions, Markets and Instruments: Initial Considerations* (Basel, Switzerland, November 2009), www.bis.org/publ/othp07.htm.

² “The Financial Services Industry in the United States.” *Select USA*, <http://selectusa.commerce.gov/industry-snapshots/financial-services-industry-united-states>.

³ Department of Commerce, Bureau of Economic Analysis, “Gross Domestic Product (GDP) by Industry Data,” http://www.bea.gov/industry/gdpbyind_data.htm.

⁴ Eben Jose, “Bank of It: After a Roller Coaster Ride, Returning Confidence Will Revive Industry Revenue,” *IBISWorld Industry Report 52211: Commercial Banking in the US* (February 2013): 5.

⁵ *Ibid.*, 4.

⁶ Doug Kelly, “High and Low: A Strengthened Economy Will Aid Demand, but Regulators Will Hurt Growth,” *IBISWorld Industry Report 52311: Investment Banking & Securities Dealing in the US* (February 2013): 2.

⁷ *Ibid.*, 3.

⁸ Gerald Berg, “Market Competition and Industrial Analysis: Modern Views in a Model Views in a New Economy,” (National Defense University, Washington D.C. August 2002).

⁹ Michael E. Porter, “The Five Competitive Forces that Shape Strategy,” *Harvard Business Review* (January 2008).

¹⁰ U.S. Census Bureau, *American Fact Finder*, “All Sectors: Geographic Area Series: Economy-Wide Key Statistics:2007-2010 Economic Census,” http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2007_US_00A1&prodType=table; Eben Jose, “Bank of It,” 4; Doug Kelly, “High and Low,” 3.

¹¹ COL Douglas McCarthy, “Industry Context,” (Industry Analytics lecture, Dwight D. Eisenhower School for National Security and Resource Strategy, Washington D.C., January 29, 2013); Eben Jose, “Bank of It,” 4; Doug Kelly, “High and Low,” 3.

¹² COL Douglas McCarthy, “Market and Competition 2,” (Industry Analytics lecture, Dwight D. Eisenhower School for National Security and Resource Strategy, Washington D.C., January 22, 2013).

¹³ Eben Jose, “Bank of It,” 24.

¹⁴ Doug Kelly, “High and Low,” 26.

¹⁵ Michael E. Porter, “The Five Competitive Forces,” 83.

¹⁶ *Ibid.*, 82.

¹⁷ *Ibid.*

¹⁸ Eben Jose, “Bank of It,” 23.

¹⁹ Mark Foulon, “Industry Analytics: Essentials of Business Strategy,” (Industry Analytics lecture, Dwight D. Eisenhower School for National Security and Resource Strategy, Washington D.C., February 8, 2013):

²⁰ Eben Jose, “Bank of It,” 7 and 22.

²¹ *Ibid.*, 5.

²² Doug Kelly, “High and Low,” 8.

²³ *Ibid.*, 29-35.

²⁴ “Company Profiles and Ratio Comparisons,” <https://www.thestreet.com/markets> , accessed May 15, 2013.

²⁵ *Ibid.*

²⁶ “Asset Turnover,” <http://www.investopedia.com/terms/a/assetturnover.asp>.

²⁷ “Debt to Equity Ratio,” <http://www.investopedia.com/terms/d/debtequityratio.asp>.

²⁸ Jeff Cox, “The Economy May Stink, but the Market Doesn’t Care,” (April 26, 2013), <http://www.cnbc.com/id/100679267>

²⁹ Doug Kelly, “High and Low,” 3.

³⁰ National Bureau of Economic Research, “US Business Cycle Expansions and Contractions,” <http://www.nber.org/cycles/cyclesmain.html>, accessed April 23, 2012.

³¹ *Ibid.*

³² Eben Jose, “High and Low,” 13.

³³ Doug Kelly, “High Low,” 13.

³⁴ *Ibid.*, 1.

³⁵ Eben Jose, “Bank of It,” 4; Doug Kelly, “High and Low,” 3.

³⁶ Doug Kelly, “High and Low,” 9.

³⁷ Governor Sarah Bloom Raskin, “Reflections on Reputation and Its Consequences,” (lecture 2013 Banking Outlook Conference, Federal Reserve of Atlanta, February 23, 2013) <http://www.federalreserve.gov/newsevents/speech/raskin20130228a.htm>.

³⁸ MarketLine Industry Profile, “Banks in the United States,” (London, United Kingdom, June 2012), 7.

³⁹ *Ibid.*

⁴⁰ Joanna Gray, “Toward a More Resilient Financial System?” *Seattle University Law Review*. (36):804, <http://digitalcommons.law.seattleu.edu/cgi/viewcontent.cgi?article=2156&context=sulr>

⁴¹ Neil Wrigley, Les Dolega, “Resilience, Fragility, and Adaption: New Evidence on the Performance of UK High Streets during Global Economic Crisis and Its Policy Implications,” *Environment and Planning* 43(10): 2337-236, <http://eprints.soton.ac.uk/202255/>.

⁴² Dodd Frank identifies commercial banking groups with more than \$50 billion in assets as systemically important. Further it recognizes that non-bank financial institutions may also contribute to systemic risk. Section 102 of Dodd-Frank identifies a potential non-bank SIFI as a U.S. or foreign entity that “predominately engages in... financial activity” such that “85percent of more of the consolidated gross revenues of the company are the result of financial activities...OR 85percent or more of gross assets of the company are related to financial activities.” See Dodd-Frank Title I, Sub Section C, www.govtrack.us/congress/bills/111/hr4173/text and Title I, Section 102 <http://www.gpo.gov/fdsys/pkg/PLAW-111publ203/pdf/PLAW-111publ203.pdf>

⁴³ Governor Janet Yellen, “Interconnectedness and Systemic Risk: Lessons from the Financial Crisis and Policy Implications,” (remarks, American Economic Association/American Finance Association Joint Luncheon, San Diego, Ca, January 4, 2013), <http://www.federalreserve.gov/newsevents/speech/yellen20130104a.htm>.

⁴⁴ “Counterparty Risk,” *Investopedia*, www.onswipe.investopedia.com.

⁴⁵ U.S. Senate, “Ending To Big To Fail: Terminating Bailouts for Taxpayer Fairness Act Bill Summary,” , <http://www.google.com/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=1&ved=0CCsQFjAA&url=http%3A%2F%2Fwww.brown.senate.gov%2Fdownload%2Fbtbf-bill-summary&ei=06VUZGoHqT54AP994HwBA&usg=AFQjCNECpv89DZgxWz-HICvzGYKZgHOr3A&sig2=MgeJe6uFasv5yhvrWil tw>

⁴⁶ Frontline, *Mr. Weill Goes to Washington – The Long Demise of Glass-Steagall*,” (March 15, 2013), <http://www.pbs.org/wgbh/pages/frontline/shows/wallstreet/weill/demise.html>

⁴⁷ Ibid.

⁴⁸ “About FSOC,” www.treasury.gov/initiatives/fsoc/about/Pages/default.aspx.

⁴⁹ See www.consumerfinance.gov.

⁵⁰ U.S. Senate, Permanent Subcommittee on Investigations, *Wall Street and the Financial Crisis: Anatomy of a Financial Collapse*, report prepared by Majority and Minority Staff, (April 13, 2011): 33, http://www.hsgac.senate.gov/imo/media/doc/Financial_Crisis/FinancialCrisisReport.pdf?attempt=2 .

⁵¹ Eben Jose, “Credit Bureaus and Rating Agencies,” *IBISWorld Industry Report 56145* (October 2012): 35.

⁵² Ibid., 14.

⁵³ Becket Adams, “It’s Official: Feds Sue Famed Ratings Agency S&P-the Same One that Downgraded the U.S.,” *The Blaze* (February 5, 2013), www.theblaze.com/stories/2013/02/05/its-official-feds-sue-famed-ratings-agency-sp

⁵⁴ Thomas Noe and H. Peyton Young, “The Limits to Compensation in the Financial Sector,” *University of Oxford Department of Economics Discussion Paper Series*, 635 (2012): 1.

⁵⁵ Gian Luca Clementi, Thomas Cooley, *Executive Compensation: Facts* (Stern School of Business, Department of Economics , 2010): 3, <http://pages.stern.nyu.edu>

⁵⁶ Ibid, 2-3.

⁵⁷ Sewell Chan, “Financial Crisis Was Avoidable, Inquiry Finds,” *The New York Times* (January 25, 2011), www.nytimes.com/2011/01/26/business/economy/26inquiry.html

⁵⁸ HFT is the trading of stocks through the use of computer programs that analyze the markets and utilize complex algorithms to make rapid trades in a very short period of time. These algorithms operate at speeds that are

difficult for the human mind to comprehend. They scan the markets for areas where the program statistically detects a probable move in price within the next fraction of a second, and then utilizes its speed to detect orders coming into the market a millisecond sooner than other market participants. The aim is to capture just a fraction of a penny per unit on every trade, repeated millions of times throughout the day.

⁵⁹ Securities and Exchange Commission, "Regulation of Exchange and Alternative Trading Systems," *Final Rule*, <http://www.sec.gov/rules/final/34-40760.txt>

⁶⁰ Scott Patterson, *Dark Pools: The Rise of Machine Traders and the Rigging of the U.S. Stock Market*, (New York: Random House, Inc., 2012): 204.

⁶¹ Nathaniel Popper, "High-Speed Traders Profit at Expense of Ordinary Investor, a Study Says," (December 3, 2012), <http://www.nytimes.com/2012/12/04/business/high-speed-trades-hurt-investors-a-study-says.html?ref=business&r=0> .

⁶² Rena S. Miller and Kathleen Ann Ruane, "The Dodd-Frank Wall Street Reform and Consumer Protection Act: Title VII, Derivatives," *Congressional Research Service Report* (November 6, 2012): 1, http://assets.opencrs.com/rpts/R41398_20121106.pdf .

⁶³ The main difference between formal exchanges and the OTC structure is the idea of a central market. The exchanges are open markets where as transactions occur, prices and deals are reported during the trading day. The OTC structure maintains a direct relationship between buyer and seller with no market as the center forum. The OTC relationship is under no obligation to report transactions, price, or contract terms.

⁶⁴ Rena Miller and Kathleen Ruane, "The Dodd-Frank Wall Street Reform and Consumer Protection Act: Title VII, Derivatives," 1.

⁶⁵ While each of these factors contributed to the financial crisis it is important to note that volatility and instability are exactly why the derivatives market exists. Without these, the desire to both hedge and speculate would be greatly diminished.

⁶⁶ For detail on how OTCs contributed to the financial crisis see Governor William Dudley, "Reforming the OCT Derivatives Market," (remarks at the Harvard Law School Symposium on Building the Financial System of the 21st Century, Boston, MA, March 22, 2012), <http://www.newyorkfed.org/newsevents/speeches/dud120322.htm>

⁶⁷ Ibid.; "Brief Summary of the Dodd-Frank Wall Street Reform and Consumer Protection Act," http://www.banking.senate.gov/public_files/070110_Dodd_Frank_Wall_Street_Reform_comprehensive_summary_Final.pdf

⁶⁸ "Executive Summary," *CFTC FY 2013 President's Budget and Performance Plan*, <http://www.cftc.gov/reports/presbudget/2013/2013presidentsbudget02.html>

⁶⁹ Silla Bush, "Dodd-Frank Swap Rules Delayed as Agency Eases Transition," (December 7, 2012), <http://www.bloomberg.com/news/2012-12-06/cftc-said-to-consider-six-month-delay-in-cross-border-rules-1-.html>

⁷⁰ Ibid.

⁷¹ Nathaniel Popper, "As Market Heats UP, Trading Slips into Shadows," *The New York Time*, (March 31, 2013), www.nytimes.com/2013/04/01/business/as-the-market-heats-up-trading-slips-into-the-shadows.html?pagewanted=all

⁷² Anthony Davies and James R. Harrigan, "Why the Education Bubble Will be Worse than the Housing Bubble," *US News* (June 12, 2012), <http://www.usnews.com/opinion/blogs/economic-intelligence/2012/06/12/the-government-shouldnt-subsidize-higher-education>

⁷³ Simon Ruth, Rachel Louise Ensign, and Al Yoon, “Student-Loan Securities Stay Hot - Investors' Hunger for Returns is Driving Demand Even as More Borrowers Fall Behind on Payments,” *Wall Street Journal* (March 4, 2013): C1.