

**Spring 2016
Industry Study**

**Final Report
*Financial Services***



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FINANCIAL SERVICES 2016

ABSTRACT: This paper assesses the health of the financial services industry (FSI); it highlights key challenges and provides policy recommendations to improve the safety and soundness, as well as the efficiency and profitability, of the industry. The assessment postulates that the regulatory response to the 2007-2009 financial crisis, while improving the safety and soundness of the financial system, ultimately over-regulated it and did not take the opportunity to create greater regulatory coherence. This resulted in less systemic risk and profitability in the traditional regulated banking sector, and pushed more risk into the unregulated shadow banking sector, while in the process stifling macro-economic growth by restricting the FSI's ability to perform its basic function to provide the economy with an optimized level of credit and liquidity. We must create greater regulatory coherence through simplified regulation and a harmonized regulatory framework; address risk concentration and migration into the unregulated shadow banking sector; intelligently invest in cybersecurity; and reinforce ethics in the industry. Now is the time to confront these challenges; waiting for the next crisis is the wrong answer. Acting now will result in a more robust and vibrant FSI, able to provide a firm foundation and platform for US macro-economic growth, and fully capable of resourcing US national security goals.

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The views expressed in this paper are those of the authors and do not reflect the official policy or position of the National Defense University, the Department of Defense or the US Government.



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INDUSTRY STUDY OUTREACH & FIELD STUDIES

On-Campus Presenters:

Financial Data Standards - Deloitte Consulting, Eisenhower School, Washington, DC
 Financial Stability Oversight Council (FSOC) Office of Financial Research, Washington, DC
 Peterson Institute for International Economics, Washington, DC
 The Carlyle Group, Washington, DC
 Woodrow Wilson International Center for Scholars, Washington, DC
 Federal Bureau of Investigation (FBI): Financial Crimes Division, Washington, DC
 StreetShares Inc., Reston, VA
 Financial Services-Information Sharing and Analysis Center (FS-ISAC), Reston, VA
 United States Congress, House Committee on Financial Services, Washington, DC
 British Embassy to the United States, Washington, DC

Field Studies—Domestic:

Bank of America (BoA), Charlotte, NC
 Chinese International Trust & Investment Corp (CITIC) Securities International USA, New York City, NY
 Consumer Banking Association (CBA), Washington, DC
 Consumer Financial Protection Bureau (CFPB), Washington, DC
 Federal Deposit Insurance Corporation (FDIC), Washington, DC
 Federal Reserve Bank of New York, New York City, NY
 Federal Reserve Board, Washington, DC
 Financial Industry Regulatory Authority (FINRA), Washington, DC
 Goldman Sachs, New York City, NY
 International Monetary Fund (IMF), Washington, DC
 Investors Exchange (IEX), New York City, NY
 J.P. Morgan Chase and Company, New York City, NY
 M&T Bank, Wilmington, DE
 Moody's Investor Service, New York City, NY
 New York Stock Exchange (NYSE), New York City, NY
 Pentagon Federal Credit Union, Alexandria, VA
 Peter J. Solomon Co., New York City, NY
 United States Commodity Futures Trading Commission (CFTC), Washington, DC
 United States Securities and Exchange Commission (SEC), Washington, DC
 Warburg Pincus LLC, New York City, NY (discussion with Mr. Timothy Geithner, former Secretary of the US Treasury)
 Wells Fargo, Charlotte, NC
 Wilmington Trust Company, Wilmington, DE

Field Studies—International:

Bank of England, London, UK
 Barclays Bank, London, UK
 European Bank for Reconstruction and Development, London, UK
 Her Majesty's Treasury, London, UK
 The London Metal Exchange, London, UK
 TheCityUK (trade association), London, UK
 United States Embassy, London, UK





INTRODUCTION

A strong economy, combined with a prominent US presence in the global financial system, creates opportunities to advance our security...

[The US has] recovered from the global economic crisis, but much remains to be done to shape the emerging economic order to avoid future crises. We have responsibilities at home to continue to improve our banking practices and forge ahead with regulatory reform...

—2015 US National Security Strategy¹

If money is the lifeblood of the economy, then the financial services industry (FSI) is the circulatory system through which it flows. The FSI facilitates capital formation, credit and liquidity required for the economy to function. Without financial services, the economy would not have a heartbeat. The effective operation of the FSI in the US is not only foundational to the strength and growth of the \$18 trillion US economy,² but it is also foundational to the function, growth and stability of the \$77 trillion global economy.³ This is especially true given that the US dollar is the world's reserve currency and dominant medium of global trade.

As the largest and most dynamic economy in the world, in addition to being a key measure of power and influence in its own right, the US economy underwrites US military strength and diplomatic influence.⁴ Economic prosperity provides the US government with the ability to adequately resource national security. As stated in the 2015 National Security Strategy,

In addition to the positive benefits of trade and commerce, a strong and well-regulated economy positions the United States to lead international efforts to promote financial transparency and prevent the global financial system from being abused by transnational criminal and terrorist organizations to engage in, or launder the proceeds of, illegal activity.⁵

However, as demonstrated most recently by the financial crisis in 2007-2009 that led to the "Great Recession," the FSI can introduce significant vulnerabilities to the economy if it is not effectively regulated; by extension, this vulnerability threatens US national security. In order to be effective, financial regulation must strike a balance between under- and over-regulation. On the one hand, under-regulation encourages a permissive environment where risk loses transparency, overconfidence goes unchecked, greed turns into unethical behavior and the entire financial system becomes vulnerable to unexpected and debilitating "shifts and shocks."⁶ On the other hand, over-regulation constrains the industry's ability to create value and stifles macro-economic growth by restricting the industry's ability to perform its basic function to provide the economy with credit and liquidity. Therefore, effective regulation must optimize the trade-offs between these extremes of under- and over-regulation such that the FSI is safe and stable while still maximizing its ability to drive macro-economic growth in the US economy, and by extension US economic strength and national security.

This paper provides an assessment of the current and projected health of the FSI, a detailed discussion of key challenges and policy recommendations. The analysis documented in this paper indicates that the FSI in 2016 is highly competitive and that firms are achieving a level of profitability just at or below their cost of equity. This marginal profitability is largely due to a combination of constrained operating conditions (i.e. low interest rates and other macro-economic factors) and new regulation promulgated in the aftermath of the financial crisis. While



the industry's ability to create value should improve as constrained operating conditions ease over the next several years, it will likely never reach pre-crisis levels due to new capital, leverage and liquidity requirements critical for ensuring the safety and stability of the financial system. Further, in addition to these important new regulatory requirements, an over-reaction to the financial crisis also brought more stringent interpretation of old regulation and new duplicative regulation, and maintained an inefficient and fragmented regulatory bureaucracy that does not serve to reduce systemic risk. This over-regulation is impacting the FSI's ability to provide the US economy with the optimal level of credit and liquidity to maximize macro-economic growth. Further, additional regulation concentrated certain existing risk to create new systemic vulnerabilities and had the unintended consequence of driving higher risk activities to the unregulated shadow banking sector.

Now is the time, eight years after the financial crisis and six years after the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, to comprehensively address critical challenges faced by the FSI. First, we must tackle comprehensive regulatory reform, followed closely by addressing the concentration and migration of risk to the unregulated shadow banking sector. Next, due to the increased threat and catastrophic consequences of a cyber-attack, we must address the increased reliance of the financial system on the cyber domain. Finally, we must pursue ethical behavior in the FSI to protect integrity and operating standards in the domestic and global markets. Each of these challenges is explored in detail by individual essays later in this paper.

Methodology

The assessment conducted as part of the FSI field study program included 360-degree exposure to financial firms, think tanks, government policy makers, regulators and global partners, in many cases at the highest levels. The study team held discussions with the Honorable Congressman French Hill, former Treasury Secretary Timothy F. Geithner, Securities and Exchange Commission (SEC) Chair Mary Jo White, Federal Reserve Governor Lael Brainard and numerous academics, banking industry executives and regulatory agency leaders. Additionally, the study team traveled to London where insights gained through high-level access to the US Embassy, Her Majesty's Treasury, Barclays, the Bank of England, CityUK, European Bank for Reconstruction and Development and other financial institutions confirmed similar themes challenging the FSI that the study team captured during visits in the US. The visits in the UK put the challenges facing the FSI into a global context, allowed for an examination of UK post-crisis best practices that could potentially be applied in the US and provided nuanced perspectives on the significance of the ties between New York and London, the world's most important global financial centers. Combined with in-depth literary reviews, interviews and independent study, the class gained a well-rounded and comprehensive understanding of the FSI.

Definition of the Financial Services Industry

The North American Industry Classification System (NAICS) methodically classifies the economy into sectors, subsectors, industry groups and—at the lowest level—industries. Within the NAICS scheme, what is commonly described as the “Financial Services Industry,” or FSI, is really a mix of over 65 separate NAICS-defined industries that span the breadth of financial services, to include disparate disciplines such as commercial banking, investment banking, credit card issuing, international trade financing, insurance agencies and brokerages, real estate property managers, and passenger car leasing.⁷ The FSI contributed just under \$3.5 trillion to the US Gross Domestic Product (GDP) in 2014, representing approximately 20% of the total US



GDP.⁸ Financial services institutions on their own make up around 25% of the total market capitalization of stocks.⁹

This report focuses on the two most consequential industries within the overarching FSI: Commercial Banking (NAICS 52211) and Investment Banking (NAICS 52311). The effective operation of these two industries alone—together representing less than a 4% contribution to US GDP¹⁰—is arguably the most important to the stability of the entire \$18 trillion US economy¹¹ and the \$77 trillion global economy.¹²

Commercial banking. The commercial banking industry, as highlighted in Figure 1, is made up of firms that provide financial services to retail and business clients in the form of commercial, industrial and consumer loans.^{13,14}

Commercial banks in the US currently manage in excess of \$15 trillion in loan assets on a daily basis.¹⁵ These banks also accept deposits from customers and then use those deposits as a source of funding for loans.¹⁶ Commercial banks in the US currently hold in excess of \$10 trillion in deposits.¹⁷ The industry earns interest revenue from loan products and noninterest revenue from fees and other services.¹⁸

Investment banking. The investment banking industry, as highlighted in Figure 2, is made up of firms and individuals that provide a range of investment services, including investment banking (e.g., debt and equity underwriting, strategic advising, and corporate finance services) and trading services (e.g., principal trading and market making, proprietary trading and prime brokerage).^{19,20}

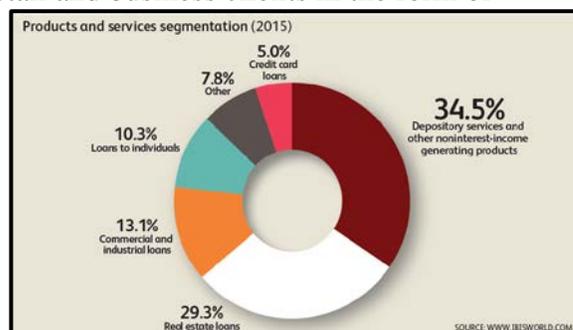


Figure 1: Commercial Banking

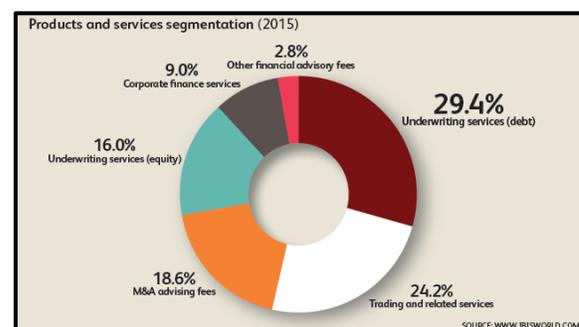


Figure 2: Investment Banking

CURRENT HEALTH OF THE FINANCIAL SERVICES INDUSTRY

In *Stress Test*, former Treasury Secretary Geithner opined on the root causes of the financial crisis that unfolded during 2007-2009. Geithner paints a picture of diffused culpability. In simple terms, he argued that borrowers took too many risks; creditors and investors were too willing to finance those risks; the government failed to rein in those risks, and then was unable to act quickly or forcefully enough when the panic hit.²¹ This abridged version of Geithner's assessment belies the dynamic confluence of complex causal factors that is best characterized as the proverbial "perfect storm." See Appendix A for a more detailed analysis of the causes.

The "Great Recession" that followed the financial crisis had a monumental, devastating impact on the US economy that continues to ripple through the global economy. Measured peak-to-trough, the US economy alone lost 8.8 million jobs and \$19.2 trillion in household wealth.²² The US government launched an emergency response to the crisis that included government bailouts, fiscal and monetary policy actions and other measures in an effort to stabilize the economy. The government also passed the Dodd-Frank Act with the intent to address the causes of the financial crisis through regulation and prevent another of its kind in the future. The Dodd-Frank Act was voluminous: ~2,300 pages and 390 different regulations, most left to regulatory



agencies to finalize. Several years later, industry is pushing back against the Dodd-Frank Act, arguing that much of the new Act fails to effectively reduce systemic risk and is instead both duplicative and punitive.

Eight years removed, the FSI is still dealing with the aftermath of the financial crisis as it seeks to recover. It is in this context that the industry study team examined the health of the FSI in a comprehensive Structure-Conduct-Performance (S-C-P) assessment of both commercial and investment banking. Fundamentally, the purpose of the S-C-P assessment is to determine if firms in the industry are employing the right business strategies in response to their market structure to create adequate value for shareholders and whether they are doing so with acceptable risk for consumers and the economy at large. If adequate value is not being created, then the question becomes whether this results from 1) poor strategy that firms need to adjust themselves, 2) unfavorable macro-economic factors or 3) market failure or government failure (e.g., inefficient government regulation) that would benefit from policy recommendations. From this assessment, the study team sought to determine whether or not the right balance was achieved between industry safety and stability through increased regulation, on the one hand, and the industry's capacity to adequately facilitate macro-economic growth by providing credit and liquidity to the economy, on the other hand.

Industry Structure

The first step in our industry analysis looked at competitiveness and market structure. The team used the Porter's Five Forces model to analyze the competitive forces that industry firms experience in order to later assess their business strategies.²³ For both industries, we found that the primary competitive forces come from intense rivalry among firms and the threat of substitute products. The commercial banking industry operates in a market structure with monopolistic competition, while the investment banking industry operates in an oligopoly. The highly competitive market structure in both industries is driving consolidation and contributing to reduced profitability.

The commercial banking industry has a relatively low level of market concentration among firms as measured by revenue; the four largest commercial banking firms capture just 27% of market share.²⁴ Those four large firms, and over 5,200 smaller national-, regional- and local-banking firms, intensely compete with each other for market share.^{25,26} In addition, firms in the commercial banking industry must compete with substitute products and services offered by thrifts, credit unions, government agencies, mortgage brokers and other nonbank organizations offering financial services, some of whom are owned by non-regulated diversified corporations operating in the shadow banking system.²⁷

The investment banking industry has a moderate level of market concentration among firms as measured by revenue. The four largest of these firms capture 39% of the market share²⁸; however, those four largest firms, and over 10,000 other smaller firms, compete intensely.²⁹

Consolidation within both commercial and investment banking will continue, with the biggest banks steadily increasing overall market share and smaller banks continuing their trend of mergers, acquisitions and even failure. Though this consolidation trend is not necessarily a detriment to the market, it may have potentially negative impacts. For instance, since small banks provide a disproportionate number of small business loans and other banking services within local communities and rural areas,³⁰ fewer small banks could lead to less credit available for these types of loans and services, with resulting lower economic growth in these communities. Additionally, with the shrinking number of small banks, more of this activity is moving to the often riskier, unregulated shadow banking sector. Furthermore, consolidation is



making the “too big to fail” banks even bigger and more interconnected, leading to potentially greater systemic risks than would exist in a more diversified industry. Understanding the market structure in the FSI is essential for firms to effectively calibrate their business strategies to the most consequential competitive forces.

Industry Conduct and Strategy

The second step in our industry analysis looked at two overlapping frames of reference to assess industry strategy. We first looked at strategy through the standard industry lens of the trade-offs between price (e.g., interest rates on loans and deposits), convenience (e.g., number of branch locations) and customer service (e.g., quality and variety of products and services).³¹ We also examined strategy using the Strategic Game Board model to evaluate how and when a firm decides to compete.³² Additionally, we assessed the extent to which firms focused their strategies on the key competitive forces identified above in the Porter’s Five Forces analysis. The intent of this analysis was to assess whether challenges to creating value are self-imposed through poor strategy, or whether the challenges are due to unfavorable macro-economic factors, or market or government failure.

Commercial banks tend to compete based on the same basic set of products and services; however, large commercial banks compete nationally while smaller community banks compete regionally and locally. Commercial banking firms tend to employ strategies with different mixes of price, convenience and customer service to seek advantage in a highly competitive market.³³ Banks have been successful at optimizing these elements with a particular specialization in one or two of them. Beyond the basic business strategy decision to focus on price, convenience or customer service, firms in the industry have implemented other strategies to improve their competitive posture. First, commercial banks have historically relied on mergers and acquisitions as a key business strategy. Largely through this mechanism, the number of commercial banks has dramatically decreased over the previous decades from over 12,000 banks in the early 1990s to just over 5,200 banks in 2015.^{34,35} The financial crisis intensified this trend that favors larger national and regional banks. In fact, during the period between 1992 and 2015, large banks with greater than \$10 billion in assets went from holding just 41.2% of total commercial banking assets in the US (51 banks) to holding 83.3% of those assets (91 banks).³⁶ During the same period, on the other end of the spectrum, small commercial banks with less than \$100 million in assets went from holding 9.9% of total commercial banking assets in the US (8,292 banks) to holding less than 1% of those assets (1,483 banks).³⁷ These mergers and acquisitions—by virtue of the resulting economies of scale—have helped national and regional community banks compensate for cost burdens associated with recruiting and retaining talent, investing in technology and complying with government regulations that are required to effectively compete in today’s market.³⁸ Second, most firms have relied on significant operational streamlining and cost cutting strategies to increase profitability. These efforts have included initiatives to reduce overhead,³⁹ consolidate real estate holdings, reduce the number of employees and retire legacy subprime mortgage litigation fees. Third, in today’s globalized and interconnected world, all firms understand that they must invest in technology to offer consumers online and mobile banking services, as well as to protect consumer information in the cyber domain. The challenge of cybersecurity will be covered in detail later in the paper.

Firms in the investment banking industry compete based on fees charged, the range of products and services provided, and reputation.⁴⁰ However, unlike commercial banking, investment banking firms compete in different market segments based on their size. The largest US firms in the industry engage heavily in securities trading,⁴¹ and based on the globalization of



capital markets, these firms are increasingly competing on a global basis⁴² with many generating upwards of 50% of their revenue outside of the US.⁴³ These products and services have a high regulatory burden, require significant levels of capital, rely on large-scale investment in technology (e.g., trading systems)⁴⁴ and benefit greatly from economies of scale that only the largest firms enjoy. In this global market segment, regulatory restrictions and the ever-present motivation to reach for yield incentivizes firms to create new substitute financial instruments, often within the shadow banking system. Smaller investment banking firms, on the other hand, tend to rely on traditional investment banking activities such as underwriting and financial advisory services.⁴⁵ These products and services have a larger focus on personal relationships, are less capital intensive and do not require smaller firms to match larger rivals with respect to scale.⁴⁶ Beyond the basic market segmentation business strategy decision, firms in the industry have also implemented other strategies to remain competitive. First, investment banking firms have invested heavily in technology. The use of telecommunication services, information technologies and electronic distribution technologies is growing at a rapid rate to improve the efficiency and effectiveness of information delivery and services to clients, and to monitor operational, market and financial risk;⁴⁷ firms with premium trading systems tend to attract the most liquidity.⁴⁸ Second, firms invest heavily in human capital given that investment banks rely extensively on talented labor for product offerings.⁴⁹

While this section discusses commercial and investment banking separately, it is increasingly difficult to do so for the key large firms in each respective industry. These firms, since the financial crisis, as a result of changes to industry structure and regulation, have employed strategies that rely on diversified portfolios across industries to balance against overly weighted market exposure. Since 2008, diversified bank holding companies, rather than independent investment banks, have increasingly delivered investment banking products and services.⁵⁰ Of the 10 largest global banks, only two—Goldman Sachs and Morgan Stanley—continue to generate most of their revenue from investment banking operations, compared with six firms before the global financial crisis.⁵¹ Goldman Sachs launched an online commercial bank in the first half of 2016, leaving Morgan Stanley as the only major investment bank that does not provide commercial banking services. JPMorgan Chase acquired and completely integrated the failed investment bank Bear Stearns in 2008; Bank of America acquired the struggling investment bank Merrill Lynch in early 2009. Mutually supporting diversification strategies are now a common theme that help banks mitigate risk and survive through difficult business cycles. Since investment banking is becoming increasingly fragile, and as it plays a critical role in macro-economic growth and national security, both domestically and globally, it will be looked at closely later in the paper in individual essay #1, “Regulation and Regulatory Framework” and individual essay #2, “Risk Migration and Concentration.”

Across both commercial and investment banking, our industry study team determined that FSI firms are employing appropriate business strategies in response to market conditions and the structure in which they operate. To the degree that firms are not creating value, discussed further in the next section, the team determined that it is not a function of poor strategy.

Industry Performance

The third step in our industry analysis examined how key firms perform given their chosen business strategies to operate within the market structure and competitive landscape. To assess the degree to which firms are creating value, our analysis took into account several different metrics, such as the ratio of Return on Invested Capital (ROIC) to Weighted Average Cost of Capital (WACC), and profit margin. However, since the financial firms and the



regulators we visited tended to all use Return on Equity (ROE) as a primary metric, comparing it to the cost of equity (i.e., the benchmark return investors require to compensate them for the risk of their investment relative to the market), we adopted this as a primary yardstick as well.⁵² ROE is used by firms as the standard measure for managing the expansion, contraction and closure of business lines, and as a comparative measure to competitors.^{53,54} Most banks calculate their cost of equity somewhere between 9% and 11% depending on volatility and risk factors unique to each firm.⁵⁵ Therefore, for firms to achieve an adequate return they should seek an ROE equal to or greater than their cost of equity. It is critically important for individual banks to achieve an adequate level of return, and create value for shareholders, so that the FSI has the incentive to innovate and continue providing the US economy with capital formation, credit and liquidity needed to facilitate macro-economic growth.

The average ROE for all *commercial banks* in the 10 years prior to the financial crisis was 13%; the smallest banks (less than \$1 billion in assets) averaged 9% and the largest banks (greater than \$10 billion in assets) averaged 13.7%.⁵⁶ The four largest commercial banks, JPMorgan Chase, Wells Fargo, Citi Group and Bank of America, averaged 14.3%, 19.0%, 22.5% and 17.4%, respectively, over this period.⁵⁷ The gap in ROE between large and small firms is indicative of the historical industry strategy to create larger national and regional banks, through mergers and acquisitions, that are more profitable by leveraging economies of scale.

In 2015 the average ROE across all commercial banks was down to 9.1%, with the small banks at 8.4% and the largest banks at 9.1%.⁵⁸ The four largest commercial banks, Wells Fargo, JPMorgan Chase, Citi Group and Bank of America, earned an average of 13.6%, 11.3%, 8.5% and 6.9%, respectively.⁵⁹ Only one of the major firms in the industry, Wells Fargo, generated a return in 2015 that reached average pre-crisis industry levels. JPMorgan Chase generated return near their cost of equity, but Citi Group, Bank of America and the average firm in the commercial banking industry generated returns at the bottom end, or below, the industry's range for cost of equity.

As a result of elevated risk associated with its products and services, investment banking is inherently more volatile than commercial banking. The ROE for Goldman Sachs and Morgan Stanley—the two major US firms that still generate most of their revenue from investment banking operations—fluctuated between 13% and 35% during the 10 years preceding the financial crisis.⁶⁰ Even at the lowest point during this period, ROE did not go below the industry cost of equity range of 9% to 11%. The ROE for these two firms was also volatile following the financial crisis; however, that volatility had a lower range from 24.5% down to -4.6%.⁶¹ In 2015, the ROE for Goldman Sachs and Morgan Stanley settled in at 8.1% and 9.2%, respectively.⁶²

Meanwhile, as highlighted in Figure 3, ROE trends across the investment banking industry were no better, with average ROE in 2014 dipping to 7.8%.⁶³ These industry-wide returns are at the low end, or below, the industry 9% to 11% range for cost of equity. Some observers have suggested that, “The combination of

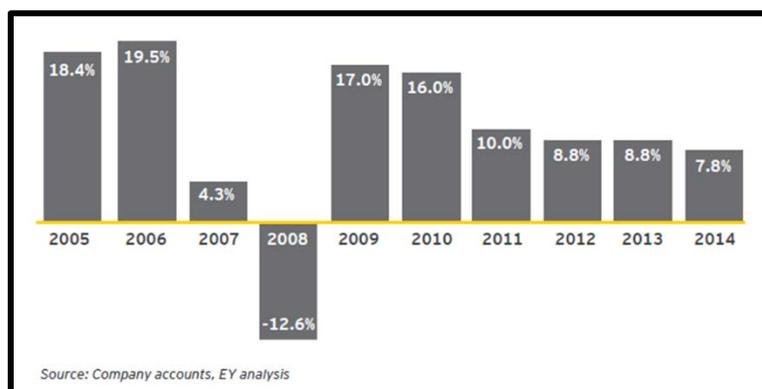


Figure 3: ROE Trends for Investment Banks



pressure from low-cost financial products like ETFs [Exchange-Traded Funds], the costs of regulatory compliance and competition from private equity and hedge funds have simply made the [investment banking] business less profitable than it once was.”⁶⁴

In summary, the FSI is creating only marginal value with profitability at or below the cost of equity, a trend that has continued since the financial crisis. The industry study team believes that, while firms are pursuing fundamentally solid business strategies in response to the market structure, low profitability persists due to a mix of historically low interest rates (likely the single greatest factor), other macro-economic factors and significantly increased regulatory burden and compliance costs. These other factors are discussed in greater detail later in the paper.

To put the level of industry profitability in context, one must compare it to the risk exposure experienced by firms to achieve those results, as well as the systemic risk exposure transferred to the consumer and economy, which the next section discusses.

Industry Risk

The final step in our S-C-P analysis was to determine if firms achieved returns at an acceptable level of risk to the consumer and overall economy. In order to assess risk exposure, our analysis focused on stability of the financial system as measured by leverage, liquidity and stress testing of Systemically Important Financial Institutions (SIFI). The SIFI designation includes bank holding companies with \$50 billion or more in total consolidated assets and nonbank financial companies designated by the Financial Stability Oversight Council (FSOC) for Federal Reserve supervision and enhanced prudential standards under the Dodd-Frank Act.⁶⁵

Leverage. Leverage refers to the relationship between a firm’s exposure to risk and capital that can be used to absorb losses from that exposure, and the firm’s resulting vulnerability and resilience to financial distress.^{66,67} Analysis of all bank SIFIs between 2010 and 2015 shows that median tangible common equity—the highest quality capital a firm holds—increased by about 29% as a percentage of assets.⁶⁸ The same analysis showed that median total equity as a percentage of assets increased by about 13%.⁶⁹ Since the financial crisis, high-quality capital has increased substantially and the riskiness of bank exposures has decreased.⁷⁰ In 2004, the median Tier 1 risk-based capital ratios for US Global Systemically Important Banks (G-SIB) was 7%, but by 2014 the ratio was up to 12%.⁷¹ These measures are important because firms that have more capital to absorb losses are less likely to fail.⁷²

Liquidity. Liquidity addresses a firm’s ability to fund assets and meet obligations as they come due, and the firm’s resulting vulnerability and resilience to financial distress.^{73,74} The financial crisis revealed the dangers of underinvestment in liquid assets to meet short-term liabilities, and the Dodd-Frank Act put in place a host of new regulations to address this risk, to include a mandate that new Liquidity Coverage Ratios (LCR) be met by banks based on size and with a phase in period.⁷⁵ Analysis of all bank SIFIs between 2010 and 2015 shows that median short-term liabilities as a percentage of total liabilities have decreased by about 15%.⁷⁶ This reduction indicates that firms have less runnable short-term liabilities on their books than before the financial crisis. The same analysis revealed that median liquid assets as a percentage of short-term liabilities have increased by about 70%;⁷⁷ this increase shows that firms have a better ability to meet short-term financial obligations in times of crisis.

Stress Testing. Stress tests, invoked under the Dodd-Frank Act, are another structured means to measure the stability of the financial industry. Results provide regulators with forward-looking information used in bank supervision to ensure institutions have robust capital planning processes that account for their unique risks, and to help ensure that institutions have sufficient capital to continue operations through times of economic and financial stress.⁷⁸ Initiated in 2010,



all SIFI designated institutions are required to undergo annual Comprehensive Capital Analysis and Review (CCAR) stress tests.⁷⁹ In addition, Dodd-Frank Act Stress Testing (DFAST), initiated more recently in 2013, requires all federally regulated financial institutions with assets in excess of \$10 billion to conduct company-run stress tests, and submit the results to their primary regulators for review.⁸⁰ The CCAR stress testing process covers banks that represent 60% of total banking assets, and that coverage extends to 85% of total banking assets when combined with the DFAST requirement.⁸¹ Stress testing has delivered substantial benefits to the banking industry—greater transparency, improved governance and better risk management practices—than those that were in place before the financial crisis.⁸²

Summarizing the benefits of stress testing, one industry observer succinctly summarized today’s interconnectedness, leverage and liquidity risk picture by stating that, “the expanded reach of banking regulation, the ability of better-capitalized banks to absorb greater losses without becoming distressed, and banks’ reduced susceptibility to cash shortages all contribute to a financial system in which adverse shocks can be absorbed safely by individual banks rather than transmitted and amplified to other parts of the financial system.”⁸³ The FSI as a whole has seen significant reduction in risk exposure in the regulated sector since the financial crisis. Accordingly, historically higher industry profit levels are now considered by many to be unrealistic. This tradeoff corrects market externalities, due to such issues as asymmetric information and principal-agent problems, where society suffered greatly due to the failure of the FSI to manage itself under less rigorous prudential regulatory oversight.

However, although many of these regulatory reforms that helped to drive down risk in the financial system are positive, such as SIFI designation, increased capital, higher liquidity ratios and the implementation of stress tests, two primary concerns arise in the area of risk. First, significantly reduced risk within the FSI has the potential to stifle the industry’s ability to provide credit and liquidity into the economy, slowing macro-economic growth. Second, risk has a tendency to migrate—suppressing it in one place often means it will appear somewhere else, such as in the unregulated shadow banking sector. Again, these challenges will be addressed, and policy recommendations offered, in individual essay #1, “Regulation and Regulatory Framework” and individual essay #2, “Risk Migration and Concentration.”

In summary, our S-C-P analysis concludes that while firms are employing solid business strategies in response to market structure in which they operate, they are creating only marginal value. The current low return on equity—that is achieved by firms at or below its cost of equity—is largely due to a mix of constrained operating conditions (historically low interest rates and other macro-economic factors) and increased government regulation. Taking this S-C-P analysis into consideration, and before turning to a detailed discussion of the challenges facing the FSI and associated policy recommendations, we now turn to the future outlook of the FSI where the macro-economic factors are considered in more detail.

INDUSTRY OUTLOOK

The growth trend for the FSI is generally positive over the next five years for both commercial and investment banking. The latest five-year growth projections call for annualized revenue growth of 4.0% for commercial banking and 6.8% for investment banking, with profit margins increasing to 27.6% in 2021 for commercial banking and remaining at 22.2% for investment banking.^{84,85} Predictions become more uncertain looking out 10 years and beyond, as macro-economic risks, regulatory landscape, industry competition (including from the shadow



banking system), mobile/online banking and other factors, such as growing cybersecurity concerns, become increasingly unpredictable.

Whether near term or long term, the most significant driver for FSI performance is the overall health of the economy. A bank's performance is disproportionately impacted by the health of the economy it supports, whether a local economy for a small community bank, or the global economy for major, diversified banks such as JPMorgan Chase.⁸⁶ This makes sense since all banks, regardless of size, act as the financial intermediaries for the businesses and consumers they serve. In a contracting economy, business activity and investment slows, and consumers have less money to spend. This impacts banks, as fewer loans are taken out, consumer spending and corresponding banking activities decrease, fewer mergers and acquisitions take place, and fewer companies go public through initial public offerings (IPO). Further, banks tend to experience disproportionate reductions in revenue and profitability compared to other firms in an economic downturn. Conversely, when an economy grows and improves, banks reap significant rewards, growing even faster than firms in other industries.

Numerous agencies and analysts point to a US economy on a path to near-term moderate growth; in an April 8, 2016 speech, the President of the Federal Reserve Bank of New York stated, "I continue to expect that the economy will expand over the course of this year at a pace slightly above its long-term trend."⁸⁷ Additionally, in their March 16, 2016 press release the Federal Open Market Committee (FOMC) affirmed "economic activity has been expanding at a moderate pace despite the global economic and financial developments of recent months."⁸⁸

Economists from two banks recently visited by the industry study team provided similar assessments. Wilmington Trust economists "...continue to expect solid yet unspectacular economic growth in 2016 based on continued job growth, wage growth, consumer spending, business investment and home building."⁸⁹ They go on to forecast US real GDP growth of 2.5% in 2016.⁹⁰ Economists from Wells Fargo Securities were slightly less bullish, but still predicted US real GDP growth of 1.7% in 2016, followed by 2.3% in 2017,⁹¹ and overall global GDP growth of 2.8% and 3.2%, respectively.⁹²

Over the long term, 10 years and beyond, the economic picture is less clear. In its long term outlook, Wilmington Trust points to expectations of a "still-dominant US economy, but decelerating longer-term,"⁹³ and predicts average US GDP growth for the next 10 years of just over 2%, though gradually decreasing over time.⁹⁴ As the Wilmington Trust report highlighted, demographics play a role, with shrinking labor forces across developed economies, and the retirement of the baby boom generation negatively affecting growth long term.⁹⁵ Other long term macro-economic risk factors include the Eurozone crisis, European Union political turmoil and the possible British exit ("Brexit"), a further slowdown in China's economy, the possibility of a US recession and escalating or new global conflicts, such as with global terrorism and extremist groups, Iran or Russia. In fact, based on discussions during the team's recent trip to London with bankers, regulators and the US embassy, a British exit from the EU is more of a threat than we realized, with polls as of May 2016 showing a 50/50 split between the "leave" and "remain" camps. According to our hosts, a "Brexit" vote to leave the EU would likely have significant negative effects on the UK economy with up to a 6% reduction in the UK GDP. Such a vote would also impact large US banks that currently base their European operations out of London since they would likely have to move to the European continent.

For the US specifically, projected growth of the national debt over the long term is another significant economic concern. In fact, rapidly expanding national debt, driven primarily by rising mandatory spending, could become the most significant threat to US national security,



as well as a key risk factor for the FSI. The possibility of increased interest rates would balloon interest payments on the national debt (if not off-set by real GDP growth). The Federal Reserve's sizeable balance sheet also represents a future economic challenge as economists wrestle with how to unwind it without causing negative consequences. Periodic Congressional jockeying over increasing the national debt limit threatens to reduce the credit worthiness of Treasury securities, currently considered the safest and most risk-free international financial asset. If not addressed soon, the federal debt will significantly impede economic growth, and hinder effective fiscal policy options. It should also be noted that budget sequestration and mandatory cuts to discretionary spending threaten to further erode our ability to provide for national security

Finally, interest rates, which are closely linked to overall economic conditions, will play a key role in the health and profitability of the FSI. In a 2012 study of the US community banking sector, the Federal Deposit Insurance Corporation (FDIC) estimated that more than 70% of the drag on community bank revenues over the previous 14 years was caused by “a decline in net interest income”⁹⁶—in other words, a tighter spread between the interest rates banks pay on deposits versus the rates they earn on loans. Historically low interest rates over the past decade, including the recent negative interest rates employed by Japan and Europe, have placed significant pressure on bank profitability worldwide. In the US, although the FOMC increased their target range for the short term federal funds interest rate in December 2015 to 0.25% to 0.5%,⁹⁷ the pace of expected future increases has slowed based on global economic uncertainty and persistently low inflation.⁹⁸ Without a return to interest rates at least close to historical pre-crisis averages, profitability and overall health within the FSI will continue to be constrained. Some experts are beginning to theorize that trusted historical patterns within developed economies have fundamentally changed in recent years, such that real interest rates no longer positively correlate with economic growth in the same way that they once did, and that persistently low rates may become the new norm irrespective of economic conditions.⁹⁹ Regardless, ROE will likely remain well below pre-crisis levels until the overall economy improves and interest rates rise above their current level. However, ROE may not return to pre-crisis levels due to increased capital requirements and new regulatory requirements imposed on the industry that are aimed at reducing systemic risk.

In summary, the outlook for the FSI in the US is positive in terms of its future ability to create adequate value under acceptable risk to consumers and the economy, although its health is closely linked to the overall state of the US and global economies. A future financial crisis could significantly impact the FSI and potentially compromise its ability to support national security; however, another financial crisis is unlikely over the next 10 years, in part due to the precautions taken since the previous one. While the overall macro-economic prospects described above will likely play the biggest role in the future health of the FSI, numerous other challenges will also factor significantly: regulation and regulatory framework, risk migration/concentration and cybersecurity. Over-regulation of the FSI is inhibiting the credit and liquidity that the industry provides to the economy—critical to supporting macro-economic growth—without necessarily reducing systemic risk. Further, over-regulation is driving risk migration into the unregulated shadow banking sector. Beyond these two important challenges, cybersecurity is critical to the safety and stability of the entire financial system. Unlike the broader macro-economic factors, these are challenges that US policy makers can directly and immediately impact. US policy makers should act now to improve the health of the FSI, and by extension the entire US economy, thereby strengthening national security. This will help to optimize and keep the FSI



positioned to support national security resourcing requirements, such as providing financial services and credit to the defense industrial base.

The next section of this paper contains individual essays written by members of our industry study team to capture each of these important challenges and associated recommendations in more detail.

CHALLENGES & RECOMMENDATIONS

Regulation and Regulatory Framework (Individual Essay #1 by CDR Kevin Cheshure)

The Dodd-Frank Act is a roughly 2,300-page compendium of federal laws forced through the Congress in 2010 on a strictly partisan basis, aimed at preventing a financial crisis similar to the one experienced in 2007-2009. Importantly, the Dodd-Frank Act establishes “high safety walls” for financial firms, including new capital, leverage and liquidity requirements, to reduce the likelihood of large bank failures and to curb excessive risk-taking. The Dodd-Frank Act also created the FSOC and the Orderly Liquidation Authority to prevent the failure of any one “too big to fail” institutions from threatening the entire financial system. Further, “stress testing” mandated by the Dodd-Frank Act forces institutions to be prepared to confront severe economic downturns. The Dodd-Frank Act also emphasized greater protection for consumers, notably with the creation of the Consumer Financial Protection Bureau (CFPB).

While these new measures make the financial system safer and sounder, and better protects consumers, detractors point out that safety and soundness have come at a regulatory cost that is needlessly excessive and inefficient. The Volcker Rule adds restrictions intended for retail banks, but it is applied to a much larger segment of the industry. Stress testing is not focused on the system, but instead only on individual institutions. Finally, the fragmented regulatory structure leads to financial institutions having multiple regulators who frequently differ in regulatory interpretations. In the absence of clear, conclusive regulatory interpretations, industry is forced into costly, duplicative compliance efforts that reduce profitability. Due to lack of clarity regarding new regulations, banks have exited certain lines of business, such as small-dollar lending, because the potential risk of non-compliance and associated penalties is too great. As a result, access to credit and financial products has been restricted, pushing consumers to the unregulated shadow banking sector and payday vendors to get the financing they need. Further, detractors note that the failure of the Dodd-Frank Act to untangle the knot of existing regulations, bring coherence to the overall regulatory framework and to optimize the number and functions of regulatory agencies weakens its efficiency and constrains the ability of firms in the FSI to contribute to greater macro-economic growth.

Cost of Regulation. Regulatory costs can be viewed from two perspectives: a micro-economic firm perspective (reduced profitability of individual firms) and a macro-economic national perspective (impaired market function which constrains economic growth). While the Dodd-Frank Act directed implementation of 390 specific regulations, regulators themselves derived over 27,000 new rules to which financial institutions must comply.¹⁰⁰ This number will continue to increase, as less than two-thirds of the Dodd-Frank Act legislation has been finalized.¹⁰¹ In addition to these new rules, regulators also renewed interpretation and enforcement of pre-existing regulation as a reaction to the crisis.

Several banks that the study team visited indicated that a significant portion of the regulatory cost increase took the form of new hires. As an example, one major regional US bank hired 800 additional compliance-related personnel since 2010 to deal with increased regulation.¹⁰² By comparison, over that same period, one of the largest global US banks stated the need for nearly 5,000 additional compliance-related personnel.¹⁰³ All told, the American



Action Forum, an independent research organization, calculated that direct compliance costs across the industry from 2010-2015 amounted to \$24 billion.¹⁰⁴

Regulatory compliance costs impact the profitability of individual firms, but compliance is also part of the normal cost of doing business in order to ensure a safer and more stable financial system. The current regulatory framework, however, due to its complex, fragmented and unpredictable nature, is placing excessive and duplicative costs on firms in the FSI. This over-regulation is impairing market function (capital formation, credit and liquidity) to the extent that the FSI is increasingly not able to maximize support to macro-economic growth.

Volcker Rule. The Dodd-Frank Act's Volcker Rule restricts bank holding companies with federally insured deposits from proprietary trading. Moreover, the rule restricts a bank's investment to 3% of a private equity or hedge fund's total value and 3% of the bank's total core capital. This has reduced the investment banking industry's revenue in fixed income, currency and commodities (FICC) trading operations from \$200 billion in 2009 to \$100 billion in 2014. The UK, on the other hand, has taken a different approach to proprietary trading, using a concept of "ring fencing" in which proprietary trading is allowed within the same bank holding company, but only in a separate legal entity set up for that specific purpose. As described by numerous firms and agencies on the industry study team's recent visit to London, this UK concept provides greater flexibility, and potentially profitability, for banks than the Volcker Rule, while at the same time reducing risks of trading losses requiring a public bailout.

Systemic Stress Testing. Stress testing of firms in the FSI was a hallmark of the Dodd-Frank Act legislation. Stress testing provides a barometer to assess a firm's ability to weather times of economic and financial stress. However, the current testing criteria is applied at the individual firm level and does not consider the compounding effects that an individual bank failure might create for other banks or the overall FSI. The interconnectedness of the FSI amplifies this concern and provides a strong case to design and conduct a system-wide stress test.

Optimized Dodd-Frank 2.0. The Dodd-Frank Act cast a wide net of regulatory solutions that disproportionately valued prevention of a future crisis over the cost and effort involved in implementing the regulations. In the process, the Dodd-Frank Act magnified the fragmented nature of the regulatory framework. Additionally, in many cases, regulation was applied in an uneven manner, lacking due process. A 2015 Harvard report found that of 192 Dodd-Frank Act rules, 30% contained no cost-benefit analysis while nearly half contained no quantitative analysis prior to implementation.¹⁰⁵ This lack of due process suggests that a significant portion of new regulation may be overly burdensome for the associated benefit provided.

Eight years after the financial crisis and four years into implementation of the Dodd-Frank Act, many are now conceding that a higher level of regulatory coherence is needed to optimize credit and liquidity in the market without sacrificing safety and soundness.¹⁰⁶ Again, the team's recent visit to the UK provided an alternative perspective and potential solution. In contrast to the eight major federal FSI regulators and three coordinating forums in the US,¹⁰⁷ the UK has three total—and two of them, the Prudential Regulatory Authority and the Financial Policy Committee—fall within the same organization, the Bank of England. See Appendix B for a visual comparison between the current US regulatory framework and simplified UK model.

Recommendations. Revisions to the current FSI regulatory framework should:

- Include an independent review of existing regulation to create a more comprehensive, less fragmented and more optimized regulatory framework. Consider the UK framework as a potential model while conducting the independent review.



- Update the Volcker Rule to ensure its intent at limiting proprietary trading is contained within the retail banking segment. Consider the UK “ring fence” model as a potential replacement for the Volcker Rule.
- Implement system-wide stress testing for banks and important non-banks
- Require a cost-benefit analysis and a public comment mechanism prior to any new legislation, regulation or rule.

Risk Migration and Concentration (Individual Essay #2 by Mr. Richard Yoneoka)

Risk is a central component of the FSI; identifying, understanding and managing that risk are critical regulatory responsibilities. The Dodd-Frank Act contributed to risk migrating to the unregulated shadow banking sector and to risk associated with derivatives trading concentrating in central clearing houses.

Risk Migration. The recent financial crisis occurred, in part, due to an inability to identify and properly evaluate risk in the financial system. The regulations imposed on the FSI, starting with the Dodd-Frank Act, sought to improve the FSI’s safety and soundness with regard to systemic risk. However, the resulting lower profits delivered by traditional banking activities, due in part to higher capital and liquidity requirements, have inadvertently incentivized higher-risk banking activities to migrate to the unregulated shadow banking sector. On the investment banking side examples include hedge funds and private equity funds. On the commercial banking side, examples include auto manufacturers and retailers, providing auto loans, debit cards, and other traditional banking services. Shadow banks are essentially providing a replica of services that traditional banks provide; however, they are not subject to the same regulatory constraints as traditional banks. This allows the shadow banks to have more flexibility in liquidity and leverage, and therefore take greater risk while attempting to make higher profit. This shadow banking construct has proven very attractive for investors seeking higher returns. Competition from shadow banks, that provide those bank-like services, continues to grow and increasingly compete with both commercial and investment banks.

The unintended consequence of increased regulation pushing activity to the shadow banking sector has created new systemic risk to the financial system by allowing a tremendous amount of financial activity to occur without prudential oversight, and with minimal or no capital and liquidity requirements.

Risk Concentration. Originated as a hedge against risk, the over-the-counter (OTC) derivatives market provides a clear example of opaque risk concentration that regulators missed in the run-up to the financial crisis. The OTC derivatives market was conducted through a network of dealers among the larger financial institutions rather than on a securities exchange, where bilateral counterparties bought and sold complex derivatives contracts. Since the transactions transpired between bilateral counterparties, off exchange and off-balance sheet, regulators did not provide oversight because they did not understand the risk of leveraged bilateral clearance. The OTC derivative market grew from \$3.2 trillion to \$20.3 trillion of gross market value in just seven and a half years.¹⁰⁸ The massive off-balance sheet activity in bilateral swaps and derivatives hid the extent of bank exposure to over-leveraged, toxic assets, and each other. As financial institutions, such as Lehman, Bear Stearns and AIG suffered liquidity problems, their off-balance-sheet exposures became public—generating a fear of contagion that directly contributed to the financial crisis.

When Lehman Brothers filed for bankruptcy, creditors filed about \$1.2 trillion in derivatives claims against them, which was party to more than 900,000 derivatives contracts.¹⁰⁹ The Depository Trust & Clearing Corporation (DTCC), Lehman’s clearinghouse, successfully



closed out its centrally cleared contracts, valued at over \$500 billion, within the following month.¹¹⁰ By contrast, Lehman's creditors involved in non-centrally cleared contracts received less than 22% of their allowed claims.¹¹¹ The Lehman case, which typified the impact from securitized derivatives on off-balance-sheet markets, drove regulatory reforms that directed bilateral agreements and standardized derivatives to be cleared through centralized counterparties (CCP) to improve transparency and reduce bilateral counterparty risk.

CCPs, or clearinghouses, essentially interposed a central party between the buyer and seller of a derivatives contract. Thus, as each bilateral counterparty pushed its transactional risk onto the centralized clearance partner, bilateral risk morphed into centralized risk. In theory, centralized clearance provides increased transparency, lends itself better to regulatory oversight and allows for resolution planning in the event of the failure of a bilateral party (or the clearing house itself). In practice, CCPs introduce a new form of systemic risk and risk concentration that require regulatory attention. As a result, the FSOC has identified five clearinghouses as "systemically important financial market utilities" (SIFMU). As all SIFIs are members of all the SIFMU clearinghouses, and also provide back-office services, several areas of possible contagion exist between the CCPs and the members. Changes in ownership structure and global consolidation of clearinghouses have produced a complex global CCP network. This global network makes it increasingly important to reduce possibilities for regulatory arbitrage across borders and to better understand the possibility of default and contagion spreading internationally; SIFMU clearinghouses in the US likely have an analogous role internationally as the G-SIBs. One SIFI member's failure will impact all of the clearinghouses, which could potentially result in contagion extending to other clearinghouse members.

In 2013, the International Swaps and Derivatives Association (ISDA) forecasted, "the introduction of mandatory clearing for standard over-the-counter...derivatives will mean that central counterparties...become the most systemically important market participant."¹¹² The \$7 trillion daily turnover of OTC and exchange traded derivatives highlights this statement's prescience. "From essentially a zero base ten years ago, the Financial Stability Board estimates that 44% of all interest rate swaps and 19% of credit derivatives...were centrally cleared as of September 2014; approximately 90% of new OTC derivatives trades in CDS [Credit Default Swap] indices are centrally cleared (2014)."¹¹³

Recognizing the concentration of risk, regulators are discussing the need to develop systemic stress tests for CCPs. The failure of a SIFI clearinghouse member will impact every SIFMU clearinghouse since it is likely a member in all of them. Similarly, the failure of a clearinghouse will impact each of its members—SIFI banks. Therefore, regulators must gain a better understanding of contagion channels that potentially run between the CCPs and their members, and consider establishing "firewalls" to prevent contagion if a CCP fails.

While the post-financial crisis decline in activity may give a false impression that the FSI is safer as a result of the centralized clearance mandate, the truth is less clear. The shadow banking sector is now larger than pre-crisis levels and contributing roughly \$20 billion more to US GDP since 2007. In contrast, the investment banking industry has contracted by almost \$40 billion over the same period. This trend could potentially lend itself to larger shadow banks filling the derivative gaps that the regulated banks once controlled. The central clearing requirement was well intentioned to enhance transparency. Unfortunately, it shifted the risk of default to only a few institutions, with more concentrated, and potentially systemic, risk. The risk associated with this market did not disappear, nor did the threat of contagion—they both simply migrated from bilateral agreements to central counterparties. Mandated central clearance is an



important element of the new regulatory architecture, but it does not eliminate risk. In addition, the bilateral OTC market is still sizeable, albeit roughly half the size of its pre-crisis levels.

Risk in financial markets can usually be identified, mitigated or shifted, but it cannot be eliminated. Measures to increase transparency help identify risk, and appropriate risk management supports a healthy FSI. The converse is also true: poor or ineffective risk management represents a significant threat to global economic security and prosperity. Internationally and domestically, US policy makers and regulators need to better understand where risk has migrated, what efforts have been undertaken to manage it and what seems threaten the stability of the financial system.

Recommendations. Revisions to the current FSI regulatory framework should:

- Include system-wide oversight of activities between banks and shadow banks; monitor trends that would indicate build-up or concentration of interconnected risk.
- Level the regulatory playing field between banks and shadow banks, through ensuring shadow banks adhere to the same standards as traditional banks when providing like services. Focus on the service provided, not on the formal identity of the firm providing it.
- Individual and network stress testing of CCPs to determine their resiliency against possible contagion and to identify unseen connections that increase systemic risk.
- Designate CCPs as globally significant market utilities (G-SIFMU).
- Institute a firewall between clearinghouse members and service providers to reduce the risk of clearinghouse failure.

Cybersecurity (Individual Essay #3 by LTC Jeff Gribschaw)

Almost every banking and regulatory organization that our industry study team visited in both the US and UK identified the threat of cyber-attacks as a major challenge, and cybersecurity as a top priority. In one of the frankest assessments the threat to Wall Street from digital attacks, the chair of the SEC recently highlighted cybersecurity as the biggest risk facing the financial system.¹¹⁴ In fact, banking professionals are increasingly characterizing their firms as Information Technology (IT) companies that move money—a paradigm shift that emphasizes the significantly increased importance of the cyber domain given the growing digitization of banking assets.¹¹⁵ Firms across the FSI, both large and small, have experienced enough economic and reputational harm from cyber disruptions, across a multitude of exposure points, to encourage them to significantly invest to minimize cyber vulnerabilities and increase defensive tools and capabilities.

Cyber Threat and Consequences of Intrusion. The global FSI faces cyber threat actors that include insiders, “hacktivists,” criminals, terrorists and nation states. Common cyber-attacks span the spectrum from fraud, financial theft and intellectual property theft, to business disruption and destruction of critical infrastructure.¹¹⁶ One of the top banks in the industry provided a “cybersecurity by the numbers” presentation to our industry study team to help quantify the scope of the threat faced by banks each year. During 2015 alone, this major bank’s threat intelligence team reviewed over three million websites and took down several thousand of those determined to be malicious; processed over two and half billion phishing emails; and identified more than 300 malware threats that bypassed all defensive security protocols.¹¹⁷

Cyber-attacks that successfully target one or more elements of the cybersecurity triad (confidentiality, integrity and availability) can significantly impact a bank’s bottom line. A successful cyber-attack can result in direct financial loss as well as destroy a firm’s reputation and lead to the rapid loss of its customer base. Furthermore, the threat of cyber-attack inhibits the ability of a bank to maximize revenue generation in an already-constrained economic



environment. Cyber-attacks threaten the US national security due to the potential impact that a compromised financial system—deemed critical infrastructure—would have to the US economy.

Cybersecurity Challenges. The threat of cyber-attack demands a collective response; there are not enough resources (e.g., funds, personnel, cybersecurity tools, etc.) available for each firm in the FSI to tackle this dynamic and rapidly evolving problem alone. The largest firms in the industry are collectively spending billions of dollars to secure their cyberspace. For example, one of the largest banks in the industry that the study team visited acknowledged that its cyber budget has doubled over the last two years to a point where it is now spending approximately \$600 million annually on cybersecurity.¹¹⁸ Unfortunately, not all firms are able to afford the investment required. In fact, smaller firms must make risk-based decisions on how much and where to invest their limited budgets, resulting in potential vulnerability in the financial system that exposes every firm in the FSI to cyber threats.

The Financial Services Information Sharing and Analysis Center (FS-ISAC) and the US Computer Emergency Response Team (US-CERT) both provide significant information sharing capabilities across the FSI and government organizations. Information sharing efforts at an international level include the Europol European Cybercrime Centre (EC3)¹¹⁹ and the Global Cyber Alliance.¹²⁰ Without exception, cyber professionals in every institution identified cybersecurity as a mutual concern that did not represent an area in which firms sought to pursue a competitive business advantage. Rather, firms proactively seek to share cyber threat information and lessons learned across the industry in order to protect each other and the critical FSI infrastructure.

Multiple US federal and state regulators enforce cybersecurity laws, regulations, rules and guidelines.¹²¹ These regulators are often responsible for both large and small companies, and often expect the same high level of compliance regardless of firm size. This poses a significant challenge to firms due to the financial burden required to invest in the latest cybersecurity defensive capabilities.

Human capital challenges include the lack of enough personnel to meet requirements (capacity), the lack of enough well trained technical personnel (capability) and the competition for these individuals. These challenges exist in FSI firms, but also in government agencies that regulate FSI firms and have responsibility for critical infrastructure protection (CIP). Government agencies face the challenge of not being able to compete with the high salaries available in the private sector for the limited number of highly skilled cybersecurity experts. Providing and maintaining a highly qualified, technically experienced cybersecurity workforce will remain a challenge into the foreseeable future for the FSI.

Recommendations:

- Consider a modification to regulatory and compliance requirements based on firm size so that adequate security is required by all, but the requirement is not so burdensome as to eliminate small FSI firms and the community banking services they currently provide. Any decisions to allow a lower level of security should be disclosed to customers so they understand their risk exposure.
- Sustain the information-sharing environment fostered by the FS-ISAC and increase government sharing of classified information to select FSI personnel.
- Build upon open source framework for cybersecurity tools to support their collective use throughout the FSI; foster innovation through investment. Include artificial intelligence analysis of big data as a research and development area for improved security and reduced dependence on labor-intensive human analysis.



- Expand government and industry initiatives to motivate and inspire students at all levels (primary, secondary and post-secondary education) to pursue Science, Technology, Engineering and Math (STEM) careers focused on cybersecurity. The FSI should increase efforts to inspire potential employees to pursue cybersecurity educational opportunities, to include transition training for adults.
- Consider a special mechanism to pay government cyber experts market rates.

SPECIAL TOPIC: INCENTIVIZING ETHICS

(Individual Essay #4 by Col John Winkler)

Unethical conduct within the FSI contributed in a material way to the financial crisis. Despite this catastrophic event, eight years later, unethical conduct persists among financial advisors, senior executives and more generally within the corporate culture of firms in the FSI. Unethical conduct within the FSI results in a loss of trust and monetary value to shareholders who invest in the industry. The FSI must change the incentives to curb unethical conduct.

Financial Advisors. Chicago's Booth School of Business looked at the conduct of 4,000 financial firms and one million financial advisors from 2005 to 2015.¹²² The study found that "1 in 13 [financial advisors] were flagged for misconduct" and, more concerning, although half of those financial advisors were fired as a result of misconduct, "44% were reemployed in a year" elsewhere within the FSI.¹²³ Moreover, 38% of misconduct is committed by repeat offenders. With this large concentration of misconduct, a first offense is a good predictor of who will commit another offense.¹²⁴ In addition to shuffling repeat offenders around the industry, there is insufficient transparency to alert unsuspecting investors to the previous conduct of their financial advisors. Lack of transparency also relates to different conduct standards between broker-dealers and investment advisors. Investment advisors have a fiduciary responsibility whereas broker-dealers have a suitability responsibility. Fiduciary responsibility simply means to put the needs and interests of the investor above those of the financial advisor. The suitability standard is not as high of an ethical bar as fiduciary responsibility. Finally, instead of focusing on short-term gains, financial advisors should be incentivized to achieve long-term objectives for both the investor and firm. By deferring compensation for a period of time firms can determine whether the profits were achieved ethically and in the best interest of the investor and firm.

Recommendations to help incentivize the ethical behavior of financial advisors include:

- Require all financial advisors to have the same fiduciary standard to ensure all financial advisors are putting the needs of the client ahead of his or her own.
- Ban financial advisors fired for misconduct from reemployment within the FSI for a minimum of one year.
- Increase transparency of individual advisor misconduct; firms should publish misconduct on their website, over the phone or in person.
- Defer a percentage of compensation to individual traders until "the horizon is longer than the life of the trade."¹²⁵

Senior Executives. Stan O'Neal, former Chairman and Chief Executive Officer (CEO) of Merrill Lynch leading up to the financial crisis, is one of many examples of entitlement within financial services. Many believe Mr. O'Neal was "chiefly responsible for ratcheting up the firm's risk taking, allowing its balance sheet to get larded with squirrely debt securities."¹²⁶ Despite Merrill Lynch being bought out by Bank of America in a shotgun marriage to save the firm, O'Neal left with a "...severance package of around \$161.5 million, on top of his 2006 pay of \$91.4 million."¹²⁷ This is a specific example of how the incentive structure of CEO



compensation contributed to the unethical practice of taking excessive risk for personal gain ahead of shareholder and client interests. The Financial Conduct Authority (FCA) in the UK has taken measures to hold senior executives more accountable in the event of unethical behavior. Senior Management Regime standards have senior executives provide written acknowledgement of their responsibilities to enable accountability when adjudicating conduct issues. Another measure to hold senior executives accountable is by deferring a portion of their compensation. If the firm receives misconduct charges, instead of the shareholders footing a majority of the bill, the performance bond is used to pay for the charges. A Price Waterhouse Coopers' study on "Executive Compensation Clawbacks" finds that more boards (40%) are modifying clawback language into contracts for senior executives.¹²⁸ However, the study goes on to state that only in a few cases, despite ethical breaches, has the clawback provision been executed to reign in unethical conduct. Furthermore, the clawback portion of the Dodd-Frank Act has yet to be approved by Congress. This is another indicator that the FSI does not take the need to tie senior executive compensation to ethical behavior seriously.

Recommendations to incentivize the ethical behavior of senior executives include:

- Implement senior management regime accountability standards similar to those implemented by the Financial Conduct Authority in the UK.
- Defer a percentage of compensation that "does not vest for several years" to enable the board time to determine whether the company achieved those profits ethically or not, and decide whether the senior executive receives all, some, or none of the compensation.¹²⁹
- Pass congressional legislation to formally implement clawback provisions for senior executives in the case of an ethical breach that results in a loss to investors.

Corporate Culture. "Problems can't be blamed on isolated rogue traders, but rather on the culture of financial services firms."¹³⁰ Strategic leadership "101" says that employees pay attention to what the leader pays attention to. The prestigious Barclays PLC in London has taken several ethical hits and has paid out €7 billion in misconduct charges from 2010 to 2015.¹³¹ This has dramatically reduced profits and a loss of trust with consumers. Barclays' ethical breaches have ranged from "mis-selling payment protection insurance, identity theft, and rigging of interest rates such as the Libor."¹³² As a result of these ethical breaches, Barclays and other firms within the industry with similar conduct issues have made it a strategic objective to become a more ethically-based company. Firms within the industry are now stressing ethical conduct in annual reports and creating values that are tied to ethical conduct.

Recommendations to incentivize ethical corporate cultures include:

- Require firms to establish an ethical code of conduct, to include for the CEO and CFO
- Include a percentage of compensation and bonuses on achieving ethical goals to reinforce ethical business practices.
- Reward companies that self-report ethical breaches to regulators by taking it into consideration when taking enforcement action.¹³³

CONCLUSION

The FSI underpins the US economy, and a strong economy fuels our nation's ability to fund national security. With an impact disproportionate to its size, the FSI provides the critical infrastructure that enables the efficient flow of capital, credit and liquidity throughout not only the domestic economy, but the global economy.

Our S-C-P analysis concluded that while firms in the FSI are employing solid business strategies in response to the market structure in which they operate, they are creating only



marginal value. The current low return on equity—that is achieved by firms at or below its cost of equity—is largely due to constrained operating conditions (historically low interest rates and other macro-economic factors) and increased government regulation. While the ability for firms to create value should improve as the constrained operating conditions ease, those returns may never reach pre-crisis levels due to the new regulations that dictate capital, leverage and liquidity requirements designed to mitigate risk and improve the safety and stability of the financial system. Further, while the FSI required some new regulation to improve its safety and stability, and correct market externalities, the effort did not resolve the fragmented regulatory bureaucracy and went too far by over-regulating the industry.

It is imperative that we now comprehensively address the critical challenges facing the FSI. In addition to over-regulation in the traditional banking sector, these challenges include risk migration/concentration to unregulated non-banks and cybersecurity. Our highest priority recommendation is an independent assessment of the financial regulatory framework to include the effectiveness of the Dodd-Frank Act and other reforms, as well as simplification of the overall regulatory bureaucracy. To achieve this, the fragmentation of regulatory bodies must be addressed no matter how politically unpopular. Overlap and redundancy cause unnecessary compliance costs and create paralyzing uncertainty. The United Kingdom's post-crisis model for prudential and conduct oversight serves as an excellent example of how to simplify the regulatory framework and create more regulatory coherence.

Second, we must address risk migration and concentration, especially into the unregulated shadow-banking sectors. The regulatory framework should encompass shadow banks to the greatest extent possible, establishing a level playing field through common standards. Monitoring risky activities that have the potential to cause systemic failure must be improved. International regulators must communicate openly in order to stay ahead of accumulated risk trends. Stress tests for CCPs must be instituted to determine their resiliency against possible contagion and to identify unseen connections that increase systemic risk. Furthermore, financial regulators should prioritize CCP structural reforms.

Third, the rapid digitization of the FSI, and its growing reliance on mobile or online platforms, has greatly increased the costs for banks to ensure uninterrupted services and protection against predatory cyber-attacks against their systems and/or clients. Banks have reported that increased communications and information sharing, via FS-ISAC and other platforms, have improved their ability to protect against the cyber threat, but there is more to be done. Government participation at the national level will serve to enhance capabilities and public knowledge of adversarial capabilities. Public policy should explore ways to incentivize cyber expertise and the attractiveness of cybersecurity careers.

Finally, the financial crisis severely damaged not only Wall Street's reputation, but also the credibility of the FSI. This was primarily fueled by the lack of accountability of those in charge of the responsible institutions, within both private and public sectors. Our recommendation for the industry is to repair the trust deficit by making senior executives more accountable, to include a reformed incentive structure that places prudence and conduct ahead of profit.

Now is the time, eight years post-financial crisis and six years post-Dodd-Frank, to comprehensively address these critical challenges facing the FSI. Doing so will create a strong, dynamic FSI that is indispensable to a thriving US economy, fully capable of resourcing national security. This will translate into the FSI and US economy remaining the strongest in the world.



APPENDIX A

CAUSES OF THE “GREAT RECESSION”

In *Stress Test*, former Treasury Secretary Geithner opined on the root causes of the financial crisis that unfolded during 2007-2009. Geithner paints a picture of diffused culpability. In simple terms, he argued that borrowers took too many risks; creditors and investors were too willing to finance those risks; the government failed to rein in those risks, and then was unable to act quickly or forcefully enough when the panic hit.¹³⁴ The abridged version of Geithner’s assessment belies the dynamic confluence of complex causal factors that is best characterized as the proverbial “perfect storm.”

For starters, the fundamental business model where banks borrow short (i.e., take in short term deposits) and lend long (i.e., provide long term loans to consumers) makes the industry inherently unstable due to a lack of short term liquidity and a susceptibility to bank runs.

At a global macro-economic level, a sustained low level of interest rates produced widespread availability of credit, and large current account deficits—attracting significant amounts of global capital to the US—unleashed huge sums of capital in search of (risky) higher-yield return.

At the domestic societal level, the government’s long-standing and bi-partisan policy orientation favoring a “home ownership society” resulted in government policies that encouraged widespread loosening of lending standards for home ownership. This introduced a pervasive mentality and perverse incentives—on both the supply and demand side of loans—that drove consumers with unworthy credit into mortgages that they could not afford. The profits underwritten by government sponsored entities (GSE), Fannie Mae and Freddie Mac, in the secondary mortgage market in the 1990s tempted Wall Street banks into the profitable business of mortgage-backed securities (MBS). With demand for MBS high among investors, and a shrinking pool of credit worthy borrowers, mortgage originators and banks began to make more exotic loans, including to subprime borrowers. The fact that banks no longer maintained mortgages on their balance sheets, but instead packaged and securitized them for sale to investors, further eroded any incentive for lenders to maintain high underwriting and lending standards. Mortgage bankers earned commissions or fees based simply on the number and dollar value of mortgages sold, not on whether or not those mortgage loans performed.

At the governance level, the repeal of the Glass-Steagall Act in 1999 and other efforts to deregulate the industry for greater profitability set the stage for an early 21st century banking environment full of systemic risk with fragmented and ineffective regulatory oversight. The repeal of Glass-Steagall resulted in significant principal-agent conflicts that opaquely changed market incentives.

Systemic risk increased because all elements of the FSI became more connected in a way that allowed for contagion to quickly spread throughout the system when crisis hit. Banks became highly leveraged in complex, risky and poorly-understood investment products (e.g., MBSs, credit default obligations, credit default swaps and derivatives). Banks were not forced to hold capital reserves sufficient to maintain liquidity through a potential short-term run. Insurers, such as AIG, added to the scale of the crisis by selling credit default swaps on MBSs, which acted like insurance contracts but were also one-way bets by the insurer that the underlying mortgages were sound. Insurers also failed to hold sufficient capital reserves for the volume of



contracts they sold. A lack of transparency in the securities market provided a false sense of safety that drove a near complete lack of understanding about the true level and location of risk. Credit rating agencies charged with assigning risk ratings to complex investment products for investors and financial firms did not understand many of the complex investment products they were rating. Further, credit rating agencies arguably were victims of rating agency arbitrage, and possibly influenced by principle-agent challenges since each of the three rating agencies survived on the fees they charged to the financial firms selling these risky investment products. Financial firms were increasingly incentivized to operate in the shadow banking system where risk was not back-stopped by a government guaranteed safety net nor overseen by government regulators.

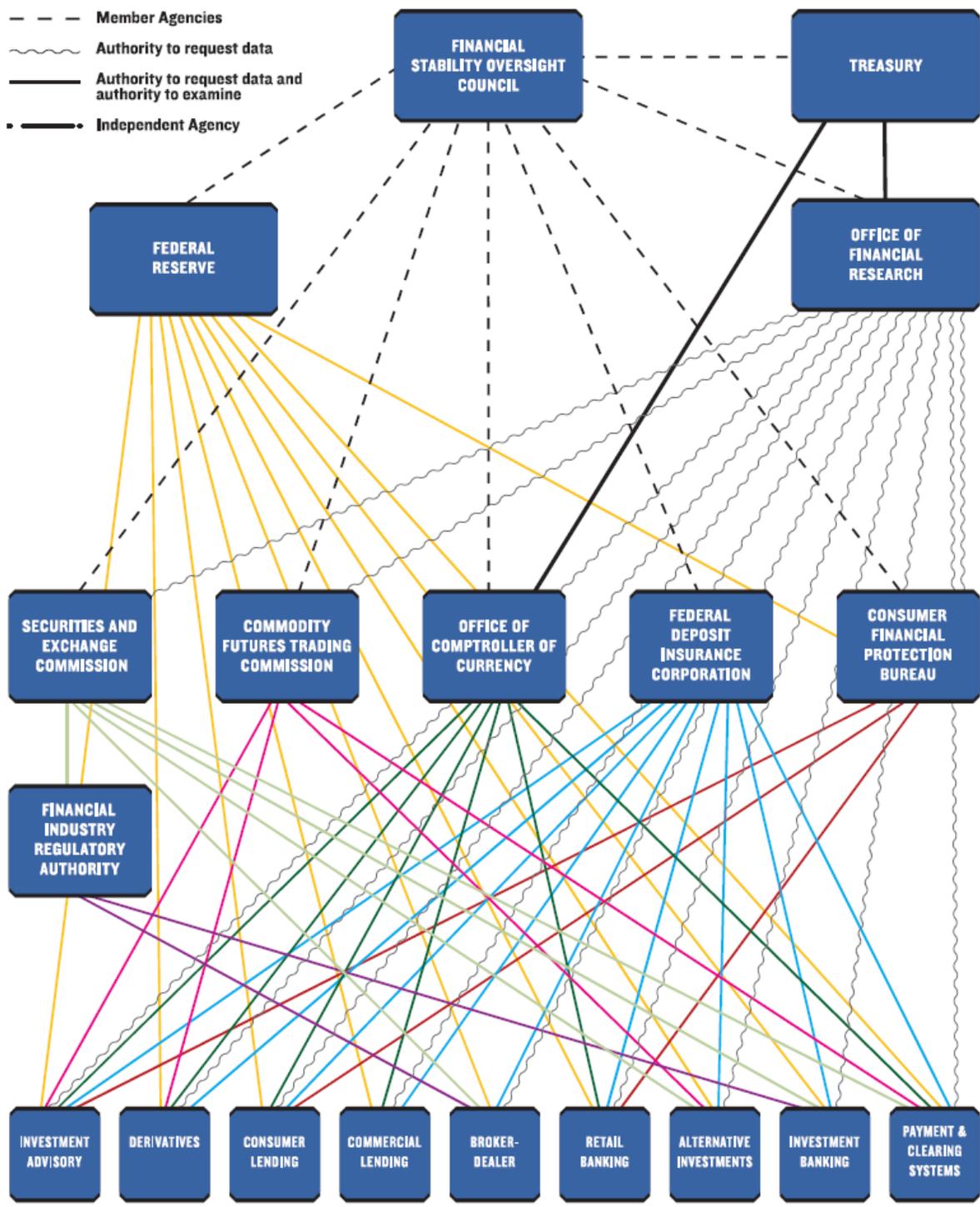
This comprehensive analysis paints the FSI as a vulnerable tinderbox leading up to the crisis. The nationwide collapse of the housing market, something previously (and falsely) assumed to be impossible, led by the widespread failure of subprime mortgages, was the spark that set ablaze the bonfire known as the financial crisis that brought the entire US economy to its knees.



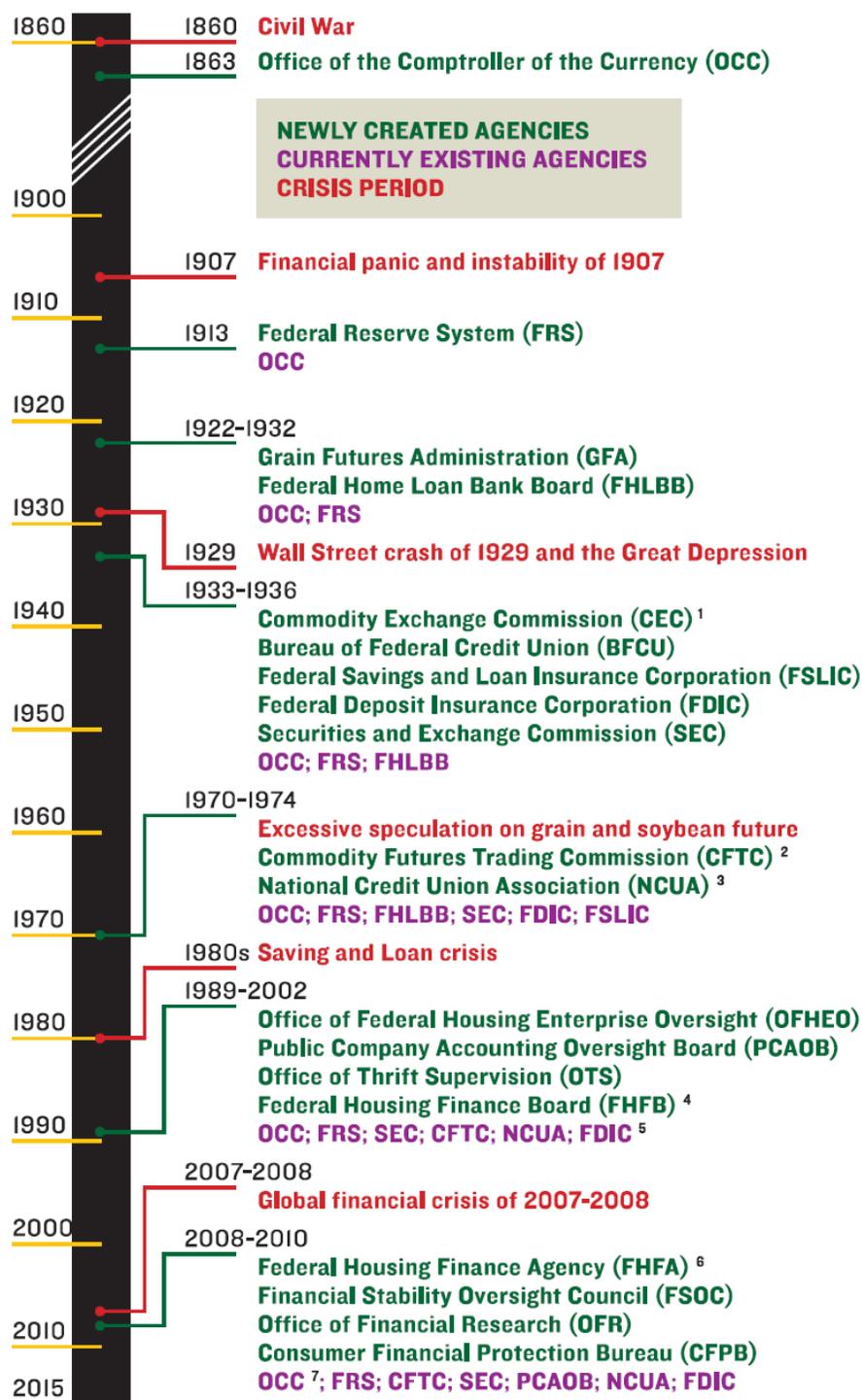
APPENDIX B

COMPARATIVE REGULATORY OVERSIGHT FRAMEWORKS (US VS. UK)

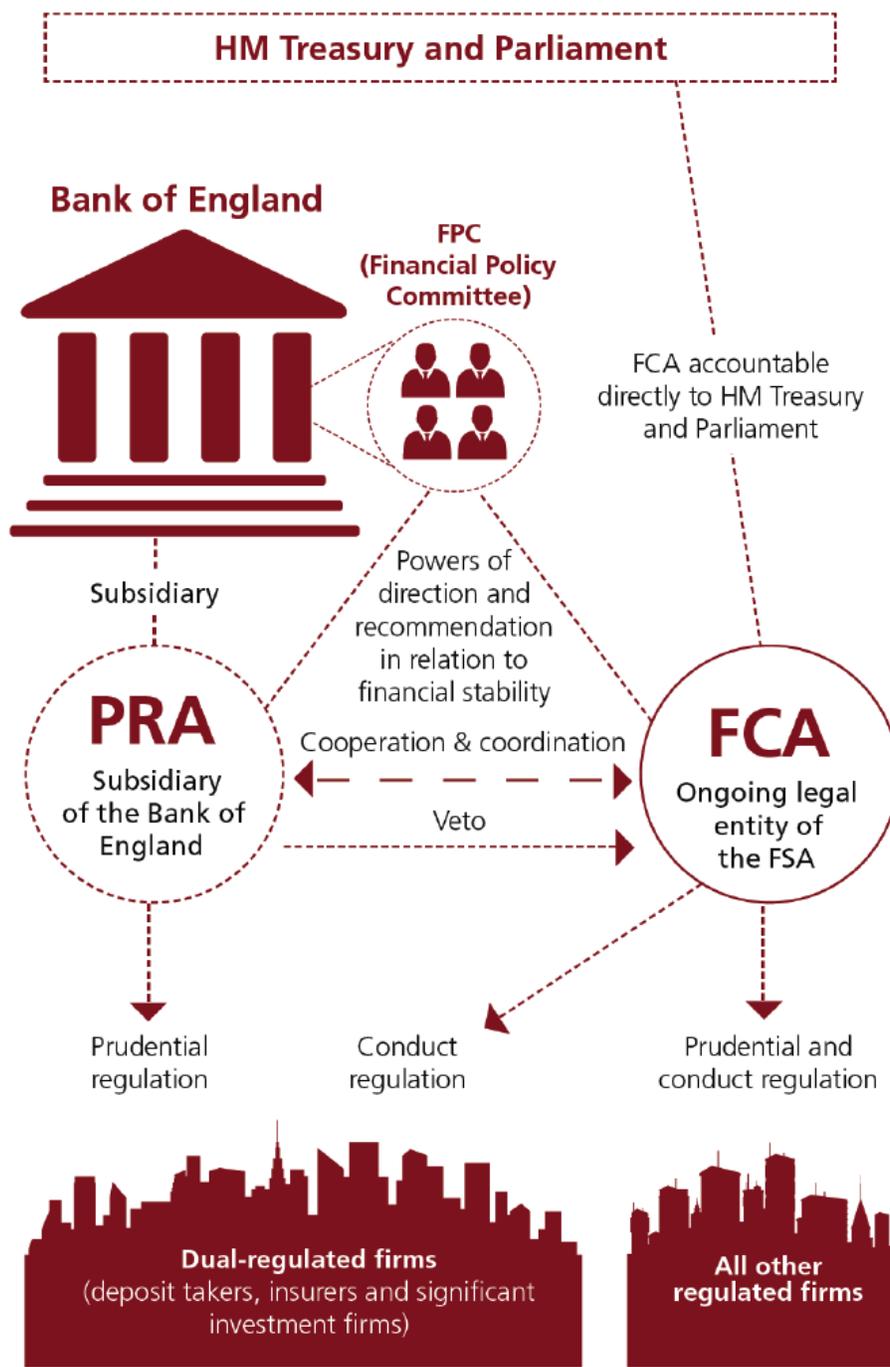
The below graphic represents the fragmentation and complexity of the US regulatory framework that evolved following the financial crisis of 2007-2009.¹³⁵



The graphic below shows a timeline for the evolution of the US financial regulatory framework as it developed over 150 years through congressional action to add agencies and eliminate others largely in an ad hoc response to financial crisis and developments.¹³⁶



In contrast to the complex and fragmented regulatory framework that evolved in the US over the past 150 years, and in response to the financial crisis of 2007-2009, the UK—with a comparable economy and financial services industry to the US—was able to develop and implement a much more simple and coherent regulatory framework following the financial crisis, which is depicted and summarized in the below two graphics.¹³⁷



Summary

A new regulatory regime has been established in the UK. Following the passage of the Financial Services Act 2012 the ground was set for the abolition of the Financial Services Authority and the creation of three new regulatory bodies: the Financial Conduct Authority, the Prudential Regulation Authority and the Financial Policy Committee. This new regime came into being on 1st April 2013.

Financial Conduct Authority (FCA):

- The FCA has an overarching strategic objective to “ensure that the relevant markets function well”.
- It also has three operational objectives:
 - Consumer protection:** securing an appropriate degree of protection for consumers.
 - Integrity:** protecting and enhancing the integrity of the UK financial system.
 - Competition:** promoting effective competition in the interests of consumers in the markets for: regulated financial services and services provided by a recognized investment exchange.
- The FCA will take a more proactive approach, including taking action early, before consumer detriment occurs.

Prudential Regulation Authority (PRA):

- The PRA is responsible for promoting the safety and soundness of systemically important firms, including insurers, and ensuring policyholders are protected in the event of a firm’s failure.
- Its approach to regulation and supervision has three characteristics:
 - Judgement-based:** using judgement in determining whether financial firms are safe and sound.
 - Forward-looking:** assessing firms not just against current risks, but also against those that could plausibly arise in the future.
 - Focused:** focusing on those issues and those firms that pose the greatest risk to the stability of the UK financial system and policyholders.

Financial Policy Committee (FPC):

- A committee within the Bank of England responsible for horizon scanning for emerging risks to the financial system as a whole and providing strategic direction for the entire regulatory regime.
- The FPC has the power to use so-called “macro-prudential tools” to counteract systemic risk. The tools could include imposing leverage limits on banks or enforcing particular capital requirements for given asset classes.
- The Bank of England is now in charge of micro-prudential and macro-prudential regulation, on top of its existing responsibilities for monetary policy, and as a result is fast becoming one of the world’s most powerful central banks.



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