
GE and the Shadow Banking Landscape

Well, my plan is more comprehensive. And frankly, it's tougher because of course we have to deal with the problem that the banks are still too big to fail... But we also have to worry about some of the other players—AIG, a big insurance company; Lehman Brothers, an investment bank. There's this whole area called "shadow banking." That's where the experts tell me the next potential problem could come from. I want to make sure we're going to cover everybody, not what caused the problem last time, but what could cause it next time.

—Hillary Clinton, Democratic presidential candidate¹

Shadow banking, as usually defined, comprises a diverse set of institutions and markets that, collectively, carry out traditional banking functions—but do so outside, or in ways only loosely linked to, the traditional system of regulated depository institutions. Examples of important components of the shadow banking system include securitization vehicles, asset-backed commercial paper (ABCP) conduits, money market mutual funds, markets for repurchase agreements (repos), investment banks, and mortgage companies. Before the crisis, the shadow banking system had come to play a major role in global finance.

—Ben Bernanke, former chairman, Board of Governors of the Federal Reserve²

On May 13, 2016, Monica Reddy's manager at Sifnos Capital Management (Sifnos), Tara Baker, approached her with a slightly bizarre request: "Starting Monday, we'd love to explore this shadow banking space. Think you could lead the charge?" Reddy was used to ambiguity at the small, upstart suburban DC investment fund. Baker admitted she got the bright idea from all the public debate between Bernie Sanders and Hillary Clinton on financial regulatory structures throughout their presidential campaigns. Reddy had seen Hillary Clinton's recent Wall Street Reform plan, which pledged to "tackle financial dangers of the 'shadow banking' system."³

Reddy, who had started at Sifnos six months before, spent her first postcollege decade at the U.S. Department of the Treasury. Although she loved the Treasury Department, she was ready to give the private sector a shot and wanted a reprieve from policy making. Most of her research at Sifnos thus far dealt with companies from the "real" side of the economy, a welcome change of pace from her financial markets focus in years prior. Despite that, it felt good to get an assignment she knew a little bit about. While Reddy had never

¹ "CNN Democratic Debate—Full Transcript," CNN.com, October 13, 2015, <http://cnnpressroom.blogs.cnn.com/2015/10/13/cnn-democratic-debate-full-transcript/> (accessed May 13, 2016).

² Ben S. Bernanke, "Some Reflections on the Crisis and the Policy Response," speech to the Board of Governors of the Federal Reserve System, April 13, 2012, <https://www.federalreserve.gov/newsevents/speech/bernanke20120413a.htm> (accessed May 13, 2016).

³ Hillary Clinton, "Wall Street Reform," Hillaryclinton.com, <https://www.hillaryclinton.com/issues/wall-street/>, (accessed May 13, 2016).

This public-sourced case was prepared by George (Yiorgos) Allayannis, Professor of Business Administration, and Jeffrey Allen (MBA '16). It was written as a basis for class discussion rather than to illustrate effective or ineffective handling of an administrative situation. Names of characters and the company for which those characters work are fictional. Copyright © 2016 by the University of Virginia Darden School Foundation, Charlottesville, VA. All rights reserved. To order copies, send an e-mail to sales@ardenbusinesspublishing.com. No part of this publication may be reproduced, stored in a retrieval system, used in a spreadsheet, or transmitted in any form or by any means—electronic, mechanical, photocopying, recording, or otherwise—without the permission of the Darden School Foundation.

worked directly on shadow banking issues, the topic had been ubiquitous in public policy circles since the global financial crisis (GFC), and she had plenty of resources on which to draw.

Notwithstanding the renewed public interest on the matter, Reddy was skeptical as to whether there were well-informed conceptions regarding the state of shadow banking. To be sure, she knew the sector had recently gained steam internationally. However, the classic conception of shadow banking in the United States that she heard described in so many postcrisis policy speeches had become less popular.⁴ Further, she was slightly troubled by the harsh dialogue surrounding shadow banking, as the industry was certainly capable of providing healthy competition with traditional banking and filling gaps in underserved markets. In fact, Reddy recalled that a contingency of policy makers insisted on referring to the industry as “market-based finance,” refusing the pejorative nature of the “shadow” adjective.⁵ On a similar note, it seemed that a single comprehensive shadow bank regulatory framework could not keep pace with the industry’s dynamism and innovation. One resource would be critical in getting to the bottom of all this—the Financial Stability Board’s (FSB’s) 2015 Global Shadow Bank Monitoring Report.⁶ She had browsed a couple of the reports in years prior but never in excruciating detail.

Rather than simply describing the state of the industry, Reddy knew that Baker would want everything couched with a certain company in the background. She had been thinking about a headline that flashed across her Morning Money news feed on March 31, 2016, which read “MetLife Beats FSOC!”⁷ Immediately her focus shifted to another company, and she realized this assignment was going to be a fantastic blend of the real and financial sides of the economy. Reddy pulled up EDGAR and grabbed the 2015 10-K for one of the world’s oldest industrial companies—General Electric (GE)—the parent company of GE Capital, the institution she had in mind. In doing so, a few primary objectives came to Reddy’s mind. First, she was particularly interested in evaluating GE CEO Jeff Immelt’s 2015 decision to divest the vast majority of GE Capital. Second, she wanted to form an opinion regarding the divestiture’s impact on GE returns moving forward, a projection that was critical to her investment research. Finally, and perhaps most importantly, she was interested in evaluating whether GE Capital did indeed fit the characteristics of a shadow bank. Much of her analysis hinged on a better understanding of this so-called shadow banking industry itself. Thus she turned her attention to that task.

The Shadow Banking Industry

Reddy had seen the advent of the term “shadow banking” attributed to PIMCO economist Paul McCulley and traced back to 2007 in countless post-GFC analyses of the system.⁸ However, thorough explanations of the system’s function and makeup before the GFC were tough to discover. She recalled one speech delivered by then-president of the Federal Reserve Bank of New York, Tim Geithner, in June 2008, before the onset of the U.S. financial meltdown, as one of the earlier public analyses of the industry. Without explicitly mentioning

⁴ Daniel K. Tarullo, “Thinking Critically about Nonbank Financial Intermediation,” speech at The Brookings Institution, November 17, 2015, <https://www.federalreserve.gov/newsevents/speech/tarullo20151117a.htm> (accessed May 17, 2016).

⁵ “Global Shadow Bank Monitoring Report 2015,” Financial Stability Board, November 12, 2015, <http://www.fsb.org/2015/11/global-shadow-banking-monitoring-report-2015/> (accessed May 14, 2016).

⁶ The Financial Stability Board (FSB) was the G-20 body responsible for monitoring global financial stability and coordinating the development of international regulatory standards for addressing financial stability issues across member jurisdictions. Through the FSB, finance ministries and regulators from international jurisdictions come together to draft minimum standards, which are ideally implemented by participating members in their domestic legal and regulatory structures. In 2016, the FSB was chaired by Bank of England Governor Mark Carney.

⁷ Ben White, “Morning Money,” *Politico*, March 31, 2016, <http://www.politico.com/tipsheets/morning-money/2016/03/morning-money-213502>, (accessed May 13, 2016).

⁸ See, for example, Bryan J. Noeth and Rajdeep Sengupta, “Is Shadow Banking Really Banking?,” *Federal Reserve Bank of St. Louis*, October 2011, <https://www.stlouisfed.org/publications/regional-economist/october-2011/is-shadow-banking-really-banking> (accessed May 14, 2016).

shadow banking, Geithner discussed “dramatic growth in the share of assets outside the traditional banking system,” in which “the scale of long-term risky and relatively illiquid assets financed by very short-term liabilities” made the system highly susceptible to banklike runs.⁹

Although pre-GFC discussions of shadow banking were lacking, there was certainly no shortage of public dialogue on the industry in the aftermath of the GFC. Reddy reexamined one of the original FSB background notes on shadow banking from 2011, which broadly identified shadow banking as “the system of credit intermediation that involves entities and activities outside the regular banking system.”¹⁰ The FSB further determined that while regulators should certainly monitor the broad universe of nonbank financial intermediaries, a more concentrated conception of shadow banking was in order. Thus it formed the narrow definition of shadow banking as “a system of credit intermediation that involves entities and activities outside the regular banking system, and raises i) systemic risk concerns, in particular by maturity/liquidity transformation, leverage and flawed credit risk transfer, and/or ii) regulatory arbitrage concerns.”¹¹ Reddy determined she would revisit some of these concepts shortly when she started thinking about risks in the system. For now, she was still concerned with zeroing in on what financial entities this system comprised.

Reddy always pictured the core of the shadow banking system, at least in the United States, to revolve substantially around the interaction of the “originate-to-distribute” model of credit intermediation and the securitization market. She recalled, for example, the practice of large, nonbank mortgage companies originating mortgage loans, then subsequently turning those loans over to the securitization process, which was facilitated by government-sponsored enterprises (GSEs), investment banks, and special-purpose and structured-investment vehicles (SPVs, SIVs). Reddy further recollected insurance companies being tied up in the process by issuing credit-risk guarantees. The system seemed also to involve money market mutual funds (MMMFs), hedge funds, and other financial institutions that got their hands on some of the by-products of the process, such as mortgage-backed securities (MBSs) and commercial paper. In this sense, shadow banking appeared to be more of a process involving numerous players rather than revolving around any one type of institution. Actually, she remembered attending a 2012 conference where then-chairman of the Federal Reserve, Ben Bernanke, relayed a helpful example of the process she had in mind. Conveniently, the FSB included a visual depiction of this procedure in its 2011 report, which she reformulated and paired with Bernanke’s description (**Exhibit 1**).

Scope and Trends

Despite some emerging clarity surrounding the nature of shadow banking, Reddy still felt that she had not established a thorough understanding of the scope of the system. In reviewing her FSB materials, it seemed that a working proxy for the scope of shadow banking before 2015 was the group of institutions known as “other financial intermediaries” (OFIs).¹² Data suggested that assets of OFIs had grown substantially since 2002 (**Exhibit 2**). Notably, however, there was a distinct dip in OFIs in 2008, owing most likely to the collapse of many nonbank financial structures in the United States around that time.

⁹ Timothy F. Geithner, “Reducing Systemic Risk in a Dynamic Financial System,” speech at the Economic Club of New York, June 9, 2008, <https://www.newyorkfed.org/newsevents/speeches/2008/tfg080609.html> (accessed May 14, 2016).

¹⁰ “Shadow Banking: Scoping the Issues,” Financial Stability Board, April 12, 2011, <http://www.fsb.org/2011/04/shadow-banking-scoping-the-issues/> (accessed May 14, 2016).

¹¹ <http://www.fsb.org/2011/04/shadow-banking-scoping-the-issues/>.

¹² The FSB defined OFIs as “all financial intermediaries that are not classified as banks, insurance companies, pension funds, public financial institutions, central banks, or financial auxiliaries.” <http://www.fsb.org/2015/11/global-shadow-banking-monitoring-report-2015/>.

This concept of OFIs seemed consistent with the FSB's broader definition of shadow banking. However, there had to be a separate quantification associated with the FSB's narrower definition. And indeed, in its 2015 Global Shadow Bank Monitoring Report, the FSB published an "economic functions approach" to identifying shadow banking activities, which classified those types of financial activities that fulfilled the narrow definition.¹³ Reddy made note of these economic functions, their descriptions, and their typical entity types (**Exhibit 3**). Additionally, she reviewed data breaking down the share of shadow banking assets by economic function (**Exhibit 4**), along with the growth in shadow banking consistent with the narrower scope (**Exhibit 5**), and the distribution of worldwide financial assets among banks, OFIs, and shadow banks (**Exhibit 6**). Unfortunately, the FSB could only trace data for the narrow measure back to 2010. Nevertheless, the data seemed to run counter to some of the commonly held beliefs about shadow banking. Trends in the United States may have influenced the landscape because the United States maintained by far the largest share of global shadow banking assets (**Exhibit 7**). After the GFC, however, one of the most significant drivers of shadow banking growth—U.S. consumer credit—stalled significantly (**Exhibit 8**). Conversely, China's share of worldwide shadow banking assets had grown markedly (**Exhibit 7**). In fact, Reddy had reason to believe the FSB's data underrepresented shadow banking activity in China. Due to a definitional discrepancy, China's FSB shadow banking data represented purely OFIs.¹⁴ Meanwhile, Reddy knew that Chinese shadow banking was linked primarily to banks engaging in off-balance sheet activities. Specifically, a large portion of shadow banking activity had been generated by banks or trust companies offering wealth-management products (WMPs) to yield-starved investors and lending directly to small and medium enterprises (SMEs) or entrepreneurs, who might not otherwise fit state-mandated lending requirements.¹⁵ Chinese OFIs, therefore, did not capture the full shadow banking landscape.

The FSB's data was a start in understanding the scope of and trends in the shadow banking sector, but Reddy was well aware that one of the big challenges in this arena revolved around data reliability. Many of the institutions that operated in this space did not have regulatory or public company reporting requirements. In fact, a Federal Reserve official had conceded that regulators' "view of developments" in "the shadow banking sector—remains incomplete."¹⁶ In any case, Reddy believed she had a decent grasp on the general nature of the shadow banking industry. Now, she wanted to more fully examine the typical business model the industry pursued.

The Business Model¹⁷

To understand the shadow banking business model, Reddy thought it wise to revisit the nature of traditional banking. At the most basic level, traditional banks intermediated between individual lenders and borrowers. Individuals typically could not lend directly to borrowers due to liquidity, timing, and informational constraints. The bank filled this gap by pooling deposits, of which they only needed to keep a fraction on hand, and seeking to find creditworthy borrowers who could put the funds to productive use. In this manner, banks engaged in

¹³ <http://www.fsb.org/2015/11/global-shadow-banking-monitoring-report-2015/>.

¹⁴ The FSB noted in its monitoring report that China disagreed with the characterization of shadow banking activities, and, therefore, its shadow banking data was purely a reflection of its OFI activity. <http://www.fsb.org/2015/11/global-shadow-banking-monitoring-report-2015/>.

¹⁵ Wei Jiang, "The Future of Shadow Banking in China," Columbia Business School: Jerome A. Chazen Institute of International Business, 2015, http://www8.gsb.columbia.edu/chazen/globalinsights/sites/globalinsights/files/Shadow%20Banking%20in%20China_Chazen%20Institute.pdf (accessed May 15, 2016).

¹⁶ Stanley Fischer, "Financial Stability and Shadow Banks: What We Don't Know Could Hurt Us," speech at the 2015 Financial Stability Conference, December 3, 2015, <https://www.federalreserve.gov/newsevents/speech/fischer20151203a.htm> (accessed May 16, 2016).

¹⁷ Unless otherwise noted, concepts in this section are derived from <https://www.stlouisfed.org/publications/regional-economist/october-2011/is-shadow-banking-really-banking>.

maturity and liquidity transformation.¹⁸ In the absence of backstops, market uncertainty could result in bank runs and fire sales. As an example, if a significant number of depositors withdrew their money at the same time, banks might need to liquidate assets to meet redemptions, which they may only be able to do at suppressed prices. This could ripple throughout the financial system, causing widespread asset price declines. To prevent such market panic, many countries established certain financial stability protections, such as deposit insurance, central bank liquidity backstops, and consolidated supervisory structures geared toward preserving the safety and soundness of banking entities.

Although the nature of shadow banking appeared similar to traditional banking, a few significant differences stuck out to Reddy. First, while both traditional and shadow banks were in the business of extending credit, it certainly seemed that the shadow banking industry was averse to holding loans to maturity, relying instead heavily on securitization and the originate-to-distribute model of lending. The second difference revolved around shadow banks' exposure to government oversight and safety nets: they seemed to have little to no exposure in either of these areas. To be sure, some were regulated for various aspects of their business, particularly to the extent that they were dealing in securities. However, only commercial banks were subject to a comprehensive, prudential bank supervision regime. Critically, shadow banks also did not have access to deposit insurance that could help prevent runs and fire sales. The other major difference existed in shadow banks' funding models. Nearly every resource Reddy consulted highlighted shadow banks' reliance on short-term wholesale funding markets. Bernanke, for instance, posited that shadow banks relied on "various forms of short-term wholesale funding, including commercial paper, repos, securities lending transactions, and interbank loans."¹⁹ Reddy knew that traditional banks used these funding sources as well, but it seemed that the shadow banking system was particularly reliant on them, given its inability to take on deposits. To think more clearly about these distinct funding arrangements, Reddy gathered her thoughts into a diagram illustrating an example of a repo transaction, which she viewed as a common example of these short-term wholesale funding streams (**Exhibit 9**). Clearly, there seemed to be risks involved in all of this, and Reddy would soon investigate those. However, she was still not convinced that she fully understood why these institutions existed in the first place—a matter that lay at the heart of her analysis.

Why Do Shadow Banks Exist?

The FSB suggested that "non-bank financing provides a valuable alternative to bank funding and helps support real economic activity."²⁰ To Reddy, it seemed that the shadow banking industry could indeed be a highly valuable source of financial innovation, competition, and diversification, with the ability to lower costs across the financial system.²¹ Perhaps most importantly, the industry appeared to fill significant gaps in the financial system with both sides of its balance sheet. Certainly she understood the enhanced access to credit the shadow banking system could provide, but the benefits of the industry's funding model seemed less obvious. Thus she began her analysis there.

In many economies, cash-rich entities, such as corporations and pension funds, have relatively few safe and logical places to store their excess funds. Using the United States as an example, deposit insurance limits often

¹⁸ Maturity and liquidity transformation involve the use of shorter-term and more liquid funds, such as deposits, to finance longer-term and more illiquid assets, such as loans. <http://www.fsb.org/2011/04/shadow-banking-scoping-the-issues/>.

¹⁹ <https://www.federalreserve.gov/newsevents/speech/bernanke20120413a.htm>.

²⁰ "Transforming Shadow Banking into Resilient Market-Based Finance: An Overview of Progress," Financial Stability Board, November 12, 2015, <http://www.fsb.org/2015/11/transforming-shadow-banking-into-resilient-market-based-finance-an-overview-of-progress/> (accessed May 17, 2016).

²¹ <https://www.stlouisfed.org/publications/regional-economist/october-2011/is-shadow-banking-really-banking>.

deterred such entities from simply placing their money in bank accounts.²² The FDIC insurance limit was \$100,000 until October 2008, at which point the limit was temporarily raised to \$250,000 and then permanently set to that level in 2010.²³ As a further complication, until 2011, banks were prohibited from offering interest on checking accounts, which served as a further deterrent to large cash-holders placing money in the traditional banking system.²⁴ Thus the shadow banking system emerged as a channel for cash-rich investors to store their money, particularly through investing in commercial paper, participating in repo transactions, or placing their funds with MMMFs, while earning some return and preserving demand-like features of deposits.²⁵ Meanwhile, on the credit side, Federal Reserve Governor Daniel Tarullo described shadow banks' role: "Nonbank intermediaries can also provide credit to borrowers that are underserved or unserved by traditional banks."²⁶ This property of shadow banking seemed especially important at present, given the lack of credit growth following the GFC and the anecdotes Reddy constantly heard related to the difficulty SMEs faced in obtaining financing for growth. In fact, she had read about some innovative attempts by hedge funds and private equity groups to create "specialized loan funds" geared toward midmarket businesses, one of which was created by the DC private equity powerhouse the Carlyle Group.²⁷

Reddy believed that the innovative and dynamic properties of shadow banking were the key to unlocking the competition, credit access, diversification benefits, and cost reduction the industry could offer. It seemed that the shadow banking industry was simply more nimble, dealt with less bureaucracy, and was more open to taking advantage of technology than the traditional banking sector. A prime example of this was the ongoing revolution in financial technology and the rise of online marketplace lending. Reddy had heard of a few of these entities, such as Lending Club, SoFi, and OnDeck. Her former employer, the Treasury Department, recently released an interesting white paper investigating the benefits and risks of such developments. Its description of the industry was intriguing:

Advances in technology and data availability are changing the way consumers and small businesses secure financing. Leveraging these developments, online marketplace lenders offer faster credit to consumers and small businesses. Over the past ten years online marketplace lending companies have evolved from platforms connecting individual borrowers with individual lenders, to sophisticated networks featuring institutional investors, financial institution partnerships, direct lending, and securitization transactions.²⁸

This was precisely the type of financial innovation Reddy had in mind when she considered the agility and dynamism of shadow banking. Of course, as with all opportunities in the financial arena, online marketplace

²² <https://www.stlouisfed.org/publications/regional-economist/october-2011/is-shadow-banking-really-banking>.

²³ "Basic FDIC Insurance Coverage Permanently Increased to \$250,000 per Depositor," FDIC press release, July 21, 2010, <https://www.fdic.gov/news/news/press/2010/pr10161.html> (accessed May 17, 2016).

²⁴ Banks were prohibited from offering interest on demand deposits until Dodd-Frank (2011) repealed the standard set by Glass-Steagall in 1933. The measure was designed to prevent banks from competing heavily on deposit accounts and putting the short-term funding to use in equity markets, which was believed to be a cause of the 1929 market crash. <https://www.stlouisfed.org/publications/regional-economist/october-2011/is-shadow-banking-really-banking>; Dodd-Frank Wall Street Reform and Consumer Protection Act, Section 627, July 2010, <https://www.govtrack.us/congress/bills/111/hr4173/text> (accessed May 17, 2016); "What is Regulation Q? Why Was it Repealed?," FinRegHQ, July 5, 2016, <http://www.finreghq.com/articles/regulation-q-repealed-reg-q-provides-exceptions/> (accessed July 9, 2016).

²⁵ Demand-like features referred to the ability to easily withdraw money, with little to no restriction. <https://www.stlouisfed.org/publications/regional-economist/october-2011/is-shadow-banking-really-banking>.

²⁶ <https://www.federalreserve.gov/newsevents/speech/tarullo20151117a.htm>.

²⁷ Carlyle GMS Finance defined mid-market companies as those with EBITDA between \$10 and \$100 million. Carlyle GMS Finance, Form 10-Q, <https://www.sec.gov/Archives/edgar/data/1544206/000119312516584027/d357694d10q.htm> (accessed May 17, 2016); "Global Shadow Bank Monitoring Report 2013," 41–42, Financial Stability Board, November 14, 2013, http://www.fsb.org/wp-content/uploads/r_131114.pdf (accessed May 17, 2016).

²⁸ Dan Cruz, "Opportunities and Challenges in Online Marketplace Lending," United States Department of the Treasury, May 10, 2016, <https://www.treasury.gov/connect/blog/Pages/Opportunities-and-Challenges-in-Online-Marketplace-Lending.aspx> (accessed May 17, 2016).

lending carried risks. Treasury was apt to point out that beyond having minimal regulatory oversight, these lenders had grown up in an era of low interest rates, and their credit demand had yet to be tested in a downward cycle.²⁹ It was uncertain how these business models would perform in downward credit cycles or higher-interest-rate environments; in the words of Jamie Dimon, CEO of JPMorgan Chase & Co., “If they have to borrow in the marketplace with individuals, hedge funds or securitized markets, they won’t be there in tough markets.”³⁰ Nevertheless, these and other institutions that emerged in recent years demonstrated the role, benefits, and economic function of the shadow banking industry. Despite these benefits, so much of the literature Reddy examined focused on the substantial risks of shadow banking, which explicitly came to fruition during the GFC. As such, she could not formulate a complete picture of shadow banking without deepening her understanding of these risks.

Risks of the Shadow Banking Industry

Reddy felt that she had already developed some notion of shadow banking risks in exploring the business model. In a recent speech, Tarullo summarized the basic idea, explaining, “What we might refer to as the prototypical form of shadow banking presented the kind of risk associated with traditional banking prior to the creation of deposit insurance—that of destabilizing short-term creditor runs that lead to defaults and asset fire sales.”³¹ Having processed numerous perspectives on the risks of the shadow banking sector, Reddy developed a list of key risks and their associated descriptions (**Exhibit 10**). All of these risks manifested themselves intensely in various aspects of the GFC. Reddy recalled a perfect example, for instance, of many of these dangers at work in the turmoil that struck the MMMF industry. Specifically, she vividly remembered the day the Reserve Primary Fund, one of the largest and oldest MMMFs “broke the buck.” That is, its net asset value (NAV) dropped below one dollar due to its heavy exposure to Lehman Brothers commercial paper, the value of which essentially plummeted to zero upon Lehman Brothers’ collapse.³² To prevent massive runs on the MMMF industry and ensuing fire sales, the Treasury Department had to step in and temporarily insure MMMFs.³³

While she believed her list was a thorough reference for shadow banking risks, Reddy thought two of these—interconnectedness and regulatory arbitrage—deserved some additional attention, as the terms were frequently cited in explanations for the GFC. With respect to interconnectedness, policy makers seemed particularly interested in the degree to which the shadow banking system was interlinked with the formal banking sector.³⁴ Clearly, the higher degree of interconnectedness, the easier it would be for financial vulnerabilities to spread throughout the financial sector. Reddy took notice of one such measure of interconnectedness, the percent of banks’ credit and funding exposure to OFIs, which appeared to have accelerated dramatically in the years leading up to the GFC but had cooled somewhat since (**Exhibit 11**). An example of this on the credit side might involve a commercial bank extending a loan or engaging in a repo with a shadow banking institution.³⁵ Conversely, on the funding side, a bank might receive a large deposit from a shadow bank that eclipsed deposit insurance limits.³⁶ Meanwhile, regulatory arbitrage seemed to constitute its

²⁹ <https://www.treasury.gov/connect/blog/Pages/Opportunities-and-Challenges-in-Online-Marketplace-Lending.aspx>.

³⁰ Hugh Son and Jennifer Surane, “Dimon Says Online Lenders’ funding not Secure Enough in Tough Times,” Bloomberg, May 11, 2016, <http://www.bloomberg.com/news/articles/2016-05-11/dimon-says-online-lenders-funding-isn-t-secure-in-tough-times> (accessed Aug. 2, 2016).

³¹ <https://www.federalreserve.gov/newsevents/speech/tarullo20151117a.htm>.

³² Diya Gullapalli, Shefali Anand, and Daisy Maxey, “Money Fund, Hurt by Debt Tied to Lehman, Breaks the Buck,” *Wall Street Journal*, September 17, 2008, <http://www.wsj.com/articles/SB122160102128644897> (accessed May 18, 2016).

³³ U.S. Department of the Treasury, “Treasury Announces Temporary Guarantee Program for Money Market Funds,” September 29, 2008, <https://www.treasury.gov/press-center/press-releases/Pages/hp1161.aspx> (accessed May 18, 2016).

³⁴ <http://www.fsb.org/2015/11/global-shadow-banking-monitoring-report-2015/>.

³⁵ <http://www.fsb.org/2015/11/global-shadow-banking-monitoring-report-2015/>.

³⁶ <http://www.fsb.org/2015/11/global-shadow-banking-monitoring-report-2015/>.

own category of risk. Policy makers were concerned with the degree to which shadow banks conducted banklike activities without being subject to banking supervision.³⁷ This notion was one of the primary drivers of the “shadow” characterization of the industry. Reddy knew a thing or two about regulation from her days at the Treasury Department, but even she found the world of shadow banking regulation, or lack thereof, to be highly confusing. Nevertheless, she believed it was critical to investigate aspects of the shadow bank regulatory environment, particularly since regulation played an enormous role with her company of interest.

Regulating the Sector

Chairman Bernanke plainly stated, “It is clear that the statutory framework of financial regulation in place before the crisis contained serious gaps. Critically, shadow banking activities were, for the most part, not subject to consistent regulatory oversight.”³⁸ But subjecting shadow banking to a comprehensive regulatory regime was not a simple task. Any regulatory framework would need flexibility to adapt to the remarkable diversity of the industry while also balancing the potentially competing objectives of financial innovation and financial stability. Given the dynamism and diversity of the industry, Reddy was skeptical about whether any regulatory structures could comprehensively keep pace with shadow banking developments. Governor Tarullo seemed to agree: “Shadow banking is not a single, identifiable ‘system,’ but a constantly changing and largely unrelated set of intermediation activities pursued by very different types of financial market actors. Indeed, the very rigor of post-crisis reforms to prudential regulation may create new opportunities for such activities.”³⁹ The post-GFC years had seen a significant degree of financial reform. Thus far, however, there was no comprehensive regime for regulating shadow banks. Despite this, there had been a significant number of postcrisis provisions that regulated activities in the shadow banking field and sought to limit regulatory arbitrage. Reddy catalogued a few of these shadow banking–related measures (**Exhibit 12**). One of the provisions, perhaps the only measure thus far that sought to identify specific nonbank financial entities for enhanced regulation, was particularly important for her analysis. This was the authority Dodd-Frank conferred upon the Treasury Department’s Financial Stability Oversight Council (FSOC) to designate certain firms as systemically important nonbank financial institutions (nonbank SIFIs), thus subjecting them to the Federal Reserve’s Enhanced Prudential Standards program.⁴⁰ Only four entities had been designated by FSOC as nonbank SIFIs: AIG, MetLife, Prudential, and her entity of interest—GE Capital.

GE Capital

Although the origins of GE Capital could be traced back to 1943 under its former existence as GE Credit Corporation, most analysts placed GE Capital’s true beginning in the 1980s, when then-CEO Jack Welch sought to diversify the entity’s forays in financial services.⁴¹ Indeed, far from simply supporting GE’s industrial and consumer products businesses, GE Capital grew into a fully diversified financial services organization, operating in areas that had little to do with GE’s traditional business lines. In its 2007 annual report, GE Capital confirmed this reality: “Financing and services offered by GE Capital are diversified, a significant change from the original business of GE Capital, which was financing distribution and sale of consumer products and other

³⁷ <http://www.fsb.org/2011/04/shadow-banking-scoping-the-issues/>.

³⁸ <https://www.federalreserve.gov/newsevents/speech/bernanke20120413a.htm>.

³⁹ <https://www.federalreserve.gov/newsevents/speech/tarullo20151117a.htm>.

⁴⁰ Dodd-Frank Wall Street Reform and Consumer Protection Act, Section 113, July 2010, <https://www.govtrack.us/congress/bills/111/hr4173/text> (accessed May 17, 2016).

⁴¹ General Electric Capital Corporation (GECC) annual report, 2007; Bouree Lam, “GE’s First Steps Away from Banking,” *The Atlantic*, June 9, 2015, <http://www.theatlantic.com/business/archive/2015/06/ges-first-steps-away-from-banking/395396/> (accessed May 19, 2016).

GE products. Currently, GE manufactures few of the products financed by GE Capital.”⁴² Reddy made note of the array of GE Capital operating areas, which included various forms of commercial and consumer finance (**Exhibit 13**). Between 2004 and 2007, it even owned a U.S. subprime mortgage lender.⁴³ GE Capital maintained that most of its expertise, at least on the commercial side, involved midmarket entities.⁴⁴ In any case, in 2007, on the eve of the financial crisis, GE Capital accounted for a remarkable, and perhaps disproportionate, share of its industrial parent’s operating segment profitability, reaching over 40% in 2007 (**Exhibit 14**), while maintaining assets over \$600 billion (**Exhibit 15**). Before investigating recent GE Capital developments that were fundamental to her analysis of GE’s investment attractiveness, Reddy was interested in examining whether GE Capital fit the shadow banking characteristics that she had spent all day uncovering.

GE Capital: A Shadow Bank?

It seemed that the going public assumption was that GE Capital was indeed a shadow bank. Nearly every article that Reddy pulled up regarding GE’s “GE Capital Exit,” a matter she would explore later, referred to GE Capital as a shadow bank.⁴⁵ Paul Krugman, the world-renowned economist, perhaps put it the most directly: “GE Capital was a quintessential example of the rise of shadow banking.”⁴⁶ Further, on January 8, 2013, GE Capital was designated as a nonbank SIFI by FSOC, which would subject the entity to a more rigorous banklike supervisory program administered by the Fed.⁴⁷ Reddy pulled a number of key passages from the FSOC’s designation notice for further scrutiny (**Exhibit 16**). Many of the FSOC’s GE Capital descriptions, including wholesale funding reliance, leverage, interconnectedness, and risks of fire sales, among others, seemed wholly consistent with the shadow banking risks cited in the FSB’s and other resources. Reddy confirmed many of these characteristics through her own scrubbing of GE Capital’s annual reports. Historically, GE Capital’s reliance on short-term funding (**Exhibit 17**) and degree of leverage (**Exhibit 18**) were high, although they each reached their peak around 2007 to 2008 and had come down substantially since then. Despite these shadow bank-like characteristics, one piece of the FSOC’s designation notice muddled her thinking. Specifically, the notice revealed that GE Capital was, in fact, a savings and loan holding company (SLHC), and thereby subject to consolidated supervision by the Federal Reserve.⁴⁸ This reality did not seem consistent with the notion that shadow banks acted outside the purview of consolidated regulation. Reddy would have to spend a little more time examining the FSOC’s explanation for designating GE Capital as a nonbank SIFI, having recalled there being some SIFI designation requirement that FSOC consider whether the entity was already prudentially regulated.⁴⁹ In any case, Reddy believed the uncertainty surrounding GE Capital’s status as a shadow bank was

⁴² General Electric Capital Corporation annual report, 2007.

⁴³ General Electric Capital Corporation annual reports, 2004 and 2007.

⁴⁴ General Electric Capital Corporation annual report, 2007.

⁴⁵ See, for example, Patrick Jenkins, “GE Capital Tells a Cautionary Tale for Shadow Banks,” *Financial Times*, April 30, 2015, <http://www.ft.com/intl/cms/s/0/802d0aee-dfa7-11e4-a06a-00144feab7de.html#axzz498RcyVuE> (accessed May 19, 2016); Paul Krugman, “A Victory Against the Shadows,” *New York Times*, April 11, 2015, http://krugman.blogs.nytimes.com/2015/04/11/a-victory-against-the-shadows/?_r=0 (accessed May 19, 2016); Matt O’Brien, “Financial Reform is Working, Kind of: GE Doesn’t Want to be a Bank Anymore,” *Washington Post*, April 14, 2015, <https://www.washingtonpost.com/news/energy-environment/wp/2015/04/14/americas-industrial-giant-is-changing-its-mind-about-being-a-finance-company/> (accessed, May 19, 2016); Justin Fox, “GE Is No Longer a Bank,” *Bloomberg*, January 15, 2016, <https://www.bloomberg.com/view/articles/2016-01-15/general-electric-is-no-longer-a-bank> (accessed May 19, 2016).

⁴⁶ http://krugman.blogs.nytimes.com/2015/04/11/a-victory-against-the-shadows/?_r=0.

⁴⁷ Financial Stability Oversight Council, “Basis of the Financial Stability Oversight Council’s Final Determination Regarding General Electric Capital Corporation, Inc,” July 8, 2013, <https://www.treasury.gov/initiatives/fsoc/designations/Documents/Basis%20of%20Final%20Determination%20Regarding%20General%20Electric%20Capital%20Corporation,%20Inc.pdf> (accessed May 19, 2016).

⁴⁸ <https://www.treasury.gov/initiatives/fsoc/designations/Documents/Basis%20of%20Final%20Determination%20Regarding%20General%20Electric%20Capital%20Corporation,%20Inc.pdf>.

⁴⁹ <https://www.treasury.gov/initiatives/fsoc/designations/Documents/Basis%20of%20Final%20Determination%20Regarding%20General%20Electric%20Capital%20Corporation,%20Inc.pdf>.

likely characteristic of many entities that were assumed to be part of the industry's nucleus. The uncertainty reminded her that any definition of the shadow banking industry would struggle to accurately capture all of the activities that drove the system. Despite this ambiguity, GE Capital's parent company, GE, had a plan in the works to largely eliminate the entity from its operations.

GE Capital Exit Plan

On April 10, 2015, GE announced that it would sell most of GE Capital and return to focusing on its core industrial businesses. Whatever remained of its financial operations would largely be geared toward “vertical financing businesses—GE Capital Aviation Services, Energy Financial Services and Healthcare Equipment Finance,” which had direct connections to its core business.⁵⁰ In the release, GE explained fairly directly that “the business model for large, wholesale funded financial companies has changed, making it increasingly difficult to generate acceptable returns going forward.”⁵¹ Reddy wanted to explore this claim more fully. To do so, she pulled the return on equity (ROE) for GE Capital, the ROE for one of its companion nonbank SIFIs, MetLife, and the aggregate ROE for commercial banks with assets greater than \$100 billion from 2005 to 2014 (**Exhibit 19**). The picture was interesting. In general, both GE Capital and MetLife solidly outperformed comparable commercial banks before the GFC. Since then, ROEs for the three groups had converged, although MetLife was somewhat volatile. This, to Reddy, seemed to provide a solid argument for the GE Capital Exit plan, as the entity could no longer outperform traditional banks, which likely maintained lower cost of funding due to their substantial use of deposit funding, an inexpensive and federally insured source of funds. Reddy further compared GE's historical price-to-book ratio to a large commercial bank—Bank of America (**Exhibit 20**)—and pulled GE's historical stock price since 2005 (**Exhibit 21**), which collapsed during the GFC, perhaps owing to the weight of GE Capital in GE's business at the time. Since then, GE had rebounded progressively. Reddy also thought it would be productive to get a sense for how much equity GE Capital had tied up in regulatory requirements. Specifically, she measured GE's common equity tier 1 (CET1) position relative to Basel III requirements (**Exhibits 22 and 23**).⁵²

It was clear that investors appreciated the exit plan. Upon announcement, GE's share price jumped nearly 11% (**Exhibit 24**). As of year-end 2015, GE seemed to be making good on many of its exit plan promises. Ultimately, it aimed to reduce GE Capital's assets by \$310 billion, while substantially reducing GE Capital's reliance on short-term funding and enhancing industrials' share of profitability to 90% by 2018, among other targets.⁵³ Reddy took stock of all of the GE Capital dispositions that had occurred thus far. By the end of 2015, GE Capital's assets had been reduced by nearly \$189 billion, with another \$64 billion in scheduled dispositions (**Exhibit 25**). Reddy had already noticed the massive reduction in short-term funding reliance that had occurred over the years (**Exhibit 17**). GE Capital further detailed in its annual Dodd-Frank–mandated Resolution Plan that commercial paper issuance had declined to \$5 billion, a remarkable drop from its high mark of \$101 billion at the end of 2007.⁵⁴ There was one last piece of the GE Capital Exit plan that caught Reddy's eye. The first page of its original announcement read: “Will work with regulators to terminate GE Capital's SIFI

⁵⁰ “GE to Create Simpler, More Valuable Industrial Company by Selling Most GE Capital Assets; Potential to Return More Than \$90 Billion to Investors through 2018 in Dividends, Buyback & Synchrony Exchange,” GE press release, April 10, 2015, https://www.ge.com/sites/default/files/ge_webcast_press_release_04102015_1.pdf (accessed May 19, 2016).

⁵¹ https://www.ge.com/sites/default/files/ge_webcast_press_release_04102015_1.pdf.

⁵² GE Capital had to abide by all Basel III requirements, except the Global SIFI surcharge, which was reserved for the United States' largest bank holding companies.

⁵³ https://www.ge.com/sites/default/files/ge_webcast_press_release_04102015_1.pdf; GE Capital, “2015 Resolution Plan: Public Section,” Federal Reserve, <https://www.federalreserve.gov/bankinforeg/resolution-plans/ge-capital-1g-20151231.pdf> (accessed May 19, 2016).

⁵⁴ <https://www.federalreserve.gov/bankinforeg/resolution-plans/ge-capital-1g-20151231.pdf>.

designation.”⁵⁵ On March 30, 2016, a federal judge overturned MetLife’s designation as a SIFI in a highly controversial ruling, which engendered the ire of the FSOC and Treasury Department.⁵⁶ Then, on March 31, GE made good on its exit plan promise, filing a petition to the FSOC for the abolishment of GE Capital’s SIFI status.⁵⁷ All of a sudden, one of the government’s hallmark post-GFC nonbank financial regulatory efforts appeared feeble. Reddy pulled share prices for each of the SIFIs around the time of all this action and noticed a distinct jump for MetLife around the March 30 announcement (**Exhibit 26**).

Reddy was in desperate need of a break. She had consumed a large amount of information on the shadow banking industry and GE Capital in a very short time period. As usual, however, as she prepared to embark on her atypical reverse commute back into the city, Reddy had a number of pressing questions on her mind. First, she wondered what the genuine driving force was behind GE’s decision to dispose most of GE Capital. Sure, management suggested less-than-satisfactory returns, but Reddy wondered whether that was due primarily to a synergy discrepancy, a more general business model issue, or a direct result of regulatory costs. Second, she deliberated what kind of share price bump GE could expect if its designation petition were successful. Of course, along with that emerged the question as to whether the time was right for Sifnos to get in on GE stock or whether they had missed out on most of the exit plan–related gains. Reddy would sift through all of these questions before the night was over. However, she had to admit that one final question had been lingering in the back of her mind nearly from the minute she opened her FSB resources. As she glanced around the room at her tiny new company, Reddy wondered whether she, herself, was now working for a shadow bank.

⁵⁵ https://www.ge.com/sites/default/files/ge_webcast_press_release_04102015_1.pdf.

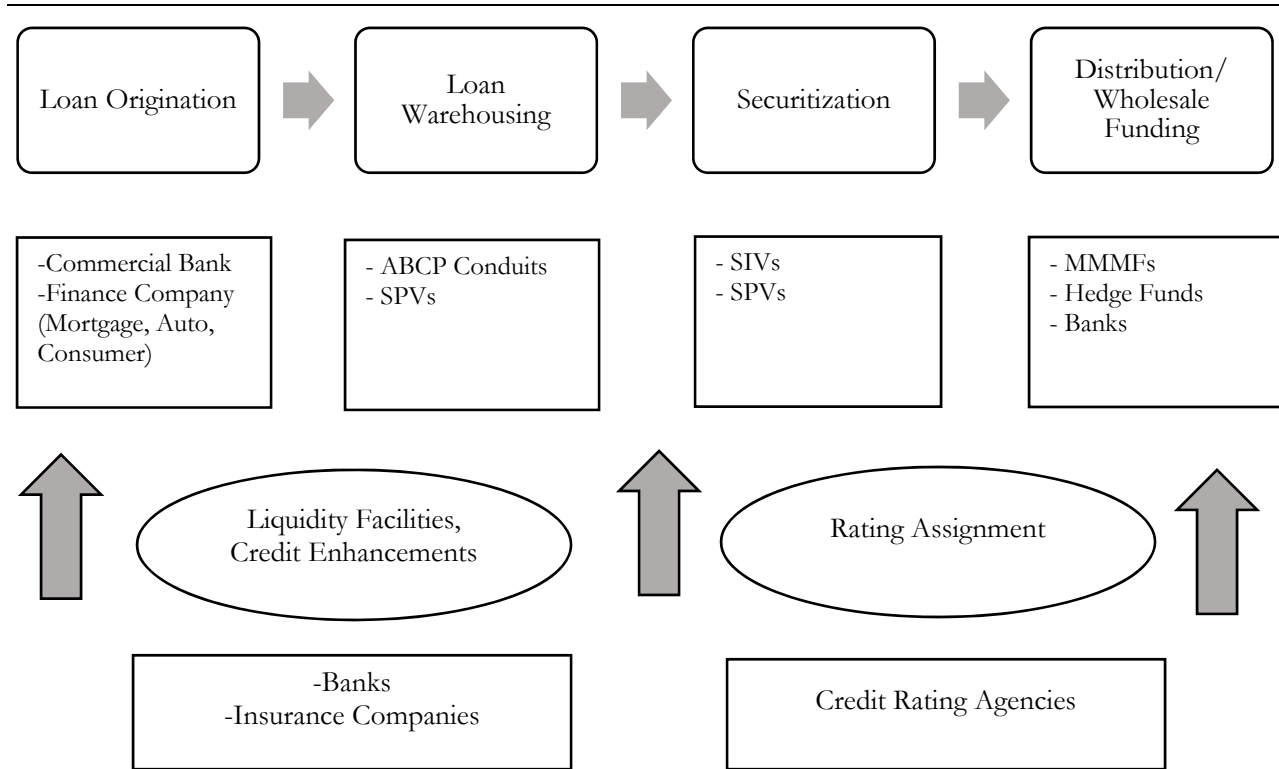
⁵⁶ Andrew M. Harris and Katherine Chiglinsky, “MetLife Defeats U.S. Government’s Too-Big-to-Fail Labeling,” *Bloomberg*, March 30, 2016, <http://www.bloomberg.com/news/articles/2016-03-30/metlife-wins-court-ruling-removing-fsoc-s-too-big-to-fail-tag-imeyio6z> (accessed May 19, 2016).

⁵⁷ Ted Mann, “GE Files to End Fed Oversight after Shrinking GE Capital,” *Wall Street Journal*, March 31, 2016, <http://www.wsj.com/articles/ge-files-to-end-fed-oversight-after-shrinking-ge-capital-1459423851> (accessed May 19, 2016).

Exhibit 1

GE and the Shadow Banking Landscape

The Shadow Bank Credit Intermediation Chain



Data source: "Shadow Banking: Scoping the Issues. A Background Note of the Financial Stability Board," Financial Stability Board, April 12, 2011.

As an illustration of shadow banking at work, consider how an automobile loan can be made and funded outside of the banking system. The loan could be originated by a finance company that pools it with other loans in a securitization vehicle. An investment bank might sell tranches of the securitization to investors. The lower-risk tranches could be purchased by an asset-backed commercial paper (ABCP) conduit that, in turn, funds itself by issuing commercial paper that is purchased by money market funds. Alternatively, the lower-risk tranches of loan securitizations might be purchased by securities dealers that fund the positions through collateralized borrowing using repurchase (repo) agreements, with money market funds and institutional investors serving as lenders.

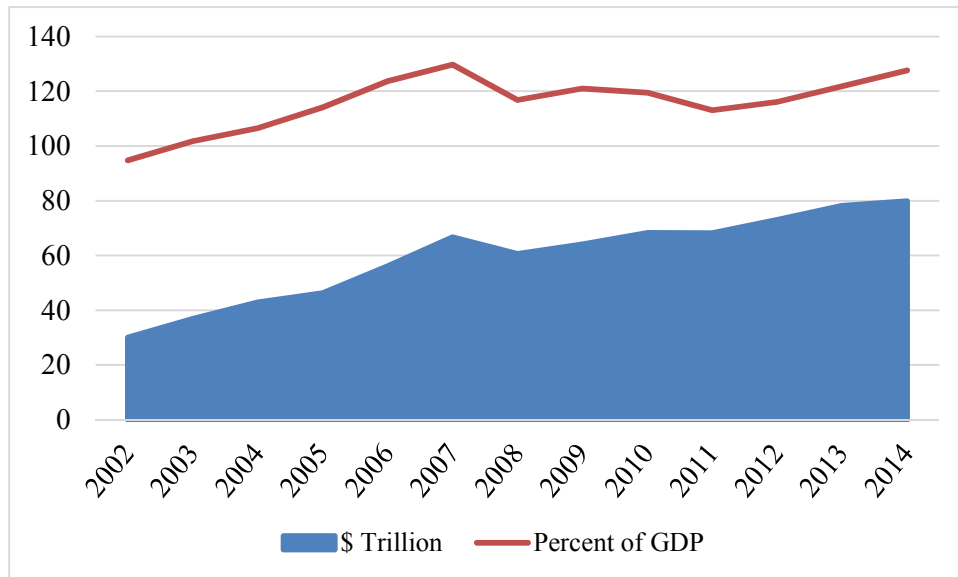
—Ben Bernanke, former chairman, Board of Governors of the Federal Reserve¹

¹ Ben S. Bernanke, "Fostering Financial Stability," speech to the Board of Governors of the Federal Reserve System, April 9, 2012, <https://www.federalreserve.gov/newsevents/speech/bernanke20120409a.htm> (accessed May 13, 2016).

Exhibit 2

GE and the Shadow Banking Landscape

Worldwide Assets of Other Financial Intermediaries (OFIs)



Data source: "Global Shadow Bank Monitoring Report 2015: Data on Underlying Exhibits," Financial Stability Board, November 12, 2015.

Exhibit 3

GE and the Shadow Banking Landscape

FSB Economic Function (EF)–Based Approach Definitions

EF #	Description	Entity Types ¹
1	Collective investment funds that face run risk	Fixed income funds, mixed funds, credit hedge funds, real estate funds
2	Direct credit extension models that maintain substantial short-term funding profiles	Finance companies, leasing companies, consumer credit companies
3	Market intermediation models that maintain substantial client asset secured or short-term funding profiles	Broker-dealers
4	Financial entities that facilitate credit risk mitigation or transfer	Credit insurance companies, financial guarantors
5	Credit intermediation dependent on securitization mechanism	Securitization vehicles
Other	Residual, unclassified OFI demonstrating shadow banking characteristics	

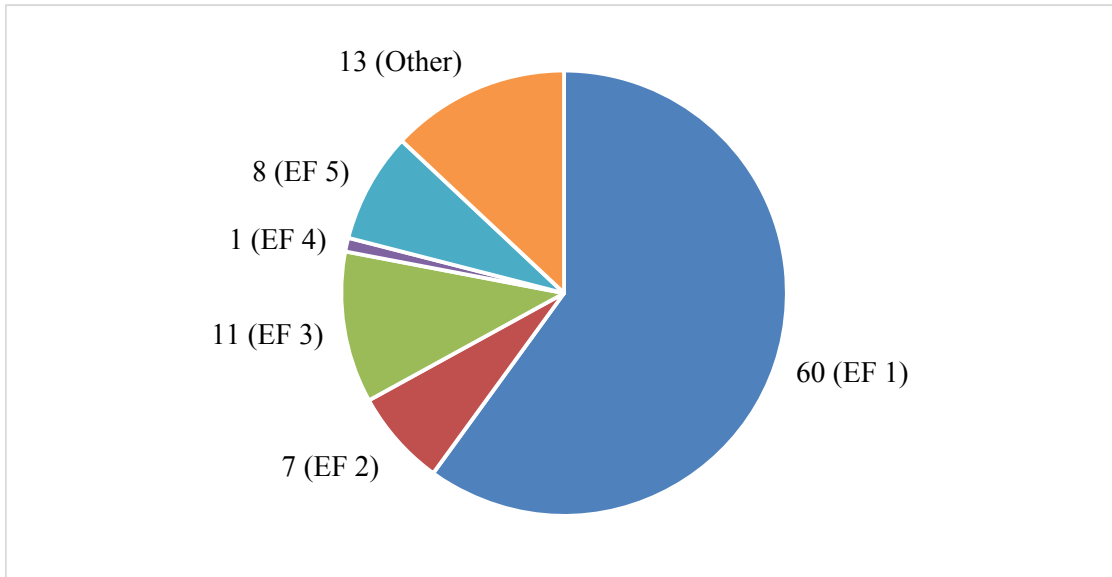
Data source: “Global Shadow Bank Monitoring Report 2015,” Financial Stability Board, November 12, 2015, <http://www.fsb.org/2015/11/global-shadow-banking-monitoring-report-2015/> (accessed May 14, 2016).

¹ FSB footnote 21 in the 2015 Global Shadow Bank Monitoring Report related to “entity types” reads: “The FSB Policy Framework acknowledges that shadow banking may take different forms across jurisdictions due to different legal and regulatory settings as well as the constant innovation and dynamic nature of the non-bank financial sector. It also enables authorities to capture new structures or innovations that create shadow banking risks, by looking through to the underlying economic function and risks of these new innovative structures. Thus the entity types listed should be taken as typical examples.”

Exhibit 4

GE and the Shadow Banking Landscape

2014 Share of Shadow Banking Assets by Economic Function (%)



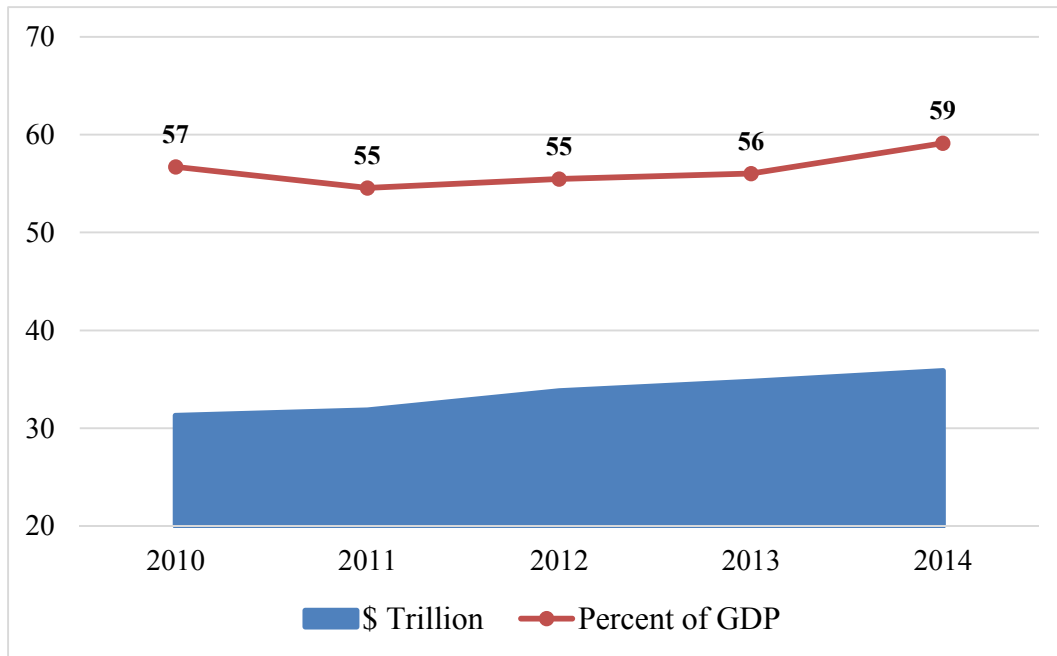
Data source: "Global Shadow Bank Monitoring Report 2015: Data on Underlying Exhibits," Financial Stability Board, November 12, 2015.

Note: See **Exhibit 3** for economic function definitions.

Exhibit 5

GE and the Shadow Banking Landscape

Size of the Global Shadow Banking Sector

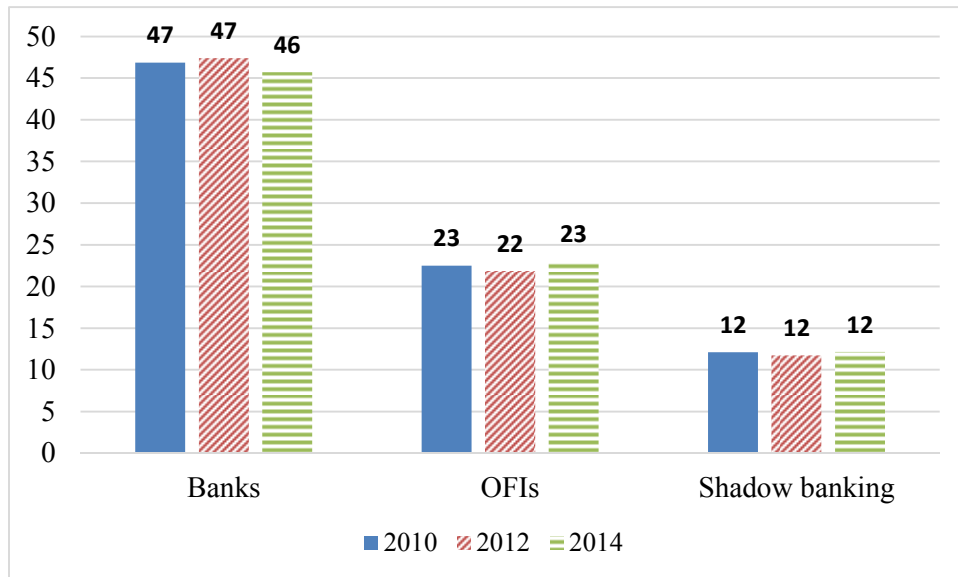


Data source: "Global Shadow Bank Monitoring Report 2015: Data on Underlying Exhibits," Financial Stability Board, November 12, 2015.

Exhibit 6

GE and the Shadow Banking Landscape

Worldwide Share of Financial Intermediation Assets (%)

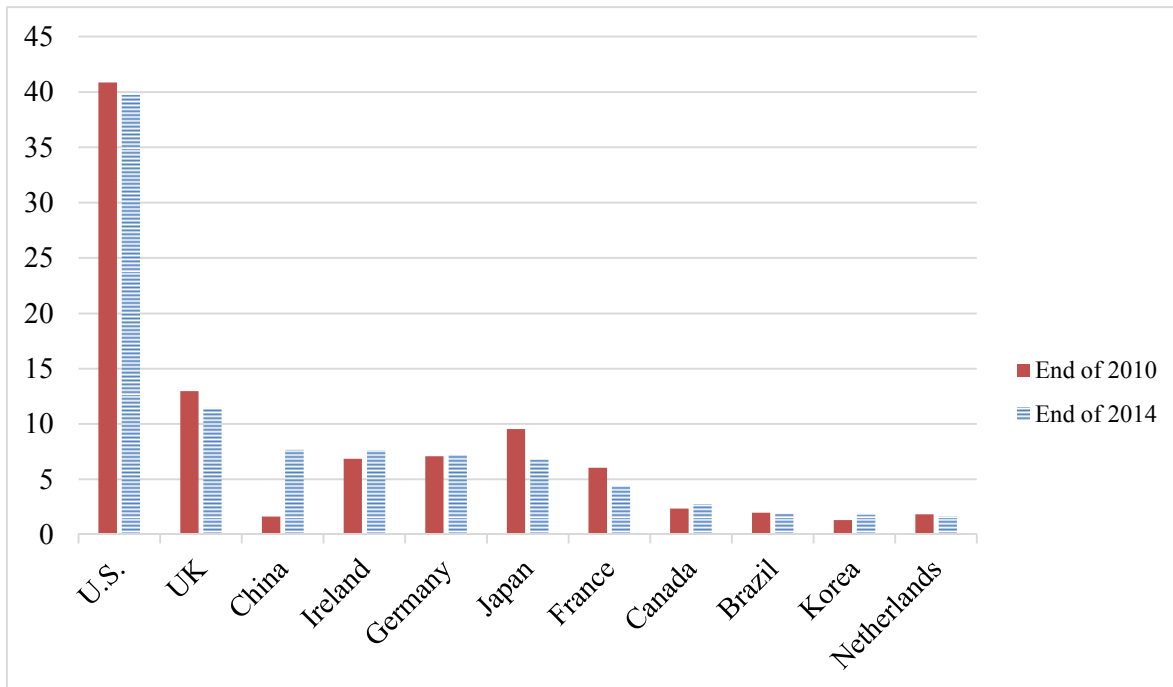


Data source: "Global Shadow Bank Monitoring Report 2015: Data on Underlying Exhibits," Financial Stability Board, November 12, 2015.

Exhibit 7

GE and the Shadow Banking Landscape

Largest Shares of Worldwide Shadow Banking Assets (%)

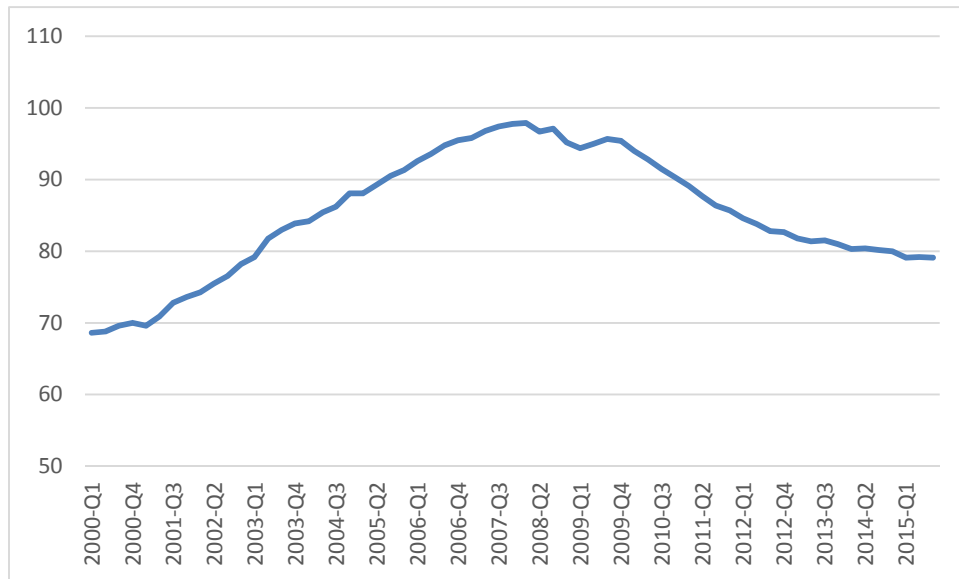


Data source: "Global Shadow Bank Monitoring Report 2015: Data on Underlying Exhibits," Financial Stability Board, November 12, 2015.

Exhibit 8

GE and the Shadow Banking Landscape

U.S. Household Debt as a Percent of GDP (%)

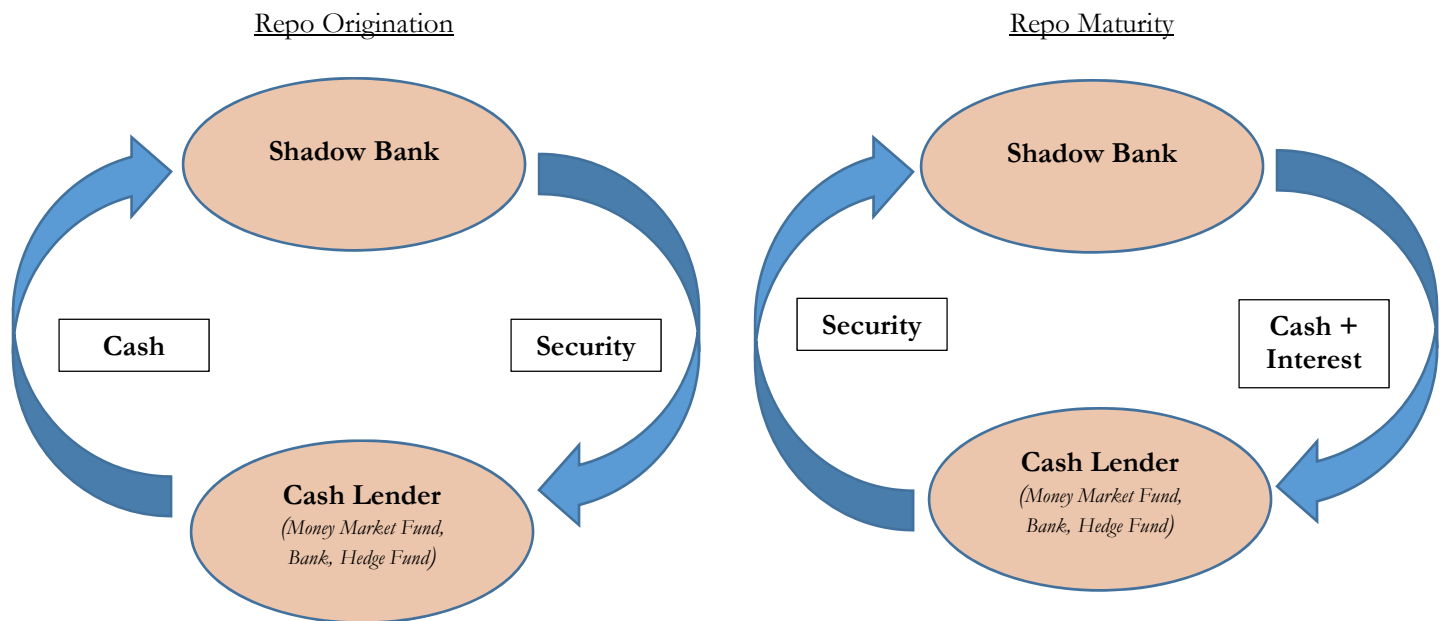


Data source: Bank for International Settlements, "BIS Statistical Warehouse: Long Series on Total Credit," <http://stats.bis.org/bis-stats-tool/org.bis.stats.ui.StatsApplication/StatsApplication.html> (accessed May 15, 2016).

Exhibit 9

GE and the Shadow Banking Landscape

Short-Term Wholesale Funding: Repurchase (Repo) Market Example



Data source: Benjamin Munyan, "Regulatory Arbitrage in Repo Markets," Office of Financial Research and Vanderbilt University, October 29, 2015, Figure 3, https://financialresearch.gov/working-papers/files/OFRwp-2015-22_Repo-Arbitrage.pdf (accessed July 9, 2016).

In the repo, or "repurchase," market, cash investors could purchase short-term securities from shadow banking issuers with the intent to repurchase them at a later date. Often, the term was overnight. Additionally, transactions needed not be bilateral as depicted above. Many repo transactions flowed through a central clearing party, in what was known as the Tri-Party Repo Market. If markets were functioning properly, it was typically easy to roll over repos on a daily basis, thus creating a stable funding source.¹ However, as was the case during the GFC, market turmoil could cause such markets to freeze up, essentially eliminating a primary source of shadow bank funding. Such a freeze was possible for any short-term wholesale funding sources, including commercial paper and interbank loans. For instance, at the apex of the GFC, commercial paper markets significantly froze, which had a remarkable impact on MMMFs. MMMFs, which the FSB classified as a certain type of shadow bank, took money directly from savers, investing the funds in short-term, highly liquid, and presumably safe assets, such as Treasury securities, municipal debt, and commercial paper.²

¹ Bryan J. Noeth and Rajdeep Sengupta, "Is Shadow Banking Really Banking?," Federal Reserve Bank of St. Louis, October 2011, <https://www.stlouisfed.org/publications/regional-economist/october-2011/is-shadow-banking-really-banking> (accessed Aug. 22, 2016).

² U.S. Securities and Exchange Commission, "Money Market Funds," <https://www.sec.gov/spotlight/money-market.shtml> (accessed May 17, 2016).

Exhibit 10
GE and the Shadow Banking Landscape
 Shadow Banking Risks

Risk	Description
Redemption/Run Risk	A product of shadow banks' maturity and liquidity transformation properties. Run risk represented the potential for shadow banking entities to experience acute redemptions of funding sources, which were typically short term and highly liquid or callable.
Fire Sales	Also a product of shadow banks' maturity and liquidity transformation properties. Fire sales could ensue from runs as entities liquidate assets to meet creditor redemptions. If an entity had to liquidate significant quantities of assets in short order, it had to sell them for suppressed prices, which generated significant losses. The financial stability concern with fire sales was that they were widespread enough to cause substantial price declines.
Leverage	Shadow banking entities were often highly levered, which amplified gains and losses. Leverage was also cited for causing excessive credit buildup and accelerating pro-cyclicality. ¹
Flawed Credit Risk Transfer	Various systems and structures, including securitization and credit-risk protecting insurance products, such as credit-default swaps, could work to distort or confuse where credit risk lies. ²
Interconnectedness	The risk that linkages between the shadow banking system and other aspects of the financial sector enhanced risks to the overall financial system.
Concentration Risk	Shadow banking entities were often concentrated in specific areas of credit intermediation. Lacking diversification, shadow banking entities that were concentrated in one area could experience significant shocks if a downturn emerged in that sector. A good example of this revolved around nonbank mortgage lenders during the GFC. When the housing market collapsed, losses were heavy for these lenders.
Regulatory Arbitrage	The notion that shadow banking entities aimed to engage in banklike activities without experiencing the regulatory oversight associated with banks. Additionally, shadow banking regulatory arbitrage could occur when banks engaged in off-balance sheet or other transactions that carried lower or no regulatory oversight and capital provisions.

Data source: Unless otherwise noted, concepts in this exhibit are derived from "Shadow Banking: Scoping the Issues. A Background Note of the Financial Stability Board," Financial Stability Board, April 12, 2011.

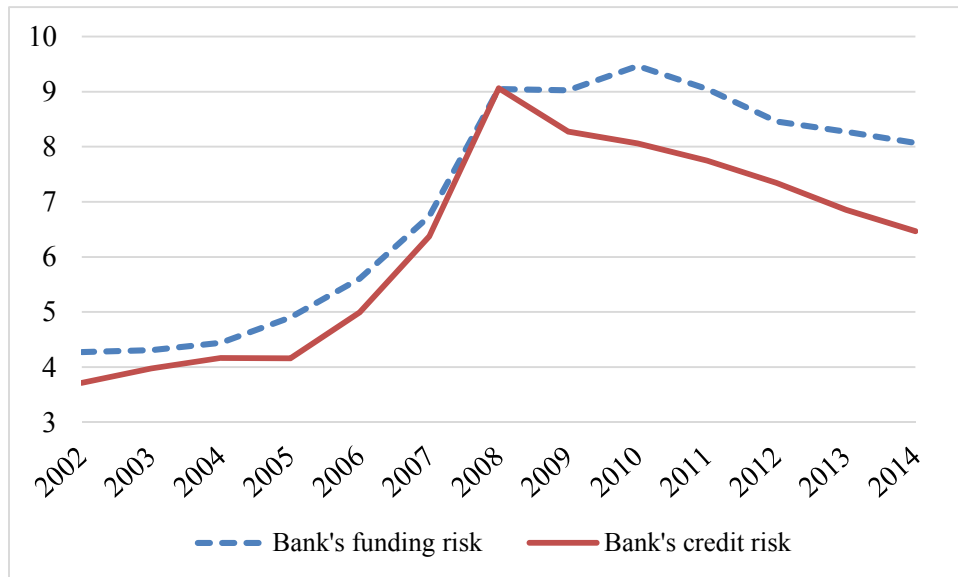
¹ In this context, leverage's effect on pro-cyclicality referred to its potential to accelerate booms or asset bubbles and magnify the impact of downward trends. See John Geanakoplos, "The Leverage Cycle," *NBER Macroeconomics Annual 2009*, Vol. 24, April 2010, <http://www.nber.org/chapters/c11786.pdf> (accessed July 9, 2016); "Shadow Banking: Scoping the Issues. A Background Note of the Financial Stability Board," Financial Stability Board, April 12, 2011.

² "Global Shadow Bank Monitoring Report 2015," Financial Stability Board, November 12, 2015, <http://www.fsb.org/2015/11/global-shadow-banking-monitoring-report-2015/> (accessed May 14, 2016).

Exhibit 11

GE and the Shadow Banking Landscape

Percent of Bank Assets and Liabilities to Other Financial Intermediaries



Data source: "Global Shadow Bank Monitoring Report 2015: Data on Underlying Exhibits," Financial Stability Board, November 12, 2015.

Exhibit 12

GE and the Shadow Banking Landscape

Examples of Shadow Bank Regulatory Provisions

Provision	Shadow-Banking Related Applicability
Nonbank SIFI Designations	Dodd-Frank established the Financial Stability Oversight Council (FSOC), which had the authority to designate certain nonbank financial institutions as systemically significant, thus subjecting these entities to the Federal Reserve's Enhanced Prudential Standards. ¹
Risk Retention	Dodd-Frank required sponsors of securitization products to retain 5% of the credit risk associated with such products. These were so-called skin-in-the-game requirements. ²
Consumer Financial Protection Bureau (CFPB)	Dodd-Frank created the CFPB, which regulated nonbank consumer financial entities for consumer protection standards. Although the CFPB did not regulate nonbank financial entities for safety and soundness, it nevertheless established some federal oversight for such entities. ³
Basel III	Enhanced regulatory capital requirements for securitizations and other off-balance sheet items to address shadow bank regulatory arbitrage concerns. Increased regulatory capital requirements for banks' holding of exposures to unregulated financial institutions. ⁴
MMMF Reform	The U.S. SEC adopted new rules in 2014 to strengthen MMMF's resiliency to run risk. ⁵
Tri-Party Repo Market Reform	The Task Force on Tri-Party Repo Infrastructure, a private body comprising market participants and sponsored by the Federal Reserve Bank of New York worked to substantially reduce the volume of intraday credit in repo markets. The task force also made recommendations to improve liquidity and risk management in the industry. ⁶
FSB Efforts	The FSB developed a system-wide monitoring framework for worldwide shadow-banking risks. It also supported policy approaches in member jurisdictions to reduce interconnectedness, reduce run-risk in MMMFs, and improve securitization transparency, among other measures.

Source: Created by author.

¹ Dodd-Frank, Section 113.² Dodd-Frank, Section 941.³ Dodd-Frank, Title X.⁴ Tobias Adrian and Adam B. Ashcraft, "Shadow Banking Regulation," *Federal Reserve Bank of New York Staff Reports*, April 2012, https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr559.pdf (accessed May 20, 2016).⁵ SEC, "SEC Adopts Money Market Fund Reform Rules," July 23, 2014, <https://www.sec.gov/News/PressRelease/Detail/PressRelease/1370542347679> (accessed May 18, 2016).⁶ Task Force on Tri-Party Repo Infrastructure, "Final Report," February 15, 2013, https://www.newyorkfed.org/medialibrary/media/tripartyrepo/pdf/report_120215.pdf (accessed May 18, 2016); FSOC, 2015 Annual Report, <https://www.treasury.gov/initiatives/fsoc/studies-reports/Documents/2015%20FSOC%20Annual%20Report.pdf>, (accessed May 18, 2016).

Exhibit 13

GE and the Shadow Banking Landscape

GE Capital Operating Segments (2007)

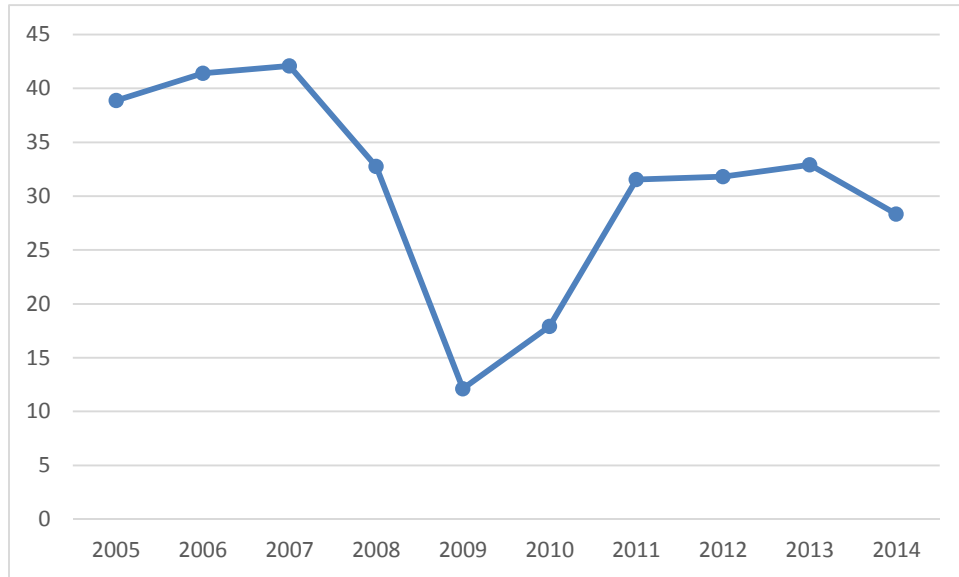
Segment (<i>subsegment</i>)	Business Focus
GE Commercial Finance	Offered loans, leases, and other financial products to manufacturers, distributors, and other users of equipment and capital assets. Midmarket focus. Competed with banks, investment banks, leasing companies, and finance companies.
<i>Capital Solutions</i>	Focused on financing equipment and capital assets for midmarket players, particularly in construction, transportation, technology, and manufacturing.
<i>Real Estate</i>	Offered equity and loan products to customers for acquisition or development of commercial real estate.
GE Money	Consumer and retailer financial services provider. Offerings included private-label credit cards, personal loans, bank cards, auto loans and leases, mortgages, debt consolidation, home equity loans, deposit and savings products, SME lending, credit insurance.
GE Infrastructure	Provided both technologies and financing to develop infrastructure in global jurisdictions. Focused on aviation, energy, oil and gas, transportation, and water.
<i>Aviation Financial Services</i>	Provided financial services to airlines, operators, owners, lenders, investors, and airport developers.
<i>Energy Financial Services</i>	Provided structured equity, debt, leasing, partnership financing, and general commercial finance to global energy and water industries.

Data source: General Electric Capital Company annual report, 2007.

Exhibit 14

GE and the Shadow Banking Landscape

Contribution of GE Capital to Total GE Operating Segment Profits (%)

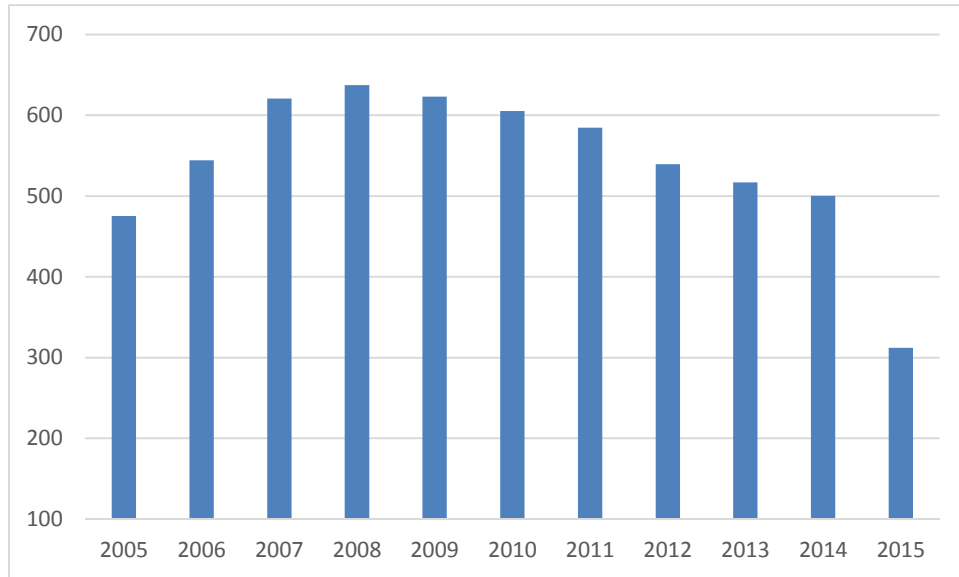


Data sources: General Electric Company annual reports, 2009 and 2014.

Exhibit 15

GE and the Shadow Banking Landscape

GE Capital Total Assets (Billions)



Data sources: General Electric Capital Company (GECC) annual reports, 2009, 2014; General Electric Company annual report, 2015.

Exhibit 16

GE and the Shadow Banking Landscape

Selected Passages from GE Capital's FSOC Designation Notice

The Financial Stability Oversight Council (Council) has made a final determination that material financial distress at General Electric Capital Corporation, Inc. (GECC) could pose a threat to U.S. financial stability...GECC is a significant source of credit to the U.S. economy, providing financing to both commercial and consumer customers. In 2012, GECC has outstanding credit to more than 243,000 commercial customers and 201,000 small businesses, as well as credit extended to 57 million consumers in the United States.

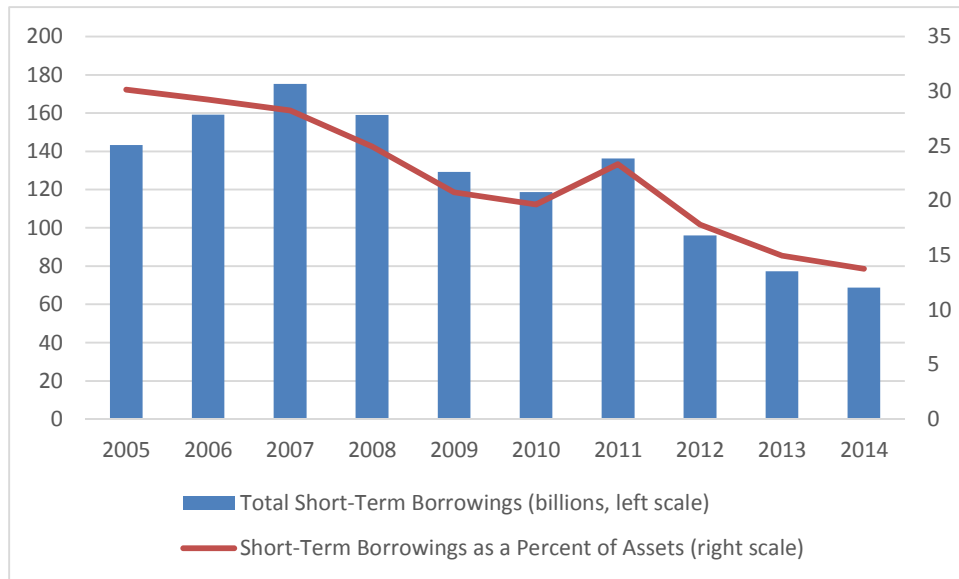
GECC is a significant participant in the global economy and financial markets and is interconnected with financial intermediaries through its financing activities and its funding model, as well as through other activities in which GECC engages. These activities include activities in wholesale short-term funding markets, which link GECC to other large financial institutions that are significant financial intermediaries and with the financial markets more broadly. For example, GECC is a significant issuer of commercial paper (CP) in the United States. Large global banks and large nonbank financial companies have significant exposure to GECC...Material financial distress at GECC could trigger a run on MMFs more generally and lead to a broader withdrawal of investments from the CP market and other short-term funding markets.

GECC holds a large portfolio of on-balance sheet assets comparable to those of the largest U.S. bank holding companies (BHCs). If GECC were unable to access funding markets, GECC could either reduce its provision of credit or be forced to sell assets quickly to fund its operations and meet its obligations. If GECC had to rapidly liquidate assets, the impact could drive down asset prices and cause balance sheet losses for other large financial firms on a scale similar to those that could be caused by asset sales by some of the largest U.S. BHCs.

GECC is subject to consolidated supervision by the Board of Governors as a grandfathered unitary Savings and Loan Holding Company that is permitted to engage in commercial activities... Absent a determination by the Council regarding GECC, however, GECC would not be subject to the enhanced prudential standards...of the Dodd-Frank Act because these standards do not apply to SLHCs... Furthermore, it is possible that in the future, certain companies may no longer be subject to the Board of Governors' authority if they successfully deregister as SLHCs. For example, if GECC were to deregister as an SLHC, even though its subsidiaries would remain subject to other regulatory regimes, the Board of Governors would no longer act as its consolidated supervisor.

Source: Financial Stability Oversight Committee, "Basis of the Financial Stability Oversight Council's Final Determination Regarding General Electric Capital Corporation, Inc.," [www.treasury.gov](https://www.treasury.gov/initiatives/fsoc/designations/Documents/Basis%20of%20Final%20Determination%20Regarding%20General%20Electric%20Capital%20Corporation,%20Inc.pdf), July 8, 2013, <https://www.treasury.gov/initiatives/fsoc/designations/Documents/Basis%20of%20Final%20Determination%20Regarding%20General%20Electric%20Capital%20Corporation,%20Inc.pdf> (accessed Aug. 21, 2016).

Exhibit 17

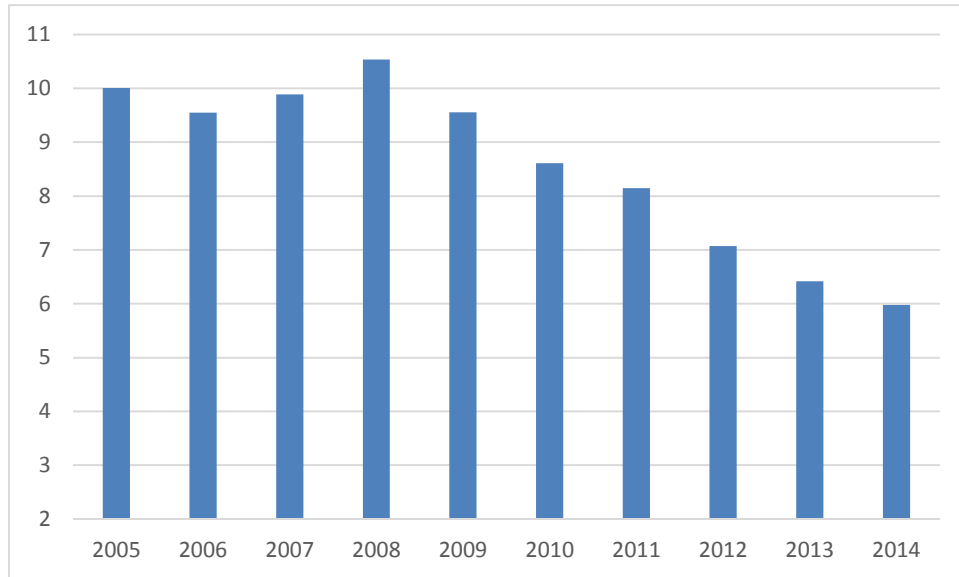
GE and the Shadow Banking Landscape**GE Capital Short-Term Borrowings**

Data sources: General Electric Capital Company annual reports, 2009 and 2014; author calculations.

Exhibit 18

GE and the Shadow Banking Landscape

GE Capital Financial Leverage (Average Assets/Average Equity, Times X)

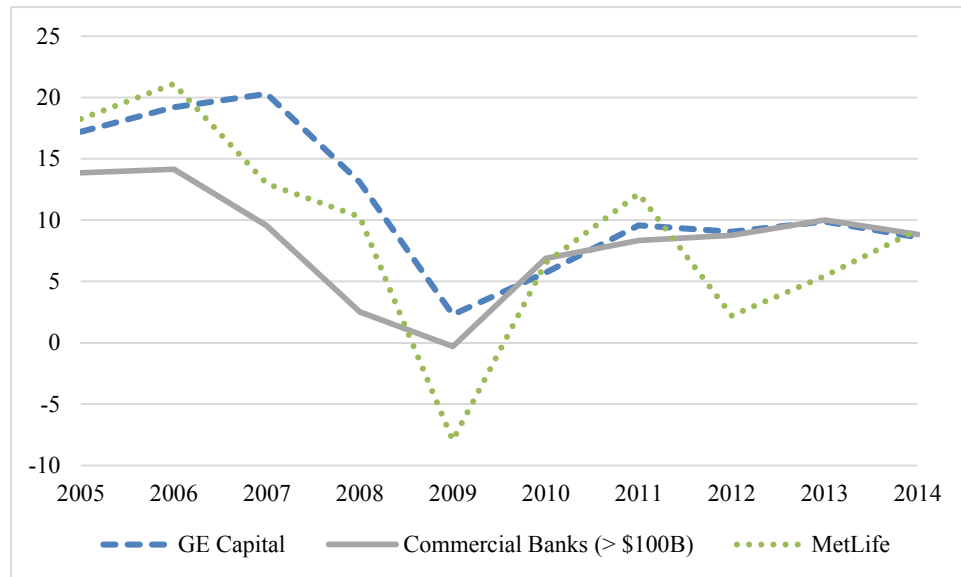


Data sources: General Electric Capital Company annual reports, 2005, 2009, and 2014; author calculations.

Exhibit 19

GE and the Shadow Banking Landscape

Return on Equity (ROE) of GE Capital and MetLife Compared to Comparable Banks (%)

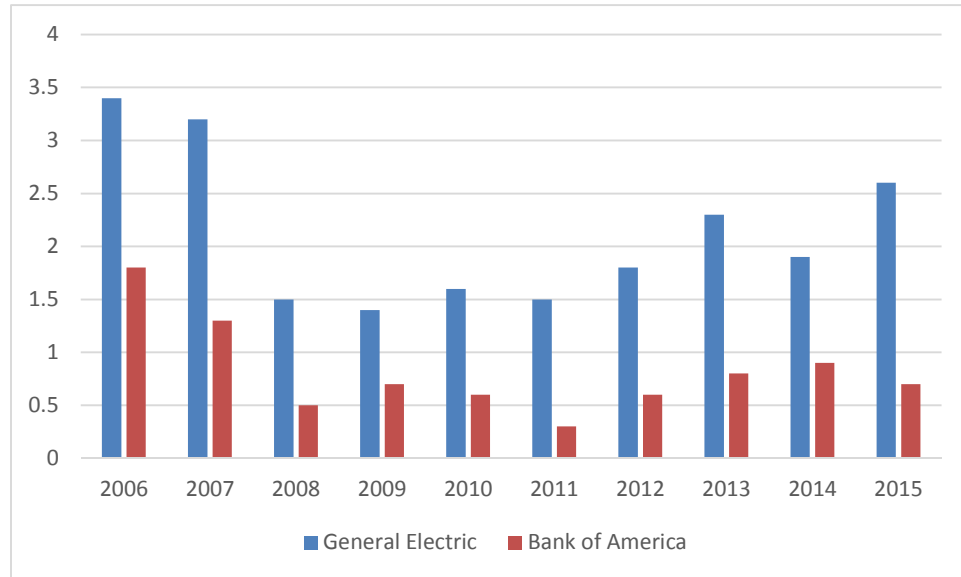


Data sources: General Electric Capital Company annual reports, 2009 and 2014; SNL Financial.

Exhibit 20

GE and the Shadow Banking Landscape

GE and Bank of America Historical Price-to-Book Ratios



Data source: Morningstar.

Exhibit 21

GE and the Shadow Banking Landscape

GE Closing Share Prices



Data source: Yahoo! Finance.

Exhibit 22

GE and the Shadow Banking Landscape

GE Capital's Risk-Weighted Assets and Core Equity Tier 1 (CET1) Ratio

December 31	2015	2014
Estimated risk-weighted assets (billions)	251.1	445.9
GE Capital Tier 1 common ratio estimate	14.5%	13.0%

Data source: General Electric Company annual report, 2015.

Exhibit 23

GE and the Shadow Banking Landscape

Basel III Capital Requirements

Minimum Capital Requirements

Ratio	% of Risk-Weighted Assets
Common Equity Tier 1 (CET1)	4.5
Additional Tier 1	1.5
Total Tier 1	6.0
Total Tier 2	2.0
Total Capital (Tier 1 + Tier 2)	8.0

Additional Capital Buffers

Buffer	% of Risk-Weighted Assets
Capital Conservation Buffer (CET1)	2.5
Countercyclical Capital Buffer	0.0–2.5
U.S. Global-SIFI Surcharge ¹	1.0–4.5

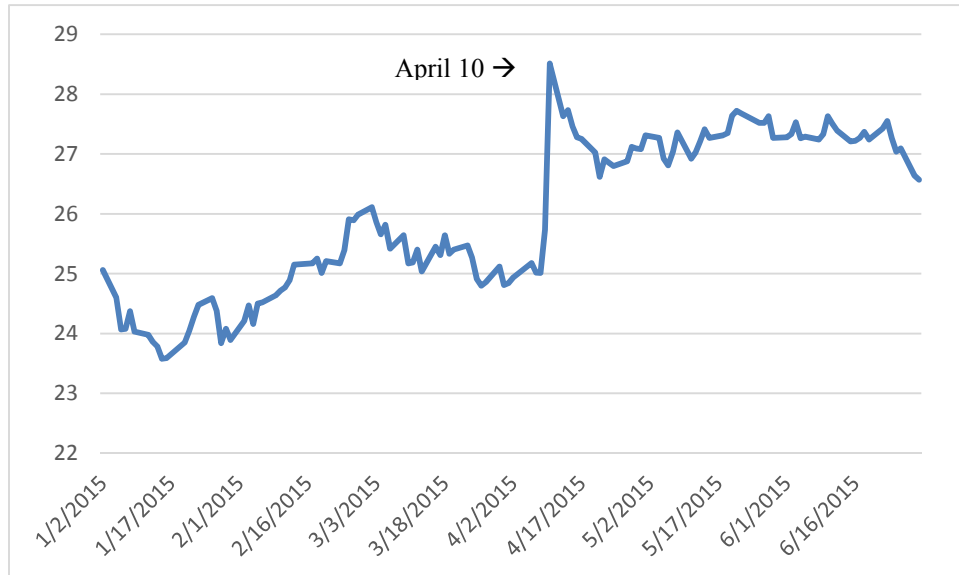
Data source: Unless otherwise noted, data is drawn from Basel Committee on Banking Supervision, “Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems,” Bank for International Settlements, December 2010 (rev. June 2011), <http://www.bis.org/publ/bcbs189.pdf> (accessed May 19, 2016).

¹ Federal Reserve System, “Regulatory Capital Rules: Implementation of Risk-Based Capital Surcharges for Globally Systemically Important Bank Holding Companies; Final Rule,” *Federal Register*, August 14, 2015, <https://www.gpo.gov/fdsys/pkg/FR-2015-08-14/pdf/2015-18702.pdf> (accessed May 19, 2016). Note: the Federal Reserve issued final rules that were more stringent than Basel’s recommended 1.0%–2.5% surcharge for Global SIFIs.

Exhibit 24

GE and the Shadow Banking Landscape

General Electric Q1–Q2 2015 Share Price



Data source: Yahoo! Finance.

Exhibit 25

GE and the Shadow Banking Landscape

GE Capital Dispositions as of December 18, 2015

Assets/Entity	Amount (\$ Billions)	Buyer
Synchrony Financial (North American Retail Finance)	83	IPO
Commercial real estate assets	33	Blackstone Group; Wells Fargo
UK home lending	13.1	Multiple buyers
U.S. Sponsor Finance business and a bank loan portfolio	12.1	Canada Pension Plan Investment Board
Global fleet services business	10.2	Element Financial Corporation and Arval
Healthcare Financial Services	8.7	Capital One
Transportation Finance	8.2	Bank of Montreal Financial Group
Australia and New Zealand consumer lending assets	7.5	Various investors
Budapest Bank	3.4	Hungarian government
European Sponsor Finance	2.7	Sumitomo Mitsui Banking Corporation
Corporate aircraft financing portfolio	2.1	Global Jet Capital
Other assets	4.8	Multiple buyers
Total Dispositions	188.9	
Additional Sale Agreements	64	
Total + Additional Agreements	252.9	
Target Asset Reduction	310	

Data source: GE Capital, "2015 Resolution Plan: Public Section," Federal Reserve, <https://www.federalreserve.gov/bankinforeg/resolution-plans/ge-capital-1g-20151231.pdf> (accessed May 19, 2016).

Exhibit 26

GE and the Shadow Banking Landscape

Nonbank SIFI March 2016 Daily Closing Share Prices

Date	Prudential	MetLife	GE¹	AIG
3/31/2016	72.22	43.94	31.79	54.05
3/30/2016	72.95	44.73	31.83	54.52
3/29/2016	71.52	42.46	31.48	53.39
3/28/2016	72.01	43.00	31.49	53.41
3/24/2016	70.76	42.30	31.11	52.98
3/23/2016	72.83	43.41	31.07	53.44
3/22/2016	74.12	44.09	31.06	53.72
3/21/2016	74.55	44.51	31.09	53.57
3/18/2016	74.94	44.73	30.92	53.71
3/17/2016	73.36	44.08	30.96	53.18
3/16/2016	72.56	43.77	30.17	52.91
3/15/2016	72.42	43.79	30.28	53.02
3/14/2016	73.00	43.90	30.27	52.87
3/11/2016	73.55	44.25	30.34	52.89
3/10/2016	70.56	42.25	29.94	51.54
3/9/2016	70.41	42.00	30.05	51.59
3/8/2016	70.31	41.78	30.06	51.93
3/7/2016	72.13	42.85	30.29	52.66
3/4/2016	71.47	42.33	30.46	52.30
3/3/2016	71.87	42.39	30.22	52.27
3/2/2016	70.76	42.01	30.18	51.83
3/1/2016	70.31	41.68	29.88	51.88

Data source: Yahoo! Finance.

¹ Note: Although GE Capital was a SIFI, it did not maintain a public share price. The share price of its parent company, GE, is listed instead.