

Rowan University

Rowan Digital Works

Rohrer College of Business Faculty Scholarship

Rohrer College of Business

12-2017

The 2007-2009 Financial Crisis: An Erosion of Ethics - A Case Study

Edward J. Schoen

Rowan University, schoen@rowan.edu

Follow this and additional works at: https://rdw.rowan.edu/business_facpub

 Part of the [Business Law, Public Responsibility, and Ethics Commons](#)

Let us know how access to this document benefits you - share your thoughts on our feedback form.

Recommended Citation

Schoen, Edward J., "The 2007-2009 Financial Crisis: An Erosion of Ethics - A Case Study" (2017). *Rohrer College of Business Faculty Scholarship*. 25.

https://rdw.rowan.edu/business_facpub/25

This Article is brought to you for free and open access by the Rohrer College of Business at Rowan Digital Works. It has been accepted for inclusion in Rohrer College of Business Faculty Scholarship by an authorized administrator of Rowan Digital Works. For more information, please contact rdw@rowan.edu.

The 2007–2009 Financial Crisis: An Erosion of Ethics: A Case Study

Edward J. Schoen

Journal of Business Ethics

ISSN 0167-4544

J Bus Ethics

DOI 10.1007/s10551-016-3052-7



Journal of Business Ethics

Volume 133, No. 2
January (II) 2016

Editors in Chief:
Ed Freeman
Michelle Greenwood
Founding Editors:
Alex C. Michalos
Deborah C. Poff
Section Editors:
Accounting
Steven Dellaportas
Business Law
Joshua E. Pery
Case Studies
Loren Falkenberg
Codes of Ethics
Muel Kaptein
Consumer Ethics/Social Responsibility
Scott J. Vitell
Corporate Governance
Alzahr Rashid
Corporate Sustainability
Cory Searcy
Corporate Responsibility: Theoretical/Qualitative Issues
Robert Phillips
Corporate Responsibility: Quantitative Issues
Joelle Vanhamme
Finance
Greg Shaller
Human Resources Management
Harry Van Buren
International Management
Nikola M. Pless, Katianne Kabshoven
Labour Relations and Worker's Rights
Edmund Byrne
Leadership: Quantitative Issues
Alex Newman
Marketing Ethics
Michael R. Hyman
Philosophical Foundations
Akiyō Jose G. Sison
Religion and Spirituality
Dominic Melé
Small Business, Entrepreneurship and Social Enterprise
Julia Roloff
Special Issues and Supplements
Thomas Maak
Teaching Business Ethics
Cristina Neesham
Value-Based Management
Samuel Natale

ISSN 0167-4544

ORIGINAL ARTICLES

The Sustainability Balanced Scorecard: A Systematic Review of Architectures
E.G. Hansen · S. Schaltegger 193

Entrepreneurial Orientation and Corruption
T. Karmann · R. Mauer · T.C. Flatten · M. Brettel 223

The Limits of Generosity: Lessons on Ethics, Economy, and Reciprocity in Kafka's *The Metamorphosis*
C. Rhodes · R. Westwood 235

Internalized Moral Identity in Ethical Leadership
R. Skubinn · L. Herzog 249

Ordinary Aristocrats: The Discursive Construction of Philanthropists as Ethical Leaders
H. Liu · C. Baker 261

When CEO Career Horizon Problems Matter for Corporate Social Responsibility: The Moderating Roles of Industry-Level Discretion and Blockholder Ownership

W.-Y. Oh · Y.K. Chang · Z. Cheng 279

Re-thinking Capitalism: What We can Learn from Scholasticism?
D. Melé 293

Corporate Social Responsibility as a Strategic Shield Against Costs of Earnings Management Practices

J. Martínez-Ferrero · S. Banerjee · I.M. García-Sánchez 305

Impact of Islamic Work Ethics on Organizational Citizenship Behaviors and Knowledge-Sharing Behaviors
G. Murtaza · M. Abbas · U. Raja · O. Roques · A. Khalid · R. Mushtaq 325

Continued on back cover

Springer

Springer

Your article is published under the Creative Commons Attribution license which allows users to read, copy, distribute and make derivative works, as long as the author of the original work is cited. You may self-archive this article on your own website, an institutional repository or funder's repository and make it publicly available immediately.

The 2007–2009 Financial Crisis: An Erosion of Ethics: A Case Study

Edward J. Schoen¹

Received: 23 December 2014 / Accepted: 28 January 2016
© The Author(s) 2016. This article is published with open access at Springerlink.com

Abstract This case study examines five dimensions of the 2007–2009 financial crisis in the United States: (1) the devastating effects of the financial crisis on the U.S. economy, including unparalleled unemployment, massive declines in gross domestic product (GDP), and the prolonged mortgage foreclosure crisis; (2) the multiple causes of the financial crisis and panic, such as the housing and bond bubbles, excessive leverage, lax financial regulation, disgraceful banking practices, and abysmal rating agency performance; (3) the extraordinary efforts of the Federal Reserve, the Federal Reserve Bank of New York, and the Department of the Treasury to stem the financial freefall triggered by the crisis and resuscitate financial institutions, (4) the ethical implications of the unprecedented actions by government institutions to rescue financial institutions and drag the country back from the brink of global financial collapse, and the conduct of the various parties contributing to the financial crisis, such as the shoddy behavior of mortgage brokers, the massive securitization of mortgages into overly complex bonds, the excessive leverage of financial institutions, the disgraceful work of bond rating firms, the abysmal risk management systems employed by financial institutions, and the massive operations of the shadow banking and over-the-counter derivatives markets; and (5) the major provisions of the Dodd–Frank Wall Street Reform and Consumer Protection Act signed into law to in response to the financial crisis and for the purpose of correcting the egregious conduct of major financial institutions.

Keywords Bank Regulatory Agencies · Collateralized Debt Obligations (CDO) · Commercial and investment banks · Credit default swaps (CDS) · Financial crisis · Housing bubble · Mortgage-backed securities (MBS) · Mortgage brokers · Rating firms · Troubled Asset Relief Program (TARP)

Abbreviations

AIG	American International Group
CDO	Collateralized Debt Obligation
CDS	Credit Default Swap
FDIC	Federal Deposit Insurance Corporation
GDP	Gross Domestic Product
GSE	Government Sponsored Entity
MBS	Mortgage-Backed Securities
OCC	Office of the Comptroller of the Currency
OTC	Over-the-Counter
OTS	Office of Thrift Supervision
SEC	Securities Exchange Commission
SIV	Structured Investment Vehicle
TARP	Troubled Assets Relief Program

Introduction

The purpose of the case study is twofold: (1) to enhance students' understanding of the 2007–2009 financial crisis in the United States, and (2) to provide a convenient tool that assists faculty members to address the 2007–2009 financial crisis in their classes and to enhance the student's understanding of ethics.

The case study examines five crucial dimensions of the 2007–2009 financial crisis in the United States: (1) the devastating effects of the financial crisis on the U.S.

✉ Edward J. Schoen
schoen@rowan.edu

¹ Professor of Management, Rohrer College of Business, Rowan University, 201 Mullica Hill Road, Glassboro, NJ 08028, USA

economy; (2) the multiple causes of the financial crisis and panic; (3) the extraordinary efforts of government regulatory agencies to stem the financial freefall triggered by the crisis; (4) the ethical implications of the conduct of the various parties contributing to and ultimately rescuing the country from the financial crisis, and (5) the major provisions of the Dodd–Frank Wall Street Reform and Consumer Protection Act signed into law in response to the financial crisis.

The “[Disastrous Effects of the 2007–2009 Financial Crisis](#)” section of the case will catalog the deleterious effects of the financial crisis including unparalleled unemployment, massive declines in gross domestic product (GDP), and the prolonged mortgage foreclosure crisis.

The “[Causes of the 2007–2009 Financial Crisis](#)” section will explore the main causes of the financial crisis, such as the housing and bond bubbles, excessive leverage, lax financial regulation, disgraceful banking practices, and abysmal rating agency performance, and thereby identify the actions of the major participants, such as mortgage brokers, subprime mortgage lenders, financial institutions, bond rating firms, and regulatory agencies, which contributed to the financial crisis.

The “[Unprecedented Rescue Efforts](#)” section will examine the extraordinary efforts of the Federal Reserve, the Federal Reserve Bank of New York, and the Department of the Treasury to rescue and resuscitate financial institutions. These efforts include massive loans, forced acquisitions, capital infusions, tainted asset purchases, instantaneous conversion of investment banks into commercial banks, receiverships, and TARP funds. The rescued firms include financial giants deemed “too big to fail,” such as Bear Stearns, Fannie Mae and Freddie Mac, AIG, Merrill Lynch, Morgan Stanley, Goldman Sachs, Washington Mutual, Wachovia, Citigroup, Bank of America, General Motors, and Chrysler and their finance companies.

The “[Major Ethical Issues](#)” section will outline the major ethical questions that rise from the activities of the players contributing to the financial crisis and the government institutions implementing unprecedented rescue strategies to drag the financial crisis back from the brink of total global collapse. These activities include the shoddy conduct of mortgage brokers in pushing clients into dodgy subprime loans, the massive securitization of mortgages and other loans into overly complex bond investments acquired by financial firms around the globe, the failure of regulatory agencies to correct the slapdash lending practices and excessive leverage of financial institutions, the disgraceful work of bond rating firms in evaluating the complex, multi-tranched investments churned out by the banks, the abysmal risk management system employed by AIG, and the massive operations of the shadow banking and over-the-counter derivatives markets.

The “[Dodd–Frank Wall Street Reform and Consumer Protection Act](#)” section will describe the major provisions

of the Dodd–Frank Wall Street Reform and Consumer Protection Act signed into law in response to the financial crisis and for the purpose of correcting the egregious conduct of major financial institutions that caused the financial crisis.

Disastrous Effects of the 2007–2009 Financial Crisis

The 2007–2009 financial crisis had a devastating effect on the U.S. economy and plunged the country into a long and deep recession officially beginning in December 2007 and ending in June 2009 (The Financial Crisis Inquiry Report [“FCI Report”] 2011, pp. 390–391). The disastrous effects included serious and long-lasting unemployment and huge declines in gross domestic product. A sharp rise in joblessness, which began in early 2008 and lasted to late 2009, saw unemployment remain at 7.8 % or higher for 46 consecutive months (Blinder 2013, pp. 10–11). On average, the economy shed 46,000 jobs per month in the first quarter of 2008, a scary 651,000 over the last quarter, and horrifying 780,000 in the first quarter of 2009 (p. 11). Just under 8.8 million jobs were lost during a period when the economy should have added about 3.1 million jobs to accommodate ordinary labor force growth (FCI Report 2011, p. 390). While employment barely crawled up in 2010 and 2011, it reached only May 2005 levels, marking a zero net job growth over a period of more than 7 years (Blinder 2013, pp. 11–12). Significantly, the unemployment period endured far longer. During the years 1948–2007, the long-term unemployed—those who were jobless for more than 6 months—constituted fewer than 13 % of the unemployed. By April 2010, the long-term unemployed peaked above an alarming 45 % (pp. 12–13).¹

Further, during 2008 and the first half of 2009, the real decline in GDP was 4.7 %, the worst decline since the 1930s. The decline occurred in five out of six quarters and in four quarters in a row (p. 14).² In contrast, during the period 1947–2008, declines of real GDP occurred for two consecutive quarters only nine times, three consecutive quarters only two times, and never fell for four consecutive quarters (p. 13). “All in all, it is hard to escape the conclusion that the 2008–2009 period was the worst by far in

¹ The underemployment rate (unemployed workers looking for jobs, part-time workers looking for full-time jobs; and those who need jobs but are too discouraged to search) increased from 8.8 % in December 2007 to 13.7 % in December 2008, reaching 17.4 % in October 2009, the highest level since calculations for that category were first made in 1994. When the recession ended in June 2009, there were 26.2 million underemployed (FCI Report 2011, pp. 390–391).

² “Since trend growth would have been at least 3.5 % over that period, we probably lost over 8 % of GDP, relative to trend. That’s the equivalent of every American losing 8 % of his or her income, or, more realistically, 10 % of the population losing 80 %” (Blinder 2013, p. 14).

70 years, both in terms of job loss and GDP decline (p. 14).” Significantly, the speed of recovery from the 2007–2009 recession has been abnormally slow. Usually, strong economic growth spurts follow steep declines in GDP. In the two preceding “great recessions” in 1973–1974 and 1980–1982, for example, the economy grew 6.2 % and 5.6 % in the following year. By that measure, a growth rate of approximately 7 % should have followed the 2007–2009 recession. Instead, the economy managed to grow by only 2.5 %, providing a “double whammy: a sharp recession followed by a weak recovery (p. 13).”

The sharp rise in unemployment and decline in GDP triggered other woes. From 2007 to the first quarter of 2009, households lost \$17 trillion in net worth, home prices dropped 32 % from their peak in 2006 to their low point in 2009, and homeownership shrank from its peak of 69.2 % in 2004 to 66.9 % in the fall of 2010 (FCI Report 2011, pp. 391–392). The stock market declined and assets in retirement accounts such as 401(k) lost \$2.8 trillion, about one third of their value, between September 2007 and December 2008. Consumer spending, which normally makes up two-thirds of GDP fell at an annual rate of roughly 3.5 % in the second half of 2008 and fell again in the first half of 2009 (p. 394). Business financing dried up and sharp increases in the U.S. business bankruptcies ensued. In 2006, 20,000 U.S. companies filed for bankruptcy; in 2009, that figure tripled to nearly 61,000 (p. 394). Commercial real estate also took a pounding. In the fall 2010, commercial vacancies rose sharply and 20 % of all office space was unoccupied (p. 397). Almost half of commercial real estate loans were “underwater” (the mortgage debt exceeded the value of the property) as of February 2010 (p. 398). These economic declines, in turn, forced state and local governments to struggle with sharp revenue declines at the same time people—who lost their jobs, went into bankruptcy, and faced foreclosure—demanded more services, including Medicaid, unemployment compensation, and welfare (p. 398).

The financial crisis also generated the mortgage foreclosure crisis. After the housing bubble burst, about four million families lost their homes to foreclosure and another four and one half million families slipped into the foreclosure process or were seriously behind on their mortgage payments (p. 402). Prior to 2007, the mortgage foreclosure rate was historically less than 1 %. Following the housing market collapse, mortgage foreclosures increased dramatically. In 2009, 2.2 % or one out of 45 houses, faced at least one foreclosure filing. There are two major events which typically trigger mortgage defaults: failure to make monthly payments and the decline in the home’s value. In the fall of 2010, one in every eleven outstanding residential mortgage loans was at least one payment past due and facing foreclosure, and about 10.8 million households, or 22.5 % of those with mortgages, owed more on their mortgages than the

market value of their home (pp. 402–403). Unfortunately, federal and state efforts to stem foreclosures—such as the Home Affordable Modification Program (HAMP) and state mortgage modification and foreclosure assistance programs—have generally been woefully ineffective (p. 405).³

Causes of the 2007–2009 Financial Crisis

Professor Alan S. Blinder identifies seven “key weaknesses” that contributed significantly to the 2007–2009 financial crisis and provides a useful framework to identify the major ethical questions presented by the financial crisis:

1. Inflated asset prices, especially of houses (the housing bubble) but also of certain securities (the bond bubble);
2. Excessive leverage (heavy borrowing) throughout the financial system and the economy;
3. Lax financial regulation, both in terms of what the law left unregulated and how poorly the various regulators performed their duties;
4. Disgraceful banking practices in subprime and other mortgage lending;
5. The crazy-quilt of unregulated securities and derivatives that were built on these bad mortgages;
6. The abysmal performance of the statistical rating agencies, which helped the crazy-quilt get stitched together; and
7. The perverse compensation systems in many financial institutions that created powerful incentives to go for broke (Blinder 2013, pp. 27–28).⁴

Housing and Bond Bubbles

A bubble is a large, long-lasting deviation of the price of some asset from its fundamental value (p. 29). It is devilishly difficult to identify a bubble as it occurs, because it is usually accompanied with favorable fundamentals, making it hard to determine what portion of the asset value increase is due to the bubble or to the improved fundamentals (p. 31).⁵ More likely the bubble’s existence is confirmed by

³ Complicating factors such as the conflicting interests of financial institutions holding second mortgages and investors in different tranches of mortgage-backed securities have made mortgage modification efforts extremely difficult (FCI Report 2011, p. 406).

⁴ See also Friedman (2011) and Arbogast (2013).

⁵ The FCI Report (2011) catalogs multiple warnings of the housing bubble (pp. 7–18). Paul Krugman’s *New York Times* columns in 2001 and 2002 warned of a housing bubble. Economist Dean Baker concluded in a 2002 paper that “the only plausible explanation for the sudden surge in home prices is the existence of a housing bubble.” By 2003, magazines such as the *Economist*, *Barron’s*, and *Money* contained articles about a possible housing bubble. (Blinder 2013, p. 33)

hindsight when it bursts. Such was the case with the spectacular 2000–2009 housing bubble “of historic proportions (p. 35).” The history of relative house prices (*i.e.*, compared to the prices of other things consumers buy) from 1890 to 1997 barely changed (p. 32).⁶ Suddenly, beginning in 1997, things altered radically. According to the Case–Schiller index, real house prices rocketed by 85 % between 1997 and 2006 (including an increase of about 72 % from January 2000 to January 2006) and then plummeted from 2006 to 2012 (pp. 32–33).⁷ Likewise, after soaring from a low of around 800,000 units per year in January 1991 to a peak of almost 2.3 million units per year in January 2006, housing starts went bust in 2006, bottoming out at under 500,000 units per year in April 2009 (p. 35).

Several factors account for the run-up in house prices. A “gold rush” mentality overtook the country (FCI Report 2011, p. 6), and, following the tech stock bubble burst in 2000, investors “were looking for a safer, stabler place to invest their money,” and, by using leverage, “really could earn a high real return by investing in housing (Blinder 2013, p. 38).” Attempting to boost the economy, the Federal Reserve held short-term interest rates extraordinarily low in 2003 and 2004, leading to historically low interest rates on home mortgages. Banks and other lenders practically tossed money at prospective new homeowners and existing homeowners who wished to refinance at lower rates (p. 38). Rising house prices facilitated home refinancing, which boomed from \$469 billion in 2000 to \$2.8 trillion in 2003 (FCI Report 2011, p. 5). Lending institutions became enamored with adjustable-rate mortgages, which began to replace the standard 30-year, fixed rate, 20 % down, prime mortgage loan, and provided the borrower with temptingly low interest rates during the first few years of the mortgage and the lender with protection should interest rates rise over the life of the mortgage (p. 104).⁸

⁶ “[T]he average annual relative price increase from 1890 to 1997 was just 0.09 of 1 %.” Nonetheless, “while the data exhibit no *long run trend* for over a century, there were some very conspicuous ups and downs. For example, real house prices rose almost 60 % from 1942 to 1947 and, more recently, jumped over 20 % from 1964 to 1989.” (Blinder 2013, p. 33)

⁷ The FCI Report (2011) states that “[n]ationally, housing prices jumped 152 % between 1997 and their peak in 2006, more than in any decade since at least 1920,” citing interviews with Jim Callahan, former Salomon Brothers trader and CEO of Pent Alpha, and Lewis Ranieri, former vice chairman of Solomon Brothers (p. 156 and 565). This reported increase in prices is presumably not adjusted for inflation.

⁸ Subprime mortgages rose from 8 % of mortgage originations in 2003 to 20 % in 2005. Adjustable-rate mortgages “gave home buyers even lower initial payments or made a larger home more affordable provided interest rates did not rise. In 2001, 4 % of prime borrowers with new mortgages chose ARMs; in 2003, 10 % did. In 2004, the proportion rose to 21 %. Among subprime borrowers, already heavy

Moreover, and as will be discussed more fully below, lenders learned that hefty profits can be earned in subprime mortgage loans, and soon began to relax underwriting standards and offered an array of alternative, subprime mortgages permitting homeowners and investors to acquire ever more expensive houses (pp. 105–106). Meanwhile, as will also be discussed below, mortgage securitization permitted the lender to sell mortgage loans to investment companies, which in turn pooled them into mortgage-backed securities they sold to other investors. The securitization of mortgages moved the mortgage loan off the books of the lender and freed capital to make additional mortgage loans (pp. 42–43).

According to Blinder (2013), a bond bubble accompanied the housing bubble (pp. 40–41). Unlike the housing bubble, in which the misperception was the conviction the value of houses would increase forever, the mistaken belief in the bond bubble was that the historic low rate of defaults on mortgages during the period 1991–2004 would continue evermore (pp. 41–42).⁹ By understating the risk of mortgage default, investors vastly overstated the value of the mortgage-backed securities (p. 54). Because mortgage-backed bonds provided a higher return than U.S. Treasury bonds with a perceived negligible increase in risk, investors flocked to mortgage-backed securities (and attempted to magnify the return by leveraging the investment, worsening the result when the bottom fell out) producing a “huge bond bubble” (p. 54).

Excessive Leverage

The key ingredient to the 2007–2009 financial crisis was excessive leverage throughout the entire financial system. Leverage began with home owners. Household debt rose from 80 % of disposable personal income in 1993 to almost 130 % by mid-2006, and more than three-quarters of the increase was mortgage debt (FCI Report 2011, pp. 83–84).¹⁰ The average mortgage debt per household rose from \$91,500 in 2001 to \$149,500 in 2007. Overall mortgage indebtedness in the U.S. climbed from \$5.3 trillion in 2001 to \$10.5 trillion in 2007, and the average mortgage debt of the American household rose almost as much in the 6 years from 2001 to 2007 as it had over the course of the country’s more than 200-year history (p. 7). Prime mortgages, which require at least a 20 % down payment, provide homeowners with a leverage ratio of 5 to 1. Subprime mortgages, requiring 5 % down payment or

Footnote 8 continued
users of ARMs, it rose from around 60 to 76 %.” (FCI Report 2011, p. 85)

⁹ During the period 1991–2004, “[a]ctual defaults... were, in a word, negligible” (Blinder 2013, pp. 41–42).

¹⁰ Household debt (mortgage plus personal) rose from about 100 % of GDP to about 140 % from 2000 to 2008 (Blinder 2013, p. 49).

less, became increasingly common, and raised the leverage ratio of the borrower to 20 to 1 or higher (Blinder 2013, p. 47). Even the slightest loss put the subprime borrower under water (p. 47).

Banks were also dangerously overleveraged. They borrowed heavily in the commercial paper and short-term “repo” market. The former were unsecured, short-term loans that, until the crisis, were invariably renewed by the lender. The latter were agreements to sell securities (initially Treasury bonds and later mortgage-backed securities and collateralized debt obligations) to the lender and then repurchase them at a slightly higher price. Repo loans too were invariably renewed by the lender. Because these were generally private transactions, there was little transparency in either market, and the extent to which the banks expanded their leverage through the commercial paper and repo markets was generally unknown by other banks. That would become a major issue as the financial crisis unfolded, because lenders began to question the value of the assets the borrower posted as collateral and disclosed on the balance sheet (FCI Report 2011, p. 228).

Another vehicle banks used to achieve higher leverage was off-balance-sheet entities, such as structured investment vehicles (SIV) (Blinder 2013, p. 50).¹¹ Banks sold substantial portions of their loans to the SIV, which borrowed money in the commercial paper market to pay for

¹¹ Banks were permitted to exclude both the assets transferred to the SIV and the loans incurred by the SIV from the banks’ balance sheets under accounting principles in place at the time of the crisis:

The logic of the off-balance sheet treatment of such things as structured investment vehicles, or SIVs, which banks created in order to get assets off their books, was that the bank did not control them, and so did not have to show the SIV assets, and liabilities, on its own books. That fiction evaporated early in the financial crisis. Some SIVs were among the first structures to fail, when they could not roll over loans to finance assets that had lost value. The banks chose to, or had to, rescue the SIVs. Maybe they did so to guard their reputations, or maybe they feared they would have been vulnerable to fraud allegations from those who lent to the leaking SIVs. In either case, it turned out there was a black hole that the regulatory rules had ignored in assessing how much capital the banks needed to hold. (Blinder 2013, p. 50)

Norris (1990). That accounting rule was subsequently changed by amendments to FASB No. 2013-08, Amendments to the Scope, Measurement and Disclosure Requirements, Financial Services-Investment Companies (Topic 946), issued in June 2013. FASB No. 2013-08 amended the definition of investment companies to include the bank and SIVs and requires the disclosure by the bank of the fair market value of investments held by the SIV. KPMG (2013, at 2), accessed at http://www.kpmginstitutes.com/financial-reporting-network/insights/2013/pdf/executive-accounting-investment-companies.pdf?utm_source=page&utm_medium=/financial-reporting-network/insights/2013/eau-new-criteria-investment-company-changes.aspx&utm_campaign=download.

the loans making the SIV highly leveraged. The bank, in turn, loaned the money it received from the SIV, converting the cash into loans without affecting the amount of its reported assets. If the bank’s deposits stay substantially the same, the bank did not affect its leverage. Moreover, as long as the SIV remained solvent, its assets and liabilities did not have to be reported in the bank’s financial statements and the highly leveraged position of the SIV remained hidden. When the value of the loans in the SIV sour—as they did with gusto in the financial crisis—the thin layer of equity in the SIV is wiped out and the losses are attributable to the bank (pp. 50–53).

Banks’ efforts to attain higher leverage succeeded magnificently:

From 2000 to 2007, large banks and thrifts generally had \$16 to \$22 in assets for each dollar of capital, for leverage ratios between 16:1 and 22:1. For some banks, leverage remained roughly constant. J.P. Morgan’s reported leverage was between 20:1 and 22:1. Wells Fargo’s generally ranged between 16:1 and 17:1. Other banks upped their leverage. Bank of America’s rose from 18:1 in 2000 to 27:1 in 2007. Citigroup’s increased from 18:1 to 22:1, then shot up to 32:1 by the end of 2007, when Citi brought off-balance assets onto the balance sheet. More than the other banks, Citigroup held assets off its balance sheet, in part to hold down capital requirements. In 2007, even after bringing \$80 billion worth of assets on balance sheet, substantial assets remained off. If those had been included, leverage in 2007 would have been 48:1, or about 53 % higher. In comparison, at Wells Fargo and Bank of America, including off-balance sheet assets would have raised the 2007 leverage ratios 17 % and 28 %, respectively (FCI Report 2011, p. 65).

Large investment banks were even more successful in achieving significant leverage. Investment banks were not subject to the same capital requirements as commercial and retail banks. Rather, investment banks were permitted to rely on their internal risk models in determining capital requirements. This enabled them to achieve higher leverage. Goldman Sachs’ “leverage increased from 17:1 in 2000 to 32:1 in 2007. Morgan Stanley and Lehman increased about 67 % and 22 % respectively, and both reached 40:1 by the end of 2007 (FCI Report 2011, p. 65).” In order to hide their high leverage, “several investment banks artificially lowered leverage ratios by selling assets right before the reporting period and subsequently buying them back (p. 65).”

Reaching a 40:1 leverage means that the investment bank’s capital constituted a mere 2.5 % of its assets; the remaining 97.5 % is borrowed, a great deal of which is short-term, much

of it overnight (Blinder 2013, pp. 52–53).¹² Because interest rates on overnight, collateralized repo loans¹³ were cheaper than interest rates on bonds (a source of funding that is guaranteed for the life of the bond), banks found it more attractive to use the former as a source of capital. The problem with that strategy is that the bank must return to the capital markets everyday to renew its loan, and, should events raise questions about the bank's creditworthiness, the bank is in major trouble. If the bank is unable to roll over its short-term borrowing, the modern version of the run on the bank ensues (p. 53).¹⁴

Synthetic leverage in the form of derivatives augmented the leverage in the financial system. "Derivatives are financial contracts whose prices are determined by, or 'derived' from, the value of some underlying asset, rate, index, or event (FCI Report 2011, pp. 45–46)."¹⁵ Coming in many forms, derivatives are used to hedge business risk or speculate on changes in such things as prices or interest rates. Two common derivatives are exchange-traded futures and options and over-the-counter credit default swaps (p. 46). Credit default swaps are agreements between a buyer and a seller in which the seller agrees to pay a debt obligation, such as a bond or a loan, if there is a default, and the buyer agrees to pay premiums to the seller for the debt protection (p. 50).¹⁶ The futures and options transactions are regulated by the Commodity Futures Trading Commission (p. 46); the credit default swap transactions were decidedly not regulated at the time of the financial crisis (p. 48).¹⁷ Left to its own devices, the over-the-counter (OTC)

derivatives market boomed. At the end of 2000, the notational amount of OTC derivatives outstanding globally was \$95.2 trillion and the gross market value was \$3.2 trillion. In June 2008, when the market peaked, outstanding OTC derivatives increased more than sevenfold to a notational amount of \$672.6 trillion and the gross market value was \$20.3 trillion (FCI Report 2011, p. 48).¹⁸ Significantly, derivatives normally are "zero-sum gambles (Blinder 2013, p. 62)," akin to dividing the pot in a game of poker: some players win and some players lose, but those not involved in the poker game are unaffected. The drastically high risks they imposed on the parties to the derivatives, however, were sufficient to trigger the financial crisis.

By acquiring derivatives, financial institutions achieved two major leverage advantages: derivatives could be used to hedge against risks thereby lowering the firm's "value at risk," and derivatives lowered the amount of capital banks were required to hold (FCI Report 2011, p. 49).¹⁹ OTC derivatives also permitted derivatives traders—including large banks and investment banks—to increase their leverage. Because the derivative mimics the returns received by someone actually owning the security, traders could achieve the same profit (or incur the same loss) without buying the security. The trader simply purchased the swap at a fraction of the actual security owner's financial outlay and often with no collateral at all.

The principal difficulty with the "newfangled" derivatives that contributed significantly to the financial crisis is that they were extremely complicated and poorly understood, and created synthetic leverage in spectacular amounts (p. 50).²⁰ When the bubble in mortgage-backed

¹² "For example, Bear Stearns' year-end balance sheet listed only 16 % of its liabilities as long-term borrowings. Its short-term borrowings were more than eight times its equity. Its reported leverage, by the way was 29 to 1" (Blinder 2013, p. 53).

¹³ A repurchase agreement, or repo, is a sale of securities for cash with a commitment to repurchase them at a specified price at a future date. Because the securities forming the basis of the agreement act as collateral for the loan, the repurchase agreement by itself is simply a collateralized loan.

¹⁴ "Such runs more or less killed both Bear Stearns and Lehman Brothers in 2008, and almost killed Merrill Lynch, Morgan Stanley and Goldman Sachs. All five were playing with fire" (Blinder 2013, p. 53).

¹⁵ "'Derivative' is a generic term for any security or contract whose value is *derived* from that of some *underlying* natural security, such as a stock or a bond. Instead of owning the asset, and either profiting or losing as its price rises or falls, a derivative is a bet on some aspect of its behavior" (Blinder 2013, p. 61).

¹⁶ When credit default swaps were packaged into synthetic CDOs, risk was amplified, because the buyer of the CDO was also exposed to subprime mortgages.

¹⁷ "In December 2000... Congress passed and President Clinton signed the Commodity Futures Modernization Act of 2000 (CFMA), which in essence deregulated the OTC derivatives market and eliminated oversight by both the [Consumer Futures Trading Commission] and the [Securities Exchange Commission]. The law also preempted application of state laws on gaming and on bucket shops (illegal brokerage operations) that otherwise could have made OTC derivatives transactions illegal. The CFMA effectively shielded OTC derivatives from virtually all regulation or oversight" (FCI Report

Footnote 17 continued

2011, p. 48). The enactment of CFMA marks another successful lobbying effort by the financial industry to remove government restrictions on financial activities: repealing limits on interest rates banks and thrifts could pay on deposits in 1980; broadening types of loans banks and thrifts could make, such as interest only, balloon payment, and adjustable rate in 1982; removing restrictions on underwriting and derivatives trading in 1987; permitting bank holding companies to acquire banks in every state in 1994; and repealing any remaining restrictions of Glass–Steagall through the Gramm–Leach–Bliley Act in 1999.

¹⁸ Because the reported notational value refers to the value of the underlying securities, not the derivative, it may "sound scarily large—vastly larger than the total world wealth, for example." If the derivative become worthless, its owner would lose the market value, not the notational value (Blinder 2013, p. 62).

¹⁹ The 1988 Basel International Capital Accords ("Basel I") made capital requirements for mortgages and mortgage-backed securities less than for all other assets except those explicitly backed by the U.S. Government. Basel I also permitted banks which hedged their credit or market risks using derivatives to hold less capital against their exposures from trading and other activities (FCI Report 2011, p. 49).

²⁰ This problem was exacerbated, because much of the derivative's risk was concentrated in a handful of the very largest banks, investment banks, and AIG Financial Products, a unit of AIG, which

securities burst, a much larger bubble in leveraged bets burst at the same time, creating one huge mess (Blinder 2013, p. 55).²¹

Reluctant Regulators

At the time of the financial crisis, the banking industry was subject to four federal banking regulators charged with “ensuring the *safe* and *sound* operation of banks and other financial institutions”: the Federal Reserve, the Office of the Comptroller of the Currency (OCC), the Office of Thrift Supervision (OTS), and the Federal Deposit Insurance Corporation (FDIC) (p. 57).²² Under the regulators’ “unwatchful” eyes, banks proliferated their SIVs, approved hundreds of billions of dollars in shamefully bad subprime mortgages (many designed to default) (Blinder 2013, p. 70), and invested vast sums of money in dicey assets “they portrayed as, and maybe even believed were, safe (p. 57).” That the banking regulators could have “slammed the door on some of the more outrageous underwriting practices, but didn’t” is perhaps the greatest tragedy of the financial crisis (p. 58).²³ Risky subprime lending by banks expanded significantly in plain view.

Footnote 20 continued

dominated dealings in OTC derivatives. “Among U.S. bank holding companies, 97 % of the notional amount of OTC derivatives, millions of contracts, were traded by just five large institutions (in 2008, J.P. Morgan Chase, Citigroup, Bank of America, Wachovia, and HSBC)—many of the same firms that would find themselves in trouble during the financial crisis. The country’s five largest investment banks were also among the world’s largest OTC derivatives dealers” (FCI Report 2011, p. 50).

²¹ The over-the-counter derivatives market came to a “grinding halt” in the Fall of 2008, substantially limiting the ability of institutions to enter or unwind their contracts or to hedge business risks at a time when risk management was most crucially needed (FCI Report 2011, p. 365).

²² The Securities and Exchange Commission (SEC) was equally unvigilant in regulating the issuance of the mortgage-backed securities and collateralized debt obligations. By the time the financial crisis hit, investors held more than \$2 trillion of non-GSE mortgage-backed securities (MBS) and close to \$700 billion of collateralized debt obligations (CDO) that held mortgage-backed securities, all of which were issued with practically no SEC oversight. The MBS were issued through “shelf registration” (a shell registration statement to which by a supplemental prospectus was added). The SEC did not review the supplemental prospectus. If it had, it would have learned that the issuer disclaimed its obligation to comply with Regulation AB which required disclosure of credit-granting or underwriting criteria used in assembling the pooled loans. The CDOs were issued through Rule 144A to qualified institutional buyers. This provision permits the sale of the securities without registration (FCI Report 2011, pp. 169–170).

²³ The 1994 Home Ownership and Equity Protection Act (HOEPA) directed the Federal Reserve to more broadly “prohibit acts or practices in connection with the [mortgage loans that the Federal Reserve] finds unfair, deceptive or designed to evade the provisions of the [act].” Despite this opportunity, the Federal Reserve consistently

Subprime mortgages were only 7 % of mortgages granted in 2001. By 2005, subprime lending grew to 20 % of all new mortgages, and total outstanding subprime mortgage balances soared to about \$1.25 trillion. Unfortunately, the banking regulators seemed not to notice despite warnings that matters were getting out of hand (p. 58).²⁴ Whether it was the free-market ideology of banking regulatory officials or perceived political pressure to drive up homeownership among relatively low-income families in the Clinton and Bush administrations, the regulators looked the other way. Indeed, the banking regulators may not actually have seen “the complete sorry picture for what it was,” because a growing source of the “dodgy” mortgages was non-bank lenders operating beyond the purview of the federal regulatory system “with no adult supervision at all” (p. 59).²⁵

The non-bank mortgage lenders were part of what is sometimes called the shadow banking system, a “complex latticework of financial institutions and capital markets” heavily involved in borrowing and lending (p. 59).²⁶ The

Footnote 23 continued

eschewed its responsibilities to intercede in mortgage loans (FCI Report 2011, pp. 76–77).

²⁴ “Alert journalists, for example, were writing about risky lending practices in the subprime mortgage sector as early as 2004. It was an open secret.... [T]he late governor Edward “Ned” Gramlich was warning Alan Greenspan that things were getting out of hand as early as 2000. And Sheila Bair, who was then a Bush Treasury official, was sounding alarms there” (Blinder 2013, p. 58).

²⁵ “[O]nly one of the top ten subprime mortgage originators in 2005 was a regulated commercial bank (Wells Fargo). By 2007 more than half of all subprime loans were being originated by mortgage brokers rather than by banks. Indeed, Gramlich estimated that only 10 % of subprime loans granted in 2005 came from regularly supervised banks and thrifts” (Blinder 2013, p. 59).

²⁶ The term “shadow banking” refers to the lack of transparency in transactions by financial institutions outside the purview of government regulators. The term was originally coined in 2007 by economist Paul McCulley to refer to non-bank financial transactions outside of the scope of government regulation in which short-term funds were borrowed to invest in longer-term assets. The definition was expanded to encompass lending transactions by all entities outside the regulated banking system in which investors lend money to borrowers who invest the funds in assets with longer-term maturities. When investors became concerned about the worth of those longer-term assets and refrained from renewing the loans or withdrew their funds, the shadow bank lenders were forced to sell their assets into falling markets and to reduce the value of similar assets on their books, creating further fears about their financial health. As the financial crisis peaked, so many investors withdrew or would not roll over their funds, that many financial institutions, banks and non-banks, encountered serious financial difficulty. Those difficulties affected commercial banks, because some commercial banks controlled shadow banks and because the withdrawal of shadow banks from other markets affected the commercial markets in which banks borrowed money. Because these transactions were private party transactions outside the realm of government regulation, there was little transparency and no one knew who owed money to whom or how much was owed, causing banks to cease trusting and lending to

players in the shadow banking system included: Fannie Mae and Freddie Mac, two government sponsored entities (GSE) charged with purchasing and pooling prime mortgages and selling them to financial institutions; private label securitizers (non-GSE assemblers of debt-backed securities); investment banks (which were often securitizers as well); bank-owned SIVs; non-bank finance companies; hedge funds; private equity funds; asset managers; and mutual, pension and other investment funds (pp. 59–60). The shadow banking system provided rich soil for the burgeoning growth of derivatives, which despite several instances of highly publicized “accidents” were set free from any government regulation by the Commodity Futures Modernization Act of 2000 (pp. 60, 62–63).²⁷

One particular type of derivative—the credit default swap (CDS)—emerged in the year 2000 and went on to play a major role in the financial crisis. The CDS is like an insurance policy. The purchaser of a CDS pays periodic fees to the seller of the CDS over the life of the CDS in return for the seller’s guarantee to pay an identified debt (e.g., a bond or loan obligation). If a default occurs on the underlying debt, the seller is obligated to pay the buyer the face value of the debt (FCI Report 2011, p. 50 and Blinder 2013, p. 66). The CDS plays a crucial role in permitting investors to hedge against non-payment. For example, an investor who is fearful the debtor on a bond will not be able to pay can purchase a CDS on the bond and have assurance the face value will be paid when due. If the debtor pays the bond when due, the CDS expires and the premiums paid by the purchaser for the CDS reduce the profit realized on the bond. If the debtor fails to pay the bond when due, the seller of the CDS pays the face value to the buyer of the CDS, much like an insurance policy covers insured losses. Like an insurance company, the seller of the CDS incurs a large loss, but hopefully one that occurs only rarely (Blinder 2013, p. 66). In short order, however, the CDS morphed into the “naked” CDS in which purchasers and sellers of CDS had no interest in the underlying security. They simply placed a bet with each other on whether or not

a default event will take place. In this scenario, risk is created not extinguished (p. 66).

The CDS transaction played a large role in the financial crisis, because it enhanced leverage (a small premium can produce a significant payout), ceased to be a zero-sum game when the sellers were unable to pay the guaranteed debt (witness the bailout of AIG to be discussed later in this case study), and provided huge profit margins for dealers willing to issue customized derivatives, driving banks into “feeding frenzies to expand volume” (p. 67). As the financial crisis unfolded, the lack of transparency in the derivatives markets fomented unbridled fear of the seller’s default and shut the derivatives markets down, perhaps the biggest boom-bust story in the crisis, magnifying the losses stemming from subprime mortgage defaults from what otherwise should have been a controllable event into a financial catastrophe (p. 67).²⁸ The financial system could not withstand this wretched stew: unwatchful regulators, unbridled mortgage lending standards, unregulated shadow banking, derivatives exempt from regulation, and subprime mortgages (and the securities into which they were placed) going bad (p. 68).

Shameful Subprime Mortgage Lending Practices

In 1994 subprime mortgage originations were around \$35 billion and about 5 % of total originations. By 2005, subprime mortgage originations reached \$625 billion and about 20 % of total originations (p. 70). These loans took multiple forms, including interest only (the borrower pays interest only for a stated period and a final principal payment in one large installment at the end of the term), balloon mortgages (the borrower pays lower, regular payments for a specific term and then must pay the remaining balance in higher payments within a relatively short time) (FCI Report 2011, p. 34),²⁹ and “pick-a-pay” loan (the borrower decides to make the contractual payment, pay only the interest, or pay less than the interest due, in which case the interest not paid is added to the principal) (Blinder 2013, p. 71). Subprime loans also included “no-doc” and “low-doc” mortgages (loans processed with little or no documentation of income or ability

Footnote 26 continued

other banks. In short, the term shadow banking refers to the lack of disclosure and information. (Kodres 2013). It is in this sense that Professor Binder describes the shadow banking system (Blinder 2013, pp. 59–63), and the Financial Crisis Inquiry Commission explains its role in the financial crisis (FCI Report 2011, pp. 27–37). And it is this sense that the term is used in the case study.

²⁷ The accidents include the bankruptcy of Orange County, California which found itself on the wrong side of a derivative deal with Merrill Lynch; highly publicized litigation between Proctor & Gamble and Bankers Trust which triggered the release of highly damning audiotapes; the escapades of Nick Leeson, a rogue trader whose Singapore trades broke Barings, Britain’s oldest investment bank; and the collapse of the Long-Term Capital Management hedge fund, which set off a worldwide financial crisis (Blinder 2013, pp. 60, 62–63).

²⁸ The notational value of outstanding CDS was \$919 billion in 2001. By the end of 2007, the notational value exceeded \$62 trillion. In 2008, an estimated 80 % of outstanding CDS were naked (Blinder 2013, p. 67).

²⁹ Investopedia.com, accessed at <http://www.investopedia.com/terms/b/balloon-mortgage.asp>, defines a balloon mortgage as follows: “A type of short-term mortgage,” which require borrowers to “make regular payments for a specific interval, then pay off the remaining balance within a relatively short time. Some types of balloon mortgages can be interest-only for 10 years, and the final ‘balloon’ payment to pay off the balance comes as one large installment at the end of the term.”

to pay the loan and sometimes referred to as “liar loans”), which ultimately made up 9 % of all outstanding loans (FCI Report 2011, p. 110).³⁰ According to both Blinder (2013, p. 70) and the FCI Report (2011, pp. 104–105), about 70 % of subprime loans also employed adjustable-rate mortgages (ARMs), such as 2/28s and 3/27s, which provided the borrower with low “teaser” rates for 2 or 3 years and then adjusted periodically upward.³¹ Experiencing the euphoria of rising house prices, borrowers believed they could refinance their subprime mortgages and then settle into a mortgage that they would afford (Blinder 2013, p. 71). Unfortunately, many of the subprime mortgages, marketed to financially unsophisticated borrowers, were simply “designed to default (pp. 70–71).” While the defaulted subprime mortgages alone were insufficient to be a major cause of the financial crisis, those defaults certainly contributed to the tremors leading to the financial crisis (p. 71).

Mortgage brokers played a crucial role in pushing borrowers into subprime loans. By 2007 more than half of all subprime loans were being originated by mortgage brokers rather than by banks (p. 59). Because brokers are paid fees by the lender for generating the mortgage (often without the borrower’s knowledge), they have no incentive to be concerned about the loan’s performance (FCI Report 2011, p. 90). Indeed, mortgage brokers’ compensation scheme worked in the opposite direction, because their compensation increased if they generated more mortgages and they received a “yield spread premium” giving them higher fees for more costly, riskier mortgages, often never disclosed to the borrowers (pp. 7, 64, 90). Because many mortgage borrowers are financially unsophisticated, they were particularly ill equipped to understand the transaction, compare terms of financial contracts, and shop around before being pushed into the subprime mortgage terms (p. 90).³²

Securitization Run Amok: Alchemy Pushing Risk Downstream and Making Sausage with Tainted Meat

Fannie Mae and Freddie Mac led the way. Possessing a near monopoly on prime, fixed rate mortgages within their

loan limits, they purchased those mortgages from banks, thrifts, and mortgage companies, assembled them into mortgage pools, issued securities backed by the mortgage pools (called mortgage-backed securities or MBS), and implicitly guaranteed the payment of the mortgages through their GSE status (pp. 38–39). Following their example, investment banks would later bundle a wider variety of loans into securities and sell them to investors, who received investment returns funded by principal and interest payments made by the debtors on the underlying loans (pp. 42–43, 45). Those loans, however, extended beyond prime mortgages to include subprime and adjustable-rate mortgages, equipment leases, credit card debt, auto loans, student loans, and manufactured housing loans (pp. 44–45). The benefits derived from assembling these loan-backed investment packages were significant: lenders moved the loans off their books, reducing the amount of capital they were required to hold against losses and improving their earnings; banks earned fees for assembling the investment packages, raised funds from selling the asset-backed securities generating new funds for additional loans, and had the option of retaining parts of the securities on their books as collateral for borrowing (p. 43). These benefits aside, securitization also introduced an enormous level of complexity into the securitization products, and separated the lender from the risk of default, which was transferred to investors downstream (p. 8).³³

The earliest MBS created by Fannie and Freddie were relatively simple mortgage pools containing a few thousand mortgages (Blinder 2013, p. 72). The average value of the mortgages multiplied by the number of mortgages generated the par value for the security; the average interest rate of the mortgages, less anticipated losses from defaults, constituted the interest rate of the securities sold to investors. Because the mortgages were pooled, the risk from defaults was spread throughout the pool, much like investors are advised to diversify their portfolios. Because prime mortgages had very low default rates and were implicitly guaranteed by the GSEs, investors believed the MBS were safe investments. The risk profile of the security they purchased was inherited directly from the underlying mortgages in the mortgage pool, much like investors purchasing mutual funds (p. 73).

In short order, things quickly became far more complex. The mortgage pools, sometimes combined with other types of loans, were divided into multiple tranches which would absorb in ascending order the losses stemming from the mortgage or loan defaults. The lowest tranches (sometimes

³⁰ Blinder (2013) says, “It has been estimated that almost one third of all subprime mortgages were either the low-doc or no-doc variety” (p. 70).

³¹ The 2/28 mortgage adjusts in the second year and applies higher interest rates for the next 28 years. The 3/27 mortgage adjusts in the third year and applies higher interest rates for the next 27 years.

³² “A study by two Federal reserve economists estimated that at least 38 % of borrowers with adjustable-rate mortgages did not understand how much their interests rates could reset at one time, and more than half underestimated how high their rates could reach over the years” (FCI Report 2011, p. 90).

³³ Because securitization generated huge fees, the phrase “I’ll be gone, you’ll be gone” was coined. It captured the dealers’ recognition that their huge upfront compensation justified the much larger, future losses suffered by investors around the globe (FCI Report 2011, p. 8).

called the residual or equity tranches) would absorb the first wave of loan defaults (e.g., up to 8 % of the loan pool); the middle or mezzanine tranches would be assigned the next level of defaults (e.g., the next 2 % of the loan pool); and the top level or senior tranche would be responsible for losses above those absorbed by the lower tranches. The equity tranches, having the highest level of risk, paid the highest interest rates; the mezzanine tranches paid lower interest rates; and the senior tranches, possessing the least risk, paid the lowest interest rates (Blinder 2013 p. 75 and FCI Report 2011, p. 71). These tranches permitted investors to choose the level of risk and rate of return they were most comfortable with. Because loan defaults on mortgages were quite low, no one expected losses to reach the upper tranches. Further, in order to compete with the implicit GSE guarantee that accompanied Fannie and Freddie's securities, the assemblers of mortgage and debt securities purchased credit default swaps from financial institutions to guarantee payment of the underlying securities and hired rating agencies (Moody, Standard and Poor, and Fitch) to rate the various tranches. Inevitably, the equity tranches received no rating; the mezzanine tranches received lower investment grade ratings (e.g., AA, A, BBB, BB), and the senior tranches received the highest investment grades (e.g., AAA) (FCI Report 2011, p. 73).

Because the lower rated MBS tranches could be hard to sell to investors, Wall Street came up with an ingenious solution: repackage the MBS with lower ratings into new collateralized debt obligations (CDO), combine them with other debt obligations, divide the new mixture into a new set of tranches, and hire the rating agencies to rate the tranches. Astoundingly, the rating firms ignored the prior ratings given to the lower MBS tranches, reapplied the same rating logic to the new CDO (i.e., given the vast size of the debt pool and attendant diversification benefits, defaults will not extend into the upper tranches of the newly created CDO), and stamped the senior tranches of the new CDO with the highest investment ranking (e.g., AAA) (pp. 128–129, 132). This alchemy not only gave new life to mezzanine MBS but triggered a frenzy among mortgage securitizers to obtain mortgage loans for the new CDOs.

Between 2003 and 2007, as house prices rose 27 % nationally and \$4 trillion in mortgage-backed securities were created, Wall Street issued nearly \$700 billion in CDOs that included mortgage-backed securities as collateral. With ready buyers for their own product, mortgage securitizers continued to demand loans for their pools, and hundreds of billions of dollars flooded the mortgage world. In effect, the CDO became the engine that powered the mortgage supply chain (pp. 128–129).

Indeed, everyone up and down the line had an interest in keeping this engine humming: mortgage lenders and brokers profited from increased volume; CDO managers and underwriters who packaged and sold the securities and rating agencies who evaluated them earned more fees; guarantors sold more derivatives; and the executives of these companies earned larger bonuses (pp. 130–132). Better yet, the risk of default was moved downstream and out of sight. Unfortunately, when the housing market went south and defaults occurred in large numbers, the CDO logic backfired and the financial crisis ensued (pp. 129, 130–132).³⁴

At every link in this “daisy chain” the parties were less knowledgeable about the soundness of the loans underlying the securities, and, because securities were continually reshuffled in ensuing and individualized editions of CDOs, the securitization process became increasingly complex and inscrutable (Blinder 2013, p. 76). Complexity and opacity precluded comparison shopping, increased reliance on rating agency imprimaturs, temporarily prolonged the supply-chain participants' profit stream, and ultimately set the stage for the ensuing collapse. Only a small percentage of mortgage defaults was required to ultimately trigger the collapse, akin to mad cow disease: while the disease may infect only a small portion of the beef on the market, the infection is so frightening that consumers shun all beef. Traders assumed the worst and tried to dump their now-unwanted securities into falling markets. Prices plummeted and panic ensued (pp. 78–79).

Overrated and Conflicted Rating Agencies

A key ingredient in the chain leading to the financial collapse was the “flood of AAA ratings the credit rating agencies showered on so many senior and super senior mortgage-related securities (p. 79).” Sadly, rather than serving as the safety rail preventing the financial system from careening off the road, the credit rating agencies—Moody's, Standard and Poor, and Fitch—bungled the job by applying deeply flawed models in gauging the safety of the underlying mortgages and attached their coveted AAA rating to MBS and CDO tranches like revelers throwing beads in New Orleans Mardi Gras parades (FCI Report 2011, pp. 119, 120–121 and Blinder 2013, p. 79). Beside

³⁴ See Jin (2013). The authors of this article report the results of their survey of the members of large national association of financial professionals, and concludes (1) that organizational core values significantly affect corporate ethics, social responsibility, and financial performance and (2) the financial industry can move toward being more ethical and socially responsible by adopting organic core values (for example, democratic, open, trusting, enterprising, creative, and simulating), and moving away from mechanistic values (e.g., structured, regulated, procedural, authoritarian, closed, and callous).

the rating firms' incompetence, the compensation system itself contributed to the flawed ratings. The securitizers hired and paid the rating agencies to evaluate the securitizers' securities (Blinder 2013, p. 80).³⁵ Not wishing to bite the hand that feeds it, the rating agency had an inherent reason to please its customers. Moreover, the practice in the rating business was to negotiate the desired ranking. For example, the securitizer might ask the rating agency what tweaking was needed to get the AAA rating. When the securitizer followed the rating agency's suggestion, the agency was locked into giving the top rating. Further, because there were only three SEC accredited rating agencies (FCI Report 2011, p. 119), securitizers engaged in "ratings shopping," pitting one rating agency against the other and hiring the rating firm willing to give the highest rating. Nor is there a downside to the rating agency's giving a flawed rating. Because security ratings are statements of opinion, not fact, and because their agreements to provide ratings disclaim liability for erroneous ratings, rating agencies are typically not liable for their misstatements (p. 120). Lastly, giant asset managers, regulators, and market professionals too often relied exclusively on the opinions of the rating agencies rather than undertaking their own due diligence. This "abdication of duty" to look deeper into the safety of the investments conferred an undeserved mantle of "oracular authority" on the ratings agencies (Blinder 2013, p. 81).³⁶

Corrupting Compensation Systems

The structure of Wall Street compensation plans "created perverse incentives for key employees to take excessive risks with... *other people's money* (p. 81)." Traders at banks, investment banks, hedge funds, and other financial companies were rewarded with hefty bonuses based on transactions that made money, but faced no penalties for transactions that failed (p. 82). Senior executives and key employees received enormous compensation packages for the financial success of their companies, and golden parachutes in the event of financial losses (p. 82).³⁷ As noted

³⁵ Professor Blinder (2013) analogizes this situation to students paying their professors to grade the students' work: "If I proposed that my students pay me for grading their work, I'd be thought crazy, corrupt or both. Yet this remains the accepted system for paying rating agencies, even today" (p. 80).

³⁶ According to the FCI Report (2011), securitizers negotiated away their right to examine mortgages in the pools and frequently waived their right to exclude mortgages that did not meet their guidelines. When securitizers actually exercised their right to exclude mortgages from the pool, loan originators followed the "three strikes, you're out rule," by putting the loan into subsequent pools until it was kicked out a third time (pp. 165–169).

³⁷ Compensation packages for senior executives and key employees soared in 2007. For example, the compensation of Lloyd Blankfein,

above, mortgage brokers improved their pay by enticing people to sign mortgages, even if they had poor credit and could not pay back the loan. They earned even bigger commissions if they pushed the borrowers into dodgier mortgages, but lost nothing if the loans defaulted. Stock options encouraged employees to focus on short-term profits, take larger risks, and employ greater leverage to trigger jumps in the company's stock price (FCI Report 2011, p. 63). Unfortunately, corporate directors, who should fix and oversee compensation systems, were simply "asleep at the switch, with disastrous consequences" (FCI Report 2011, pp. 213–214 and Blinder 2013, pp. 84, 213–214).³⁸

Unprecedented Rescue Efforts

In early 2007, the housing bubble burst. Home prices fell. Home sales declined. Mortgage delinquencies increased and continued to do so as 2007 went on, particularly in subprime adjustable-rate mortgages (FCI Report 2011, p. 213, 217, 221–222). Rating agencies downgraded their ratings of mortgage-backed securities and collateralized debt obligations. Alarmed investors sold, and sales prices plummeted. By the summer of 2007, securitization of MBS and CDO ceased and their market vanished (p. 214).³⁹ Disruption ensued as financial firms fled the commercial paper and repo markets for safer harbors. Banks became unwilling to lend to each other and scrambled to improve their own liquidity.

Footnote 37 continued

CEO at Goldman Sachs was \$468.5 million; Richard Fuld, CEO of Lehman Brothers, \$34 million; Jamie Dimon, CEO of J.P. Morgan Chase, \$28 million. Year-end bonuses Wall Street firms paid workers in New York was roughly \$33 billion, and total compensation for the major U.S. securities firms and banks approximated \$137 billion (FCI Report 2011, p. 63).

³⁸ A reviewer of this paper insightfully suggested that an alternative explanation for the lack of ethical behavior underlying the crisis might be the personality based approaches involving greed, love of money, and ruthless indifference to the fate of others on the part of the corporate bankers involved in the debt crisis, and suggests that examination of the following sources may be helpful starting point to explore that line of research: Basham (2011), Boddy (2011), Chambers et al. (2010), Cohan (2012), Jones (2013, 2014), Mesly and Maziade (2013), Mulhern (2010), Spencer and Wargo (2010), and Stout (2005).

³⁹ Downgraded ratings caused huge losses. Investors, like banks, pension funds, and insurance companies were forced to sell the MBS and CDO, because they lost their investment grade status, and selling into a declining market is disastrous. MBS and CDO held by financial firms lost much of their value, and new securitizations lacked buyers. Unable to sell, banks were forced to "mark-to-market" recognizing losses on their securities. Assets in off-balance sheet SIVs, rendered insolvent by the price decline, had to be brought back onto the balance sheet and more losses had to be recognized. This reduced the bank's capital and increased its reserve requirements (FCI Report 2011, pp. 221–222).

Institutions dependent on the commercial paper and repo markets failed or would have to be rescued by the Federal Reserve (p. 255).⁴⁰

Bear Stearns was first. Experiencing runs by hedge fund customers, derivatives counterparties, and repo lenders (who loaned Bear Stearns over \$100 billion, most of it overnight), and possessing a large portfolio of illiquid mortgage assets and unable to borrow from other banks without government assistance, Bear Stearns notified the SEC on Thursday evening, March 13, 2008, that it would be “unable to operate normally on Friday” (p. 289).⁴¹ The New York Fed made a \$12.9 billion loan to Bear Stearns through J.P. Morgan on Friday morning, March 14, 2008. The markets viewed the loan as a sign of terminal weakness. The rating agencies downgraded Bear Stearns’ ratings. Bear Stearns’ stock plummeted and it was out of cash by the end of the day. Over the next weekend, the Federal Reserve, invoking its emergency powers, acquired \$29.97 billion of Bear Stearns’ assets (mostly mortgage related) and J.P. Morgan purchased Bear Stearns’ stock (FCI Report 2011, pp. 289–290, 291 and Blinder 2011, pp. 102–108). The principal reason for the decision to rescue Bear Stearns is likely that it was “*too interconnected to fail*” (Blinder 2013, p. 112). It was the prime broker for hundreds of hedge funds; it was counterparty to hundreds of thousands of derivatives transactions; it was heavily involved in the repo financing market. If it failed, all of those markets would have been severely disrupted (pp. 112–113).

Fannie Mae and Freddie Mac were next. In July and August 2008, they experienced liquidity squeezes when they were unable to borrow against their own securities in the repo market, and asked the Federal Reserve for help. Suspecting their problems may have been deeper, the Treasury Department developed a three-part legislative plan to strengthen the GSEs: increasing their lines of credit, injecting capital, and placing them under the supervision of a new federal agency, the Federal Housing Finance Agency (FHFA). Congress approved these proposals when it passed

the Housing and Economic Recovery Act of 2008. Discovering that the financial problems facing the GSEs were worse than expected and that they were likely insolvent, FHFA and Treasury agreed the GSEs had to be placed in conservatorship and the boards of Fannie Mae and Freddie Mac reluctantly voted to accept conservatorship on September 7, 2008 (FCI Report 2011, pp. 316–320 and Blinder 2013, p. 118), at significant cost to taxpayers (FCI Report 2011, p. 322).⁴²

Lehman Brothers was next. Lehman Brothers was a poster child of high leverage and heavy reliance on low-cost, short-term borrowing, and owed nearly \$200 billion in the repo markets. Lehman Brothers claimed it had \$45 billion in ready liquidity, and its May 31, 2008, balance sheet showed \$639 billion in assets and \$26 billion in equity. However, Lehman Brothers’ assets included \$21 billion in real estate and \$72 billion in mortgage- and asset-backed securities, and no one believed those assets were worth that much. Indeed, marking them down by 30 % would wipe out Lehman Brothers’ equity (Blinder 2013, pp. 120–121 and FCI Report 2011, pp. 326–327). Various suggestions and proposals to address Lehman Brothers problems were considered over the summer (FCI Report 2011, pp. 328–329). By September 2008, Lehman’s situation had deteriorated further as investors became increasingly concerned that Lehman Brothers could not withstand the type of run that had taken down Bear Stearns. Those concerns became reality, and a run ensued on Lehman Brothers (pp. 330–333). Treasury Secretary Henry Paulson and New York Fed President Timothy Geithner arranged a weekend meeting on Saturday and Sunday, September 13–14, 2008, among the heads of Wall Street firms to work out a deal that would not, Paulson insisted, involve public money. By Saturday night, the Wall Street firms ultimately agreed to purchase Lehman Brothers troubled real estate-related assets after which Lehman Brothers would be acquired by Barclays Bank (pp. 333–335). On Sunday morning, however, the agreement collapsed, when the parties could not agree whether Barclays Bank or the New York Fed would provide a guarantee of Lehman’s obligations from the date of the agreement until the transaction closed. When the agreement unraveled, Lehman Brothers was doomed. Lehman Brothers filed for bankruptcy on Monday morning,

⁴⁰ Treasury Secretary Paulson provides his perspective on these rescue efforts in an interesting *Bloomberg Businessweek* article. See Paulson (2013). In the article, Secretary Paulson claims he lacked authority to rescue Lehman Brothers by providing an infusion of capital via a loan, a position with which Federal Reserve Chair Bernanke agreed in testimony before the FDIC despite his earlier claim that he believed the market was prepared for Lehman’s collapse (FCI Report 2011, p. 340).

⁴¹ The run on Bear Stearns was accelerated by Goldman Sachs, which temporarily refused to accept a novation removing Hayman Capital Partners and installing Bear Stearns as the counterparty to a relatively small derivative. Normally, this would have been a routine transaction, and, when news of Goldman Sachs’ refusal to accept Bear Stearns hit the street, the run on Bear Stearns gathered steam (FCI Report 2011, pp. 287–288).

⁴² “[The Fair Housing Finance Agency] has estimated that costs [of the bailouts of Fannie Mae and Freddie Mac] through 2013 will range from \$221 to \$363 billion. The Congressional Budget Office has projected that the economic cost of the GSEs’ downfall, including the total financial cost of government support as well as actual dollar outlays, could reach \$389 billion by 2019” (Blinder 2013, p. 119). Placing Fannie Mae and Freddie Mac in conservatorship may have sent a very bad message about the depths of the financial crisis, because Fannie Mae and Freddie Mac arguably held the better slices of all of the MBS.

September 15, 2008, at 1:45 am (Blinder 2013, p. 124 and FCI Report 2011, pp. 335–339),⁴³ and fervent arguments have ensued ever since about whether the Federal Reserve should have worked out a rescue plan for Lehman Brothers as it had for Bear Stearns (Blinder 2013, pp. 125–127 and FCI Report 2011, pp. 340–341). In any event, the consequences of Lehman Brothers' bankruptcy turned out to be far more severe than anyone imagined and the financial system began literally to fall apart (Blinder 2013, p. 127).⁴⁴

One good thing did come out the weekend meeting. The CEOs of Bank of America and Merrill Lynch agreed that Bank of America would acquire (and thereby rescue) Merrill Lynch. Although the takeover of Merrill Lynch would later run into a few speed bumps, the merger was completed on January 1, 2009 (p. 153).⁴⁵

American International Group (AIG) was next in line. In 2004, AIG was the largest insurance company in the world (measured by stock value) and a massive conglomerate with \$850 billion in assets, 116,000 employees in 130 countries, and 223 subsidiaries. AIG's credit rating was the highest possible rating: Aaa by Moody's since 1986 and AAA by Standard and Poor since 1983. One of only six companies in the world to have the highest credit rating, AIG could borrow more cheaply than its competitors and bring an unusual level of credibility to the credit default swap markets. Starting in 1998, one of its subsidiaries, AIG Financial Products, became a major over-the-counter derivatives dealer, eventually generating a portfolio of \$2.7 trillion in notational amount. Credit default swaps constituted a significant portion of AIG's derivatives business. Its credit protection on assets, including MBS and CDOs, grew from \$20 billion in 2002 to \$211 billion in 2005 and \$533 billion in 2007. AIG Financial Products' regulator, the Office of Thrift Supervision, did not require AIG to

establish a reserve in the case of a loss, and AIG Financial Services was so confident there would be no realized economic losses on the CDOs on which it provided protection, it failed to make any provisions for losses, a colossal failure in risk management. Nor did AIG Financial Services post any collateral when it wrote the contracts. It did, however, agree to post collateral if the value of the underlying securities dropped or if the rating agencies downgraded AIG's long-term debt ratings (FCI Report 2011, pp. 139–141 and Blinder 2013, pp. 131–133).

Disaster struck early in 2008. AIG's auditors, PricewaterhouseCoopers, not only discovered evidence AIG had manipulated earnings, but also concluded that AIG had a material weakness in internal controls, because AIG had not developed a reliable methodology to estimate the declining value of the securities on which it has written credit protection (FCI Report 2011, pp. 141, 273). AIG was forced to disclose this material weakness in an SEC filing and acknowledged that it had understated its potential losses related to the derivatives by \$3.6 billion (pp. 271–273). The ratings agencies immediately announced downgrades of AIG's credit rating, triggering a crescendo of calls for collateral from its counterparties, the most aggressive of which was Goldman Sachs (FCI Report 2011, pp. 141, 273–274 and Blinder 2013, pp. 133–135).⁴⁶ Worse news followed. At the end of February, AIG reported a net loss of \$5.29 billion stemming from \$11.12 billion in valuation losses related to the super-senior CDO credit default swaps it had written and more than \$2.6 billion in losses related to purchases of mortgage-backed securities by its securities lending business (FCI Report 2011, pp. 271–273). These losses, in turn, triggered another bevy of calls for additional collateral by AIG's counterparties.

Over the ensuing months, AIG's troubles mounted. Demands for collateral by its credit default swap counterparties soared, and AIG struggled to keep pace. By September, the calls had rocketed to \$23.4 billion, of which AIG had posted \$18.9 billion (FCI Report 2011, p. 344 and Blinder 2013, p. 235). The ratings agencies warned of additional rating downgrades, which would produce an

⁴³ Barclays later purchased much of Lehman's U.S. banking business out of bankruptcy. Green (2013).

⁴⁴ According to the FCI Report (2011), "The inconsistency of federal government decisions in not rescuing Lehman after having rescued Bear Stearns and the GSEs, and immediately before rescuing AIG, added to uncertainty and panic in the financial markets" (p. 343).

⁴⁵ "Bank of America was soon suffering from buyer's remorse. In retrospect, it overpaid for a balance sheet and legal liabilities that were worse than it realized" (Blinder 2013, p. 153). Merrill Lynch's projected after-tax losses were larger than expected, growing from \$5 billion in early December to \$12 billion in mid-December. This prompted Ken Lewis, CEO of Bank of America, to contemplate using an escape clause in the merger agreement. In January 2009, the Treasury Department used \$20 billion in TARP funds, discussed more fully in the "Unprecedented Rescue Efforts" section, to purchase \$20 billion in Bank of America preferred stock, and Treasury, Federal Reserve and FDIC designated an asset pool of \$118 billion to serve as protective "ring fence" to provide liquidity and guarantee the company's solvency. On May 9, 2009, Bank of America asked to exit the ring fence deal, explaining that the company had determined Merrill Lynch's losses would not exceed the first \$10 billion, Bank of America's first-loss position (FCI Report 2011, pp. 383–385).

⁴⁶ Goldman Sachs was far more aggressive than the other banks in recognizing losses in marking its mortgage-backed securities to market and insisted that AIG follow suit. Doing so would trigger a substantial increase in the collateral AIG would have to post, and AIG and Goldman Sachs continued to argue over Goldman's marks and the amount of collateral AIG was required to post. Their dispute ultimately cost AIG tens of billions of dollars and triggered one of the largest government bailouts in American history (FCI Report 2011, pp. 233–234). Surprisingly, AIG senior executive officers later claimed they were stunned by the initial collateral call to learn of the collateral call provisions in the CDS issued by AIG, and the managing director of AIG Financial Products claimed he directed AIG to stop writing CDS 18 months earlier (FCI Report, 2011, p. 266).

estimated \$10 billion in additional collateral calls; and trigger liquidity puts AIG had written on commercial paper would require it to come up with an additional \$5 billion (FCI Report 2011, pp. 344–345 and Blinder 2013, p. 136). Its securities lending business had soured as well, because the value of its posted securities had declined, reducing the amount it could borrow, and the assets in which it had invested the loan proceeds—largely mortgage-related—lost significant value, triggering an additional \$24 billion in collateral calls from its securities lending counterparties. Moreover, AIG had to come up with \$1.4 billion to cover its commercial paper loans by September 12, 2008, and another \$3.2 billion the following week (FCI Report 2011, pp. 344–345). AIG was in deep trouble.

Unable to roll over its commercial paper or obtain repo funding, AIG could neither borrow funds nor raise capital. Caught in a trap without an escape button, AIG turned to the Federal Reserve Bank of New York for help (p. 347). Letting AIG collapse was unthinkable. Doing so would trigger a massive dislocation in the commercial paper market, significantly increase the capital reserve requirements of European banks, which had lowered those requirements by purchasing AIG credit default swaps, and create massive disruption among the companies who purchased AIG's \$2.7 trillion over-the-counter derivatives, \$1 trillion of which was concentrated in just twelve large counterparties (p. 348). Unable to work out a private sector solution and invoking its emergency powers, the Federal Reserve on Tuesday, September 16, 2008, agreed to loan \$85 billion to AIG to meet its immediate obligations. AIG provided collateral in the form of the parent company's assets and those of its non-regulated subsidiaries, plus the stock of those subsidiaries. Treasury would later add \$49.1 billion of Troubled Asset Relief Program (TARP) funds (explained more fully below), and taxpayer funds committed to AIG would ultimately reach \$182 billion (FCI Report 2011, pp. 348–350 and Blinder 2013, pp. 136–137), the worst public relations aspect of which was the public outcry against the “embarrassingly large” bonuses paid to four hundred AIG executives (Blinder 2013, 137–138).⁴⁷

Within twenty-four hours, Lehman went bankrupt, Merrill Lynch was taken over, and AIG was rescued. Panic ensued. The Federal Reserve unsuccessfully scurried to make cash available to banks to deter runs (FCI Report 2011, p. 371).⁴⁸ Commercial paper and repo markets froze.

⁴⁷ Blinder (2013) contends that the most serious mistake in the AIG bailout was the controversial decision to cover all of the losses of AIG's creditors, rather than giving them “a haircut,” thereby seriously breaching the moral hazard principle (pp. 138–140).

⁴⁸ “Ten days after the Lehman bankruptcy, the Fed had provided nearly \$300 billion to investment banks and commercial banks through the [Primary Dealer Credit Facility] and the [Term Securities Lending Facility].” The Fed used these programs to permit banks to

Unabated runs against banks, hedge funds, and money market funds followed (FCI Report 2011, pp. 353–359 and Blinder 2013, pp. 142–149). Seeking a different solution, Treasury Secretary Paulson started seeking authority for TARP funds from Congress.

When massive runs spread to Morgan Stanley and Goldman Sachs, the two large investment banks remaining, they became the next parties in line. Believing they would fail, the Federal Reserve on Sunday, September 21, 2008, accepted their applications to become bank holding companies, a suggestion the New York Federal Bank and FDIC had earlier rejected for Lehman Brothers (FCI Report 2011, p. 328). Morgan Stanley instantly converted its \$39 billion industrial loan company into a national bank subject to the supervision of the Office of the Comptroller of the Currency. Goldman Sachs converted its \$26 billion industrial loan company into a state-chartered bank that was a member of the Federal Reserve System and subject to supervision by the Federal Reserve and New York State. These conversions gave Morgan Stanley and Goldman Sachs immediate emergency access to the Federal Reserve's discount window for terms of up to 90 days to restore their liquidity, and, when Wall Street opened on Monday morning, there were no large, independent investment banks remaining (FCI Report 2011, pp. 360–363 and Blinder 2013, p. 152).

Washington Mutual lined up next. Depositors withdrew \$16.7 billion from their accounts and “WaMu” faced imminent collapse. Moody's downgraded WaMu's senior unsecured debt to junk status, and the Office of Thrift Supervision concluded it was insolvent. The government seized WaMu on September 25, 2008, appointing the FDIC as receiver, and WaMu became the largest insured depository institution to fail in the U.S. history. J.P. Morgan paid FDIC \$1.9 billion to buy WaMu's banking operations, and WaMu's parent, now lacking the thrift operations, declared bankruptcy (FCI Report 2011, p. 365 and Blinder 2013, pp. 155–157). Because the FDIC refused to protect WaMu's unsecured creditors under the “systemic risk” exception of the Federal Deposit Insurance Corporation Improvement Act of 1991, panic spread to the unsecured creditors of other struggling banks, including Wachovia, the next institution to get in line (FCI Report 2011, p. 366).

Seeing what happened to WaMu, Wachovia depositors accelerated significant withdrawals, lenders withdrew liquidity support, and unsecured depositors and creditors using their computers began a “silent” run on Wachovia (FCI Report 2011, p. 367 and Blinder 2013, p. 157). Creditors

Footnote 48 continued

borrow money on advantageous terms by posting their assets of questionable quality and extending the term of the loans (FCI Report 2011, p. 354 and Blinder 2013, pp. 296–297). The PDCF and TSLF programs peaked at \$483 and \$156 billion, respectively (FCI Report 2011, p. 375).

refused to roll over Wachovia's short-term funding, including commercial paper, and demanded Wachovia pay roughly half of its long-term debt. Although not contractually obligated to do so, Wachovia feared its refusal to repay the loans early would create insurmountable problems later. On Saturday and Sunday, September 27 and 28, 2008, government officials lined up Wells Fargo and Citigroup to bid on Wachovia. Both company's bids required the FDIC to cover some losses, but Citigroup's proposal appeared to provide less exposure to the FDIC. On that basis, the FDIC approved and publically announced Citigroup's winning bid, permitting Wachovia to open on Monday morning, September 29, 2008 (FCI Report 2011, pp. 367–369). As Wachovia and Citigroup proceeded to work on their deal, Wells Fargo sprang a surprise. On Thursday morning, October 2, 2008, Wells Fargo offered to buy all of Wachovia stock for \$7 per share, seven times Citigroup's bid, with no government assistance (FCI Report 2011, p. 370 and Blinder 2013, pp. 159–160). Wachovia's board convened that afternoon and accepted Wells Fargo's offer unanimously. The Wells Fargo deal was announced on Friday morning (p. 370).

These heroic rescue efforts would shortly be boosted significantly by the Troubled Asset Relief Program (TARP). TARP was a \$700 billion program included in the Emergency Economic Stabilization Act of 2008, which President Bush signed into law on October 3, 2008, and which authorized the Treasury Department “to purchase and insure certain types of troubled assets for the purposes of providing stability to and preventing disruption in the economy and financial system,” and to purchase “any financial instrument that the Secretary... determines... is necessary to promote financial market stability” (FCI Report 2011, p. 372 and Blinder 2013, p. 192). While Treasury Secretary Paulson promoted TARP as a vehicle for purchasing toxic mortgage-related assets, he quickly changed tactics and decided that the best way to reassure the markets was to erase uncertainty about the solvency of financial institutions by injecting capital into the major financial institutions (FCI Report 2011, p. 272 and Blinder 2013, p. 192).⁴⁹ This revised approach sidestepped the difficult problems of identifying, establishing ownership, appraising, auctioning, and purchasing (and forcing financial institutions to step forward and admit that they held) toxic assets. On October 13, 2008, Treasury Secretary Paulson strong-armed nine major financial institutions—the four largest commercial bank holding companies (Bank of America, Citigroup, J.P. Morgan and Wells Fargo), the three remaining large investment banks (Goldman Sachs

and Morgan Stanley, which were now bank holding companies, and Merrill Lynch, which Bank of America agreed to acquire), and two important clearing and settlement banks (BNY Mellon and State Street)—to accept capital infusions in return for which the Treasury acquired senior preferred stock⁵⁰ paying a 5 % dividend. The amount of capital infused into those financial institutions was significant: \$25 billion each went to Citigroup, J.P. Morgan, and Wells Fargo; \$15 billion went to Bank of America; \$10 billion each went to Merrill, Morgan Stanley, and Goldman; \$3 billion to BNY Mellon; and \$2 billion to State Street, for a total of \$125 billion (FCI Report 2011, pp. 373–374 and Blinder 2013, pp. 193–202). By infusing this capital in the form of preferred stock, the banks' equity was substantially increased, a buffer was created for them to absorb losses, the banks reduced their dangerously high leverage, and the stability of the financial system was increased. This made it safe to do business with banks, which were cloaked in a de facto government guarantee.

Over the next few months, the last of President Bush's second term as President, the Treasury Department directed TARP funds to specific financial institutions. It used \$40 billion plus a \$30 billion lending facility to prop up AIG a second time. It provided \$20 billion to shore up Citigroup, which lost investor confidence after its failed bid for Wachovia, incurred huge losses on its structured investment vehicles, and flirted with insolvency. It pledged \$20 billion to Bank of America to nudge the completion of its acquisition of Merrill Lynch. It invested \$181 billion in automobile manufacturers and their finance companies: General Motors, GMAC, Chrysler, and Chrysler Financial (FCI Report 2011, p. 375).

Despite ongoing disagreement about the “bait and switch” application of TARP funds to infuse capital rather than acquire toxic assets, the miraculous outcome is “TARP worked—probably better than anyone expected,” and in the end “cost the taxpayers almost nothing” (Blinder 2013, pp. 208–209). That certainly is not a bad outcome for a couple of months of very hard work.

The Bush presidency came to an end. Barack Obama became the 44th President on January 20, 2009. He embarked on an ambitious and controversial economic stimulus plan, and the Dodd–Frank Act, signed into law on July 21, 2010, attempted to impose reforms on the financial industry.

⁴⁹ The scare tactics used to promote the passage of TARP may itself have accelerated the crisis by expanding the panic from the financial markets into the real economy causing consumer and business confidence to plummet and grinding discretionary economic activity to a halt.

⁵⁰ Investopedia defines preferred stock as a “class of ownership in a corporation that has a higher claim on its assets and earnings than common stock. Preferred shares generally have a dividend that must be paid out before dividends to common shareholders, and the shares usually do not carry voting rights,” accessed at <http://www.investopedia.com/terms/p/preferredstock.asp>.

Major Ethical Issues

The 2007–2009 financial crisis “witnessed an erosion of standards of responsibility and ethics... [that] stretched from the ground level to the corporate suites” (FCI Report 2011, p. xxii). The activities of the financial institutions and regulatory agencies that contributed to the financial crisis and government institutions that employed unprecedented rescue strategies to drag the financial crisis back from the brink of total global collapse present major ethical questions.⁵¹ Those questions include the following:

Mortgage Brokers

1. *Determine whether the compensation paid to mortgage brokers constitutes a conflict of interest with respect to the individuals for whom the mortgage brokers facilitated the mortgages.*

Because mortgage brokers' compensation was higher for originating subprime loans than conventional loans, they frequently pushed borrowers into more costly and risky mortgages, such as interest only, balloon and adjustable-rate loans, and failed to disclose either their compensation differential to the borrowers or the differences in risk posed by the subprime loans. Because it is unclear whether the brokers generated subprime mortgages to gain enhanced compensation or to advance interest of the borrower, a conflict of interest exists.

2. *How should the mortgage brokers have resolved the conflict of interest, if any, with the individuals for whom they sought mortgages with lenders?*

In order to resolve the conflict of interest, the brokers should either have removed themselves from the mortgage transaction or fully disclosed their enhanced financial interest in generating the subprime loans. Full disclosure must cover not only the brokers' enhanced compensation but the enhanced risk accepted by the borrower for which the broker is paid more, because many mortgage borrowers locked into subprime loans were financially unsophisticated and poorly equipped to

understand the transaction, compare terms, and shop around.

Subprime Mortgage Lenders

1. *Assess whether the marketing and promotion of subprime mortgages “designed to default” to susceptible consumers was ethical or unethical.*

Because susceptible consumers lacked financial sophistication and were led to believe rising housing prices would permit them to refinance their subprime mortgages into ones they could afford, lenders who encouraged them to commit to subprime loans without fully disclosing the risks involved and properly assessing whether they could successfully repay the loans acted unethically. Mortgage brokers, who received higher compensation for originating the riskier loans, acted deceptively in the absence of full disclosure. Mortgage lenders, which earned higher interest on subprime loans while they held them and higher compensation upon selling the mortgage loan to banks securitizing the mortgage loans, acted deceptively in the absence of full disclosure. Further, both mortgage brokers and mortgage lenders, who assigned the loans to banks securitizing the mortgages, lacked any incentive to be concerned about the loan's performance, because the loans were passed downstream and became someone else's problem. The disastrous consequences of the financial crisis to all those affected demonstrate that the practice of marketing and promotion of subprime mortgages “designed to default” was immoral under the ethical theory of Act Utilitarianism. Likewise, marketing and promoting subprime mortgages “designed to default” is not a rule of conduct designed to produce the greatest good to those affected, and hence is deemed immoral under the ethical theory of Rule Utilitarianism. Finally, the failure to provide full disclosure to the borrowers constitutes deception which is deemed immoral under both Kant's categorical imperative and Rawls' Equal Liberty principle.

2. *Discuss whether lenders' providing subprime mortgages to borrowers who were otherwise unable to obtain prime mortgages and who agreed to the terms of the subprime mortgage was ethical.*

Providing subprime mortgages to borrowers who were otherwise unable to obtain prime mortgages and who freely agreed to the terms of the subprime mortgage was ethical, because it provided the only avenue available to them to acquire a home and was consistent with federal policy, provided full disclosure of the risks of such loans was given to the borrower and adequate assessment of the buyers' ability to repay the loan was made by the broker or lender. This was certainly not the case in low-doc, no-doc, interest only, and “pick-a-pay” loans.

⁵¹ Routledge recently published an excellent resource that addresses these ethical questions. See Flynn (2012). In her book, Professor Flynn explains what went wrong in the crisis and the role played by the credit rating agencies, mortgage-backed and collateralized loan securitizers, derivative dealers, AIG, Fannie Mae and Freddie Mac, commercial and investment banks, the shadow banking industry, and government regulators in causing the financial crisis. She next examines the impact of the financial crisis on those directly affected by the financial crisis, discusses what must be done to set things right and insure such a crisis does not occur again, and addresses the ethical implications of economic recovery efforts.

Securitization of Mortgages

1. *Assess whether banks' securitization of mortgage loans into investment securities with multiple tranches and selling those securities to investors was ethical or unethical.*

There is certainly nothing morally wrong with assembling complicated investment securities to investors, provided the investors are given sufficient and accurate information to make an informed decision to invest in the securities or to divest the securities. Indeed, mortgage-backed securities played an important role in augmenting the investment income of investors and commercial and investment banks beyond that provided by Treasury bonds, and, as implemented by Fannie Mae and Freddie Mac, the securitization of mortgages played a huge role in expanding funds available to mortgage loan borrowers, because lending banks could sell their mortgages and use the proceeds to fund additional mortgages, permitting more and more families to acquire homes.

2. *Determine whether the banks' repackaging of lower rated mortgage-backed securities into new collateralized debt securities with investment grade ratings was ethical or unethical.*

The manner in which banks assembled and sold their mortgage-backed securities and collateralized debt securities was incredibly complex. The securities were divided into tranches each of which was assigned a different level of risk. The securities were backed by credit default swaps, and stamped with inflated ratings issued by Moody, Standard and Poor, and Fitch. When the securities did not sell, they were repackaged into new collateralized debt obligations, assigned to new tranches, and given new, pristine ratings by the rating firms. As subprime mortgages increased, they too were tossed into the securities. This complicated and ever changing mixture of tranches, credit default swaps, inflated ratings, and prime and subprime mortgages camouflaged the soundness of the loans underlying the securities. Because the securitization process had become exceedingly complex and inscrutable, investors were unable to understand what they were purchasing and increasingly relied on the faulty rating agency imprimatur.

These practices run counter to the moral obligations of investment and commercial banks to provide accurate information to investors so that they can make an informed decision to invest or divest the securities. Providing accurate information provides the greatest amount of good to those affected by the issuance of complicated MBO and CDO, and is ethical under Act Utilitarianism. Providing accurate information is a rule of conduct that produces the greatest amount of good to those affected by the issuance

of complicated MBO and CDO, and is ethical under Rule Utilitarianism. Providing accurate information is deemed moral, because it passes muster under Kant's means-only principle and Rawls' Equal Liberty principle.

3. *Assess whether or not the securitization of mortgages and "pushing the risk downstream" was ethical or unethical.*

Permitting mortgage lenders to sell their mortgages loans to other investors permits the mortgage lender to use the proceeds of the sale to lend more money to borrowers seeking to purchase homes. Employing government sponsored entities such as Fannie Mae and Freddie Mac to purchase prime mortgages and place them into mortgage pools facilitates the process and advances the federal government's policy of increasing home ownership. While the mortgage lender indeed "pushed the risk downstream," the investment pools spread the risk of loss across the pool and created sound investments, because prime mortgages have a very low risk of default. In short, securitization of mortgages serves an enormously beneficial function.

Nonetheless, the ever increasing complexity of the mortgage pools, which contained equity, mezzanine, and senior tranches, which combined prime and subprime mortgages, and which were secured by credit default swaps acquired in over-the-counter derivatives markets from securitizers who achieved unacceptable leverage ratios without any oversight by government regulators, created a disastrous situation in which only small percentage of mortgage defaults could trigger a complete collapse of the financial system. Very clearly the harms inflicted by the financial collapse, which should have been foreseen, exceeded the benefits, making the practice of inscrutable securitization of mortgages unethical under the theory of act utilitarianism. Likewise, the practice of creating and selling inscrutable mortgage and collateralized debt obligations does not constitute a rule of conduct which creates the greatest amount of good to those affected, and violates rule utilitarianism. Because banks creating, marketing, and selling the inscrutable mortgage and collateralized debt obligations and dressing them up with flawed securities ratings failed to disclose information needed by investors to make an informed investment decision, those banks flunk Kant's "means only" principle and Rawls' Equal Liberty principle and "veil of ignorance" test, and hence acted unethically.

Rating Firms

1. *Assess the morality of the rating firms' assignment of investment ratings to the mortgage-backed securities (MBS) and collateralized debt obligations (CDO) assembled and sold by banks and subsequent downgrading of those ratings.*

It is clear that the rating firms' assignment of investment ratings to the mortgage-backed and collateralized debt obligations was incompetent. The rating firms employed deeply flawed models in assessing the safety of the bonds and looked the other way when mortgages they previously rated low were repackaged into restructured bonds. As noted in endnote 39, the rating firms' subsequent downgrading of securities ratings caused huge losses. Investors, like banks, pension funds, and insurance companies, were forced to sell the MBS and CDO, because they lost their investment grade status, and selling into a declining market is disastrous. MBS and CDO held by financial firms lost much of their value, and new securitizations lacked buyers. Unable to sell, banks were forced to "mark-to-market" recognizing losses on their securities. Assets in off-balance sheet Structured Investment Vehicles, rendered insolvent by the price decline, had to be brought back onto the balance sheet and more losses had to be recognized. This reduced the bank's capital and increased its reserve requirements. Had the ratings firms done their work properly, these losses could have been avoided.

If the ratings firms were aware or should have been aware of the financial debacle which followed their assignment and subsequent downgrading of investment grade ratings, the ratings firms clearly acted unethically under all of the ethical theories. The bad consequences outweighed the good consequences to those affected; the incompetent assignment of investment grade ratings does not constitute a rule of conduct that produces more good than harm to those affected; and both Kant and Rawls cannot abide deception.

2. *Do you think holding the ratings firms liable for their assignment of ratings to investment securities is ethical or unethical?*

It is tempting to think that holding the ratings firms liable for their assignment of ratings on which investors rely is ethical, because they would be compelled to act more carefully in assessing the financial risk and appending their coveted investment grade ratings. However, the rating firms would likely be forced to raise their fees for their investment ratings to offset their increased liability for flawed ratings, thereby raising the price of the investment and lowering the investment return. This scenario is analogous to the role of public accounting firms who audit the financial statements of publicly traded companies. Their audit fees are cheaper if their liability is limited to their clients and known and identified users of the certified financial statements. Their audit fees increase significantly if they are held liable to foreseeable users of the certified financial statements. Hence, in order to assess the morality of making ratings firms liable for flawed investment ratings, an assessment of the impact on ratings firms' fees is

required. Regardless, the Dodd–Frank Act, discussed below, has imposed liability for flawed ratings on the ratings firms for knowing or reckless failure to conduct a reasonable investigation in performing ratings services.

3. *Determine whether the compensation arrangement between the investment banks and ratings firms was ethical or unethical.*

The compensation arrangements between the investment banks and ratings firms were problematic, because they created a conflict of interest. The ratings firms might have assigned the ratings because they were accurately computed and properly advised investors who relied on them. The ratings firms might have assigned the ratings, because they feared the loss of their fees if they disappointed the banks paying for the ratings and wanted to continue their working relationship with the banks and the resulting income flow. Blinder's analogy is telling. He compares banks' compensation of rating firms to faculty members' being paid by students to grade their submitted work. While the fact credit rating agencies were paid by the companies whose securities were rated was well known in the industry, investors, who were unaware of those arrangements and relied on those ratings without realizing the existence of the conflict of interest, were likely deceived. Hence, by failing to disclose fully the conflict of interest to those investors, the investment banks and ratings firms acted unethically.

Regulatory Agencies

1. *Assuming the Federal Reserve had authority to mandate that lenders issue only prime mortgages, do you think the Federal Reserve acted unethically in refraining from imposing such restrictions?*

The 1994 Home Ownership and Equity Protection Act (HOEPA) directed the Federal Reserve to ban mortgage loan practices it found to be unfair or deceptive, thereby giving the Federal Reserve Bank authority to impose restrictions on subprime mortgages. Nonetheless, subprime mortgages played a crucial role in permitting low-income families to acquire homes, an important public policy initiative of the Bush and Clinton administrations. Permitting subprime mortgages to grow significantly (from 5 % of mortgage origination in 1994 to 20 % of total originations in 2005) supported that initiative. The Federal Reserve reasonably concluded the amount of defaulted subprime mortgages was insufficient by itself to trigger a financial crisis. Hence, unless the Federal Reserve knew or should have known defaults in subprime mortgages would trigger the financial crisis, its refraining from requiring lenders issue only prime mortgages cannot be said to be unethical.

2. *Do you think the Securities Exchange Commission (SEC) acted unethically in failing to review, and require adequate disclosures in, banks' supplemental prospectuses with respect to credit-granting or underwriting criteria used in assembling the pooled loans?*

As noted in endnote 22, the SEC contributed to the financial crisis, because it permitted the issuance of more than \$2 trillion in non-GSE mortgage-backed securities (MBS) and close to \$700 billion of collateralized debt obligations (CDO) with lax or no oversight. MBS were issued through a “shelf registration,” a shell registration statement to which a supplemental prospectus was added. The supplemental prospectus contained a disclaimer of the issuers' obligation to comply with Regulation AB which requires disclosure of credit-granting or underwriting criteria used to assemble the pooled loans. The SEC failed to review the supplemental prospectus. The CDOs were issued through Rule 144A to qualified institutional buyers without registration. In short, because the SEC permitted the issuance of MBO and CDO investments, which violated or sidestepped disclosure requirements that could have alerted investors of the risks the MBO and CDO, the SEC acted unethically. Had the SEC complied with its oversight responsibilities, the financial crisis might have been averted, thereby producing more net benefit to those affected. Likewise, permitting the issuance of securities with insufficient disclosures certainly does not constitute a rule of conduct which produces the greatest amount of good to those affected. Finally, the failure to insure adequate disclosures facilitates deception of investors, contrary to Kant's means-only principle and Rawls' Equal Liberty theory.

3. *Determine whether the decision of the Federal Reserve and Treasury Department not to rescue Lehman Brothers was ethical or unethical.*

The decision of the Federal Reserve and Treasury Department not to rescue Lehman Brothers, following its rescue of Bear Stearns, Fannie Mae and Freddie Mac, triggered vast uncertainty and unbridled panic in the financial markets which, in hindsight, arguably caused more harm to financial institutions (ultimately requiring bailouts in trillions) than the cost of rescuing Lehman Brothers (estimated between \$12 and \$60 billion). Perhaps overplaying his hand or simply seeking to escape scathing criticism for rescuing undeserving financial behemoths, Treasury Secretary Henry Paulsen insisted that the rescue be accomplished without government funds. The resulting deal to have Wall Street firms purchase Lehman's toxic assets and sell the cleansed investment bank to Barclay's Bank almost worked, only to collapse at the last moment. Not having a clear picture of what the Federal Reserve and Treasury Department knew or should have known about the consequences of Lehman's ensuing bankruptcy, it is difficult to assess the morality of

the decision not to rescue Lehman Brothers. If the Federal Reserve and Treasury Department anticipated or should have anticipated the true dimensions of the catastrophe that followed, they acted unethically in failing to rescue Lehman Brothers because more harm than good was created for those affected. Likewise, implementing rescue efforts to avert a greater harm constitutes a rule of conduct that likely produces the greatest net amount of good for those affected, and failing to follow that rule of conduct would be deemed immoral. Except for the principle of moral hazard discussed below, Kant would likely agree that employing rescue tactics to prevent greater financial harms constitutes an acceptable universal practice, and hence is moral. Under Rawls' veil of ignorance theory, effecting financial rescue is likely deemed a fair course of conduct if the parties do not know what position they will occupy in the financial crisis, and hence can be viewed as moral.

4. *Assess whether the “moral hazard” principle was sufficient justification for the Treasury Department to refuse to rescue Lehman Brothers before it declared bankruptcy.*

The principle of “moral hazard” holds that government's rescue of financial institutions encourages them to engage in risky transactions, because they anticipate being bailed out by the government. To avoid the consequences of moral hazard, the principle goes, the government should make financial institutions absorb the loss to serve as a lesson to others not to mimic such risky conduct.⁵² The preceding rescue of Bear Stearns likely caused financial institutions to believe they would be rescued if they found themselves in financial difficulties, and permitting Lehman Brothers to fail countered that belief. Unfortunately, Lehman Brothers' bankruptcy shocked the financial markets, and caused financial institutions to question the financial health of their own counterparties. Lending halted, cash was hoarded, and market paralysis and panic ensued. Given the above noted disparity between the ultimate cost of financial institution bailouts and the estimated cost of rescuing Lehman Brothers, the principle of moral hazard, at least by hindsight, was an insufficient justification for letting Lehman Brothers fail.

5. *Assess whether or not the actions of the Federal Reserve and Treasury Department to rescue Bear Stearns, Fannie Mae and Freddy Mac, AIG, Goldman*

⁵² This line of reasoning may be subject to a counterargument: by rescuing the financial institutions, the common shareholders of the rescued companies lost equity and senior management was usually fired, results which in themselves may serve as a strong disincentive to excessive risk. In other words, executives are encouraged not to engage in excessive risk because they may in fact be rescued. The difference, of course, is that in the case of rescue the financial institutions live on. Unrescued financial institutions do not.

Sachs and Morgan Stanley, Washington Mutual, Wachovia, and Citigroup was moral or immoral.

The actions of the Federal Reserve and Treasury Department to rescue the above noted financial institutions were likely ethical under Act Utilitarianism, because doing so arguably produced the greatest net amount good to all those affected by the rescue efforts. It was not simply the direct financial fallout from letting those institutions collapse that was avoided, but the likely collapse of global financial markets. Employing approximately \$700 billion in TARP funds and \$700 billion in President Obama's ensuing financial stimulus funds actually worked, avoided global financial Armageddon, and was clearly worth the price. The rule of conduct that likely produces the greatest amount of good for those affected is to rescue financial institutions when doing so avoids devastating global financial collapse. Hence rescuing those financial institutions was likely ethical under rule utilitarianism. The same conclusion is reached via Kant's categorical imperative and Rawls' difference principle. Rescuing the enumerated financial institutions likely constitutes an effective universal practice which, given the outcome of avoiding global financial collapse, financial institutions can approve. While the identified financial institutions were provided with an economic benefit not provided to others, the disparate treatment is justified by the critical needs of the financial institutions and, fortunately, ultimately rescued the global financial markets rather than further disrupting and collapsing them. Indeed, the failure to implement those the rescues would have frozen all commerce and destroyed economies globally. Hence the financial rescue of the companies can be deemed moral under Rawls' difference principle.

6. *Assess whether or not the Federal Reserve, the Office of the Comptroller of the Currency (OCC), the Office of Thrift Supervision (OTS), and the Federal Deposit Insurance Corporation (FDIC) took adequate steps to insure commercial and investment banks engaged in sufficient risk management, and if not, whether their failure to do so was ethical or unethical.*

Under the "unwatchful" eyes of the bank regulators, banks approved hundreds of billions of dollars in shameful subprime mortgages and invested vast sums in dicey MBS and CDO. The bank regulators did not seem to notice. They were equally blind to the phenomenal growth of the shadow banking system, featuring commercial paper and short-term repo loans securitized by MBO and CDO dressed up with credit default swaps. They looked the other way while banks achieved dangerously high leverage that triggered the domino chain of bank failures. They permitted the banks to sell their mortgage loans to off-balance sheet structured investment vehicles, which paid for the mortgages with money borrowed in the commercial paper

market and enabled the banks to avoid increased reserve requirements. They allowed banks' investments in derivatives to hedge against risks and further lower reserve requirements. They stood idly by when the Commodity Futures Modernization Act of 2000 released the over-the-counter derivatives market from any government regulation. Despite clear warnings of the coming housing bubble, reports expressing alarm about the risky lending practices in subprime mortgages, and financial disruptions such as the bankruptcy of Orange County, California, and the collapse of Barings and the Long-Term Capital Management hedge funds, the bank regulators shamefully took no action to assess the adequacy of banks' risk management protocols. Given the danger signals flashing around them, the bank regulators should have promptly addressed these issues by shoring up risk management, cleaning up subprime lending practices, requiring banks to lower their leverage ratios, and upping reserve requirements. Their failure to do so clearly produced far more harm than good to those affected, and is deemed unethical under act utilitarianism. The rule of conduct for bank regulators that likely produces the greatest amount of good to those affected is to insure adequate risk management protocols are followed by banks. By not following that rule, the bank regulators acted unethically. Participants in the financial system can likely agree that requiring bank regulators to insure adequate risk management practices are followed constitutes a beneficial universal practice, and hence is moral under Kant's categorical imperative. Rawls' veil of ignorance theory reaches the same conclusion: not knowing what position the participant might occupy in society, it likely is an acceptable and fair practice to make banks employ sufficient risk management practices.

American International Group (AIG)

1. *Assess the morality of AIG's issuance of credit default swaps to guarantee the financial performance of the MBS and CDO and its decision not to maintain reserves in the event of default.*

Even though AIG's credit protections on assets, including MBS and CDO, reached \$533 billion in 2007, \$79 billion of which was written in the over-the-counter credit default swap (CDS) protection on super-senior tranches of CDOs containing subprime mortgages, neither its regulator, the Office of Thrift Management (OTM), nor AIG thought it was necessary to provide any type of reserve for losses on its credit default swaps (CDS), an enormous failure in risk management. Notably, AIG was required to post collateral on its credit default swaps if the value of the underlying assets declined or if the credit agencies lowered AIG's credit ratings. Both conditions were fulfilled in 2008.

Forced by its auditors, PricewaterhouseCoopers, to disclose it had no reliable methodology to estimate movement in the value of the securities on which it wrote its CDS, the ratings agencies downgraded AIG's credit rating, triggering a massive demand that AIG post significant collateral to secure its CDS. Soon afterward, AIG began reporting substantial declines in the value of MBS and CDO on which it had written CDS, triggering an ensuing series of calls for increased collateral. Declines in its securities lending business exacerbated its situation. AIG simply could not keep up, and, unable to borrow funds or raise capital, AIG turned to and was rescued by the Federal Reserve.

Several features of this situation are surprising. First, senior executive officers claimed they were stunned by the initial collateral call to learn that collateral call provisions existed in the CDS issued by AIG. Second, there is evidence the managing director of AIG Financial Products directed AIG Financial Products to stop writing CDS 18 months before the financial crisis unfolded. This suggests there was a lapse of internal controls over the operations of AIG Financial Services. Third, the credulity of AIG Financial Products executives and the OTM regulators to think there was no need to post reserves for losses triggered by CDS belies the financial success (indeed legend) previously achieved by AIG, and vividly illustrates the difference between prudent risk management and sheer recklessness.

Hence, AIG's issuance of staggering amounts of credit default swaps and failure to maintain reserves in the event of the default of the underlying debts in MBS and CDO must be deemed unethical. As a consequence of AIG's actions, significantly more harm than good was heaped on all those affected, making the actions unethical. While supposedly knowledgeable about risk management, AIG's failure to maintain reserves to cover defaults is decidedly not a beneficial rule of conduct that produces more good than harm for those affected, and hence is immoral under Rule Utilitarianism. Requiring financial institutions like AIG to maintain safe reserve levels appears to be a laudable universal practice; failing to do so violates Kant's categorical imperative and is deemed immoral. When viewed from behind the veil of ignorance, maintaining sufficient reserves appears to be a practice that financial institutions would deem fair and worthwhile; hence, AIG's failure to do so can be deemed immoral under Rawls' theory of justice.

Commercial and Investment Banks

1. *Determine whether it is moral or immoral for commercial and investment banks to achieve such extraordinary levels of leverage.*

The commercial and investment banks achieved dangerously high levels of leverage by borrowing heavily in the

commercial paper and short-term repo markets and selling their mortgages to off-balance sheet structured investment vehicles (SIV), as discussed more fully below. The debt to equity ratios of the commercial banks at the time of the financial crisis were eye popping: J.P Morgan (22:1); Wells Fargo (17:1); Bank of America (27:1); Citigroup (32:1). Notably these ratios did not factor in the debt the banks hid in their SIV; if those debts were considered, the ratios would have been substantially higher. Investment banks achieved even higher debt to equity ratios: Goldman Sachs (32:1) and Morgan Stanley (40:1). The investment banks were able to do so because they had the added advantage of being permitted to rely on their internal risk models in determining capital requirements, rather than meeting the reserve requirements of the commercial bank regulators.⁵³

Having such high debt to equity ratios was an enormously risky financial strategy, which daily required the banks to return to the capital markets to renew their loans and face the danger that a refusal to roll over its short-term borrowing could trigger a run. The major problem with such high leverage ratios is that the banks had little or no cushion when the financial crisis unfolded. Moreover, because these were private transactions, only the parties to the loan renewal were aware of debt, causing other banks to become suspicious about the financial condition of competitors. This contributed to the collapse of the shadow bank and derivatives markets, because no bank was willing to lend money to other banks. The financial markets froze and the government had to intervene.

That the banks achieved such high debt to equity ratios was likely unethical. Under the theory of act utilitarianism, the banks' collective and significantly high leverage was a substantial contributing cause to the financial crisis, and certainly produced more overall harm than good. The rule of conduct that likely produces the greatest amount of good to those affected is that banks should maintain reasonable levels of leverage to protect investors and customers. By failing to follow that rule, the highly leveraged banks acted unethically. Having banks maintain reasonable levels of leverage likely constitutes an acceptable universal practice, because financial institutions would be operating in a much safer environment, and hence would be deemed ethical under Kant's categorical imperative. Likewise, not knowing what position the banks might occupy in the financial

⁵³ Because of the vast differences in risk that banking institutions take, each bank is permitted to tailor its internal risk management program to its needs and circumstances. Risk management programs involve several crucial steps: identifying risk, measuring risk, monitoring risk, and controlling risk. Notably, however, because each bank creates and tailors its own risk management program, comparisons across financial institutions and employment of common rules are precluded, essentially permitting each bank to evaluate itself, perhaps akin to permitting students to grade their own work.

sector, the banks likely would agree that maintaining adequate debt to equity ratios would be a fair rule to follow. Hence maintaining reasonable leverage would be deemed ethical under Rawls' veil of ignorance theory.

2. *Determine whether it is moral or immoral for commercial and investment banks to utilize structured investment vehicles to remove their mortgage-related assets and liabilities from their financial statements?*

Banks sold their mortgage loans to their structured investment vehicles (SIV); the SIV borrowed money in the commercial paper market to pay for the mortgages; and the banks used the sales proceeds to make more loans. Because their balance sheet did not change, banks avoided additional reserve requirements; because the banks did not have to report the loans on their balance sheet, the significant debt incurred by the SIV was hidden from view. The lack of transparency in the shadow banking and derivatives markets, the steps banks took to hide their high leverage before the end of their accounting reporting period, and the bank's concealment of debt in their SIV constitute deception, and hence would be deemed unethical under Kant's means-only principle and Rawls' Equal Liberty principle. Likewise, as noted above, camouflaging the banks' level of debt was a substantial cause of the financial crisis, caused more harm than good to those affected, and constitutes a lousy universal practice. Hence banks' hiding debt in SIV can be deemed immoral under both Act and Rule Utilitarianism.

3. *Determine whether it is moral or immoral to employ derivatives to hedge risk and enhance leverage.*

Properly employed derivatives such as options and futures contracts are essential tools to hedge financial risk. An option gives the purchaser the right to buy an asset at a specified price (the "striking price") during the life of the option. If the price of the underlying asset goes up, the purchaser of the option can exercise the option and realize as profit the difference between the market price of the asset and the striking price in the option. If the price of the underlying asset goes down, the purchaser of the option can buy the asset in the market at the lower price and let the option expire, effectively purchasing the asset at the price that was originally satisfactory to the option's purchaser.

A futures contract requires the buyer to purchase and the seller to sell an asset at a specified price at a designated future date. The difference between the market price of the asset and the striking price is noted daily ("marked to market"). If the price of the underlying asset goes up, the gain is attributed to the buyer's account and the loss to the seller's account. If the price of the underlying asset goes down, the loss is attributed to the buyer's account and the gain to the seller's account. At the end of the contract term the account is settled and closed. The asset underlying the futures contract is usually never actually delivered. Rather

the purchaser buys the asset at the current market price. If the price of the asset increased during the term of the futures contract, the gain made by the purchaser offsets the increased price. If the price of the asset decreased during the term of the futures contract, the purchaser buys the asset at the lower price, but the loss realized on the futures contract effectively permits the buyer to purchase the asset at the price that was originally acceptable. The markets in which options and futures contracts are traded provide an invaluable tool to the marketplace: they permit investors hedge risk on price movements of the underlying assets, and provide valuable information about the direction in which the prices of the assets are likely to move in the future.

Futures contracts are highly leveraged, because the investor has control over a large cash amount of the commodity but is only required to put up a relatively small amount of capital. At the time the futures contract is initiated, the commodity exchange requires the investor to deposit a minimum amount of money (perhaps 5–10 %) of the futures contract. This deposit (called "the initial margin") is increased or decreased on a daily basis depending on the movement of the price of the underlying commodity. If the margin drops below a designated amount (called the maintenance margin), the broker will ask the investor to make an additional deposit into the account to bring the account at least up to the initial margin. This request is called a margin call. Because the futures contract is highly leveraged, the investor can realize significant gains (or losses) on substantial amounts of commodities with comparatively small levels of capital. For example, if the futures contract enables the investor to acquire \$250,000 of a commodity on an initial margin of \$12,500, a 6 % increase in the price of the commodity would provide the investor with a profit of \$15,000 (or 150 % of the initial margin). If the price of the commodity decreased by 6 %, however, the investor would realize a loss of \$15,000 (150 % of the initial margin), causing the investor to come up with \$5,000 in addition to the original margin.

The fact that derivatives markets enable investors to hedge losses and use significant leverage is neither moral nor immoral. Regulated by the Commodity Futures Trading Commission, the U.S. derivatives markets provide essential transparency into worldwide forces affecting prices of commodities and permit hedgers and speculators achieve their investment objectives. In contrast, the manner in which the banks engaged in derivatives transactions in over-the-counter derivatives markets was secretive, and fueled suspicion and fear about the financial condition of the parties when the defaults in MBO and CDO became known. The wretched stew of unwatchful regulators, unbridled mortgage-lending standards, subprime mortgages, and unregulated shadow banking and derivatives transactions caused the financial system to freeze and triggered a horrendous financial crisis.

OTC Derivatives Market

1. *Assess whether passage of the Commodity Futures Modernization Act of 2000, which exempted the over-the-counter derivatives market from any government regulation, constitutes ethical government policy.*

As noted in endnote 17, the Commodity Futures Modernization Act of 2000 (CFMA) deregulated the over-the-counter derivatives market and eliminated oversight by the Commodities Futures Trading Commission (CFTC). The law also repealed a ban on single stock futures transactions, and preempted application of state laws that otherwise could have made over-the-counter derivatives transactions illegal. In short, the CFMA effectively immunized over-the-counter derivatives from all regulation or oversight. If the over-the-counter derivatives market were subject to the regulation of CFTC, significantly more transparency would have been provided to the derivatives transactions, to the massive amounts of derivatives issued and purchased by the banks, and to the significant level of leverage they provided. If the players in the shadow banking system—Fannie Mae and Freddie Mac, commercial and investment bank securitizers, bank SIVs, hedge funds, private equity funds, asset managers and mutual, pension and other investment funds—had greater insight in the huge amounts of derivatives traded and CDS issued, financial sanity and safeguards could have been instituted earlier and the financial crisis avoided. If so, enacting CFMA into law likely produced more harm than good to those affected, and did not constitute a rule of conduct that produced more good than harm to those affected, and hence is deemed unethical under Act and Rule Utilitarianism. Further, CFMA permitted the parties to the derivatives to shroud the transactions in secrecy and hide the massive financial risk assumed by the shadow banking participants, especially the GSEs, the commercial and investment banks, and AIG. Likewise, the lack of transparency and sheer complexity of the over-the-counter derivatives permitted by CFMA cannot survive the deception tests of Kant's categorical imperative and Rawls' Equal Liberty theory. Enacting CFMA, then, can be considered unethical.

2. *Discuss the ethics of the “self-correcting market” philosophy which eschews prescriptive government regulation of the derivatives market and imposes the risk of loss on investors as a regulatory scheme?*

Banking regulators depended on the bank's internal risk management systems to assess the financial soundness of the institution and, rather than duplicating the risk management tests, provided feedback on the quality of its risk management systems. This approach assumed the financial institution appreciated the self-correcting nature of markets and, acting in its own self-interest, would not inflict

financial harm on itself by engaging in overly risky transactions and suffering the consequences. This deference to self-correcting markets inhibited regulators from imposing prescriptive restrictions on banks, and permitted the regulators to take a “wait and see” approach as the news of troubling mortgage practices became more persistent. Once the regulators became aware that the mortgage problem was real, they drafted non-binding guidance statements on non-traditional mortgages, and asked the banks to consider the buyer's ability to pay the loan when higher rates of interest or balloon payments kicked in and to use “no doc” and “low doc” loans cautiously. The advisory approach employed by the regulators opened the door to delaying tactics on the part of the banks, and postponed the implementation of effective regulation to clean up the mortgage writing practices until it was too late. Following the “self-correcting market” ideology is immoral under Act Utilitarianism, because doing so was a substantial cause of the financial crisis and inflicted more harm than good on those affected. The rule of conduct that likely produces the greatest amount of good to those affected is to take prompt and clear regulatory action to cure the mortgage market problem, rather than waiting for the market to inflict the self-correction on the financial institutions. Hence not following that rule can be considered unethical. Taking prompt and clear corrective regulatory action likely might not be a practice financial institutions like, but probably constitutes a practice that is best for the financial markets and hence can be imposed on all financial institutions under Kant's categorical imperative. Taking prompt and clear corrective regulatory action is likely an acceptable practice when viewed from behind the veil of ignorance, and hence would be deemed moral under Rawls' justice principle.

Dodd–Frank Wall Street Reform and Consumer Protection Act

Dodd–Frank Wall Street Reform and Consumer Protection Act (“the Dodd–Frank Act”) was signed into law to in response to the financial crisis and for the purposes of correcting the egregious conduct of major financial institutions that caused the financial crisis, mandating that taxpayer money never be used in the future to bail out financial institutions, and curbing the emergency powers of the Federal Reserve utilized to rescue and resuscitate financial institutions and end the financial crisis. Just as understanding what happened in the Enron scandal explains the major provisions of the Sarbanes–Oxley act, so too understanding what happened in the 2007–2009 financial crisis explains the major provisions of the Dodd–Frank Act.

The Dodd–Frank Act is a lengthy (848 pages) and complicated piece of legislation which directs regulatory

agencies to issue a vast series of regulations, creates additional bureaucracies, and imposes a huge cost on financial institutions to comply with its myriad requirements. Several features of the Dodd–Frank Act deserve attention.

Financial Stability Oversight Council

The Dodd–Frank Act creates the Financial Stability Oversight Council (FSOC), whose role is to collect and analyze data to identify and respond to emerging risks throughout the financial system. Voting members of the FSOC are the Treasury Department, Federal Reserve Board, Securities and Exchange Commission, Commodities Futures Trading Commission, Office of the Comptroller of the Currency, Federal Deposit Insurance Corporation, Federal Housing Finance Agency, National Credit Union Administration, Consumer Financial Protection Bureau, and an independent appointee with insurance expertise. The five non-voting members include Office of the Federal Register and state banking, insurance and securities regulators. FSOC will also recommend stricter rules for capital, liquidity, and risk management; approve management of non-bank financial companies by the Federal Reserve if they pose a threat to the U.S. financial stability; approve the breakup of large companies posing a threat to the U.S. financial stability; and establish a floor for capital and enforce a 15:1 leverage requirement to mitigate grave threats to the U.S. financial system.

Terminating “Too Big to Fail” Bailouts

The Dodd–Frank Act prohibits the use of taxpayer funded bailouts and liquidations; implements the “Volker Rule” requiring regulators to prohibit proprietary trading, investment in and sponsorship of hedge funds and private equity funds and restricting relationships with hedge funds; requires “large, complex financial companies” to periodically update and submit plans for their rapid and orderly shutdown should the company go under; creates an orderly liquidation mechanism for FDIC to unwind failing financial companies monitored by the Treasury Department, FDIC and the Federal Reserve; prohibits the Federal Reserve from engaging in emergency lending transactions without the approval of the Secretary of Treasury; and bars the Federal Reserve from emergency lending to an individual entity.

Creating Transparency and Accountability for Derivatives

The Dodd–Frank Act authorizes the Securities Exchange Commission and the Commodities Futures Trading Commission to regulate over-the-counter derivatives trades and provide oversight of excessive risk-taking. The Dodd–

Frank Act also requires derivatives transactions to be executed on a central clearing exchange so that (1) there is control over which derivative contracts are cleared, (2) data can be collected on derivative contracts providing greater transparency to the derivatives market, (3) reasonable capital and margin requirements on derivatives dealers and swap participants can be enforced, and (4) registered swap dealers and major swap participants follow a code of conduct when advising a swap entity.

Enhanced Compensation Oversight for Financial Industry

The Dodd–Frank Act requires federal financial regulators to issue and enforce joint compensation rules (focused on incentive compensation) specifically applicable to financial institutions with a Federal regulator.

Mortgage Reform

The Dodd–Frank act requires lending institutions to ensure borrowers can repay their loans; prohibits financial incentives and bonuses (such as “yield spread premiums”) for steering borrowers into more costly subprime loans; imposes penalties up to 3 years of interest payments, liability for damages, and attorney fees on lenders and mortgage brokers who fail to comply with the new mortgage standards; requires disclosure to borrowers of the maximum a borrower could pay on a variable rate mortgage and a warning their payments will vary based on interest rate changes; and establishes an Office of Housing Counseling within the Department of Housing and Urban Development to boost homeownership and rental housing counseling.

Registration of Hedge Funds

The Dodd–Frank act requires hedge funds and private equity advisors to register with the Securities and Exchange Commission as investment advisors and to provide data about their trades and portfolios to permit assessment of systemic risk. The Dodd–Frank Act also raises the threshold for federal regulation of investment advisors from \$30 million to \$100 million, thereby increasing the number of advisors subject to proven and effective state supervision and permitting the Securities and Exchange Commission to focus its resources on newly registered hedge funds.

Credit Rating Agencies

The Dodd–Frank Act creates the Office of Credit Ratings within the Securities and Exchange Commission, and requires the Securities and Exchange Commission to examine and issue a report on the Nationally Recognized

Statistical Rating Organizations (NRSRO) at least once a year. The Dodd–Frank Act also requires NRSROs to (1) disclose their ratings methodologies, their use of third parties in due diligence, and their ratings track record, and (2) consider credible, independent information in their ratings that comes to their attention from a source other than the organization being rated. The Dodd–Frank Act also requires the NRSRO to conduct a one-year look-back review if an NRSRO employee accepts employment with the obligor or underwriter of a security rated by the NRSRO, subjects NRSROs to liability to investors for their knowing or reckless failure to conduct a reasonable investigation in performing ratings services, and directs the Securities and Exchange Commission to create a mechanism to prevent issuers of asset backed securities from picking the agency they think will provide the highest rating.

Skin in the Securitization Game

Companies that sell products like mortgage-backed securities are required to disclose more information about the underlying assets, to analyze the quality of the underlying assets, and to retain at least 5 % of the credit risk unless the underlying loans meet standards that reduce riskiness, and thereby suffer losses along with the purchasers of the securities.

The above noted summary of the major provisions of the Dodd–Frank Act can be reinforced by dividing students into eight teams, and asking each team to identify the actions or transactions discussed in the case study that likely lead to its inclusion in the Dodd–Frank Act.

Conclusion

As noted in the introduction, the purpose of the case study is twofold: (1) to enhance students' understanding of the 2007–2009 financial crisis in the United States, and (2) to provide a convenient tool that assists faculty members to address the 2007–2009 financial crisis in their classes and to enhance the student's understanding of ethics. Toward those ends, the case study examines five crucial dimensions of the 2007–2009 financial crisis: (1) the devastating effects of the financial crisis on the U.S. economy, (2) the causes of the financial crisis and panic, (3) the extraordinary rescue efforts undertaken to stem the financial freefall triggered by the crisis, (4) the ethical implications of the parties involved, and (5) the major provisions of the Dodd–Frank Act enacted in response to the financial crisis. The heart of the case study is the examination of the morality of the actions of the principal players who triggered and ameliorated the financial crisis. Notably, these questions address the actions of financial companies, their executives and government regulatory agencies. By posing questions about

their actions and suggesting answers to those questions, the case study hopefully will assist faculty members to include the 2007–2009 financial crisis in their courses and to enhance their students understanding of ethical principles.

Open Access This article is distributed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made.

References

- Arbogast, S. V. (2013). *Resisting corporate corruption: Cases in practical ethics from Enron through the financial crisis*. Beverly, MA: Scrivener Publishing.
- Blinder, A. (2013). *After the music stopped the financial crisis, the response, and the work ahead*. New York: Penguin Press.
- Basham, B. (2011). Beware corporate psychopaths—They are still occupying positions of power. Accessed from <http://www.independent.co.uk/news/business/comment/brian-basham-beware-corporate-psychopaths-they-are-still-occupying-positions-of-power-6282502.html?origin=internalSearch>.
- Boddy, C. R. (2011). The corporate psychopaths theory of the global financial crisis. *Journal of Business Ethics*, 102(2), 255–259.
- Chambers, L., Drysdale, J., & Hughes, J. (2010). The future of leadership: A practitioner view. *European Management Journal: New Leadership Themes*, 28(4), 260–268.
- Cohan, W. D. (2012). This is how Wall Street psychopaths caused the financial crisis. Accessed from <http://www.businessinsider.com/bill-cohan-an-academic-describes-how-wall-street-psychopaths-caused-the-financial-crisis-2012-1>.
- FASB No. 2013-08, Amendments to the scope, measurement and disclosure requirements, financial services-investment companies (topic 946), issued in June 2013.
- Financial Crisis Inquiry Report. (2011). *Financial crisis inquiry report: Final report of the national commission on the causes of the financial and economic crisis in the UN*. New York: Public Affairs.
- Flynn, E. (2012). *Ethical lessons of the financial crisis*. New York: Routledge.
- Friedman, J. (Ed.). (2011). *What caused the financial crisis*. Philadelphia, PA: University of Pennsylvania Press.
- Green, J. (2013, September 12). Where is Dick Fuld now? Finding Lehman Brothers last CEO. *Bloomberg Businessweek*. Retrieved from <http://www.businessweek.com/printer/articles/152006-where-is-dick-fuld-now-finding-lehman-brothers-last-ceo>.
- Jin, K. G., et al. (2013, January). The role of corporate value clusters in ethics, social responsibility, and performance: A study of financial professionals and implications for the financial meltdown. *Journal of Business Ethics*. Retrieved from <http://link.springer.com/article/10.1007/s10551-012-1227-4>.
- Jones, D. N. (2013). What's mine is mine and what's yours is mine: The Dark Triad and gambling with your neighbor's money. *Journal of Research in Personality*, 47(5), 563–571.
- Jones, D. N. (2014). Risk in the face of retribution: Psychopathic individuals persist in financial misbehavior among the Dark Triad. *Personality and Individual Differences*, 67, 109–113.
- Kodres, L. (2013, June 2013). What is shadow banking?. *Finance and Development*, 50(2), The International Monetary Fund. Accessed from <http://www.imf.org/external/pubs/ft/fandd/2013/06/basics.htm>.

- KPMG. (2013). Entities must reassess whether investment company accounting applies. *KPMG Accounting Update*.
- Mesly, O., & Maziade, R. (2013). Bankers and functional psychopathy: The risk of losing everything. *The Journal of Wealth Management*, 16(1), 33–48.
- Mulhern, G. (2010). President's Column. *The Psychologist (The Magazine of the British Psychological Society)*, 23, 1–2.
- Norris, F. (1990, December 10). Confronting high risk and banks. *The New York Times*. http://www.nytimes.com/2009/12/11/business/economy/11norris.html?pagewanted=all&_r=0.
- Paulson, H. (2013, September 15). This is what it was like to face the financial crisis. *Bloomberg Businessweek*. Retrieved from <http://www.businessweek.com/printer/articles/151554-hank-paulson-this-is-what-it-was-like-to-face-the-financial-crisis>.
- Spencer, G. L., & Wargo, D. T. (2010). Malevolent employees and their effect on the ethical culture of business organizations. Accessed December 4, 2011, from <http://forumonpublicpolicy.com/spring2010.vol2010/spring2010archive/wargo.pdf>.
- Stout, M. (2005). The ice people: Living among us are people with no conscience, no emotions and no conception of love: Welcome to the chilling world of the sociopath. *Psychology Today*, January/February, 72–76.
- The Financial Crisis Inquiry Commission. (2011). *The Financial Crisis Inquiry Report*. Washington, D.C.: U.S. Government Printing Office. Retrieved from <http://www.gpo.gov/fdsys/pkg/GPO-FCIC/pdf/GPO-FCIC.pdf>.