

# The Shadow Banking System and Its Legal Origins

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*The global financial crisis cannot be understood without closely analyzing the development and the failure of the shadow banking system. Shadow banking, in turn, cannot be understood without examining how law shaped it. This article provides a definition of the shadow banking system and describes the critical role law and legal change played in shaping it.*

*The shadow banking system describes a web of financial instruments (asset-backed securities, credit derivatives, money market mutual funds, repurchase agreements) that connected commercial and household borrowers to investors in capital markets. This system differs, however, from traditional bond markets and is marked by six features:*

- ¶ *institutions serving a critical intermediation role;*
- ¶ *the pooling of financial assets and risks;*
- ¶ *“structuring,” or the unbundling and re-bundling of cash streams and risks from financial assets;*
- ¶ *maturity transformation;*
- ¶ *the creation of assets with theoretically low risk and high liquidity that have many of the features of “money”; and*
- ¶ *opacity.*

*This system provided many of the core economic functions of banking, including supplying credit while offering investors theoretically liquid and stable investments (similar to bank deposit accounts). Yet the system escaped bank regulation. This system ultimately experienced the same types of liquidity and solvency crises as banks, causing massive economic damage.*

*The article explores how regulatory arbitrage, deregulation (broadly construed), and legal subsidies midwived the birth of the shadow banking system and fostered its growth.*

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## INTRODUCTION

The global financial crisis cannot be understood without closely analyzing the development and the failure of the “shadow banking system.”<sup>1</sup> Commentators have bandied about the term “shadow banking,” using it to mean unregulated or less regulated financial institutions.<sup>2</sup> This Article seeks to provide a more systematic and rigorous definition for the shadow banking system.<sup>3</sup> Shadow banking, in turn, cannot be understood without examining how law helped create that system and fueled its growth. Without a clear picture of how legal dynamics joined with economic factors to foster the growth of shadow banking, financial reform will fail. This article explores the legal dimensions of shadow banking. It explains how legal change – particular regulatory arbitrage,<sup>4</sup> deregulation,<sup>5</sup> and legal subsidies<sup>6</sup> – contributed to the rise of shadow banking.

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<sup>1</sup> The term “shadow banking” was coined by Paul McCulley of the PIMCO investment fund at a 2007 Federal Reserve Conference in Jackson Hole, Wyoming. Financial Crisis Inquiry Commission, Preliminary Staff Report: Shadow Banking and the Financial Crisis 9, n.8 (May 24, 2010) available at [http://fcic-static.law.stanford.edu/cdn\\_media/fcic-reports/2010-0505-Shadow-Banking.pdf](http://fcic-static.law.stanford.edu/cdn_media/fcic-reports/2010-0505-Shadow-Banking.pdf).

Shadow banking has been the subject of recent, cutting edge economic research into the financial crisis. This economic research can be broken into two lines of inquiry, which this Article integrates. First, economists Gary Gorton and Andrew Metrick have pioneered research into how shadow banking markets have suffered “bank runs” or liquidity crises. See, e.g., Gary Gorton, *Slapped in the Face by the Invisible Hand: Banking and the Panic of 2007*, Nat’l Bur. Econ. Res. Working Paper (May 9, 2009) available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1401882](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1401882); Gary Gorton & Andrew Metrick, *Securitized Banking and the Run on Repo*, \_\_ J. FIN. ECON. \_\_ (forthcoming 2011). A second line of research, by Tobias Adrian and Hyun Song Shin, focuses on the macroeconomic (particularly monetary) consequences of the development of this substitute banking system. See, e.g., Tobias Adrian & Hyun Song Shin, *Money, Liquidity, and Monetary Policy*, 99 AM. ECON. REV. 600 (2009). A handful of other economists, such as Viral Acharya, have looked at the shadow banking system from a high-level policy view. See, e.g., REGULATING WALL STREET: THE DODD-FRANK ACT AND THE NEW ARCHITECTURE OF GLOBAL FINANCE 303-425 (Viral V. Acharya et al. eds., 2011).

<sup>2</sup> Cf. Paul Krugman, *Out of the Shadows*, N.Y. TIMES, June 18, 2009, at A27 (arguing financial reform efforts fail to address “parallel financial system” of “largely unregulated institutions”).

<sup>3</sup> A few economists have provided their own definitions of the shadow banking system. Zoltan Poszar, Tobias Adrian, Adam Ashcraft, and Hayley Boesky of the Federal Reserve Bank of New York provide one of the more rigorous definitions. They define the shadow banking system as a network of financial intermediaries that provide “credit intermediation.” Credit intermediation, in turn, consists of:

- ¶ *maturity transformation*: converting long term financial assets into short term instruments for investors;
- ¶ *credit transformation*: enhancing the credit quality of financial assets by providing a priority of claims by investors to those assets; and
- ¶ *liquidity transformation*: using liquid instruments to finance illiquid assets. Zoltan Poszar et al., *Shadow Banking*, Fed. Red. Bank N.Y. Staff Report No. 458 8 (July 2010) available at [http://www.newyorkfed.org/research/staff\\_reports/sr458.html](http://www.newyorkfed.org/research/staff_reports/sr458.html).

Their definition includes some but not all of the economic features that this Article uses to define shadow banking. In contrast with their definition, this article focuses more on connecting borrowers to capital markets and emphasizes several features additional feature, namely “pooling,” “structuring,” “money creation,” and “opacity.” See *infra* notes 32-38 and accompanying text.

Gary Gorton provides another definition of the shadow banking system that focuses on one particular economic function, namely the creation of “informationally insensitive debt.” GARY GORTON, *SLAPPED BY THE INVISIBLE HAND* 27 (2010). Informationally insensitive debt is debt that is “immune to adverse selection by privately informed traders.” Gorton, *supra* note 1, at 3. This means that investors do not have to worry that more informed traders can reap a profit at their expense by using private information. *Id.* at 3-4. This means an investor’s search costs to value debt is low. This “informational insensitivity” is a key ingredient in the “money creation” feature of shadow banking in this Article. See *infra* notes 36-37 and accompanying text.

<sup>4</sup> Regulatory arbitrage is defined below. *Infra* notes 171-182 and accompanying text.

This Article generally defines the shadow banking system as a network of financial instruments and institutions that developed in the past 40 years to connect commercial and consumer borrowers indirectly to investors in capital markets. At the heart of this network is securitization or asset-backed securities.<sup>7</sup> Other financial instruments played vital roles in the network, including asset-backed commercial paper (a variant of asset-backed securities),<sup>8</sup> credit derivatives,<sup>9</sup> shares in money market mutual funds,<sup>10</sup> and repurchase agreements (“repos”).<sup>11</sup> These instruments provide credit and transfer credit risk via capital markets in much the same way as traditional bonds, but with important differences. Each of the categories of shadow banking instruments has many, if not all, of six additional features – intermediation, pooling, structuring, maturity transformation, money creation, and opacity – each of which are defined and discussed in Part I.A. below. These six features plus credit provision enable shadow banking instruments, alone and together as a system, to provide a substitute for many of the economic functions of depository banking, including providing loans to households and businesses while offering investors theoretically low risk and highly liquid investments.

This Article also aims to clear up potential misconceptions about shadow banking. First, the focus on the economic functions of these instruments and the shadow banking system more generally does not imply that they developed solely in response to economic demands or in a legal vacuum. Rather, this article highlights how legal dynamics and legal change helped create, shaped and fostered the growth of these instruments and the shadow banking system. Second, the shadow banking system was not designed or cut out of whole cloth, but developed out of numerous decisions by financial institutions and regulators to engage in regulatory arbitrage, loosen financial regulations, or provide subsidies or legal preferences to shadow banking instruments. These incremental decisions allowed the markets for various discrete financial instruments to intertwine and form an elaborate system. Third, although this system provided economic substitutes for the functions of depository banks, it is not hermetically sealed from the traditional depository banking system. Instead, banks used the shadow banking system and played vital roles within it, and the connection between traditional and shadow banking posed significant economic risks.<sup>12</sup>

Before this Article delves into the trees of defining the shadow banking system, explaining its components, and outlining its legal history, it is important to sketch a rough map of the forest. The rise of shadow banking system fits within a larger history of the transformation of western financial markets, institutions, and regulations over the past forty years. What triggered the transformation of financial institution regulation in the United States and other countries over this period is too vast a topic for one article. However, tracing the outline of some

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<sup>5</sup> This article defines deregulation broadly as described and for the reasons noted in Part II. *See infra* note 183 and accompanying text.

<sup>6</sup> This term is explained and analyzed in Part II.

<sup>7</sup> Asset-backed securities are described in detail in Part I.B.1.

<sup>8</sup> For a detailed description of asset-backed commercial paper, *see infra* Part I.B.2.

<sup>9</sup> Credit derivatives are analyzed in detail in Part I.B.3 *infra*.

<sup>10</sup> Money market mutual funds are described in detail in Part I.B.4.

<sup>11</sup> *See* Part I.B.5. *infra* for analysis of repurchase and reverse repurchase agreements.

<sup>12</sup> *See infra* Part IV.B. and accompanying text.

of the economic and political forces at work, even briefly, places the rise of the shadow banking system in a context that makes sense of many of the details in this Article.

In the United States and other western economies, banks and financial institutions were tightly regulated in the wake of the Great Depression. In many countries, banking was an unexciting industry, with banks subject to various regulations. These regulations protected consumers. They also restricted bank risk-taking to prevent future banking crises and to address the moral hazard that comes with other government interventions to prevent crises, such as deposit insurance and the government acting as lender-of-last-resort to banks.<sup>13</sup> In exchange, for these regulations, regulations limited competition for banks and afforded banks a franchise.<sup>14</sup> This cozy world was blown apart in the starting in the late 1970s and throughout the 1980s. During this period, a wide array of Western nation dramatically deregulated their financial services sectors in waves.<sup>15</sup>

What explains this? First, the collapse of the Bretton Woods system of fixed exchange rates in the early 1970s and the oil and inflation shocks later in that decade unleashed massive economic risk.<sup>16</sup> Floating exchange rates and volatile prices caused firms and investors to look to capital markets for investments that could help manage risks and make a profit.<sup>17</sup> In various countries, non-bank financial institutions emerged as rivals to banks and offered firms and households new credit, savings, and investment products that were often tied to markets.<sup>18</sup> The collapse of Bretton Woods marked further acceleration away from capital controls and towards greater cross-border capital flows.<sup>19</sup> Cross border flows of capital were matched by demands by financial firms to enter foreign markets.<sup>20</sup> Thus capital markets, non-bank financial institutions, and foreign firms all offered formidable competition for banks.<sup>21</sup>

Meanwhile inflation and interest rate volatility transformed the old regulations of banks into competitive straitjackets.<sup>22</sup> In response, some countries began to deregulate their banking

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<sup>13</sup> Cf. Viral V. Acharya, *A Theory of Systemic Risk and Design of Prudential Bank Regulation*, 5 J. FIN. STABILITY 224 (2009) (providing a framework for analyzing when bank regulation mitigates or contributes to systemic risk).

<sup>14</sup> Regulations thus added to the value of a bank charter. Gary Gorton & Andrew Metrick, *Regulating the Shadow Banking System*, BROOKINGS PAPERS ECON. ACTIVITY, 261 273 (Fall 2010).

<sup>15</sup> CHARLES OMAN, GLOBALISATION AND REGIONALISATION: THE CHALLENGE FOR DEVELOPING COUNTRIES 53 (1994); Carles Boix, *Partisan Governments, the International Economy, and Macroeconomic Policies in Advanced Nations, 1960-93*, 53 WORLD POL. 55 (2000).

<sup>16</sup> Tanya Beder, *The History of Financial Engineering from Inception to Today*, in FINANCIAL ENGINEERING: THE EVOLUTION OF A PROFESSION \_ (Tanya S. Beder & Cara M. Marshall eds., 2011).

<sup>17</sup> *Id.*

<sup>18</sup> DUNCAN R. WOOD, GOVERNING GLOBAL BANKING: THE BASEL COMMITTEE AND THE POLITICS OF FINANCIAL GLOBALISATION 38 (2005).

<sup>19</sup> Thorsten H. Block, *Financial Market Liberalization and the Changing Character of Corporate Governance*, in INTERNATIONAL CAPITAL MARKETS: SYSTEMS IN TRANSITION 207, 214 (John Eatwell & Lance Taylor eds., 2002);

<sup>20</sup> SEE INTERNATIONAL MONETARY FUND, REPORT ON THE MEASUREMENT OF INTERNATIONAL CAPITAL FLOWS 7 (1992).

<sup>21</sup> LARRY ALLEN, THE GLOBAL ECONOMIC SYSTEM SINCE 1945 118-121(2004)(discussing these phenomena in Japan).

<sup>22</sup> Erik F. Gerding, *Deregulation Pas de Deux: Dual Regulatory Classes of Financial Institutions and the Path to Financial Crisis in Sweden and the United States*, 15 NEXUS 135, 146-48 (2010) (describing this phenomenon in the Swedish financial sector in the 1980s)

sector.<sup>23</sup> Deregulation was fueled not only by competitive pressures, but by interest group politics and a waxing free-market ideology.<sup>24</sup> Free capital flows and the power of international precedent meant that one country deregulating pressured other countries to follow suit.<sup>25</sup>

Investment products that connected firms and households to capital markets meant subjecting them to market risks. For example, companies could finance themselves through, and investors could purchase, but this subjected both groups to the volatility of capital markets.<sup>26</sup> Both borrowers and investors reaped benefits from the stability of the old banking model of depository banks borrowing from depositors (and offering deposit accounts to investors) and lending to borrowers.<sup>27</sup> However, in the 1980s, a wave of financial innovation – made possible by the revolution in quantitative finance and advances in computing power – offered borrowers and investors the benefits of capital markets (market pricing, liquid markets for investments) with the features of traditional banking.<sup>28</sup> New financial instruments moved to more “complete” capital markets, generally speaking a market in which distinct securities cover each slice of risk and reward from all future events.<sup>29</sup>

This Article proceeds as follows: Part I provides a definition of the shadow banking system that focuses on seven economic features. Part I analyzes how the shadow banking system performs many of the economic functions of depository banks. It then describes the principal instruments that currently make up the shadow system, describes how they exhibit those seven features, and outlines some of the key categories of financial institutions and their roles in the system. Part II defines regulatory arbitrage, deregulation, and legal subsidies and sketches how each contributed to the development of the first shadow banking instrument, namely shares in money market mutual funds. Part III discusses the principal examples of regulatory arbitrage that drove shadow banking. Part IV looks at the key examples of deregulation and legal subsidies that contributed to shadow banking. Part V explores the political economy of deregulation, regulatory arbitrage, and legal subsidies and the rise of shadow banking. Part VI concludes.

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<sup>23</sup> *Id.* at 147-48.

<sup>24</sup> DAVID HELD ET AL., *GLOBAL TRANSFORMATIONS: POLITICS, ECONOMICS, AND CULTURE* 215-16 (1999).

<sup>25</sup> ERIC HELLEINER, *STATES AND THE REEMERGENCE OF GLOBAL FINANCE: FROM BRETTON WOODS TO THE 1990S* 167 (1996).

<sup>26</sup> *Cf.* William D. Coleman & Geoffrey R.D. Underhill, *Globalization, Regionalism and the Regulation of Securities Markets*, in *REGIONALISM AND GLOBAL ECONOMIC INTEGRATION: EUROPE, ASIA AND THE AMERICAS* 223, 229 (1998).

<sup>27</sup> Gary Gorton frames this as investor demand for informationally insensitive debt. See the discussion *supra* note 3.

<sup>28</sup> Erik F. Gerding, *Code, Crash, and Open Source: the Outsourcing of Financial Regulation to Risk Models and the Global Financial Crisis*, 84 WASH. L. REV. 127, 139-164 (2009) (describing revolution in quantitative finance and how it enabled growth of asset-backed securities, credit derivatives, and advanced risk management models and tools);

<sup>29</sup> See Ronald J. Gilson & Charles K. Whitehead, *Deconstructing Equity: Public Ownership, Agency Costs, and Complete Capital Markets*, 108 COLUM. L. REV. 231 (2008).

I. THE SHADOW BANKING SYSTEM: DEFINITION AND ANATOMY

**A. Defining Shadow Banking**

One way to think of the shadow banking system is define it chiefly by reference to specific financial instruments.<sup>30</sup> This Article takes the alternative approach of defining shadow banking through economic functions and features. This functional approach helps pinpoint when and how certain financial instruments (and financial institutions) fit under the rubric of shadow banking. Moreover, the functional approach clarifies both the economic roles and risks posed by those instruments and when yet-to-be-invented instruments could perform the same functions and pose the same dangers.

On a high level the shadow banking system and its component financial instruments provide many of the functions of traditional depository banking, yet operate by connecting borrowers to investors in capital markets. Investors in capital markets are purchasing instruments that essentially lend or provide credit to households and firms. The shadow banking system represents a hybrid; it plays the role of bank, yet harnesses capital markets. The connection to capital markets provides both a means to spread risk (and earn reward), but also subjects the system to a new set of risks, including market risk.<sup>31</sup> Yet the instruments that this article includes in shadow banking – asset-backed securities, asset-backed commercial paper, credit derivatives, money market mutual funds, and repos – differ in marked respects from traditional corporate bonds. Each of the categories of shadow banking instruments has many, if not all, of the following six additional features in addition to providing credit:

1. *Intermediation*: Unlike with bonds, these instruments interpose an intermediary between borrowers and investors.<sup>32</sup>
2. *Pooling*: Intermediation, in turn, allows the cash streams and financial risks of different loans or financial assets to be pooled together.<sup>33</sup>
3. *Structuring*: Complex contractual features of these instruments permit “structuring.” Structuring describes how the cash streams and risks of underlying loans or assets can be unbundled, rearranged, and rewoven into new instruments sold to investors. These

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<sup>30</sup> Gary Gorton defines the shadow banking system through a mixture of specific financial instruments (repos and securitization) and one particular economic function (the creation of information insensitive debt). GORTON, *supra* note 3, at 27.

<sup>31</sup> Market risk means the potential losses an individual or firm could suffer (whether from a decrease in the value of assets or an increase in liabilities) due to changes in market price. HENNIE VAN GREUNING & SONJA BRAJOVIC BRATANOVIC, ANALYZING AND MANAGING BANKING RISK: FRAMEWORK FOR ASSESSING CORPORATE GOVERNANCE AND FINANCIAL RISK 111 (2003).

<sup>32</sup> As noted above, Poszar et al. also focus on intermediation in their definition of shadow banking. *Supra* note 3.

<sup>33</sup> Gerding, *supra* note 28, at 147-49 (describing pooling in securitization).

instruments can thus offer specific combinations of risk and reward tailored to meet the needs of investors.<sup>34</sup>

4. *Maturity transformation*: Intermediation and structuring enables another feature, “maturity transformation.” This feature captures how some shadow instruments effectively convert longer term assets like loans into shorter term instruments that can be purchased by investors.<sup>35</sup>

5. *“Money” creation*: Together, pooling, structuring and maturity transformation enable some shadow banking instruments to offer theoretical low-risk and high liquidity to investors.<sup>36</sup> These instruments exhibit, to a degree, one or more of the three canonical economic characteristics of “money”: namely serving as a medium of exchange, a unit of account, and store of value.<sup>37</sup>

6. *Opacity*: Finally, the existence of one or more intermediaries between borrowers and investors creates a degree of opacity that complicates the ability of investors to assess how financial risk, including credit risk, courses from underlying assets to the instruments they have purchased (the “opacity” feature).<sup>38</sup>

These seven features do not manifest themselves in the same manner or to the same degree in the various instruments of the shadow banking system. Indeed, the various instruments described above, from asset-backed securities to repos, have different economic functions, and, as this Article will argue, pose different kinds and gradients of risk. It is therefore important to analyze these instruments individually. Part B will describe each of the instruments listed above one-by-one. Part I.D. will compare these various instruments side-by-side to gauge the extent to which they exhibit the features listed above.

## **1. Shadow Banking Compared to Depository Bank: Revisiting the “Specialness” of Banking**

These shadow banking instruments – whether considered individually or as a system – have come to provide at least three of the core economic functions of banks as described in an influential 1982 speech by Gerald Corrigan (then a senior Federal Reserve official).<sup>39</sup> In that speech, Corrigan claimed banks had three “special” attributes that made them deserving of

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<sup>34</sup> *Id.* at 149 (describing structuring or “tranching” in securitizations).

<sup>35</sup> This is one of the functions of credit intermediation in the definition of shadow banking by Poszar et al. See discussion *supra* note 3.

<sup>36</sup> Gary Gorton emphasizes this feature in his definition of shadow banking that focuses on “informationally insensitive debt.” See *supra* note 3.

<sup>37</sup> N. GREGORY MANKIW, *MACROECONOMICS* 75-77 (5<sup>th</sup> Ed. 2003) (listing three features of money).

<sup>38</sup> See Gerding, *supra* note 28, at 175 (describing information destruction in securitization).

<sup>39</sup> E. Gerald Corrigan, *Are Banks Special?*, in FED. RESERVE BANK OF MINNEAPOLIS, 1982 ANNUAL REPORT available at <http://www.minneapolisfed.org/pubs/ar/ar1982a.cfm>.

different regulatory treatment than other financial institutions.<sup>40</sup> Shadow banking has belied this specialness of banking.

*First*, most of these “shadow” instruments provided credit to consumers and businesses, by offering investors in capital markets (primarily institutional investors) a means to invest in credit markets. These investments indirectly provide loans indirectly to consumers, businesses and even financial institutions (the “credit provision” and “credit transfer” features mentioned above).<sup>41</sup> This roughly tracks *and refutes* Corrigan’s argument that banks are special because they provide “backup” liquidity to households, businesses and financial markets.<sup>42</sup> Corrigan claimed that this function becomes crucial when financial markets undergo profound stress.<sup>43</sup>

*Second*, these instruments were designed to offer investors much of the same liquidity and relative security of bank deposits.<sup>44</sup> This tracks and refutes Corrigan’s claim that banks alone provide transaction accounts (checking and savings deposits, in the case of banks) that allow the account holders both to withdraw funds – at par and on demand – and then to transfer them to other parties easily.<sup>45</sup> (This “transaction account” function equates with the “money” feature of shadow banking instruments described above.) Providing customers with assurance that they will have liquid, transferable funds also becomes particular critical during times of financial crisis, according to Corrigan.<sup>46</sup>

These first two functions of shadow banking are easy to grasp. The third has been largely overlooked by scholars and policymakers.<sup>47</sup> Corrigan argued that banks also serve as a “transmission belt” for monetary policy.<sup>48</sup> By creating a substitute channel for bank lending, shadow banking can dramatically expand (or contract) the effective supply of money in the economy.<sup>49</sup> That is not to say that central banks monitor (let alone manipulate) the shadow banking system in the same way they look to the traditional banking sector to implement monetary policy. Scholars have argued that central banks and financial regulators have largely

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<sup>40</sup> *Id.*

<sup>41</sup> FINANCIAL STABILITY BOARD, SHADOW BANKING: SCOPING THE ISSUES 4 (Apr. 12, 2011) *available at* [http://www.financialstabilityboard.org/publications/r\\_110412a.pdf](http://www.financialstabilityboard.org/publications/r_110412a.pdf).

<sup>42</sup> *Compare* Corrigan, *supra* note 39.

<sup>43</sup> *Id.*

<sup>44</sup> FINANCIAL STABILITY BOARD, *supra* note 41, at 4.

<sup>45</sup> *Compare* Corrigan, *supra* note 39.

<sup>46</sup> *Id.*

<sup>47</sup> There have been notable exceptions among economists, particularly Adrian and Shin, who have looked at the monetary effects of shadow banking. *See* Adrian & Shin, *supra* note 1.

<sup>48</sup> Corrigan, *supra* note 39.

<sup>49</sup> *See* Adrian & Shin, *supra* note 1, at 604.



missed the monetary effects of shadow banking.<sup>50</sup> I address the monetary and macroeconomic dimensions of shadow banking in a separate article.<sup>51</sup>

It was clear even as Corrigan spoke, that the specialness of banks was becoming questionable. Soon after his speech, a number of scholars who argued for deregulation of banks questioned Corrigan’s premise that banks were unique. For example, in 1983, Richard Aspinwall challenged Corrigan’s thesis by pointing to a range of financial instruments and institutions (all of which came to form parts of what this Article calls the shadow banking system).<sup>52</sup> Aspinwall argued that the best response to the increasing ability of non-banks to provide the same economic functions as banks is to reduce the regulatory impediments to banks to allow them to compete.<sup>53</sup> Other scholars have echoed Aspinwall’s deregulatory argument through the decades, up through and even past the onset of the current global financial crisis (which this Article labels the “Panic of 2008”).<sup>54</sup>

## **2. Banking Risks**

This deregulatory argument was, however, premised on assumptions that the non-banks that provide the economic functions of banks do not suffer from or create the same economic risks or impose many of the same economic externalities as banks. For if non-banks did pose the same risks and inflict the same negative externalities as banks, regulating these entities as opposed to merely deregulating banks might have been the more sensible policy solution.<sup>55</sup>

To foreshadow later portions of this Article, the Panic of 2008 belied these assumptions that non-banks did not face the same economic risks and pose the same negative externalities as banks.<sup>56</sup> At the time, however, the assumption was not unreasonable. Indeed, elements of shadow banking, like securitization, offered novel structures to address two of the formidable

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<sup>50</sup> See Margaret M. Blair, *Financial Innovation, Leverage, Bubbles, and the Distribution of Income*, 30 REV. BANKING & FIN. L. 225, 270-73(2010).

<sup>51</sup> Erik F. Gerding, *Shadow Banking and the Link Between Financial Regulation and Monetary Policy* (unpublished manuscript on file with the author).

<sup>52</sup> Aspinwall argued that money-market-mutual funds, as well as other products and institutions, had started to provide substitutes for transaction accounts. He noted other non-bank lenders served as sources of backup liquidity to the market. Aspinwall also pointed out that even then the Federal Reserve also conducted monetary policy by transacting with dealers in government securities, many of which were not banks. Richard Aspinwall, *On the “Specialness” of Banking*, 7 ISSUES IN BANK REG. 16 (1983).

<sup>53</sup> *Id.*

<sup>54</sup> See e.g., Mehrsa Baradaran, *Reconsidering the Separation of Banking and Commerce after Financial Collapse*, \_\_\_ GEO. WASH. L. REV. \_\_\_ (forthcoming 2011), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1783029](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1783029) (arguing that nonbanks performing bank functions makes bank holding company regulation obsolete).

<sup>55</sup> Aspinwall himself recognized the possibility of non-banks creating similar economic risks to banks, but placed the burden on extending banking regulations to non-banks on finding evidence that these risks would become manifest. *Supra* note 52.

<sup>56</sup> *Infra* notes 362-370 and accompanying text.

and intertwined risks inherent in traditional banking: liquidity risk and solvency risk. These risks are unpacked below.

Liquidity risk arises because, when banks borrow from depositors and lend to households and businesses, they suffer from an asset-liability mismatch.<sup>57</sup> On the one side of their balance sheet, they have long-terms assets (like 30 year mortgages).<sup>58</sup> While on the other side, they have short-term liabilities, as depositors can typically withdraw funds from their accounts on short notice.<sup>59</sup> This asset-liability mismatch leaves banks susceptible to runs, when depositors rush to withdraw funds.<sup>60</sup> Although bank runs may seem like irrational panics, economists have shown that they may result from completely rational behavior. Investors may seek to withdraw funds knowing that if a mass of other investors withdraw first, they will strip the cupboard bare. Bank runs thus can become self-fulfilling prophecies.<sup>61</sup> A run at one bank threatens to trigger runs on others if depositors and other creditors cannot distinguish a safe bank from an unsafe one.<sup>62</sup> A rash of panic runs can cause credit to evaporate in financial markets and the economy generally.<sup>63</sup> It is this prospect of bank runs and liquidity drying up quickly that is the foundation for three core governmental interventions in banking markets: a central bank acting a lender-of-last-resort, government-provided deposit insurance, and requirements that banks maintain a certain amount of highly liquid assets in their portfolio.<sup>64</sup>

Banks are also subject to solvency crises.<sup>65</sup> This may arise for many reasons. When banks hold onto the loans they make, they have credit risk, *i.e.* the risk of loans defaulting.<sup>66</sup> Credit risk may be compounded if banks have long-term exposure to particular borrowers, types of borrowers, or sectors of the economy; this is called concentration risk.<sup>67</sup> Moreover, banks

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<sup>57</sup> Douglas W. Diamond & Raghuram G. Rajan, *Liquidity Risk, Liquidity Creation and Financial Fragility: a Theory of Banking*, Nat’l Bur. Econ. Res. Working Paper No. 7430 1 (Dec. 1999) *available at* [http://www.nber.org/papers/w7430.pdf?new\\_window=1](http://www.nber.org/papers/w7430.pdf?new_window=1).

<sup>58</sup> KEITH POND, *RETAIL BANKING* 24 (2007).

<sup>59</sup> *Id.*

<sup>60</sup> Mark J. Flannery, *Debt Maturity and the Deadweight Cost of Leverage: Optimally Financing Banking Firms*, 84 *AMER. ECON. REV.* 320, 320 (1994).

<sup>61</sup> The classic economic model of a bank run can be found in Douglas W. Diamond & Philip H. Dybvig, *Bank Runs, Deposit Insurance, and Liquidity*, 91 *J. POL. ECON.* 401 (1983).

<sup>62</sup> Gary Gorton, *Private Clearinghouses and the Origins of Central Banking*, *FED. RES. BANK PHILADELPHIA BUS. REV.* 1, 5 (Jan./Feb. 1984) (describing 12 banking panics in United States between 1800 and 1915 that impacted even solvent banks).

<sup>63</sup> Sudipto Bhattacharya et al., *The Economics of Bank Regulation*, 30 *J. MONEY, CREDIT & BANKING*, 745, 754 (1998).

<sup>64</sup> Charles M. Kahn and João A.C. Santos, *Allocating Bank Regulatory Powers: Lender of Last Resort, Deposit Insurance and Supervision*, 49 *EUR. ECON. REV.* 2107 (2005).

<sup>65</sup> Viral V. Acharya et al., *Capital, Contingent Capital, and Liquidity Requirements*, in *REGULATING WALL STREET: supra* note 1, at 145.

<sup>66</sup> Credit risk includes “counterparty risk” in derivative transactions, which means the risk to a firm that its counterparty in a derivative contract will default on its contractual obligations to make future payments to the firm. JOËL BESSIS, *RISK MANAGEMENT IN BANKING* 12-13 (2d ed. 2002).

<sup>67</sup> Robert P. Bartlett, III, *Making Banks Transparent*, \_\_ *VAND. L. REV.* \_\_ (forthcoming 2011) *available at* [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1884437](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1884437) (describing various forms of risk concentration problems faced by banks).

become more financially fragile when they become more highly leveraged.<sup>68</sup> As with liquidity risk, the insolvency of one bank can have dire spillover effects on other banks. A bank’s failure can cause severe losses for banks that have loaned money to it, raising the specter of a chain reaction of failing banks.<sup>69</sup> This specter becomes more frightening should either banks have exposures to similar risks (such as similar concentration risk)<sup>70</sup> or the linkages connecting banks become harder to sort out.<sup>71</sup> Although liquidity and solvency risk can be separated analytically, real market events make it difficult to untangle these risks.<sup>72</sup> Threats to a bank’s balance sheet can spook depositors and precipitate a bank run, and, on the flip side, a bad enough run can lead to insolvency.<sup>73</sup>

## **B. Anatomy: the Instruments of Shadow Banking**

### **1. Securitization: shadow banking’s central artery**

The shadow banking system can address the liquidity and solvency risks faced by banks by transforming illiquid loans into liquid securities which are sold to investors in capital markets. To understand this alchemy, consider securitization, the central artery of the shadow banking system. Securitization allows a lender to sell loans to an investment vehicle and thus trade highly illiquid assets for cash.<sup>74</sup> The investment vehicle issues multiple classes of asset-backed securities to investors, with the terms of the securities structured so that the senior classes represent theoretically low-risk assets that can be traded on bond markets.<sup>75</sup> The market price of asset-backed securities (together with the imprimatur of credit rating agencies) supposedly reflects the credit and liquidity risk inherent in the instruments.<sup>76</sup>

Diagram A below explains this process. In stage 1, banks and lenders make (or “originate”) loans such as mortgages to consumers or businesses. In stage 2, an investment vehicle buys pools of mortgages using cash paid by investors who bought securities from those vehicles (stage 3). These last two stages of transactions occur practically simultaneously. The securities then pay out to investors based on the cash streams the investment vehicles receive from the underlying mortgages.<sup>77</sup>

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<sup>68</sup> George G. Kaufman & Kenneth E. Scott, *What is Systemic Risk, and Do Bank Regulators Retard or Contribute to It*, 7 INDEP. REV. 371, 373 (2003).

<sup>69</sup> *Id.*

<sup>70</sup> *Id.*

<sup>71</sup> George G. Kaufman, *Bank Contagion: a Review of the Theory and Evidence*, 8 J. FIN. SERVICES RES. 123, 123 (1994).

<sup>72</sup> Nathaniel Frank et al., *Transmission of Liquidity Shocks: Evidence from the 2007 Subprime Crisis*, Oxford-Man Inst. Quant. Fin. Working Paper at 22 (Aug. 2008) available at <http://www.oxford-man.ox.ac.uk/documents/papers/2008OMI12.pdf>.

<sup>73</sup> François Marini, *Bank Insolvency, Deposit Insurance and Capital Adequacy*, 24 J. FIN. SERVICES RES. 67 (2003).

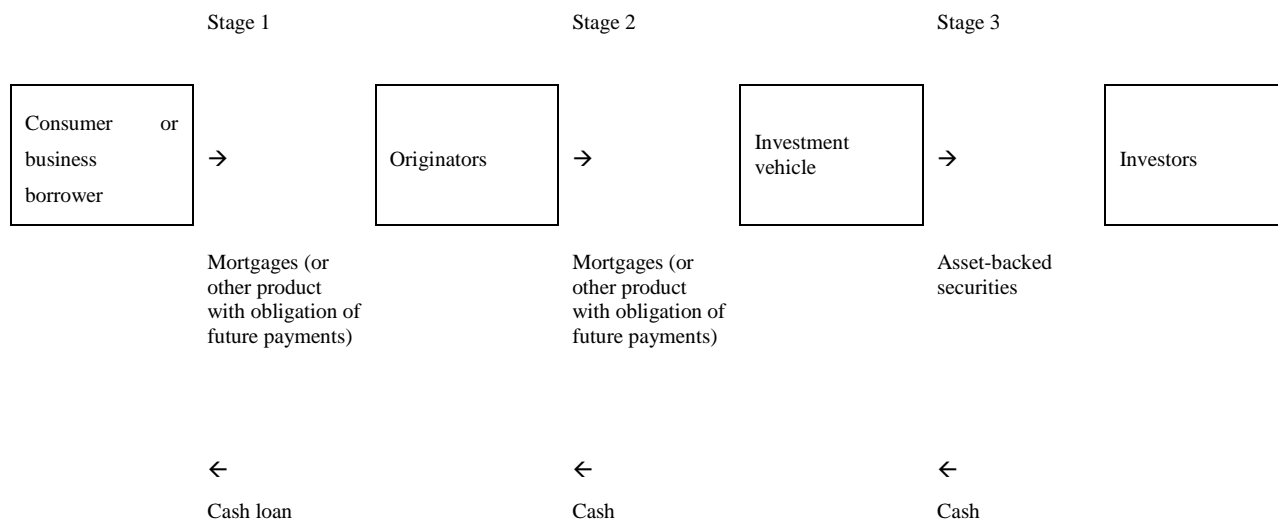
<sup>74</sup> JANET M. TAVAKOLI, COLLATERALIZED DEBT OBLIGATIONS AND STRUCTURED FINANCE: NEW DEVELOPMENTS IN CASH AND SYNTHETIC SECURITIZATION 14 (2003).

<sup>75</sup> See Steven P. Baum, *The Securitization of Commercial Property Debt*, in A PRIMER ON SECURITIZATION 45, 49 (Leon T. Kendall & Michael J. Fishman eds., 1997).

<sup>76</sup> Jian Hu, *Assessing the Credit Risk of CDOs Backed by Structured Finance Securities: Rating Analysts’ Challenges and Solutions*, 10 (Aug. 31, 2007) (unpublished manuscript) available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1011184](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1011184).

<sup>77</sup> See Steven L. Schwarcz, *Protecting Financial Markets: Lessons from the Subprime Mortgage Meltdown*, 93 MINN. L. REV. 373, 376–77 (2008).

**Diagram A**



Greater demand by investors for the end product of asset-backed securities acts to funnel more credit back to borrowers. Banks and other lenders benefit because they have solved the asset-liability mismatch by trading illiquid loans for cash. Unburdened of the risk of loans defaulting, banks can deploy this cash by making additional loans. Banks can also earn fees at numerous places in the securitization process.

Securitization also has much to offer investors in capital markets as well. By purchasing these asset-backed securities, investors can invest in the lucrative consumer-credit market (including investing in mortgages, credit card debt, and student loans) while holding securities that are theoretically more liquid than the underlying mortgages.<sup>78</sup> This liquidity reflects the effective maturity transformation of securitization, which converts long term mortgages into theoretically marketable securities.<sup>79</sup>

Moreover, asset-backed securities allow investors to diversify. This diversification occurs in three different ways. First, the pooling of mortgages means that the risk of default on any one mortgage is offset by the fact that other mortgages in the pool will continue to pay out. This risk-spreading through pooling is a central benefit of all securitizations. This assumes, however, that losses among mortgages in the pool will not be highly correlated and that any correlation can be accurately estimated and will not suddenly increase.<sup>80</sup> Second, securitization facilitates diversification because investors in asset-backed securities are only buying a sliver of the mortgage pool’s risk, and they can diversify away this risk through other investments in their portfolios.<sup>81</sup> This assumes that losses on the mortgage-backed securities that investors purchase are not highly correlated with losses on other assets (including other asset-backed securities) in their portfolios. Third, investors can achieve diversification through the terms of the securities being issued. Cash payments on the underlying assets need not simply flow to holders of

<sup>78</sup> Leon T. Kendall, *Securitization: a New Era in American Finance*, in A PRIMER ON SECURITIZATION 1, 5, 13 (Leon T. Kendall & Michael J. Fishman eds., 1997).

<sup>79</sup> Poszar et al., *supra* note 3, at 3.

<sup>80</sup> Joshua Coval et al., *The Economics of Structured Finance*, 23 J. ECON. PERSP. 3, 10, 27-28 (2009).

<sup>81</sup> See Kendall, *supra* note 78, at 13–15.

securities pro rata. Instead, the securities can be “structured” to create different classes, or “tranches,” of securities, with each class having a different level of risk and a different level of reward.<sup>82</sup>

More senior classes of asset-backed securities – that is those with more senior claims to cash streams on the underlying assets – offer greater safety to investors. This safety, when combined with liquidity, means that asset-backed securities replicate many of the features that investors sought in bank deposits. For institutional investors, senior asset-backed securities created a substitute for traditional bank accounts.<sup>83</sup> Economist Gary Gorton argues that the supposed liquidity and low risk of senior tranches of asset-backed securities meant that they took on many of the features of “money,” just like bank accounts.<sup>84</sup>

Securitization also offers benefits for the economy as a whole, by spreading risk to a wider number of investors, who theoretically can bear that risk more efficiently.<sup>85</sup> Note however that both the efficiency of risk-spreading and the economic benefits to investors depend on the accurate pricing asset-backed securities for the risk of default on the underlying loans.<sup>86</sup> When risk-spreading works, it also benefits borrowers, who can enjoy lower interest rates than had banks held onto their loans.<sup>87</sup>

The discussion thus far has greatly oversimplified the structure of many asset-backed securities. For example, securitizations can become even more complex when mortgage-backed securities (or other asset-backed securities) are themselves securitized. A new investment vehicle could purchase mortgage-backed securities and use them as collateral for another securitization, which is called a collateralized debt obligation (CDO).<sup>88</sup> Securities issued in CDOs are often re-securitized themselves, creating what is called a “CDO-squared.”<sup>89</sup> The iterative layering of securitizations of securitizations of securitizations became wildly popular in financial markets in the pre-crisis years.<sup>90</sup> Resecuritization provides an additional market for asset-backed securities, further increasing their liquidity. The market for asset-backed securities surged up until the Panic of 2008, growing from \$168.4 in securities outstanding in 1996 to over \$1.2 trillion

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<sup>82</sup> To accomplish this, the indenture or other agreement establishing the terms of each tranche often employs a complex “waterfall” rule for payment to different tranches. The waterfall sets the order in which the classes are entitled to receive payments from the underlying assets; in a simple waterfall, holders of senior classes receive amounts due to them in full before holders of junior classes receive anything. Thus, junior classes face a higher risk of not being paid due to defaults on the underlying assets and receive compensation for this risk with a higher interest rate. Different tranches (with different tradeoffs between risk and reward) appeal to different types of investors. More complex waterfall rules than the example above allow securitizations to carve up risk and reward in very finely tuned ways. For an explanation of waterfalls and tranching, see Baum, *supra* note 75, at 45, 49 (describing commercial mortgage-backed securities).

<sup>83</sup> Gorton, *supra* note 1, at 8-10.

<sup>84</sup> *Id.*

<sup>85</sup> See Gilson & Whitehead, *supra* note 29, 245-46 (2008).

<sup>86</sup> Gerding, *supra* note 28, at 149-50 (2009).

<sup>87</sup> James W. Kolani et al., *The Effects of Securitization on Mortgage Market Yields: a Cointegration Analysis*, 26 REAL ESTATE ECON. 555, 678 (1998).

<sup>88</sup> Leon T. Kendall, *Securitization: a New Era in American Finance*, in A PRIMER ON SECURITIZATION *supra* note 75, at 1, 15.

<sup>89</sup> Coval et al., *supra* note 80, at 7.

<sup>90</sup> Efraim Benmelech & Jennifer Dlugosz, *The Alchemy of CDO Credit Ratings*, Nat’l Bur. Econ. Res. Working Paper No. 14878 (Apr. 2009).

outstanding in 2006.<sup>91</sup>

## **2. Securitizations advanced: Asset-backed commercial paper**

Securitization has evolved and generated numerous specialized variants, including asset-backed commercial paper. Asset-backed commercial paper is created when companies that are seeking financing sell assets to an investment vehicle. The investment vehicle then issues short term securities with maturities between 90 and 180 days. As with other securitizations, the investment vehicle uses the proceeds from selling securities to investors to purchase the underlying assets. Those assets serve as collateral for the obligations of the investment vehicle to make payments on the commercial paper being issued. Safe, liquid, short term commercial paper offers investors economic benefits similar to deposit accounts with a bank.<sup>92</sup>

Aside from issuing short term securities, asset-backed commercial paper differs from traditional securitization in several regards. First, the investment vehicle in asset-backed commercial paper (called a “conduit”) may purchase a revolving set of assets that may change over time. Second, as commercial paper matures, the conduit will issue new paper to investors (the proceeds of which will be used to purchase fresh assets and pay the fees of the various service providers to the transaction). These first two features mean that conduits may suffer an asset-liability mismatch of their own, as they have short term obligations to investors yet hold longer term assets. This potential for a mismatch leads to a third feature of ABCP that differs from traditional securitizations: in exchange for a fee, a third party often agrees to provide liquidity support to the vehicle in the form of infusions of cash or liquid assets as needed.<sup>93</sup> Like securitizations, asset-backed commercial paper issuances often include some form financial guarantee (for example, letters of credit, credit derivatives or bond insurance) from another financial institution.<sup>94</sup> Finally, asset-backed commercial paper transactions are created by a “sponsor,” which may be either a large corporation that needs to finance its operations or a financial institution. The sponsor develops the structure of the entire transaction, including identifying assets and sellers of assets (if the sponsor is not selling them itself) to back the securities. The sponsor may also contract to provide credit enhancement or liquidity support to the issuing vehicle.<sup>95</sup>

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<sup>91</sup> Gorton, *supra* note 1, at 25.

<sup>92</sup> Viral Acharya & Matthew Richardson, *Causes of the Financial Crisis*, 21 CRIT. REV. 195, 201 (2009).

<sup>93</sup> Viral V. Acharya et al., *Securitization Without Risk Transfer*, Nat’l Bur. Econ. Res. Working Paper No. 15730 2 (Feb. 2010) *available at* <http://www.nber.org/papers/w15730>.

<sup>94</sup> In addition, some conduits purchase a mix of different assets to diversify the portfolio. Fitch Ratings, *Structured Finance: Asset-backed Criteria Report: Asset-backed Commercial Paper Explained* (Nov. 8, 2001) *available at* <http://pages.stern.nyu.edu/~igiddy/ABS/fitchabcp.pdf> (last visited Oct. 1, 2010).

<sup>95</sup> Three common structures of asset-backed commercial paper transactions involve different roles and objectives for the sponsor. In the first structure, called a “single seller,” the sponsor is the only originator of the loans or other assets being used as collateral for the ABCP issuance. Single seller transactions can help corporate borrowers use their assets to finance their continued operations. The second type of transaction involves multiple originators of the underlying collateral. In this “multi-seller” transaction, the sponsor is a financial institution that creates the ABCP transaction as a service to help its clients obtain financing. A financial institution also acts as a sponsor in the third type of structure, called a “securities backed” issuance. Financial institutions create this third type of asset-backed to move assets off their balance sheets and to engage in regulatory arbitrage of capital requirements and other

Asset-backed commercial paper enjoyed phenomenal growth in the decade before the crisis. The market doubled in size from January 2001, when approximately \$600 billion in these instruments were outstanding in the United States, to the eve of the crisis in January 2007, when over \$1.2 trillion was outstanding.<sup>96</sup> At that point in 2007, more asset-backed commercial paper was outstanding than any other short-term debt instrument, including U.S. Treasuries.<sup>97</sup>

### **3. Credit Derivatives**

Credit derivatives formed another important strand in the shadow banking web. This type of derivatives represent contracts in which one party (the “credit protection seller”) agrees to pay the other party (the “credit protection buyer”) a specified amount should a “credit event” occur with respect to certain reference assets. In exchange, the credit protection buyer pays a premium to the seller. In plainer English, the credit protection seller provides a form of “insurance” to the buyer against credit risk on the reference assets. This might mean insurance against either the insolvency of a particularly important commercial counterparty or default on loans, bonds, or other assets in the credit protection buyer’s portfolio.<sup>98</sup>

The following Diagram B depicts the basic economics of a credit derivative:

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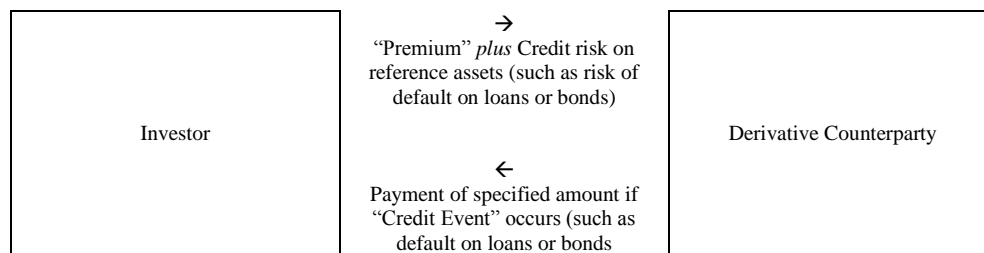
regulations (the role of regulatory arbitrage in driving the creation of the shadow banking web is discussed in Part *infra*). *Id.*

<sup>96</sup> Viral V. Acharya & Phillip Schnabl, *Do Global Banks Spread Global Imbalances? Asset-Backed Commercial Paper During the Financial Crisis of 2007-09*, 58 IMF ECON. REV. 37, 38-39 (2010).

<sup>97</sup> *Id.* at 38.

<sup>98</sup> Frank Partnoy & David A. Skeel, Jr., *The Promise and Perils of Credit Derivatives*, 75 U. CIN. L. REV. 1019, (2007) (defining credit derivatives and analyzing their economic functions and risks).

**Diagram B**



The distillation and insurance of specific credit risks represents another form of the “structuring” feature described above, in which rewards and risks of underlying assets are unbundled and re-bundled.<sup>99</sup> Credit derivatives also involve intermediation. A credit protection seller can turn around and hedge the risk it assumes under a credit derivative. When the credit protection seller writes numerous credit derivatives it is essentially pooling risks. Intermediation and pooling are particularly strong in the case of OTC derivatives dealers, institutions that act as middlemen in the credit derivatives market. The market for OTC credit derivatives is dominated by just over a dozen such dealers.<sup>100</sup>

Although derivatives can be used for many reasons, they have often been used as tools in connection with securitization. An investor can use credit derivatives to hedge the risk of a default on asset-backed securities in its portfolio.<sup>101</sup> Bond insurance, in which a regulated company provides a guarantee on bond payments, provides this same function. Diagram C sketches out the basic economic bargain of a credit derivative used in this way. It thus depicts how credit derivatives serve as another link in a larger chain of credit risk transfers in the securitization process.

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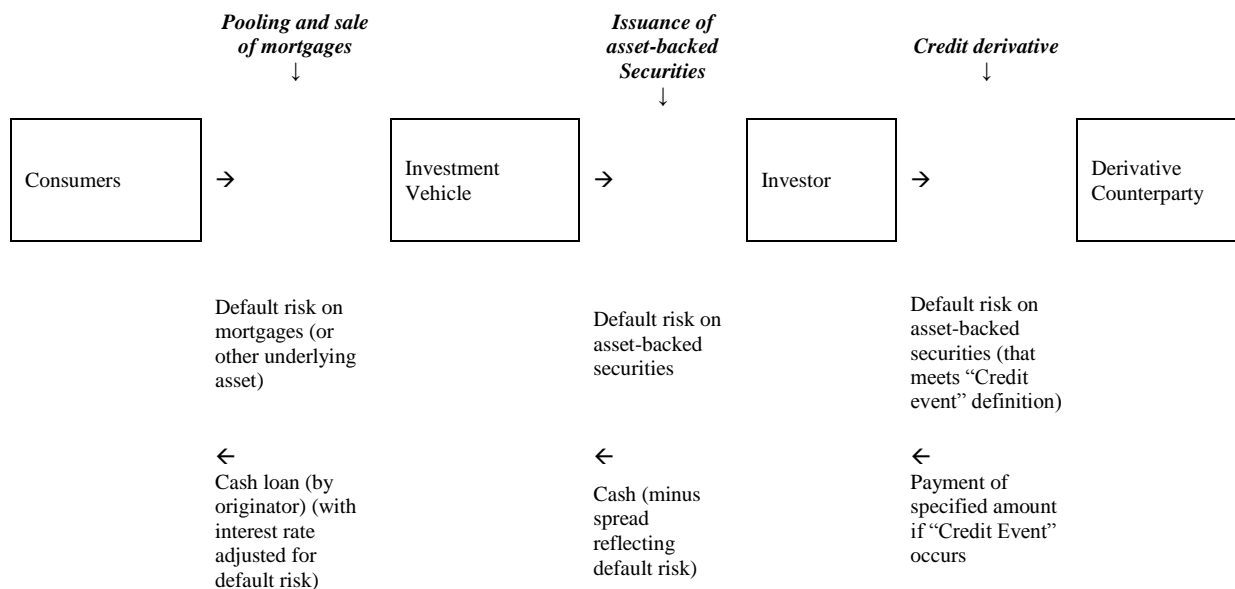
<sup>99</sup> *See id.*

<sup>100</sup> *See id.*

<sup>101</sup> Aaron Unterman, *Exporting Risk: Global Implications of the Securitization of U.S. Housing Debt*, 4 HASTINGS BUS. L.J. 77, 89 (2008).



Diagram C



If credit derivatives allow investors to offload credit risk, they also enable to buy more securities and take on fresh risk by making new loans or investments.<sup>102</sup> There is extensive evidence that financial institutions have used credit derivatives in this manner.<sup>103</sup>

Just as asset-backed securities can themselves be securitized and re-securitized, so too can a credit protection seller hedge its own credit risk under the derivative contract with a second credit derivative. The new credit protection seller under that second derivative can then itself hedge with a third credit derivative. Rinse, lather, repeat and long, convoluted chains of risk transfers are formed.<sup>104</sup> Credit derivatives of all types experience meteoric growth in the first decade of the 21<sup>st</sup> century. From the first half of 2001 to its market peak in the second half of 2007, the notional value of credit default swaps increased over 98 fold from approximately \$U.S.631 billion to \$62 trillion.<sup>105</sup>

#### 4. Money market mutual funds

<sup>102</sup> Norvald Instefjord, *Risk and Hedging: Do Credit Derivatives Increase Bank Risk*, 29 J. BANKING & FIN. 333, 334-35 (2005) (positing that credit derivatives make it attractive for financial institutions to take on new risk as existing risk is hedged).

<sup>103</sup> Several studies indicate that banks that used credit derivatives to hedge, replaced that credit risk by making fresh loans or investments. E.g. Beverly Hirtle, *Credit Derivatives and Bank Credit Supply*, 18 J. FIN. INTERMEDIATION 125, 126 (2009).

<sup>104</sup> Henry T.C. Hu, *Misunderstood Derivatives: the Causes of Informational Failure and the Promise of Regulatory Incrementalism*, 102 YALE L.J. 1457, 1502 (1993).

<sup>105</sup> International Swaps and Derivatives Association. Inc.. ISDA Market Survey Historical Data, available at <http://www.isda.org/statistics/index.html> (last visited Oct. 1, 2010).

Money-market mutual funds, one of the first pieces of the shadow banking system, were first created in the 1970s. These funds were designed to provide low risk, highly liquid securities to investors as a substitute for bank deposits with higher effective interest rates.<sup>106</sup> (The growth of money market mutual funds in response to restrictions on bank deposits is discussed below when Part III analyzes how regulatory arbitrage served as midwife to the birth of the shadow banking system.) These funds sold shares to investors and used the proceeds to invest in relatively safe debt securities, such as senior asset-backed securities, asset-backed commercial paper, and corporate debt.<sup>107</sup> In doing so, the funds engage in maturity transformation at the margin; even if the fund holds very short term assets, investors can “withdraw” funds invested on demand.<sup>108</sup> Money market mutual funds enjoyed spectacular growth, expanding from no assets under management in the 1970s (when the funds were created) to \$ 4 trillion at their peak in 2008.<sup>109</sup>

## 5. Repos

Repurchase agreements (commonly known as “repos”) represent the final strand in the shadow banking web. In a repo transaction, a borrower sells a security at below the current market price and agrees to repurchase it at an agreed-upon, higher price in the future.<sup>110</sup> This sale and repurchase provides the same economics as a secured loan with the security being sold serving as collateral.<sup>111</sup> The difference between the current market price of the security and the price at which the borrower sells it represents the “haircut.”<sup>112</sup> Larger haircuts (when the security is sold to the lender for far below market price) mean more collateral for the lender and lower leverage for the borrower.<sup>113</sup> Smaller haircuts translate into less collateral and more leverage.<sup>114</sup> Using illiquid collateral for loans, even short term loans, represents effective maturity transformation.<sup>115</sup>

Some repo transactions, called tripartite repos, involve a clearing bank that acts as intermediary between the borrower and lender. This institution holds and administers the collateral for the transaction pursuant to a contract among the three parties. A third party holding the collateral reduces the counterparty risk of the lender in the transactions.<sup>116</sup>

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<sup>106</sup> William A. Birdthistle, *Breaking Bucks in Money Market Mutual Funds*, 2010 WIS. L. REV. 1155, 1156-81 (describing evolution of money market mutual funds).

<sup>107</sup> Birdthistle, *supra* note 106.

<sup>108</sup> Sandra C. Krieger, Executive Vice President, Fed. Res. Bank N.Y. Remarks at the Global Association of Risk Professionals 12th Annual Risk Management Convention, New York City “Reducing the Systemic Risk in Shadow Maturity Transformation” (March 8, 2011) *available at* <http://www.newyorkfed.org/newsevents/speeches/2011/kri110308.html>.

<sup>109</sup> Birdthistle, *supra* note 106, at 1176.

<sup>110</sup> Adrian & Shin, *supra* note 1, at 602; Gorton & Metrick, *supra* note 1.

<sup>111</sup> Gorton & Metrick, *supra* note 1.

<sup>112</sup> Adrian and Shin, *supra* note 110, at 602.

<sup>113</sup> *Id.*

<sup>114</sup> *Id.*

<sup>115</sup> Krieger, *supra* note 108.

<sup>116</sup> Gary Gorton, Information, Liquidity, and the (Ongoing) Panic of 2007, Nat’l Bur. Econ. Res. Working Paper No. 14649 (Jan. 2009) *available at* <http://www.nber.org/papers/w14649>.

The repo market serves as a significant financing source for corporations and particularly financial institutions.<sup>117</sup> Many financial institutions use the “overnight” repo market – that is repurchase agreements with a term of less than a day – for short term funding needs. Lenders enter into repo transactions to enjoy a short-term investment opportunity or to gain use of securities (for example, to vote on corporate governance matters of the company that issued the security).<sup>118</sup> Gary Gorton and Andrew Metrick argue that by providing firms with a short-term collateralized investment, repos provide many of the investment features of demand deposits.<sup>119</sup> They argue that exemptions in the Bankruptcy Code that allow repo lenders to seize collateral without being subject to the automatic stay (a topic discussed in Part \_\_ below) make this form of loan much safer.<sup>120</sup>

There is no official data on the total size of the repo market in the United States; however, the sums being borrowed are enormous.<sup>121</sup> According to the Federal Reserve, the 19 primary dealer banks in the United States reported \$4.5 trillion in financing through fixed income security repos as of March 2008.<sup>122</sup> Scholars estimate that repo lending in the United States peaked just before the crisis at \$10 trillion in gross amount outstanding.<sup>123</sup> The triparty repo market peaked before the crisis at \$2.8 trillion.<sup>124</sup>

### **C. Driving Factors Behind Shadow Banking Instruments: Credit and Leverage**

Repos highlight one of the primary reasons financial institutions created the entire shadow banking system – to allow them to borrow funds, which they turn around and use to invest. Leverage allows an investor to increase potential returns on equity beyond what would be possible through a direct investment of its own funds. Leverage comes in three forms. First, balance sheet leverage is the most visible form of the three and arises when a firm’s assets exceed its equity capital. Banks increase balance sheet leverage when they borrow funds to acquire more assets. Second, economic leverage arises when an investor is exposed to a change in value of an investment beyond the amount it paid for that investment. Economic leverage does not necessarily appear on the investor’s balance sheet. For example, a loan guarantee may not appear on a firm’s balance sheet if it represents a contingent liability that may materialize in the future. Lastly, embedded leverage describes when a firm’s exposure to an investment is larger than the market factor for that investment. Embedded leverage arises when a firm invests in a security or other investment that is itself leveraged.<sup>125</sup>

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<sup>117</sup> For a description of the repo market, its importance as a source of short term financing for financial institutions, and how the market seized up in the financial crisis, see Gorton & Metrick, *supra* note 111.

<sup>118</sup> Peter Hördahl & Michael R. King, *Developments in Repo Markets During the Financial Turmoil* BANK INT’L SETTLEMENTS Q. REV. 38 (December 8, 2008) available at <http://ssrn.com/abstract=1329903>.

<sup>119</sup> Gorton & Metrick, *supra* note 14, at 266, 277.

<sup>120</sup> *Id.*

<sup>121</sup> Gorton & Metrick, *supra* note 1. Studies estimate the size of the repo market in the Eurozone to be similar as of the end of 2007. *Id.*

<sup>122</sup> *Id.*

<sup>123</sup> *Id.*

<sup>124</sup> *Id.*

<sup>125</sup> Katia D’Hulster, *The Leverage Ratio*, World Bank Group Crisis Response Note No. 11 1 (Dec. 2009) available at <http://rru.worldbank.org/documents/CrisisResponse/Note11.pdf>.

Per introductory corporate finance, leverage both magnifies potential returns on equity and potential losses for firms that invest with borrowed money.<sup>126</sup> Leverage is the lifeblood of the business of financial institutions.<sup>127</sup> Indeed, it is impossible to understand the evolution of the shadow banking system without considering how it enabled leveraged investments by financial institutions.<sup>128</sup> Shadow banking instruments helped increase leverage in financial markets in three ways: by providing new instruments for borrowing, by increasing economic leverage, and by creating embedded leverage.

### *1. Provision of Credit*

Many of the shadow banking instruments described in Part I.A. – asset-backed securities, asset-backed commercial paper, and repos – represent effective loans, whether direct or indirect. Asset-backed securities and asset-backed commercial paper funnel money from capital market investors to originating lenders and ultimately to consumer or commercial borrowers. Repurchase agreements represent an economic loan, in which the borrower receives temporary funds from the lender. Even money-market mutual funds function as loan conduits, as they sell shares to investors and use the funds to purchase bonds for their portfolio. These devices not only extend credit from investors to borrowers, they also transfer credit risk from borrowers to investors.

Credit derivatives represent another mechanism for transferring credit risk, albeit without the credit protection seller lending any money. However, credit derivatives *can* indirectly increase the supply of loans. Investors can take on more risk and invest more when they offload credit risk via hedging credit derivatives. A number of empirical studies demonstrate that banks increase the supply of credit they provide as they hedge credit risk with credit derivatives.<sup>129</sup>

### *2. Economic Leverage*

Many shadow banking instruments also allow financial firms to increase economic leverage per the example of credit derivatives. Note that the credit protection seller does not have to commit funds up front to cover its expected obligations to the buyer. This frees up capital that the seller can deploy elsewhere, including by underwriting additional credit derivatives.<sup>130</sup> This mirrors the canonical example of economic leverage that does not appear on a balance sheet: a financial guarantee that represents a contingent liability.<sup>131</sup> Part III.C. below explains how many shadow banking financial instruments were constructed to move leverage off a financial institution’s balance sheet in order to obtain regulatory relief and for other purposes.

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<sup>126</sup> WILLIAM A. KLEIN ET AL., BUSINESS ORGANIZATION AND FINANCE: LEGAL AND ECONOMIC PRINCIPLES 343-46 (11th ed. 2010).

<sup>127</sup> The focus on leverage endured even as the global financial crisis took hold. Cf. John Garvey & Adam Dener, *Maximizing Operating Leverage at Your Bank*, AMER. BANKER, July 13, 2007 at 1.

<sup>128</sup> Financial Stability Board, *supra* note 41, at 4.

<sup>129</sup> See *supra* note 103 and accompanying text.

<sup>130</sup> There is both theoretical and empirical evidence that financial institutions that offload risk with credit derivatives make fresh loans rather than reduce their overall exposure. See *supra* note 103 and accompanying text.

<sup>131</sup> *Supra* note **Error! Bookmark not defined.** and accompanying text.

Returning to the example above: the credit protection buyer, however, may have concerns about the credit risk of its counterparty. Therefore, credit and other derivative contracts often include a margin feature, by which one party has to post certain collateral to secure its future payment obligations.<sup>132</sup> They also have a functional equivalent in the collateral features of repurchase agreements.<sup>133</sup> Lower collateral or margin requirements – whether in a repo or credit derivative – can result in party with future obligations enjoying higher leverage. Lower collateral means that that party need deploy less of its own capital to cover its future payment obligations. Lower collateral also means that a firm may enter into more transactions (for example, borrowing more money through repos or underwriting more credit protection via derivative contracts). When set too low, collateral requirements allow a firm to increase leverage excessively. This would enable a repo “borrower” to borrow more funds and a credit protection seller to overinvest in underwriting fresh derivative contracts.

### 3. *Embedded Leverage*

Shadow banking instruments can also increase embedded leverage. The layering of securitization upon securitization or the hedging and re-hedging of investments with credit derivatives means that the leverage of individual investments can be multiplied many times over. Part II.D below provides other examples of how one shadow banking instrument (for example a repo) can allow a firm to make a leveraged bet in another already leveraged instrument (for example, a subordinated asset-backed security or a credit default swap).

## **D. The Shadow Banking Instruments Side by Side: Lumping and Splitting**

The capacity to provide credit and increase leverage represents one of the common features of the array of shadow banking instruments. It is critical, however, to describe not only the common features of shadow banking instruments, but to highlight their differences as well. The chart in Figure D below compares the various shadow banking instruments according to six of the seven economic features listed in the introduction to this Article:

1. *Credit provision and credit transfer*: To what extent does the instrument provide increased loans to commercial or consumer borrowers?
2. *Intermediation*: In the market for the instrument, what institution acts as middleman between counterparties, *e.g.*, between borrowers and investors?
3. *Pooling*: Does the instrument bundle together the future cash streams or risks of various assets?
4. *Structuring*: Does the instrument carve up the risks and rewards of various assets into particular investment slices?
5. *Maturity Transformation*: Does the instrument and relevant intermediary convert long term assets into short term investments?

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<sup>132</sup> Sharon Brown-Hruska, *The Derivatives Marketplace: Exchanges and the Over-the-Counter Market*, in FINANCIAL DERIVATIVES: PRICING AND RISK MANAGEMENT 21, 29-30 (Robert W. Kolb & James A. Overdahl eds., 2010) (comparing collateral mechanisms in over-the-counter and centrally cleared derivatives).

<sup>133</sup> Cf. Gorton & Metrick, *supra* note 1 (describing these collateral or “haircut” provisions).

6. “*Money*”: Do some versions of the instrument offer some of the features of deposit accounts, namely low risk and high liquidity, to investors? Does it thus take on some of the economic features of “money”?

(The seventh feature, opacity, is discussed briefly when the Conclusion to this Article discusses the crash of the shadow banking system in the Panic of 2008).

Figure D

**Economic Features of Shadow Banking Instruments**

| <b>Instrument</b>               | <b>Credit provision</b>   | <b>Intermediation provided by</b>  | <b>Pooling and Structuring</b>   | <b>Maturity transformation</b>  | <b>Resemblance to deposit accounts; economic features of “money”</b>  |
|---------------------------------|---|--|--|---|---|
| Asset-backed securities         | Yes   | Investment vehicle; Government-sponsored entities; Originating lenders   | Pooling of underlying loans; Structuring via tranching   | Long term loans may be converted into securities; Even when securities have maturity dates that match the underlying assets, their theoretical liquidity would allow investors to sell quickly. | Possibly strong for senior securities; senior securities used as collateral for repos.  |
| Asset-backed commercial paper   | Yes   | Investment conduit; sponsors   | Same as above  | Significant   | Strong  |
| Credit derivatives              | To extent, credit protection buyer uses credit transfer to take fresh credit risk | Intermediation provided by dealers in credit derivatives who offer credit protection and then hedge the assumed risk | Pooling occurs by credit protection seller “insuring” various risks of different firms; Terms of instrument unbundle and isolate financial risks being insured | Not directly, but allows long term credit risk to be offloaded  | No, but to extent enables additional short term credit, can increase money supply   |
| Money-market mutual fund shares | Yes   | Money market mutual fund   | Pooling of assets owned by fund; No structuring  | At margin, by converting short term investments by fund into equivalent of demand deposits  | Strong  |
| Repos                           | Yes   | In tri-party repos, by clearing bank   | Possible indirect pooling in tri-party repos, by clearing bank; No structuring   | At margin; provide short term loans for long term investments; even liquidity of highly liquid collateral for these loans may not match intraday maturity of loans                              | Strong – short term investment; collateral (not subject to bankruptcy stay) provides security for loan and can be re-hypothecated; collateral acts as form of money |

This comparison of the features of shadow banking instruments becomes critical when assessing both the economic risks posed by each category instrument and the ways in which each category should be regulated to address those risks. Assessing risk and regulation involves the thorny intellectual exercise of lumping versus splitting; to what degree do shadow banking instrument perform similar economic functions and pose similar economic risks and to what degree are they different.

### **E. Putting It All Together: From Instruments to a System**

Although the various shadow banking instruments need to be analyzed individually, they also must be viewed together as a system. The various shadow banking instruments were developed and function separately. However, over the last several decades financial institutions have increasingly used them in conjunction with one another. Thus, these instruments have formed both chains and webs that connect financial institutions in complex ways. The discussion above of how investors use credit derivatives to hedge risk from asset-backed securities provided a simple example.<sup>134</sup> In addition, money-market mutual funds regularly purchase senior asset-backed securities for their bond portfolio.<sup>135</sup> Investors in asset-backed securities often use repos for short-term financing.<sup>136</sup> Any number of financial institutions can act as repo lenders. Diagram E links the foregoing transactions together to provide a simple depiction of a shadow banking web:

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<sup>134</sup> See *supra* notes 102-103 and accompanying text. Of course, credit derivatives can be used to hedge the credit risk from any transaction and any counterparty. See *supra* note 98 and accompanying text

<sup>135</sup> Markus K. Brunnermeier, *Deciphering the Liquidity and Credit Crunch 2007–2008*, 23 J. ECON. PERSP. 77, 79 (2009).

<sup>136</sup> Gorton & Metrick, *supra* note 1.



Diagram E

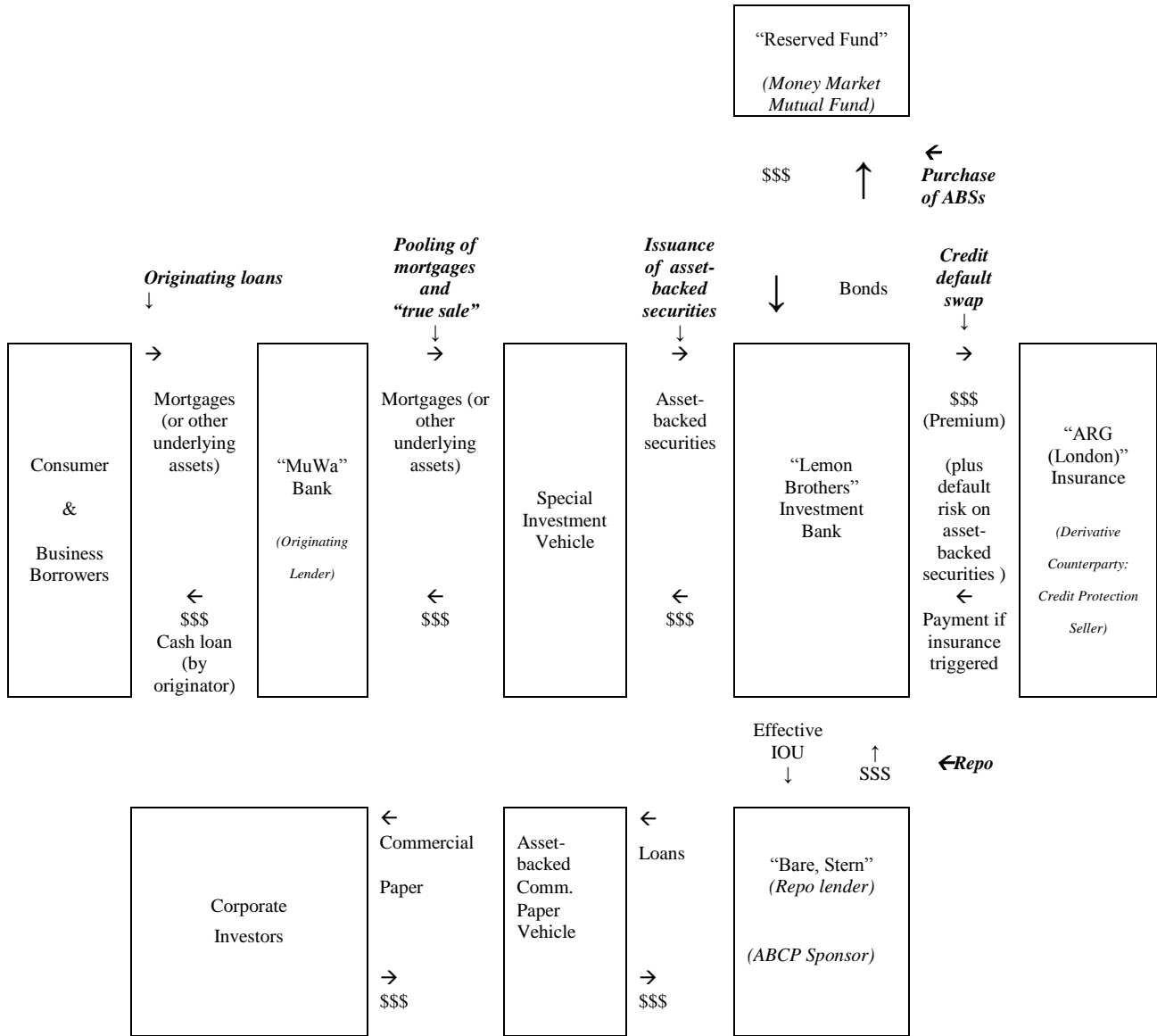
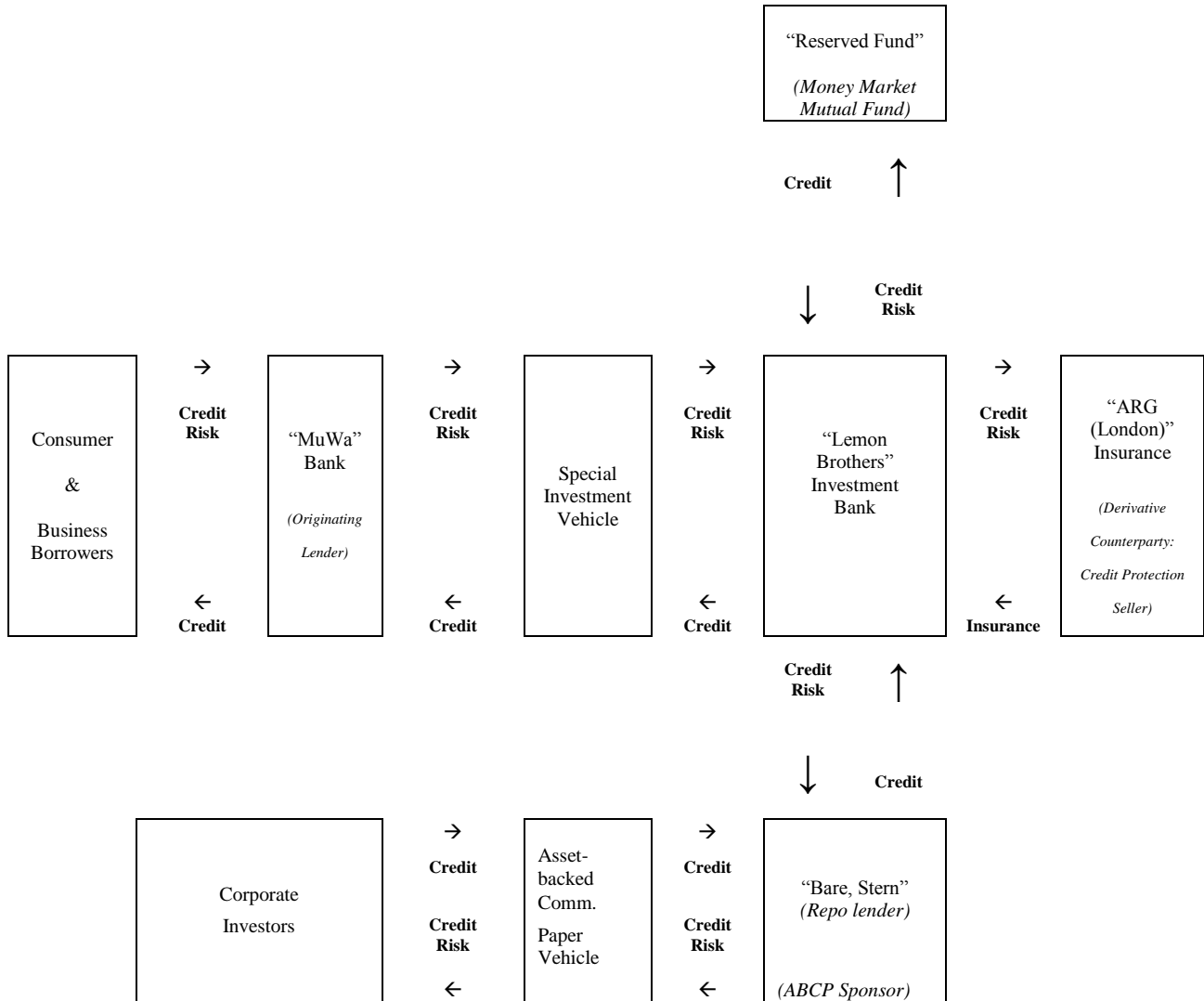


Diagram F simplifies the above illustration to show how the various instruments effectively represent both the provision of credit (loans) and the transfer of credit risk. Diagram F also demonstrates how this simple web can ultimately funnel more credit back to household and commercial borrowers, while diffusing the credit risk from those original loans to a wide number of investors and financial institutions. This Diagram throws into sharp relief the shadow banking system’s arteries for providing credit and veins for carrying away credit risk.

Diagram F



Of course the previous two diagrams are gross over-simplifications of the complex ways in which the markets for the various shadow banking instruments connect with one another. Shadow banking instruments can be used like demonically complex tinker toys to connect financial institutions in myriad ways and assist them in providing credit, increasing leverage, hedging risk, and speculating. The markets for shadow banking instruments can connect in at least four different ways. First, any asset that generates predictable cash flows can be securitized. For example, credit derivatives can be used to create asset-backed securities in what are called synthetic CDOs.<sup>137</sup> Second, the various shadow banking instruments can serve as investments for key shadow banking institutions. For example, money market mutual funds might purchase not only asset-backed securities, but asset-backed commercial paper or lend in the repo markets.<sup>138</sup> Third, credit derivatives can be used to hedge the risk of any shadow banking instrument or exposure to a counterparty in a shadow banking instrument.<sup>139</sup> Finally, one category of shadow banking instrument can be used as collateral for another shadow banking transaction. Indeed, asset-backed securities were an important source of collateral for repo transactions.<sup>140</sup> Some scholars argue that the need for high quality collateral to support repos increased the market size for asset-backed securities significantly and transformed those securities into a form of money.<sup>141</sup>

## **F. Key Players**

Shadow banking involves not only a series of financial instruments, but a roster of different financial institutions, each playing a different role in the system.

*Investment banks:* these firms serve as the hubs of the shadow banking web and play the middleman in almost every type of shadow banking transaction thanks to their vast networks of clients. They act as both brokers in the markets for the various shadow banking instruments, which makes them all but indispensable to the functioning of the system.<sup>142</sup> Investment banks may also purchase asset-backed securities for their own

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<sup>137</sup> Michael S. Gibson, Understanding the Risk of Synthetic CDOs, Fed. Res. Sys. Fin. & Econ. Discussion Series Working Paper No. 2004-36 1-4 (July 2004) *available at* <http://papers.ssrn.com/sol3/papers.cfm?abstractid=596442>.

<sup>138</sup> Naohiko Baba et al., *U.S. Dollar Money Market Funds and Non-US Banks*, Bank Int’l Settlements Q. Rev. 65, 69 (Mar. 2009) *available at* [http://bis.org/publ/qtrpdf/r\\_qt0903g.pdf](http://bis.org/publ/qtrpdf/r_qt0903g.pdf).

<sup>139</sup> Partnoy & Skeel, *supra* note 98, at 1023-24 (describing use of credit derivatives to hedge).

<sup>140</sup> Gorton & Metrick, *supra* note 14, at 266-277.

<sup>141</sup> *Id.*

<sup>142</sup> Investment banks put together and structure asset-backed securities transactions and then underwrite the securities. They thus connect originating lenders to the institutional investor clients of the investment bank’s brokerage units. See Hugh Thomas, *A Preliminary Look at Gains from Asset Securitization*, 9 J. INT’L FIN MARKETS, INST. & MONEY 321, 328 (1999). Investment banks also securitize the assets on their own balance sheets. James Crotty, *Structural Causes of the Global Financial Crisis: a Critical Assessment of the ‘New Financial Architecture’*, 33 CAMBRIDGE J. ECON. 563, 570 (2009). They sponsor asset-backed commercial paper issuances, whether as a service for clients, to finance their own operations, or to move assets off their balance sheets for regulatory purposes (as described below). See *supra* note 95 (describing types of asset-backed commercial paper transactions). As dealers of OTC derivatives, investment banks would arrange transactions between credit protection buyers and credit protection sellers in credit derivatives. Franklin Edwards & Frederic Mishkin, *The Decline of Traditional Banking: Implications for Financial Stability and Regulatory Policy*, FED. RES. BANK N.Y. ECON. POL’Y REV. 27, 35 (July 1995) (early study noting move of financial institutions away from traditional banking activities towards OTC derivatives dealing).

accounts. Investment banks also buy or sell credit protection in credit derivatives, whether to hedge their own risk, provide a service to clients, or speculate.<sup>143</sup> The 2011 lawsuit by the Securities and Exchange Commission against Goldman Sachs involving a series of securitization and credit derivatives transactions put together by that firm underscored the centrality of investment banks as middlemen or market makers in the shadow banking system.<sup>144</sup>

*Hedge funds:* Hedge funds played a vital role of their own in the shadow banking system; because these funds are essentially unregulated (or were until Dodd-Frank), they could invest in a much wider array of assets than banks and other financial institutions.<sup>145</sup> Moreover, their ability to take on leverage was limited only by the demands of their investors and creditors.<sup>146</sup> Hedge funds bought some of the riskiest instruments in the shadow banking system, which law precluded banks and other regulated entities from purchasing.<sup>147</sup> This freedom allowed hedge funds to earn handsome profits and to inject liquidity into shadow banking markets.<sup>148</sup> Although hedge funds were competitors for investment banks, their unregulated capacity for risk-taking also made hedge funds attractive places for regulated institutions to invest money,<sup>149</sup> ideal counterparties for transferring credit risk (for example, as credit protection sellers in credit derivatives),<sup>150</sup> and valuable customers (for the broker-dealer services of investment banks).<sup>151</sup>

*Government-Sponsored Entities – Freddie and Fannie:* Freddie Mac and Fannie Mae, helped prime the shadow banking pump. These firms (together with the Government National Mortgage Association) created the mortgage-backed securities market.<sup>152</sup> Congress chartered Freddie Mac and Fannie Mae as privately owned companies to create a liquid national market for residential mortgages to promote increased

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<sup>143</sup> Standard & Poor’s, *Demystifying Banks’ Use of Credit Derivatives* (Dec. 8, 2003) *available at* <http://www2.standardandpoors.com/spf/pdf/fixedincome/DemystifyingBank.pdf> (noting, however, that most bank and investment bank positions in credit derivatives are offsetting, indicating that the firm is dealing in derivatives rather than hedging).

<sup>144</sup> See SEC Litigation Release No. 21,489 (Apr. 16, 2010) (*Securities and Exchange Commission v. Goldman, Sachs & Co. and Fabrice Tourre*, 10 Civ. 3229 (BJ) (S.D.N.Y. filed April 16, 2010)) (describing SEC allegations).

<sup>145</sup> Noah L. Wynkoop, Note, *The Unregulables? The Perilous Confluence of Hedge Funds and Credit Derivatives*, 76 *FORDHAM L. REV.* 3095 (2008)

<sup>146</sup> See Sheridan Titman, *The Leverage of Hedge Funds*, 7 *FIN. RES. LETTERS* 2 (2010) (analyzing why certain hedge funds take on high leverage). Some hedge funds use little or no leverage. Stephen Brown et al., *Hedge Funds, Mutual Funds, and ETFs*, in *REGULATING WALL STREET*, *supra* note 1, at 351, 351.

<sup>147</sup> See Pozsar, *supra* note 3 (describing how credit hedge funds acted as shadow banks).

<sup>148</sup> Some scholars argue that hedge funds may have played a valuable role by injecting liquidity into shadow banking markets as the crisis deepened. See Brown, *supra* note 146, at 352.

<sup>149</sup> Some scholars have questioned the wide perception that hedge funds earn outsized returns. *E.g.* William Fung et al., *Hedge Funds: Performance, Risk, and Capital Formation*, 63 *J. FIN.* 1777 (2008) (finding only a subset of funds studied deliver above average returns adjusted for risk).

<sup>150</sup> For an analysis of the extensive use by hedge funds of credit derivatives, see Wynkoop, *supra* note 145 (arguing that heavy use of lightly regulated credit derivatives by unregulated hedge funds increases systemic risk).

<sup>151</sup> Ben S. Bernanke, Remarks at the Federal Reserve Bank of Atlanta’s 2006 Financial Markets Conference, Sea Island, Georgia (“Hedge Funds and Systemic Risk”) (May 16, 2006) *available at* <http://www.federalreserve.gov/newsevents/speech/Bernanke20060516a.htm>

<sup>152</sup> David Reiss, *The Federal Government’s Implied Guarantee of Fannie Mae and Freddie Mac’s Obligations: Uncle Sam Will Pick Up the Tab*, 42 *GA. L. REV.* 1019, 1028 (2008).

homeownership.<sup>153</sup> To fulfill their missions, Freddie and Fannie engaged in two lines of business. First, they pooled and securitized residential mortgages of certain loan sizes that met certain credit standards and other criteria (“conforming mortgages”).<sup>154</sup> Freddie and Fannie would then guarantee the asset-backed securities created from these mortgages.<sup>155</sup> Second, the GSEs purchased for their own investment portfolios mortgages and mortgage-backed securities issued by others.<sup>156</sup> The full role of the government in subsidizing, regulating, and deregulating these Freddie and Fannie is further examined in Part \_\_. These two firms historically dominated the mortgage-backed securities market. However, in the decade before the crisis, these institutions faced significant competition as investment banks began creating “private label” mortgage-backed securities not guaranteed by Freddie or Fannie.<sup>157</sup>

*Less-Regulated Mortgage Lenders and Other Loan Originators:* These less regulated entities provided the raw material for mortgage-backed securities by making (or originating) the mortgage loans that would be securitized.<sup>158</sup> These lenders pioneered many of the exotic mortgages that were ultimately marketed at less credit-worthy borrowers (the infamous subprime mortgages).<sup>159</sup> These mortgages did not meet the regulatory criteria for securitization by Freddie or Fannie, but were purchased for the private label securitizations mentioned above.<sup>160</sup> The high yields on subprime mortgages fueled the profits and growth of the private label market.<sup>161</sup> Other non-bank lenders, among them credit card, student loan and automobile finance companies originated loans for other kinds of asset-backed securities.<sup>162</sup>

*Banks and Regulated Entities:* The shadow banking system connected less regulated entities with depository banks and other regulated lenders. The fact that shadow banking represents a bypass of traditional borrow-from-depositors-lend-to-borrowers banking model should not be understood to mean that banks are not players in the shadow banking webs. In fact, banks operate at many different nodes in the web: for example, they originate loans that are securitized,<sup>163</sup> invest in investment grade asset-back securities,<sup>164</sup> and borrow and lend through the repo market.<sup>165</sup> Part IV.B. discusses how

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<sup>153</sup> *Id.* at 1028-1030.

<sup>154</sup> *Id.* at 1031-33.

<sup>155</sup> *Id.* at 1031.

<sup>156</sup> *Id.*

<sup>157</sup> *Id.* at 1030-31.

<sup>158</sup> Scholars have criticized the Federal Reserve for inadequately supervising non-bank mortgage lenders that were owned by bank holding companies. Patricia A. McCoy et al., *Systemic Risk Through Securitization: The Result of Deregulation and Regulatory Failure*, 41 CONN. L. REV. 493, 511-513. Independent non-bank mortgage lenders enjoyed greater freedom from federal regulation. *Id.* at 515. Federal bank regulators blamed states for inadequately regulating these independent firms. *Id.* at 523. .

<sup>159</sup> For a description of these mortgages, see Patricia A. McCoy, *Rethinking Disclosure in a World of Risk-Based Pricing*, 44 HARV. J. ON LEGIS. 123, 143-47 (2007).

<sup>160</sup> McCoy et al., *supra* note 158, at 496-97.

<sup>161</sup> *See id.* at 498.

<sup>162</sup> Anna J. Schwartz, *Origins of the Financial Market Crisis of 2008*, 29 CATO J. 19, 21 (2009).

<sup>163</sup> Stuart I. Greenbaum & Anjan V. Thakor, *Bank Funding Modes: Securitization versus Deposits*, 11 J.BANKING & FIN. 379 (1987).

<sup>164</sup> *See* GORTON, *supra* note 3, at 100-101 (describing a specialized bank investment strategy in tranches of CDOs).

regulation changed to enable banks to make these investments. Bank involvement in shadow banking poses of course risks and challenges for regulation, including that banks will abuse the government subsidies they enjoyed, such as deposit insurance, to take investment risk with taxpayer money.<sup>166</sup>

*Financial Conglomerates:* This danger becomes acute because banks now sit under the same corporate umbrella as investment banks, broker dealers, hedge funds, mortgage lenders, insurance companies, and other financial institutions. Indeed, financial conglomerates often house many or all of the categories of shadow banking players under one corporate roof.<sup>167</sup> Conglomerates have the opportunity to transfer subsidies from banks to other affiliates in the corporate group, including by below cost loans or guarantees.<sup>168</sup>

## **G. Meteoric Growth: Shadow Banking Eclipses Depository Banking**

The various institutions involved in shadow banking enjoyed spectacular growth. In the United States by the eve of the crisis, the combined assets of broker dealers, government-sponsored entities, non-bank finance companies, and asset-backed securities issuers surpassed the assets owned by traditional banks, savings institutions, and credit unions.<sup>169</sup> In 1980, the number of mortgages held by banks dwarfed those that were securitized. Over the next 27 years, this situation dramatically reversed as mortgage securitization realized explosive growth.<sup>170</sup>

## **II. THE LEGAL ORIGINS OF SHADOW BANKING: AN OVERVIEW**

### **A. Overview**

The description of shadow banking instruments in Part I focuses on their economic functions, including their ability to provide credit, transfer credit risk, and offer investments with theoretically low risk and high liquidity investments. However, each of these instruments did not develop solely in reaction to economic demands in a legal vacuum. Instead, regulation drove the both the creation and expansion of each of these shadow banking instruments. More particularly, regulatory arbitrage, deregulation, and legal subsidies helped create and fueled the rise of each of these instruments.

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<sup>165</sup> Mark D Griffiths & Drew B Winters, On a Preferred Habitat for Liquidity at the Turn-of-the-Year: Evidence from the Term-Repo Market, 12 J. FIN. SERVICES RES. 21 (1997).

<sup>166</sup> See, e.g., 12 U.S.C. §§ 1831e(a), 1831e(d) (Federal Deposit Insurance Act provisions restricting permissible activities and debt investments by state savings associations). These statutory provisions are explicitly intended to protect the FDIC’s insurance fund. 12 U.S.C. §§ 1831e(a)(1).

<sup>167</sup> For a stringent criticism of deregulation that allowed financial conglomerates composed of banks, investment banks, and various other types of financial services entities, see Arthur E. Wilmarth, Jr., *The Dark Side of Universal Banking: Financial Conglomerates and the Origins of the Subprime Financial Crisis*, 41 CONN. L. REV. 963, 972-94 (2009).

<sup>168</sup> This danger, regulatory efforts to address the danger, and attempts to circumvent those regulations are discussed *infra* Part IV.B.

<sup>169</sup> Adrian & Shin, *supra* note 1, at 601.

<sup>170</sup> *Id.*

Regulatory arbitrage can be thought of simply as avoiding legal restrictions. More rigorously defined, regulatory arbitrage means when an individual or firm moves from an activity that is regulated to another activity that is functionally equivalent (or an economic substitute) but that is subject to lower regulation and lower legal cost.<sup>171</sup> Like tax arbitrage, regulatory capital arbitrage aims to exploit differences in legal form to achieve the same substantive economic result.<sup>172</sup> Regulatory arbitrage takes two forms, both of which contributed to the development of shadow banking. First, regulatory arbitrage includes “legal structuring,” which describes when individuals or financial firms engage lawyers to create transaction structures that provide the same economic functions of more regulated investments while either escaping or loosening regulation.<sup>173</sup> Regulatory arbitrage also includes “investment switching,” which occurs when investors “vote with their feet” and move capital to instruments, institutions, or markets with lighter regulatory regimes.<sup>174</sup> Capital flows to countries with a lesser degree of financial regulation represent one form of investment switching.<sup>175</sup> In practice, legal structuring and switching blur together and often contribute to one another. For example, legal structuring may facilitate investment switching by providing investors with a means to access less regulated markets or jurisdictions. Investment switching may cause regulated firms to lose capital or business and provide them with an incentive to develop structures to lower their regulatory burden.

As with tax arbitrage, financial institutions engage in regulatory capital arbitrage when the benefits of a lower cost of capital exceed the costs of switching or structuring.<sup>176</sup> These costs may include external costs, such as out-of-pocket payments to bankers, lawyers, and accountants to develop transactions.<sup>177</sup> External costs also include any increased interest expenses with using a particular transaction (such as higher interest expenses associated with off-balance sheet financings like securitizations).<sup>178</sup> Structuring and switching costs also cover internal costs, such as changes to loan administration to support securitization.<sup>179</sup> Scholars have speculated that firms may realize significant economies of scale with respect to structuring costs.<sup>180</sup> Many factors may reduce structuring costs, including the ability of one firm to copy another firm’s innovative transactional structures.<sup>181</sup> The costs of investment switching may decline as technology enables firms to compare investment prices and move capital more easily.<sup>182</sup>

Deregulation, most basically, occurs when legislatures, courts, or regulatory agencies remove or reduce the effects of a legal rule. These actors can reduce the effectiveness of a legal

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<sup>171</sup> For a typology of forms of regulatory arbitrage, see Victor Fleischer, *Regulatory Arbitrage*, 89 TEXAS L. REV. 227 (2010).

<sup>172</sup> See generally *id.*, at 229 (defining regulatory arbitrage), 245 (providing example of regulatory capital arbitrage).

<sup>173</sup> See *supra* note 4 and accompanying text.

<sup>174</sup> See ERIK F. GERDING, BUBBLES, FINANCIAL REGULATION AND LAW \_\_ (forthcoming 2012).

<sup>175</sup> Joel F. Houston et al, *Regulatory Arbitrage and International Bank Flows*, unpublished manuscript (Dec. 18, 2009) available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1525895](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1525895).

<sup>176</sup> Jones, *supra* note 244, at 38-39.

<sup>177</sup> *Id.* at 39.

<sup>178</sup> *Id.*

<sup>179</sup> *Id.*

<sup>180</sup> *Id.*

<sup>181</sup> See generally Peter R. Haiss, *Bank Herding and Incentive Systems as Catalysts for the Financial Crisis*, 7 IUP J. BEHAVIORAL FIN. 30 (2010) (discussing herd behavior in regulatory capital arbitrage).

<sup>182</sup> Fleischer, *supra* note 171.



rule in a number of ways beyond mere repeal of a law or regulation. Accordingly, this Article uses deregulation to also include any of the following that would enable a financial institution to make a broader array of investments, assume additional risk, or increase leverage:

- ¶ new legal rules that enable additional investments or risk-taking
- ¶ rules that preempt regulatory action;
- ¶ more permissive interpretations of legal rules by regulatory agencies or courts;
- ¶ lower intensity enforcement of legal rules; and
- ¶ resistance by regulators to exercise existing legal authority or adapt existing legal rules to new contexts.<sup>183</sup>

This broader definition of deregulation recognizes that regulation is not a binary on/off phenomenon and operates not only through positive statutes and regulations, but by numerous other decisions by regulators, legislatures, and courts. In addition to deregulation, the federal government directly or indirectly subsidized shadow banking markets, by granting guarantees and special legal preferences to shadow banking instruments or institutions.

### **1. What Drives Regulatory Arbitrage? Leverage and Government Guarantees**

The presence of government guarantees explains why leverage has been the driving force behind much of the development of the shadow banking system.<sup>184</sup> Guarantees also explain why financial institutions exploited regulatory arbitrage and deregulation to increase leverage (as detailed below). At first blush, the desire of financial institutions to lever up makes sense; leverage after all magnifies returns on shareholder equity.<sup>185</sup> But, there is an underlying puzzle: under the Miller-Modigliani theorem from corporate finance, a firm should have the same cost of financing whether it chose to finance itself entirely through equity, entirely through debt, or any mix of the two.<sup>186</sup> What then explains the impulse of financial firms to obtain massive leverage? Why was debt apparently so much cheaper?

This puzzle can be answered by looking at whether the assumptions of the Miller-Modigliani hold true in financial markets. For example, the theorem assumes the absence of tax costs.<sup>187</sup> Indeed, the deductibility of interest payments may favor debt holders over equity.<sup>188</sup> Another assumption is that markets are efficient,<sup>189</sup> but behavioral finance offers both theoretical

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<sup>183</sup> This definition expands the definition of “deregulation” to reflect the fact that “law” operates not only through positive statutes and regulations, but by numerous other decisions by legal actors, including regulators.

<sup>184</sup> See *supra* Part I.C.

<sup>185</sup> See *supra* note 126 and accompanying text.

<sup>186</sup> Franco Modigliani & Merton H. Miller, *The Cost of Capital, Corporation Finance and the Theory of Investment*, 48 AMER. ECON. REV. 261 (1958).

<sup>187</sup> *Id.*

<sup>188</sup> Tax Reform and the Tax Treatment of Debt and Equity, Joint Hearing Before the Sen. Comm. on Finance & House Comm. on Ways and Means, 112<sup>th</sup> Cong. \_\_ (July 13, 2011)(statement of Victor Fleischer, Associate Professor, U. Colo. L. Sch.) available at <http://finance.senate.gov/imo/media/doc/Fleischer%20Testimony.pdf>. Professor Fleischer cites the use of hybrid instruments, such as trust preferred, as evidence that the asymmetrical tax treatment of debt and equity induces leverage. *Id.* These hybrid instruments are discussed below. See *infra* notes 255-258 and accompanying text.

<sup>189</sup> Modigliani & Miller, *supra* note 186.

and empirical evidence on persistent inefficiencies in capital markets.<sup>190</sup> Persistent inefficiencies may indicate that an asset price bubble has formed,<sup>191</sup> and that the theorem does not hold. A third possibility is that agency costs or regulation have made equity financing relatively more expensive.<sup>192</sup>

Viral Acharya, Nirupama Kulkarni, and Matthew Richardson focus on a more powerful explanation involving financial institution regulation. These economists argue that government subsidies of banks and implicit guarantees made debt far more attractive.<sup>193</sup> When creditors banked on government rescues (which might wipe out shareholders), debt becomes cheaper.<sup>194</sup> To the extent, financial institutions continue to enjoy deposit insurance, a “Too-Big-to-Fail” implied guarantee, or even subtler subsidies (such as preferential access to Federal Reserve loans), then they may continue to have increased incentives to exploit regulatory arbitrage or to push for deregulation to increase their leverage.<sup>195</sup> Of course financial institutions have every incentive to retain and expand the scope these guarantees and subsidies; doing so externalizes the cost of risk taking on taxpayers and reduces the firm’s cost of capital accordingly.<sup>196</sup>

## **2. Four Types of Regulatory Arbitrage and Deregulation in the Shadow Banking System**

The following template helps organize the regulatory arbitrage, deregulation, and government subsidies that fueled shadow banking. Each of the examples of regulatory arbitrage and deregulation below fit into one or more of the following categories:

- ¶ *Creation of shadow banking instruments as alternatives to banking:* Examples of this include the creation of money-market mutual funds<sup>197</sup> asset-backed securities,<sup>198</sup> and credit derivatives.<sup>199</sup>
- ¶ *Subsidization of shadow banking instruments and institutions:* The federal government grants various indirect subsidies and preferences to shadow banking institutions and instruments that other financial institutions and products do not enjoy. For example, Freddie Mac and Fannie Mae benefitted not only from an implicit

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<sup>190</sup> Nicholas C. Barberis & Richard H. Thaler, *A Survey of Behavioral Finance*, in 1B HANDBOOK OF THE ECONOMICS OF FINANCE, 1054, 1061-64 (George M. Constantinides et al. eds., 2003).

<sup>191</sup> *Id.* See also Erik F. Gerding, *Laws Against Bubbles: an Experimental-Asset-Market Approach to Analyzing Financial Regulation*, 2007 WIS. L. REV. 977, 999-1001.

<sup>192</sup> For a comprehensive analysis of when the Miller-Modigliani theorem does not hold, see Peter H. Huang & Michael S. Knoll, *Corporate Finance, Corporate Law and Finance Theory*, 74 S. CAL. L. REV. 175, 178 (2000) (presenting the “reverse” Miller-Modigliani theorem).

<sup>193</sup> Acharya et al., *supra* note 65, at 157.

<sup>194</sup> *See id.*

<sup>195</sup> VIRAL V. ACHARYA ET AL., GUARANTEED TO FAIL: FANNIE MAE, FREDDIE MAC, AND THE DEBACLE OF MORTGAGE FINANCE 27-28 (2011) (analyzing Too-Big-To-Fail guarantees and leverage of government-sponsored entities).

<sup>196</sup> *Id.*

<sup>197</sup> *Infra* notes 206-207 and accompanying text.

<sup>198</sup> *Infra* notes 214-215 and accompanying text.

<sup>199</sup> *Infra* note 216 and accompanying text.

government guarantee, but from a host of other exemptions from federal and state laws.<sup>200</sup> The bankruptcy exemptions for repos and derivatives serve as other examples.<sup>201</sup>

¶ *Allowing banks and regulated financial institutions to participate in the shadow banking system:* Another category of regulatory arbitrage innovations and deregulation permitted banks and regulated entities to invest in the shadow banking system.<sup>202</sup> These actions not only helped the shadow banking system grow, they posed deep problems. They opened up the possibility of banks abusing the government safety net to take bets with taxpayer money. They threatened to distort financial markets by putting banks, with a lower cost of capital, at a competitive advantage to other financial institutions.<sup>203</sup> Finally, these actions created a transmission line for contagion where losses in the shadow banking system could affect the depository banking system.<sup>204</sup>

¶ *Shadow Banking as Instruments to Arbitrage Financial Regulations:* If shadow banking instruments began as creatures of regulatory arbitrage, they were used at later stages as tools to arbitrage accounting and capital regulations.<sup>205</sup>

## **B. Origin story: money market mutual funds, regulatory arbitrage, and deregulation**

To see the start of this cycle, consider one of the first shadow-banking innovations – money-market mutual funds. These funds flourished because U.S. banks in the 1970s struggled with the caps that former Regulation Q placed on the interest rates they could offer depositors.<sup>206</sup> As inflation eroded the attractiveness of bank deposits, customers flocked to money market mutual funds, which offered a new alternative for relatively safe, liquid investments.<sup>207</sup> The increased competition for banks led to the Depository Institutions Deregulation and Monetary Control Act of 1980 (DIDMCA), which mandated the phased elimination of Regulation Q.<sup>208</sup>

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<sup>200</sup> See *infra* notes 343-346 and accompanying text.

<sup>201</sup> See *infra* notes 326-328 and accompanying text.

<sup>202</sup> See *infra* Part IV.B.

<sup>203</sup> See Gerding, *supra* note 22 (discussing distortive effects of government guarantees and subsidies).

<sup>204</sup> See generally Sheri Markose et al., Too Interconnected To Fail: Financial Contagion and Systemic Risk In Network Model of CDS and Other Credit Enhancement Obligations of US Banks, COMISEF Working Paper No. 033 (Apr. 21, 2010) available at <http://comisef.eu/files/wps033.pdf> (providing model of crisis transmission from securitization to banking sector).

<sup>205</sup> See *infra* Part III.

<sup>206</sup> Regulation Q was found at 12 CFR Pt. 217 (1979).

<sup>207</sup> The first money market mutual fund was created in 1971. Birdthistle, *supra* note 106, at 11-12

<sup>208</sup> Pub. L. No. 96-221, 94 Stat. 132 (codified as amended in scattered sections of 12 U.S.C.) See R. Alton Gilbert, *Requiem for Regulation Q: What It Did and Why It Passed Away*, FED. RES. BANK ST. LOUIS REV. 22 (Feb. 1986). The act also had implemented other reforms to increase the competitiveness of banks, allow them to operate in an inflationary environment, and reduce inflation. Many of these other reforms would ultimately impact the shadow banking system and contribute to the Panic of 2008. For example, the statute also loosened restrictions on the interest rates banks could charge for loans and preempted state usury laws home mortgages. Patricia A. McCoy et al., *Systemic Risk through Securitization: the Result of Deregulation and Regulatory Failure*, 41 CONN. L. REV. 493, 499 (2009). This deregulation allowed banks to price mortgage interest rates according to risk and paved the way for subprime mortgages. *Id.* See also Patricia A. McCoy, *Rethinking Disclosure in a World of Risk-Based Pricing*, 44 HARV. J. LEGIS. 123, 125 (2007).

In turn, money market mutual funds sought the help of regulators to make their products appear safer and more like bank deposits.<sup>209</sup> The lynchpin of this effort was allowing funds to price their shares based on a fixed “net asset value.”<sup>210</sup> Net asset value is the number used as the fund’s price and is based on the assets in the fund’s portfolio.<sup>211</sup> As the value of the portfolio changes, the net asset value should fluctuate, but a floating net asset value reveals the volatility of the value of a mutual fund share.<sup>212</sup> By 1983, three years after DIDMCA, funds successfully convinced the SEC to allow funds to change their pricing from a floating net asset value to a fixed net asset value.<sup>213</sup>

### III. REGULATORY ARBITRAGE

Regulatory arbitrage drove not just the development of money-market mutual funds, but the development and explosive growth of other shadow banking instruments. For example, the creation of asset-backed securities required careful legal engineering around bankruptcy rules to ensure that the investment vehicle issuing the securities is bankruptcy remote from the originator of the loans.<sup>214</sup> Legal scholars have questioned the legal foundations of this engineering around bankruptcy.<sup>215</sup> The creators of credit derivatives also used creative lawyering to ensure that these instruments did not constitute “insurance.”<sup>216</sup> The trade in credit derivatives presented serious competition and eclipsed the market for regulated bond insurance.<sup>217</sup>

The market for shadow banking instruments also exploded because these products helped financial firms game accounting rules, securities laws, and bank regulations. The following paragraphs describe the most important of these games. The evolutionary force driving these games was the urge of financial institutions to hide leverage, whether from investors, creditors, or bank regulators.

#### A. Securitization and Regulatory Arbitrage: Balance Sheet Games

##### 1. Arbitraging Restrictions on Bank Investments

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<sup>209</sup> Birdthistle, *supra* note 106, at 1160.

<sup>210</sup> *Id.*

<sup>211</sup> *Id.*

<sup>212</sup> *Id.*

<sup>213</sup> *Id.* Valuation of Debt Instruments and Computation of Current Price by Certain Open-End Investment Companies (Money Market Funds), 48 Fed. Reg. 32,555 (July 18, 1983).

<sup>214</sup> Bankruptcy remoteness ensures investors in asset-backed securities that should the originator go bankrupt, its creditors will not have claims on the assets used to pay on their securities. See Steven L. Schwarcz, *The Alchemy of Asset Securitization*, 1 STAN. J.L. BUS. & FIN. 133, 135 (1994).

<sup>215</sup> E.g., Kenneth C. Kettering, *Securitization and Its Discontents: the Dynamics of Financial Product Development*, 29 CARDOZO L. REV. 1553 (noting that securitization has become so economically important (“too-big-to-fail”) that these shaky legal foundations cannot be questioned).

<sup>216</sup> See Robert F. Schwartz, *Risk Distribution in the Capital Markets: Credit Default Swaps, Insurance and a Theory of Demarcation*, 12 FORDHAM J. CORP. & FIN. L. 167, 181-88 (2007) (describing history of lawyers and insurance regulators grappling with whether credit default swaps should be regulated as insurance products). For an argument that credit derivatives do not constitute and should not be regulated as insurance, see M. Todd Henderson, *Credit Derivatives are not “Insurance,”* 16 CONN. INS. L.J. 1 (2009).

<sup>217</sup> Thomas Nelthorpe, *The Sure Thing?*, AM. SECURITIZATION (Winter/Spring 2007) at 35 available at <http://www.americansecuritization.com/uploadedFiles/Monolines.pdf> (last visited Oct. 20, 2010).

By transforming the cash streams from assets such as mortgages into securities, securitization allowed investors to participate in lucrative lending markets that would have otherwise been off limits because of regulatory restrictions. For example, regulations restrict the ability of banks to invest in real estate.<sup>218</sup> Other regulations prohibit banks (as well as insurance companies, pension funds, and other regulated entities) from investing in bonds, *unless* those bonds are given an investment grade rating by a credit rating agency licensed by the Securities and Exchange Commission.<sup>219</sup> Law professor Frank Partnoy argues that this scheme endows these rating agencies with a regulatory license, which they rent out to bond issuers.<sup>220</sup> Investment grade mortgage-backed securities thus represented innovative instruments that allowed banks and other regulated entities to invest simultaneously in real estate and debt markets. (This was aided by changes in bank regulation and regulatory interpretations that clarified banks could securitize assets and purchase and sell asset-backed securities, which is discussed in Part IV.B. below.)

## 2. *Securitization and ratings gamesmanship*

As summarized above, asset-backed securities were carefully structured to achieve these investment grade ratings. However, the investment banks and other parties that arranged and profited from securitization gamed rating agencies in several ways. First, scholars have examined how the investment banks and other financial institutions that designed and marketed asset-backed securities shopped among rating agency firms for higher ratings. The firms that put together securitizations determine which ratings firm would get hired and receive the fees from the transaction. Competition among ratings firms, combined with negligible liability for giving unwarranted investment grade ratings, created perverse incentives for the agencies to please the firms holding the purse strings.<sup>221</sup>

The gaming of rating agencies may have taken even more sophisticated forms. In the wake of the SEC’s 2010 lawsuit against Goldman Sachs, newspapers reported that the investment bank had exploited the disclosure by rating agencies of their methodologies in rating asset-backed securities to game the ratings. Goldman Sachs and other banks were able to reverse engineer rating agency models to obtain higher ratings for riskier asset-backed securities.<sup>222</sup> In short, even regulation outsourced to private entities can suffer from regulatory arbitrage.<sup>223</sup>

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<sup>218</sup> *E.g.*, 12 U.S.C. § 29 (2008) (restricting ability of national banks to invest in real estate).

<sup>219</sup> See Frank Partnoy, *The Siskel and Ebert of Financial Markets?: Two Thumbs Down for the Credit Rating Agencies*, 77 WASH. U. L.Q. 619, 698 (1999). Banks and other regulated financial institutions are prevented from investing in equity securities. *E.g.*, 12 U.S.C. § 24 (2008) (specifying categories of securities investments which national banks are permitted to make).

<sup>220</sup> Partnoy, *supra* note 219, at 681. These regulations represent an effective delegation or outsourcing of responsibility for regulating the riskiness of financial institution investments to rating agencies. Erik F. Gerding, *Code, Crash, and Open Source: the Outsourcing of Financial Regulation to Risk Models and the Global Financial Crisis*, 84 WASH. L. REV. 127, 151-57.

<sup>221</sup> Edward I. Altman et al., *Regulation of Rating Agencies*, in REGULATING WALL STREET, *supra* note 1, at 443, 448-453 (describing conflict of interest when issuer of securities pays rating agencies for rating).

<sup>222</sup> Gretchen Morgenson & Louise Story, *Rating Agency Data Aided Wall Street in Deals*, N.Y. TIMES, Apr. 23, 2010 at A1.

<sup>223</sup> See generally, Gerding, *supra* note 28.

3. *Securitization and accounting gamesmanship*

One of the principal purposes of securitization vehicles has been to allow financial institutions to move assets off of their balance sheets. Under the relevant accounting standard, if a firm disposes of assets to a securitization vehicle in a “true sale” for bankruptcy purposes and the firm retains only minimal control over the securitization vehicle, then it no longer must count those assets on its balance sheet.<sup>224</sup> Accounting standards, however, are built to be gamed, and the Panic of 2008 revealed the dangers of the games that financial institutions played.<sup>225</sup> Many financial institutions continued to bear the risk of loans and securities that had been moved off their balance sheet.<sup>226</sup> Financial disclosure thus provided little warning of the losses that firms took on these assets that suddenly materialized.<sup>227</sup>

Three accounting games that firms played with securitization merit special attention.

a. *Non-consolidation.*

First, firms could avoid “consolidating” certain securitization vehicles (called “variable interest entities” or “VIEs” in the accounting literature) on their balance sheet despite being under obligations to backstop losses for securities issued by those vehicles. If these firms concluded that the probability of paying those obligations was sufficiently low, they could keep those vehicles off-balance sheet. For example, a financial institution that sponsored an asset-backed commercial paper vehicle might provide liquidity or credit support for that vehicle, which means it would incur liabilities if securities issued by that vehicle declined in value. Financial institutions took the position that the probability of making payments was sufficiently small that they did not have to treat these obligations as a balance sheet liability.<sup>228</sup>

In addition, financial institutions may have been subject to “moral recourse” to cover losses on these securities being issued; although the firm would have no contractual obligation to pay investors, the marketplace expected that the firm would step in should extreme losses occur. Again, because financial institutions judged that the probability of liability was low, they decided that they did not need to treat these moral recourse obligations as a balance sheet liability.<sup>229</sup> The problem was that those supposedly low probability events materialized during the Panic of 2008.<sup>230</sup>

b. *Valuing of residual interests.*

Financial institutions also gamed securitization for accounting purposes in a second way. In many securitizations, the financial institution that sold assets to a securitization vehicle would

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<sup>224</sup> See generally Statement of Financial Accounting Standards No. 140. For a lengthy critique of bankruptcy standards as they were applied to accounting, see Kettering, *supra* note 215.

<sup>225</sup> Frank Partnoy & Lynn Turner, *Bring Transparency to Off-Balance Sheet Accounting*, in MAKE MARKETS BE MARKETS, 85 (Robert Johnson & Erica Payne eds., 2009).

<sup>226</sup> *Id.* at 86-87.

<sup>227</sup> *Id.*

<sup>228</sup> *Id.* at 89-90. See also Stephen G. Ryan, *Accounting in and for the Subprime Crisis*, 83 ACCT. REV. 1605 (2008).

<sup>229</sup> Ryan, *supra* note 228, at 1632.

<sup>230</sup> *Cf. id.* (describing how probability of moral recourse to the issuer rising with liquidity events).

also purchase some of the resultant asset-backed securities. So long as this retained interest was sufficiently small, the seller would not have to consolidate the securitization vehicle on its balance sheet. (Otherwise, the seller would have to count the securities purchased by other parties on its balance sheet). Of course the retained interests would be an asset for the seller, but the seller often had considerable discretion in valuing this retained interest – particularly in the absence of market prices for the asset-backed securities. Empirical research indicates that financial institutions often used discretion to overvalue these retained interests and inflate the gains from the sale of the assets.<sup>231</sup>

*c. Timing and “Window dressing.”*

The third accounting game involved financial institutions playing with the timing of transactions. Empirical studies show that financial institutions timed various shadow banking transactions to move assets and liabilities off their balance sheets just before the end of financial quarters, when the snapshot of those financial statements would be taken.<sup>232</sup> This presents two problems. First, their snapshot nature means that balance sheets would not reflect the risk that existed on an institution’s books for most of a quarter but that vanished only a few days before quarter’s end. At first blush, this might not seem to be a disclosure problem, assuming firms appropriately and permanently moved assets off balance sheet via a securitization. However, if in any particular quarter the institution was unable to dispose of assets – for example, because the securitization market dried up – balance sheets would suddenly balloon.<sup>233</sup>

Even worse, many firms were not appropriately and permanently disposing of assets, but instead were agreeing to repurchase the assets at a future date. The sole purpose of these transactions was to “window dress” the financial statements to remove assets just before a quarter’s end. This practice achieved notoriety in the wake of Lehman Brother’s collapse. An investigation of the investment bank’s accounting uncovered a comprehensive scheme in which Lehman Brothers management used repos to move assets off the firm’s balance sheet just before quarterly reports. The assets would then reappear on the firm’s balance sheet just after the quarter. The firm used creative accounting to book these repos as sales to mask its leverage just as the global financial crisis hit.<sup>234</sup>

## **B. Derivatives and Accounting Games**

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<sup>231</sup> N. Emre Karaoglu, Regulatory Capital and Earnings Management in Banks: the Case of Loan Sales and Securitizations, FDIC Cntr for Fin. Res. Working Paper No. 2005-05 (May 2005) *available at* [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=722982](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=722982) (last visited Oct. 13, 2010).

<sup>232</sup> Patricia M. Dechow & Catherine Shakespeare, *Do Managers Time Securitization Transactions to Obtain Accounting Benefits?*, 84 ACCOUNTING REV. 1 (2009).

<sup>233</sup> The possibility that originating lenders will be stuck with assets if the securitization pipeline backs up is known as “warehouse risk.” Adrian D’Silva & Brian Gordon, Hedges in the Warehouse: the Banks Get Trimmed, Fed. Res. Bank Chicago Pol’y Paper Discussion Series (Apr. 1, 2008) *available at* [http://qa.chicagofed.org/digital\\_assets/publications/policy\\_discussion\\_papers/2008/PDP2008-5.pdf](http://qa.chicagofed.org/digital_assets/publications/policy_discussion_papers/2008/PDP2008-5.pdf) (discussing inadequate hedging of this risk by institutions).

<sup>234</sup> Report of Anton R. Valukas, Examiner, Vol. 3, Section III.A.4, “Repo 105”, In re Lehman Brothers Holdings Inc., et al., (Bankr. S.D.N.Y. 2010) (08-13555 (JMP)) *available at* <http://lehmanreport.jenner.com/VOLUME%203.pdf>.

Securitization was not the only strand of the shadow banking web to be used for accounting gamesmanship. Financial institutions have also been able to keep swaps, including credit default swaps off their balance sheets. In the 1980s, the Financial Accounting Standards Board (FASB) took the position that swaps should receive the same accounting treatment as other banking instruments and should be disclosed as assets and liabilities on a firm’s balance sheet. FASB reasoned that banks accounted for loans as assets and deposits as liabilities. A swap represented an asset and liability paired together: payment obligations owed to the firm from the swap counterparty constituted an asset and obligations from the firm to the counterparty were a liability. According to FASB, firms should thus disclose both the asset and liability aspect of each swap on their balance sheets.<sup>235</sup>

However, financial institutions became concerned that the explosive growth in the derivatives markets meant that this treatment would cause their balance sheets to balloon. Thus, major derivatives players through their industry organization, the International Swap Dealers Association (ISDA) lobbied and persuaded FASB to change its stance. After this shift, parties to derivative contracts did not have to count swaps as assets or liabilities on their balance sheets, but merely have to disclose the changes in the “fair value” of these contracts over time.<sup>236</sup> Two scholars compared this rule to “an individual reporting only the change in their debt balances, instead of the debts themselves.”<sup>237</sup> The dangers of this disclosure became evident in cases such as the failure of AIG. That firm disclosed only the notional amount of credit default swaps, but not any information on the value of liabilities under those contracts, which eventually mushroomed into hundreds of billions of losses.<sup>238</sup>

### **C. Regulatory Capital Arbitrage**

Firms also wanted to hide leverage for purposes of bank regulations. The market for shadow banking instruments, including asset-backed securities, asset-backed commercial paper, and credit derivatives, exploded after 2000 because these instruments enabled massive evasion or arbitrage of bank capital regulations. This reveals an often-overlooked facet of these instruments; they often only pantomimed their stated role of transferring risk in the service of letting banks escape capital rules. Professors Acharya and Richardson explain that this evasion of capital regulations was the driving force behind securitization in the years leading up to the crisis. They write:

... especially from 2003 to 2007, the main purpose of securitization was not to share risk with investors, but to make an end run around capital adequacy regulations. The net result was to keep the risk concentrated in the financial institutions—and, indeed, to keep the risk at a greatly magnified level, because of the over-leveraging it allowed.<sup>239</sup>

#### *1. Capital requirements as regulatory tax.*

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<sup>235</sup> Partnoy & Turner, *supra* note 225, at 88.

<sup>236</sup> *Id.*

<sup>237</sup> *Id.*

<sup>238</sup> *Id.*

<sup>239</sup> Viral Acharya & Matthew Richardson, *Causes of the Financial Crisis*, 21 CRIT. REV. 195, 196-97 (2009).



To understand why and how banks engaged in this arbitrage, it is critical first to highlight the functions of capital regulations. Regulatory capital requirements require that financial institutions retain a certain amount of equity based on the amount of assets the bank owns.<sup>240</sup> The regulatory capital cushion has two interrelated functions. First, it protects the bank from unexpected losses on its investments.<sup>241</sup> Lowering the risk of bank insolvency mitigates the negative externalities of bank failures on financial markets and taxpayers who provide deposit insurance.<sup>242</sup> Second, bank capital requirements reduce a firm’s leverage.<sup>243</sup>

When regulations require banks to hold more capital than they would due solely to market discipline (*i.e.* the level of capital that their creditors and investors demand), banks view these requirements as a form of regulatory taxation.<sup>244</sup> As with other forms of taxation, banks will incur certain structuring costs to lower their regulatory burden.<sup>245</sup> The goal of this arbitrage – called regulatory capital arbitrage – is to enable firms to reduce their capital ratios for regulatory purposes but without a corresponding reduction in economic risk (or to maintain regulatory capital ratios while *increasing* economic risk).<sup>246</sup> Regulatory arbitrage may yield the benefit of reducing a firm’s cost of capital and free capital to be deployed elsewhere.<sup>247</sup> As noted above, government guarantees and the prospect of externalizing the cost (but not the gains) of risk-taking on taxpayers can explain this lower cost of capital and the impulse to game capital requirements.<sup>248</sup>

## 2. *An overview of how regulatory capital arbitrage operates.*

Regulatory capital arbitrage can take a number of different forms, the most important of which are facilitated by securitization and other elements of shadow banking.<sup>249</sup> Regulatory capital arbitrage can involve banks gaming traditional bank capital ratios by playing with the numerator and denominator of those ratios.<sup>250</sup> Simple regulatory capital requirements mandate that financial institution maintain a capital ratio comprised of equity in the numerator and assets in the denominator.<sup>251</sup> The Basel I and Basel II accords contained complex rules for what types

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<sup>240</sup> JEFF MADURA, FINANCIAL MARKETS AND INSTITUTIONS 492 (9<sup>th</sup> ed. 2010).

<sup>241</sup> *Id.*

<sup>242</sup> See Richard Herring & Til Schuermann, *Capital Regulation for Position Risk in Banks, Securities Firms, and Insurance Companies*, in CAPITAL ADEQUACY BEYOND BASEL: BANKING, SECURITIES, AND INSURANCE 15, 19 (Hal S. Scott ed., 2005) (describing rationale for capital adequacy rules of reducing systemic risk); STEPHANIE M STULZ, BANK CAPITAL AND RISK-TAKING: THE IMPACT OF CAPITAL REGULATION, CHARTER VALUE, AND THE BUSINESS CYCLE 11 (2007) (describing literature on capital requirements mediating moral hazard of deposit insurance)

<sup>243</sup> See Acharya et al., *supra* note 65, at 143, 146-47.

<sup>244</sup> David Jones, *Emerging Problems with the Basel Capital Accord: Regulatory Capital Arbitrage and Related Issues*, 24 J. BANKING & FIN. 35 (2000).

<sup>245</sup> *Id.* at 38-39.

<sup>246</sup> See *id.* at 36, 38-39.

<sup>247</sup> Jones, *supra* note 244, at 38-40.

<sup>248</sup> See *supra* Part II.A.1.

<sup>249</sup> Some senior regulators recognized this potential and expressed concern as early as 1998. *E.g.*, “Financial Globalization and Efficient Banking Regulation,” Remarks by Federal Reserve Governor Laurence Meyer before the Annual Washington Conference of the Institute of International Bankers, Washington, D.C. (Mar. 2, 1009) available at <http://www.federalreserve.gov/boarddocs/speeches/1998/19980302.htm>.

<sup>250</sup> *Id.* at 36.

<sup>251</sup> Madura, *supra* note 240, at 429

of equity instruments could count towards the numerator.<sup>252</sup> The Accords also required different ratios of capital for different categories of assets in the denominator depending on the perceived riskiness of the assets.<sup>253</sup> Basel’s baseline capital ratio was generally 8% for loans.<sup>254</sup>

Banks could game these traditional capital rules by cosmetically increasing the numerator in the ratio, for example through gains trading or under-provisioning for loan loss reserves.<sup>255</sup> Banks also gamed the numerator by developing hybrid securities, such as trust preferred securities, that are treated like debt for tax purposes (with interest payments being subject to deductions), but capital for bank regulatory purposes.<sup>256</sup> Trust preferred securities had debt-like features, including required “interest” payments to holders (with some ability of the bank to defer payments for limited time periods).<sup>257</sup> Commentators have faulted the performance of these instruments during the financial crisis. The responsibility of banks to make “debt payments” combined with a freeze in the market for issuances of trust preferred securities during the crisis underscored that these securities did not provide the same cushion against losses as plain vanilla equity.<sup>258</sup>

More prevalent than games with the numerator of regulatory capital ratios were the strategies banks used to manipulate the denominator.<sup>259</sup> Securitization plays a vital role in these strategies,<sup>260</sup> which can be understood through two insights. *First*, securitization can game the fact that traditional capital regulations place assets in certain risk buckets. By unbundling and reassembling the cash streams and risk from underlying assets, securitization allows firms to create instruments that fit into a particular regulatory bucket, but that have much more risk “stuffed” into the instrument than the regulatory capital required for that bucket.<sup>261</sup>

*Second*, securitization plays with the regulatory treatment of guarantees. David Jones explains using the following example. Assume a firm has a balance sheet with assets of \$100 in loans, liabilities of \$95 in deposits and \$5 in equity. The implied leverage ratio is 5%. If a firm were to sell \$50 in loans to a third party and provide an off-balance sheet guarantee for those loans (for example, through a standby letter of credit or other form of credit enhancement), it would have the same economic risk, but its capital ratio per its balance sheet would dramatically improve, jumping to 10% (\$5 in equity divided by \$50 in on-balance sheet loans).<sup>262</sup> The first two Basel Accords prohibit this simple form of regulatory capital arbitrage by imposing regulatory capital requirements on financial guarantees. The Accord requires that when the bank issues a guarantee on assets that it has sold itself, the guarantee is deemed to be “recourse.” This generally means that the bank must hold capital equal to the bank’s maximum potential credit

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<sup>252</sup> Benton E. Gup, *Capital Games*, in CAPITAL MARKETS, GLOBALIZATION, AND ECONOMIC DEVELOPMENT 17 (Benton E. Gup ed., 2005).

<sup>253</sup> *Id.*

<sup>254</sup> Jones, *supra* note 244, at 36.

<sup>255</sup> *Id.*

<sup>256</sup> See Acharya et al., *supra* note 65, at 161, 175.

<sup>257</sup> *Id.* at 161. Trust preferred securities were in turn securitized to develop more liquid markets for these securities.

*Id.*

<sup>258</sup> *Id.* at 161, 176-77. The Dodd-Frank Act restricts their use for meeting regulatory capital purposes. *Id.* at 176-77.

<sup>259</sup> Jones, *supra* note 244, at 36.

<sup>260</sup> *Id.*

<sup>261</sup> *Id.* at 41-44.

<sup>262</sup> *Id.* at 40-41.

loss under the guarantee. Nevertheless, banks use securitization and other shadow banking instruments to create effective guarantees that do not require that the financial institution hold regulatory capital for the full amount of economic risk it retains.<sup>263</sup>

3. *Six Strategies for Regulatory Capital Arbitrage*

These two insights help explain six common strategies for regulatory capital arbitrage

- (1) *Concentrate credit risk and cherry pick.* Under this strategy, banks structure asset-backed securities so that subordinated asset-backed securities concentrated economic risk but regulatory capital requirements that are lower than economic risk. The senior tranches in the securitization contain a correspondingly low degree of economic risk, but would bear the brunt of the regulatory capital requirements. The issuing bank then retains the subordinated securities and sells the senior securities to outside investors.<sup>264</sup>

Scholars have also claimed that banks used the flip side of the same strategy: banks would securitize assets and then purchase the resultant AAA-rated senior securities. These securities would contain more economic risk than regulatory capital requirements.<sup>265</sup> These AAA-rated securities were treated as having minimal credit risk and no liquidity or funding risk.<sup>266</sup> Banks could thus have their cake (enjoy the premiums on their asset-backed security investments, which were particularly high for those backed by subprime mortgages) and eat it too (lower their regulatory capital below the risk suggested by those same market premiums).<sup>267</sup>

- (2) *Remote origination:* The second strategy builds off the fact that capital regulations require only an 8% capital ratio if the bank is issuing a guarantee of loans owned by someone else. This provides another reason for securities to have asset-backed commercial paper investment vehicles (rather than the sponsoring bank) originate assets that will back the commercial paper issued to investors.<sup>268</sup>
- (3) *Indirect credit enhancements and creative guarantees:* The third strategy exploits the regulatory treatment of other forms of economic guarantees provided by banks for securitization vehicles.<sup>269</sup> For example, banks would carefully structure the liquidity enhancements that they provided to asset-backed commercial paper vehicles to obtain lower risk weights for these guarantees under capital regulations.<sup>270</sup> Careful design allowed banks that provided liquidity enhancements to hold only 0.8% capital against the

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<sup>263</sup> *Id.*

<sup>264</sup> *Id.* at 42-44.

<sup>265</sup> See Acharya et al., *supra* note 65, at 149.

<sup>266</sup> *Id.* at 148.

<sup>267</sup> Acharya & Richardson, *supra* note 239, at 204-05.

<sup>268</sup> Jones, *supra* note 244, at 44-45.

<sup>269</sup> *Id.* at 45-46

<sup>270</sup> *Id.* See also Viral V. Acharya et al., *Securitization Without Risk Transfer*, Nat’l Bur. Econ. Res. Working Paper No. 15730 (Feb. 2010); Acharya et al., *supra* note 65, at 148.

value of assets in the asset-backed commercial paper vehicle (compared to the 8% capital that would be required had these assets been on the bank’s balance sheet).<sup>271</sup> U.S. bank regulators effectively exempted these liquidity enhancements from capital requirements for the sponsoring banks.<sup>272</sup> The Asset-Backed Commercial Paper market responded with explosive growth. It doubled from \$600 billion to \$1.2 trillion outstanding from 2004 to the second quarter of 2007.<sup>273</sup>

The crisis triggered these liquidity guarantees and revealed the mistake of this light regulatory capital treatment.<sup>274</sup> Asset-backed commercial paper were structured so that, when the crisis struck, investors bore only 4.3% of the loss of the \$1.25 trillion outstanding in asset-backed commercial paper.<sup>275</sup> Empirical studies show when asset-backed commercial paper investment vehicles suffered losses during the crisis, sponsoring banks – and not investors – generally bore the losses.<sup>276</sup> Risk materialized on the balance sheets of sponsoring banks despite the light capital treatment.<sup>277</sup> This led several scholars to brand asset-backed commercial paper as “securitization without risk transfer” and to conclude that a primary driver of these securitization structures was regulatory capital arbitrage.<sup>278</sup>

Beyond liquidity enhancements, banks designed other creative, indirect guarantees. For example, banks designed complex credit enhancements for those asset-backed securities that have the features of revolving credit facilities (such as collateralized loan agreements (a form of CDO) and securitizations of credit card facilities).<sup>279</sup> Careful structuring meant that these credit enhancements require no or minimal regulatory capital for the banks that provided them.<sup>280</sup> Still other guarantees from banks and financial institutions were implicit.<sup>281</sup> The “moral recourse” of financial institutions for securitization vehicles or hedge funds they sponsored (described above) required no regulatory capital.<sup>282</sup>

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<sup>271</sup> Acharya & Schnabl, *supra* note 96, at 89.

<sup>272</sup> Acharya et al., *supra* note 270, at 12.

<sup>273</sup> See Acharya et al., *supra* note 65, at 148-49.

<sup>274</sup> Acharya et al., *supra* note 270.

<sup>275</sup> See Acharya et al., *supra* note 65, at 149.

<sup>276</sup> Acharya & Schnabl, note 96, at 90-92.

<sup>277</sup> *Id.*

<sup>278</sup> Viral V. Acharya et al., *supra* note 270, at 31-34.

<sup>279</sup> Jones, *supra* note 244, at 46. The assets backing these securitizations may be paid off (“draw downs”) by borrowers quickly, yet investors purchasing the asset-backed securities may prefer a much longer maturity on their securities. Banks sponsoring these securitizations covered any potential resulting mismatches between an investment vehicle’s fluctuating assets and its issued securities by creating “master trusts.” Under these trusts, the bank “designates” lines of credit for the investment vehicle. *Id.* at 46-47.

<sup>280</sup> The sponsoring bank’s credit exposure under these lines of credit was considered minimal. Thus, a bank’s credit enhancement was considered to constitute not credit risk (which would require regulatory capital under Basel) but operational risk (which would not require regulatory capital). *Id.*

<sup>281</sup> See *supra* notes 229-230 and accompanying text.

<sup>282</sup> See Acharya et al., *supra* note 65.

- (4) *Third-party guarantees:* Banks also engaged in regulatory capital arbitrage when they purchased asset-backed securities that enjoyed third-party guarantees via credit derivatives or bond insurance. Those guarantees allowed the banks that invested in senior asset-backed securities to hold as little as zero capital against those investments. Banks could hold no capital even though capital markets priced the credit risk on those assets (when adjusted for the guarantees) as more than zero. Banks widely exploited this loophole. For example, AIG’s 2007 Annual Report disclosed that \$379 billion of its \$527 billion credit derivative exposure (created by its infamous Financial Products Group) resulted from banks engaging in this form of regulatory capital arbitrage.<sup>283</sup>
- (5) *Moving assets from banking book to trading book:* The 1997 Market Risk Amendment to the Basel Accords facilitated additional forms of regulatory capital arbitrage. These amendments allowed certain banks to set regulatory capital for certain risks in their trading books. This encouraged banks to move asset-backed securities and other shadow banking instruments from their banking book to their trading books to dramatically lower their regulatory capital.<sup>284</sup>
- (6) *Exploiting Basel II’s do-it-yourself capital requirements:* As noted below, the Basel II Accord allowed certain large financial institutions to set their own regulatory capital levels according to their proprietary risk models.<sup>285</sup> When the SEC extended this approach to certain large investment banking conglomerates, those firms dramatically increased their leverage to over 30:1 within a three year span.<sup>286</sup> Financial institutions then used these models to lower their capital requirements.<sup>287</sup> The models used to measure firm risk and set firm regulatory capital were the same models firms used to price asset-backed securities, credit derivatives, and other shadow banking instruments.<sup>288</sup>

#### *4. Regulatory Capital Arbitrage as compound arbitrage*

Many of the six evasion strategies described above depended on asset-backed securities or other shadow banking instruments and counterparties achieving investment grade ratings.<sup>289</sup> Thus the various games that financial institutions played with rating agencies (described above)<sup>290</sup> assumed fresh importance in the context of regulatory capital arbitrage; these games further undermined capital regulations. Similarly, interpretations of bank regulators that allowed lenders to lower their regulatory capital requirements by securitizing assets depended on the

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<sup>283</sup> *Id.* at 149-50.

<sup>284</sup> Jones, *supra* note 244, at 48. *See also* Bartlett, *supra* note 67.

<sup>285</sup> *See infra* Part IV.E.

<sup>286</sup> *See infra* notes 336-340 and accompanying text.

<sup>287</sup> *Id.* at 154-59.

<sup>288</sup> *Id.* at 139-143, 147-164.

<sup>289</sup> Acharya & Schnabl, *supra* note 96, at 85.

<sup>290</sup> *See supra* Part III.A.2.

securitization qualifying as a true sale for bankruptcy and accounting purposes.<sup>291</sup> Thus the gaming of bankruptcy and accounting rules described above also contributes to regulatory capital arbitrage.<sup>292</sup>

### 5. *Effects of Regulatory Capital Arbitrage*

Taking a step back from individual arbitrage strategies, a troubling picture of the effect of regulatory capital arbitrage emerges. Although, the various shadow banking instruments were designed to spread risk, most of the credit risk stayed within the financial system. A 2008 study reports that banks, thrifts, government-sponsored entities, and broker-dealers held \$789 billion – or roughly 50% – of the AAA-rated CDO tranches outstanding.<sup>293</sup> At the same point, banks, broker dealers and monoline bond insurers held \$320 billion of the \$476 billion of subordinated CDO tranches.<sup>294</sup> A 2008 IMF report documented how balance sheets of a sample of ten very large financial institutions doubled from 2004 to 2007, yet the implied risk of their balance sheets under the Basel Accord registered only a modest uptick.<sup>295</sup> This suggests that the most troubling problem with securitization, and shadow banking more generally, is not that financial institutions unloaded high credit risk assets onto non-financial institution investors. Instead, too much of the toxic risk stayed on the balance sheets of financial institutions or was passed from one institution to another.<sup>296</sup>

These statistics support the earlier predictions of scholars on the pernicious effects of regulatory capital arbitrage. Well before the crisis, some scholars worried that regulatory capital arbitrage would result in an effective deterioration of risk-based capital standards.<sup>297</sup> Regulatory capital arbitrage can mask growing financial problems at banks and frustrate both market discipline and prompt regulatory actions to address failing banks.<sup>298</sup> Some scholars attribute the fact that many large complex financial institutions that failed during the crisis – Bear Stearns, Washington Mutual, Lehman Brothers, Wachovia, and Merrill Lunch – actually had higher capital than required by regulation to regulatory capital arbitrage. This arbitrage masked the true economic risk of these firms.<sup>299</sup> Moreover, regulatory capital arbitrage can discourage a true hedging of economic risks.<sup>300</sup> Higher leverage can effectively externalize more of a firm’s risk on the marketplace and on the government.<sup>301</sup>

## IV. DEREGULATION & LEGAL SUBSIDIES

### A. The Demise of Glass-Steagall and Subsidy Leakage

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<sup>291</sup> MELANIE L. FEIN, SECURITIES ACTIVITIES OF BANKS § 13.04 (3<sup>rd</sup> Ed. 2010 Suppl.).

<sup>292</sup> See *supra* Part III.A.

<sup>293</sup> See Acharya et al., *supra* note 65, at 149.

<sup>294</sup> *Id.*

<sup>295</sup> *Id.* at 150 *citing* INTERNATIONAL MONETARY FUND, GLOBAL FINANCIAL STABILITY REPORT: CONTAINING SYSTEMIC RISKS AND RESTORING FINANCIAL SOUNDNESS 31 (Apr. 2008) *available at* <http://www.imf.org/external/pubs/ft/gfsr/2008/01/pdf/text.pdf>.

<sup>296</sup> See Hyun Song Shin, *Securitisation and Financial Stability*, 119 ECON. J. 309 (2009).

<sup>297</sup> Jones, *supra* note 244, at 49

<sup>298</sup> *Id.*

<sup>299</sup> See Acharya et al., *supra* note 65, at 147.

<sup>300</sup> Jones, *supra* note 244, at 37.

<sup>301</sup> See Acharya et al., *supra* note 65, at 157. See also Acharya & Richardson, *supra* note 239, at 197-98.

The repeal of the Glass-Steagall Act represents the granddaddy of deregulation of the shadow banking sector. The demise of the Depression era statute (which occurred in stages throughout the 1980s and 1990s and culminated in the Gramm Leach Bliley Act of 1999) allowed banks, investment banks, and other financial institutions to operate under the same corporate roof. This allowed investment banks entities to function as true middlemen in the shadow banking network – and put together securitizations and derivative transactions. The demise of Glass-Steagall also facilitated fuller bank investments in shadow banking instruments.<sup>302</sup>

However, several scholars raised early warnings about the risks of repealing the statute. Law professor Arthur Wilmarth and other warned that financial conglomerates would exploit “Too-big-To-Fail” status.<sup>303</sup> In other words, financial markets would assume that the government could not allow these behemoths to become insolvent for fear of the massive damage to financial markets. The implicit government guarantee gave these firms a lower cost of raising debt.<sup>304</sup>

Other scholars feared that financial conglomerates would exploit the explicit subsidies afforded to depository banks (and regulated insurance companies) and gamble with taxpayer money.<sup>305</sup> Although banking laws contained provisions to prevent this subsidy leakage from banks to non-banks,<sup>306</sup> scholars have questioned their effectiveness.<sup>307</sup> Law professor Saule Omarova argues that the demise of Glass-Steagall division placed much of the work for counteracting subsidy leakage on an obscure Depression era statutory provision, Section 23A of the Federal Reserve Act.<sup>308</sup> Section 23A imposes quantitative limitations on certain extensions of credit and other transactions between a bank and its affiliates that expose a bank to an affiliate's credit or investment risk, prohibits banks from purchasing low-quality assets from their nonbank affiliates, and imposes strict collateral requirements with respect to extensions of credit to affiliates.<sup>309</sup>

Omarova details how banks sought exemptions from these strictures “to leverage their subsidiary banks’ high credit ratings and access to cheap sources of funding to increase profitability of their nonbank subsidiaries.”<sup>310</sup> The Federal Reserve granted numerous exemptions from 1996 until 2010 to allow financial conglomerates to use their bank affiliates to

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<sup>302</sup> Professor Arthur Wilmarth describes how the repeal of the Glass Steagall Act’s division between commercial and investment banking (together with the loosening of other financial regulations) stimulated the growth of securitization, OTC derivatives, and other elements of shadow banking. Arthur E. Wilmarth, Jr., *The Dark Side of Universal Banking: Financial Conglomerates and the Origins of the Subprime Financial Crisis*, 41 CONN. L. REV. 963, 972-94 (2009).

<sup>303</sup> Arthur E. Wilmarth, *The Transformation of the U.S. Financial Services Industry, 1975–2000: Competition, Consolidation, and Increased Risks*, 2002 U. ILL. L. REV. 215, 300.

<sup>304</sup> HOWARD DAVIES, *THE FINANCIAL CRISIS: WHO IS TO BLAME?* 40 (2010)

<sup>305</sup> *Id.*

<sup>306</sup> Saule T. Omarova, *From Gramm-Leach-Bliley to Dodd-Frank: the Unfulfilled Promise of Section 23A of the Federal Reserve Act*, 89 N.C. L. REV. 101 109-111 (2011)( discussing Section 23A of the Federal Reserve Act.

<sup>307</sup> *Id.*

<sup>308</sup> *Id.* at 123.

<sup>309</sup> *Id.* at 109-111.

<sup>310</sup> *Id.* at 124.

support loans by non-banks, including to support shadow banking operations.<sup>311</sup> For example, between 2000 and 2006, the Federal Reserve gave Citigroup multiple exemptions to allow its banking subsidiary to purchase subprime mortgage assets from a series of mortgage lenders that Citigroup acquired.<sup>312</sup> Omarova connects this decision to Citigroup’s ability to expand its non-banking mortgage lending operations and its ability to reap profits from securitization.<sup>313</sup> She also details a separate set of Federal Reserve exemptions that allowed conglomerates to use bank affiliates to support securities lending by broker-dealer affiliates.<sup>314</sup> This eased the ability of financial conglomerates to engage in derivatives and repo transactions, among other shadow banking operations.<sup>315</sup>

## **B. Bank Participation in the Shadow Banking System**

Changes in statutes, regulations and regulatory interpretations in the 1980s and 1990s clarified that banks could purchase investment grade asset-backed securities and not just plain vanilla corporate bonds.<sup>316</sup> The OCC allowed national banks to securitize assets on its balance sheet and underwrite and deal in the resultant asset-backed securities in a series of agency rule changes and regulatory interpretations in the 1980s and 1990s.<sup>317</sup> The Federal Reserve also issued similar rulings permitting state banks to underwrite and deal in mortgage-backed securities.<sup>318</sup>

Regulators also enabled banks to participated in derivatives through subtle shifts in regulatory interpretations. Saule Omarova examines how the OCC changed the definition of the “business of banking” incrementally over several years to allow banks to increasingly deal in derivatives.<sup>319</sup> The OCC issued interpretations allowing national banks to enter into certain credit default swaps.<sup>320</sup> This same interpretation allowed national banks to hold below-investment grade debt to hedge risks from derivatives activities.<sup>321</sup>

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<sup>311</sup> *Id.* at 124-25 (describing exemptions to allow bank affiliates to purchase assets such as mortgage and hedge fund loans).

<sup>312</sup> *Id.* at 126-130.

<sup>313</sup> *Id.* at 130-32.

<sup>314</sup> *Id.* at 134-140.

<sup>315</sup> *Id.* at 132-34, 141-42.

<sup>316</sup> Wilmarth, *supra* note \_\_, at 987 n. 90 *citing* 12 CFR §§1.2(m)-(n), 1.3€-(f)(2008) (OCC regulations permitting national banks to invest in residential mortgage-backed and other asset-backed securities provided those securities have investment grade ratings). The Secondary Mortgage Market Enhancement Act of 1984 (Pub. L. No. 98-440, § 105(c), 98 Stat. 1691) and the Reigle Community Development and Regulatory Improvement Act of 1994 (Pub. L. No. 103-325, 108 Stat. 2160) both amended 12 U.S.C. §24 (Seventh) to enable national banks to purchase asset-backed securities by removing quantitative restrictions. FEIN, *supra* note 291, at 13.02[A] (3<sup>rd</sup> Ed. 2010 Suppl.).

<sup>317</sup> FEIN, *supra* note 291, at § 13.02[A]. In these rules and interpretations, the OCC creatively interpreted a provision in the Glass Steagall Act which preserved the right of banks to “possess to sell, without recourse or agreement to repurchase, obligations evidencing loans in real estate.” 12 U.S.C. § 378(a)(1). FEIN, *supra* note 316, at § 13.02[A]. At least one of the OCC rulings were challenged (unsuccessfully) by the Securities Industry Association. *Id.*

<sup>318</sup> FEIN, *supra* note 291, at § 13.02[A].

<sup>319</sup> Saule T. Omarova, *The Quiet Metamorphosis: How Derivatives Changed the “Business of Banking”*, 63 MIAMI L. REV. 1041 (2009).

<sup>320</sup> FEIN, *supra* note 291, at § 14.05[G] *citing* OCC Interpretative Letter No. 1051 (Feb. 15, 2006).

<sup>321</sup> *Id.*



### **C. Derivatives Deregulated: the Commodity Futures Modernization Act and Accounting Standards**

In 2000, Congress shielded credit derivatives and other OTC derivatives from regulation by the Commodity Futures Trading Commission (CFTC), the SEC, and state regulators by passing the Commodity Futures Modernization Act.<sup>322</sup> This statute exempted credit derivatives not only from disclosure regulations, but also from regulations under the Commodity Exchange Act and other statutes that could have applied capital requirements to counterparties to these contracts.<sup>323</sup> This stroke of deregulation stemmed in large part from efforts by then-Federal Reserve Chairman Alan Greenspan, senior Treasury Department officials, OTC derivatives dealers, and their allies in Congress. This coalition sought to head off an attempt by the CFTC, under the leadership of Brooksley Born, to regulate OTC derivatives. A decade before the Panic of 2008, Born had warned of the dangers that these derivatives might cause a financial meltdown.<sup>324</sup>

“Deregulation” of derivatives also occurred in the accounting world. Financial institutions and their derivatives lobbying organization effectively shut down a proposal in the 1980s from the Financial Accounting Standards Board (FASB) financial institutions report swaps on their balance sheets. FASB reasoned that banks already reported loans as assets and deposits as liabilities on their balance sheets. Swaps effectively represented an asset (expected payments a firm would receive from its counterparty under the swap) and a liability (expected payments to a firm’s counterparty) bundled together. The scuttling of this proposal meant that swaps were in some sense given preferential accounting treatment compared to bank loans and deposits.<sup>325</sup>

### **D. Bankruptcy Preferences**

Derivatives also received another extremely valuable form of preferential treatment. In 2005, Congress amended the Bankruptcy Code to exempt certain derivatives, including mortgage-backed securities, from key provisions of the bankruptcy process, including the automatic stay.<sup>326</sup> Major financial institutions active in the derivatives market lobbied hard for

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<sup>322</sup> Pub. L. No. 106-554, 114 Stat. 2763.

<sup>323</sup> Michael Greenberger, *Out of the Black Hole: Regulatory Reform of the Over-The-Counter Derivatives Market*, in MAKE MARKETS BE MARKETS (Robert Johnson & Erica Payne eds., 2009).

<sup>324</sup> For a gripping account of how Greenspan and Treasury Secretaries Rubin and Summers shut down Born’s attempts to regulate OTC derivatives, see *The Warning*, PBS FRONTLINE (Oct. 20, 2009) available at <http://www.pbs.org/wgbh/pages/frontline/warning/view/> (last viewed Sept.30, 2010).

<sup>325</sup> Partnoy & Turner, *supra* note 225, at 87-88.

<sup>326</sup> Bankruptcy Abuse & Consumer Protection Act of 2005, Pub. L. 109-8 (2005). After the 2005 amendments, a party to one of these derivative contracts is no longer subject to the automatic stay and voidable preferences provisions of the bankruptcy code that would restrict their remedies as a creditor should their counterparty enter bankruptcy. This means that should the counterparty file for bankruptcy, the creditor party in a derivative contract does not face the normal legal restrictions on terminating the derivative contract, accelerating the debtor’s obligations, foreclosing on collateral, and exercising set-off rights. Nor is the creditor subject to potential claw-back of pre-bankruptcy payments from the debtor. For a summary of these provisions, see Mark J. Roe, *Bankruptcy's*

these exemptions.<sup>327</sup> Law professor Mark Roe argues that these changes allow derivative creditors to “jump to the head of the bankruptcy repayment line.” This dulls the incentives of parties to derivative contracts to monitor the risk-taking of their counterparties.<sup>328</sup>

These bankruptcy exemptions for derivatives mirrored similar exemptions Congress created for repos in 1984, which spurred explosive growth in repo markets.<sup>329</sup> Gary Gorton and Andrew Metrick argue that this critical exemption enabled repos to take on more of the features of money.<sup>330</sup>

## **E. Basel II and Leverage**

One of the most important examples of deregulation enabling shadow banking growth was the Basel II Accord. This agreement among international bank regulators was intended to prevent a race-to-the-bottom among countries with respect to bank capital requirements.<sup>331</sup> The drafters of Basel II, under pressure from large banks,<sup>332</sup> cited the need to move away from the flaws of capital requirements under the first Basel Accord.<sup>333</sup> Among these flaws was the incentive to game the crude risk buckets that the earlier agreement used to set capital requirements. Basel II gave national regulators the ability to allow certain large banks to set their own regulatory capital according to each bank’s proprietary risk models.<sup>334</sup> Many financial institutions exploited this flexibility to set their own capital requirements to lower capital and dramatically increase leverage.<sup>335</sup>

For example, the SEC decided to allow certain large financial holding companies to take advantage of the Basel II approach to set capital under the Consolidated Supervised Entity (“CSE”) regime.<sup>336</sup> Ultimately, the following seven financial-holding companies, including

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*Financial Crisis Accelerator: The Derivatives Players’ Priorities in Chapter 11*, 63 STAN. L. REV. 539 (forthcoming).

<sup>327</sup> David A. Skeel, Jr., *Bankruptcy Boundary Games*, 4 BROOK. J. CORP. FIN. & COM. L. 1, 10 (2009).

<sup>328</sup> Roe, *supra* note 326. This dulling of incentives, he writes, acted as a “financial crisis accelerator” and contributed to the failures of AIG, Bear Stearns, and Lehman Brothers in the Panic of 2008. Roe argues that repeal of these amendments would force the derivatives markets to police counterparty risk and would lower the risk of recurrence of major financial institution failures from derivatives. *Id.*

<sup>329</sup> Bankruptcy Amendments and Federal Judgeship Act of 1984, Pub. L. No. 98-353 (98 Stat. 333).

<sup>330</sup> Gorton & Metrick, *supra* note 1.

<sup>331</sup> Gerding, *supra* note 86, at 132.

<sup>332</sup> Kern Alexander, *Global Financial Standard Setting, the G10 Committees, and International Economic Law*, 34 BROOKLYN J. INT’L L. 861, 880 n. 66 (2009).

<sup>333</sup> Basel I capital requirements placed bank assets into different risk buckets. For each bucket, banks were required to hold a different amount of capital as a cushion against losses. Gerding, *supra* note 86, at 155. The crudeness of this bucket approach led to arguments that capital requirements were not tailored for economic risk and that banks thus have a great incentive to arbitrage the rules. Raj Bhala, *Applying Equilibrium Theory and the FICAS Model: a Case Study of Capital Adequacy and Currency Trading*, 41 ST. LOUIS U. L.J. 125, 159–62, 178, 183–87 (1997) (detailing arguments for superiority of banks’ internal models to measure risk and set capital requirements compared to regulatory methods).

<sup>334</sup> Gerding, *supra* note 86, at 132, 155-57.

<sup>335</sup> In Switzerland, the principal bank regulator blamed that country’s implementation of Basel II for allowing large Swiss banks to increase leverage dramatically in the run-up to the crisis. This increase left major Swiss banks vulnerable to losses when financial markets dived and prompted the Swiss government to bailout UBS.

<sup>336</sup> Gerding, *supra* note 86, at 158-59.

some of the largest U.S investment banking firms, joined the CSE program: the Bear Stearns Companies, Inc., Goldman Sachs Group, Inc., Lehman Brothers Holdings Inc., Morgan Stanley, Merrill Lynch & Co., Citigroup Inc., and JP Morgan Chase & Co.<sup>337</sup> Once the CSE rules took effect, these firms lowered their regulatory capital and dramatically increased their leverage, with some firms reaching leverage ratios of 33 to 1.<sup>338</sup> Later, after one of these seven firms, Bear Stearns, founded, the SEC’s Inspector general issued a scathing report criticizing the agency’s oversight of the CSE program.<sup>339</sup> An increase in leverage by investment banks had dramatic implications for the entire shadow banking system given the position of those institutions as hubs of the system.<sup>340</sup>

## **F. Securities Law Exemptions**

Several SEC rules and rule interpretations provided valuable exemptions for asset-backed securities from securities laws. For example, in 1992, the SEC passed a rule that securitization vehicles were not required to register with the SEC as an “investment company” under the Investment Company Act of 1940.<sup>341</sup> Prior to the demise of Glass-Steagall, the SEC also exempted banks that securitized assets and sold asset-backed securities to investors from the definition of “dealer” in the Securities Exchange Act of 1934.<sup>342</sup>

## **G. Regulatory Subsidies: Freddie and Fannie**

Before the financial crisis, scholars debated whether or not these two GSEs enjoyed an implicit guarantee from the federal government of their obligations in the event of their insolvency.<sup>343</sup> The financial crisis led to the federal government taking over the GSEs in conservatorship settled the argument; the guarantee is no longer so implicit.<sup>344</sup> Beyond an implicit guarantee, Freddie and Fannie enjoyed a raft of other regulatory subsidies, including tax exemptions, exemptions from various securities laws, and laws granting special status to GSE securities making them equivalent to government securities (which enabled federal agencies, fiduciaries, and federally regulated lenders to invest in GSE securities).<sup>345</sup> Moreover, Freddie

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<sup>337</sup> *Id.*

<sup>338</sup> Stephen Labaton, *Agency’s ’04 Rule Let Banks Pile Up New Debt*, N.Y. TIMES, Oct. 3, 2008, at A1.

<sup>339</sup> OFFICE OF INSPECTOR GENERAL, SEC’S OVERSIGHT OF BEAR STEARNS AND RELATED ENTITIES: THE CONSOLIDATED SUPERVISED ENTITY PROGRAM 4 (2008), Report No. 446-B (Sept. 25, 2008), available at <http://www.sec-oig.gov/Reports/AuditsInspections/2008/446-a.pdf> (last visited Sept. 7, 2010).

<sup>340</sup> See *supra* notes 142-144 and accompanying text.

<sup>341</sup> FEIN, *supra* note 291, at § 13.06[A]; Exclusion form the Definition of Investment Company for Structured Financings, 57 Fed. Reg. 56,245 (1992) (codified at 17 C.F.R. §270.3 a-7).

<sup>342</sup> FEIN, *supra* note 291, at § 13.06[B].

<sup>343</sup> Compare Reiss, *supra* note 87 (arguing an implicit guarantee existed) with Richard Scott Carnell, *Handling the Failure of a Government-Sponsored Enterprise*, 80 WASH. L. REV. 565 (2005). Professor Carnell documented government disavowals of a guarantee and argued that the guarantee was more a matter of investor perception. *Id.* at 584.

<sup>344</sup> See David J. Reiss, *Fannie Mae and Freddie Mac and the Future of Federal Housing Finance Policy: A Study of Regulatory Privilege*, 61 ALA. L. REV. 907 (2010).

<sup>345</sup> Reiss, *supra* note 87, at 1055-65.

and Fannie were subject to weaker capital requirements than other federally regulated financial institutions, which enabled them to take on more leverage and hence more risk.<sup>346</sup>

V. THE POLITICAL ECONOMY OF REGULATORY ARBITRAGE, DEREGULATION, AND LEGAL SUBSIDIES IN THE SHADOW BANKING SYSTEM

Taking a step back, the examples of regulatory arbitrage, deregulation, and legal subsidies above provide a striking composite image: once these three wheels were set in motion they generated yet more regulatory arbitrage, deregulation and subsidization. The story of the first shadow banking instrument – shares in money market mutual funds – serves as a telling example. These funds were created to arbitrage bank regulations.<sup>347</sup> Losing deposit business, banks pushed for deregulation, culminating in the deregulation of banks in the DIDMCA statute.<sup>348</sup> Money market mutual funds then pushed for rule changes to allow them to price their shares to give the illusion of the security of bank deposits.<sup>349</sup> Products of regulatory arbitrage and beneficiaries of deregulation, like asset-backed securities and credit derivatives, were later used as instruments of the more complex gaming of bank capital requirements. Regulatory capital arbitrage, in turn, involved gaming the Basel I and Basel II Accords, both of which represented international efforts to prevent regulatory arbitrage.<sup>350</sup>

Analyzing the political economy of regulatory arbitrage, deregulation and legal subsidies in the shadow banking system provides lessons for how and why this legal change took shape. When regulatory arbitrage created competition for a regulated industry like banks, bank had three options. They could engage in regulatory arbitrage themselves to allow them to compete more aggressively, push for greater regulation of their competition, or push for deregulation to allow them to compete more favorably. For each option, one would expect the new competitors to push back in the political marketplace. Indeed, examples of political fights over regulation among different categories of regulated financial institutions abound in the examples above.<sup>351</sup>

But why did this result in a general apparent trend of looser and looser and less and less effective regulations rather than either tighter regulations or some regulatory equilibrium? The answer likely lies in two phenomena. First, deregulation, particularly the slow deterioration and ultimate repeal of Glass Steagall -- dissolved the boundaries between categories of institutions.<sup>352</sup> If you can’t beat ‘em, join ‘em – or merge with them. The formation of financial conglomerates created more shared political interests and concentrated financial and economic power in large complex financial institutions.<sup>353</sup> Moreover, the relationships between shadow banking upstarts

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<sup>346</sup> *Id.* at 1065.

<sup>347</sup> *Supra* Part II.B.

<sup>348</sup> *Id.*

<sup>349</sup> *Id.*

<sup>350</sup> Gerding, *supra* note 28, at 132 n. 13.

<sup>351</sup> For example, the securities industry fought SEC exemptions of securitization vehicles from the Investment Company Act. *Supra* Part IV.F.

<sup>352</sup> See Arthur E. Wilmarth, Jr., *The Dark Side of Universal Banking: Financial Conglomerates and the Origins of the Subprime Financial Crisis*, 41 CONN. L. REV. 963, 975-994 (2009).

<sup>353</sup> *See id.*

and banks were not only competitive, but symbiotic as well; banks and shadow banking institutions were frequently counterparties.<sup>354</sup>

Second, much of the regulatory arbitrage and deregulation resulted in exploitation of government subsidies, whether explicit (like deposit insurance) or implicit (Too-Big-to-Fail). This exploitation externalized the costs of financial institutions on one of the most diffuse political groups – taxpayers. Public choice points to a clear winner as between a small group of rich players that seek a subsidy and a large group of diffuse, disorganized players that will pay the subsidy.<sup>355</sup> This exploitation of subsidies benefitted from the fact that implicit subsidies and the leakage of subsidies from one affiliate to another are hard to identify.<sup>356</sup> Difficulty identifying subsidies allows for plausible deniability by both the subsidized and government officials.<sup>357</sup> Non-subsidized competitors had to make a hard political argument against implicit guarantees. Nevertheless, the marketplace may still believe in the government guarantee, which can become a self-fulfilling prophecy.<sup>358</sup>

The examples of regulatory arbitrage and particularly deregulation reveal that some of the most important issues in financial regulation are also hyper-technical. This precludes meaningful public involvement in the regulatory process, particularly in contesting the abuse of government subsidies. Moreover, the regulatory decisions that created and nurtured the shadow banking system represented slow incremental change over many years. The shadow banking system was not designed, but grew organically from numerous decisions by regulators and the regulated over a period of years. This made it difficult for regulators or the private sector to see the full significance of any particular decision. It also complicates retrospective efforts to quantify the full effects of any particular act of deregulation or category of regulatory arbitrage. On the other hand, even significant changes to financial regulation, like the repeal of Glass Steagall, were not significantly studied after they occurred.

Cracks in the regulatory architecture may have escaped notice because credit booms, to which deregulation and regulatory arbitrage contribute, hides mistakes by both the private and public sectors. Booming prices mask the mispricing of risk in financial markets. They also obscure regulatory errors.<sup>359</sup>

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<sup>354</sup> See, e.g., FEIN, *supra* note 291, at §14.07[C] (discussing bank loans to, investments in, and derivatives transactions with, hedge funds).

<sup>355</sup> For a small sample of the classic public choice theory literature on how cohesive groups with small numbers of members can exercise more influence over political and regulatory processes see George J. Stigler, *The Theory of Economic Regulation*, 2 BELL. J. ECON. & MGMT. SCI. 3 (1971); Sam Peltzman, *Toward a More General Theory of Regulation*, 19 J. L. ECON. 211 (1976); Gary S. Becker, *A Theory of Competition Among Pressure Groups for Political Influence*, 98 Q. J. ECON. 371 (1983).

<sup>356</sup> Compare David J. Reiss, *The Federal Government’s Implied Guarantee of Fannie Mae and Freddie Mac’s Obligations: Uncle Sam Will Pick Up the Tab*, 42 GA. L. REV. 1019 (2008) (arguing that Freddie Mac and Fannie Mae enjoyed implicit government guarantees) with Richard Scott Carnell, *Handling the Failure of a Government-Sponsored Enterprise*, 80 WASH. L. REV. 565, 584 (2005) (arguing those guarantees were more a matter of investor perception).

<sup>357</sup> Carnell, *supra* note 356 at 584 (documenting government disavowals of any guarantee of Freddie or Fannie).

<sup>358</sup> Reiss, *supra* note 356.

<sup>359</sup> Gerding, *supra* note 50.

Booming markets can reinforce deregulatory efforts by providing more resources to firms seeking deregulation and undermining warnings of danger.<sup>360</sup> Receding memories of past crises contribute to disaster myopia, a behavioral bias in which regulators and the private sector discount the possibility of another financial catastrophe.<sup>361</sup>

## VI. THE AFTERMATH & CONCLUSION

The meltdown did of course come to the shadow banking system. Perversely, a system that was largely created by evading bank regulations came to suffer from banking crises. Economists Gary Gorton and Andrew Metrick have described how various segments of the shadow banking system – money-market mutual funds, repos, asset-backed commercial paper, and asset-backed securities – suffered banking runs.<sup>362</sup> Waves of defaults on mortgages caused losses on junior mortgage-backed securities and ratings downgrades for senior securities.<sup>363</sup> Losses and uncertainty on the value of asset-backed securities spread to other shadow banking markets.<sup>364</sup> The subprime crisis represented toxins entering a vast plumbing network. The complexity of the network made it hard to determine which water was safe to drink. In response, investors rushed to withdraw funds and lenders stopped lending.

The features of shadow banking came back to threaten the system. Intermediation meant that investors could not easily gauge their exposure to mortgages, mortgage-backed securities, or default by a counterparty.<sup>365</sup> Pooling of risks failed when the risks of underlying assets became highly correlated.<sup>366</sup> Instead of merely isolating risks, structuring added to the difficulty of tracing those risks as they coursed through financial markets.<sup>367</sup> Maturity transformation meant that shadow banking was subject to the same liquidity crises and runs as traditional banks.<sup>368</sup> The end result was that shadow banking instruments designed to have features of deposit accounts or “money” no longer enjoyed safety or liquidity.<sup>369</sup>

One can see how solvency and liquidity crises infected every corner of the shadow banking system by the list of federal interventions in financial markets during the crisis. The government’s loans and equity investments in financial institutions through TARP and other programs rescued financial institutions failing because of investments in asset-backed securities and credit derivatives. Through these bailouts, the government acted to take over failing shadow banks just like bank regulators “resolve” failing depository banks. At the same time, the Federal Reserve took a host of emergency interventions under Section 13(3) of the Federal Reserve Act.<sup>370</sup> The Federal Reserve issued loans and guarantees to private sector investors through a

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<sup>360</sup> *Id.*

<sup>361</sup> Jack M. Guttentag & Richard J. Herring, *DISASTER MYOPIA IN INTERNATIONAL BANKING* 3–4 (1986).

<sup>362</sup> Gorton & Metrick, *supra* note 1.

<sup>363</sup> *Id.*

<sup>364</sup> *Id.*

<sup>365</sup> Poszar et al., *supra* note 3.

<sup>366</sup> *Id.*

<sup>367</sup> Gerding, *supra* note 28.

<sup>368</sup> Poszar et al., *supra* note 3; Gorton & Metrick, *supra* note 1.

<sup>369</sup> Gorton & Metrick, *supra* note 1.

<sup>370</sup> For a summary of Federal Reserve emergency actions during the crisis, see Christian A. Johnson, *Exigent and Unusual Circumstances: the Federal Reserve and the U.S. Financial Crisis*, \_\_\_ *EUR. BUS. ORG. L. REV.* \_\_\_ (2010).

series of convoluted facilities. Two things stand out about these Federal Reserve initiatives. First, a list of these facilities reads like a genealogy of shadow banking: Federal Reserve interventions reached into every cranny of the shadow banking system, from money market mutual funds, to asset-backed securities, to asset-backed commercial paper to repos.<sup>371</sup> Second, through these facilities, the Federal Reserve was providing the functional equivalent of deposit insurance for shadow banking instruments and was serving effectively as a lender-of-last-resort to shadow banking markets. The Federal Reserve deployed the traditional tools for solving liquidity crises in the traditional depository banking sector to save the shadow banking system. Again, the perversity is palpable: the federal government adapted tools for rescuing banks to save a system designed to escape bank regulations.

The aftermath of the financial crisis leaves several pressing questions unanswered. Among them: would the shadow banking system have existed even absent deregulation? If legal rules had not changed since the 1970s would shadow banking still have grown as much? Counterfactual history is hard to write. Even so, deregulation was not the only force behind shadow banking’s evolution. Regulatory arbitrage also drove its growth. With no changes in regulations, shadow banking institutions like money market mutual funds would still have stolen both investors and loan business from banks. The shadow banking system still would have grown, although perhaps not as large and in a different form. But regulatory changes allowed the banking system to feed into the shadow banking system, putting government subsidies at risk. Regulatory change thus created a transmission line for economic contagion from the shadow to the traditional banking sector.

The regulatory arbitrage that fueled shadow banking filled a demand brought about by macroeconomic forces, including the collapse of Bretton Woods and inflation shocks, that unleashed financial risk starting in the 1970s.<sup>372</sup> Those risks have not dissipated. Nor has the demand for financial products to help manage and spread those risks. Shadow banking instruments may have been used for regulatory arbitrage, but they also had important economic functions. Therefore, if financial reform moved back to the regulatory world that existed in the United States before the 1970s – with narrow banks, walls between categories of financial institutions, and limits on financial products – those regulations would face constant pressure. Economic shocks and regulatory arbitrage would undermine the franchise of narrow banks and create demand for a range of products that can connect borrowers and investors to capital markets.

If shadow banking and impulses for regulatory arbitrage and deregulation will endure for the duration, then the most pressing issue is to create regulations and regulators that can adapt to innovations while addressing ancient risks.

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<sup>371</sup> *Id.*

<sup>372</sup> See *supra* notes 17-21 and accompanying text.

