How Regulatory Arbitrage Contributed To The Financial Crisis Of 2007-2009; And How We Can Prevent Regulatory Avoidance In The Financial Services Sector Going Forward

by

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Graduate Department of the Faculty of Law
University of Toronto

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Abstract

This paper will consider how regulatory arbitrage contributed to the 2007-2009 financial crisis (the “financial crisis”). In particular, the paper will establish how the avoidance of regulatory capital requirements by large and complex financial institutions (“LC financial institutions”) severely worsened the financial crisis, necessitating a massive rent extraction from U.S. taxpayers. In doing so, the paper will examine the regulatory arbitrage perpetrated by American International Group and the subsequent U.S. taxpayer bailout of that firm.

Because of the enormous amount of sovereign credit that had to be substituted for private capital during the financial crisis the paper assumes that the net negative nature of regulatory avoidance by LC financial institutions is axiomatic. Therefore, the paper advances several possible reform measures that could eventually be implemented into a new legal framework to confront the problems that are posed by the avoidance of financial services regulations.
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1 Appendix A.................................................................75
1 Introduction

This paper will consider how regulatory arbitrage contributed to the 2007-2009 financial crisis (the "financial crisis"). In particular, the paper will establish how the avoidance of regulatory capital requirements by large and complex financial institutions ("LC financial institutions") severely worsened the financial crisis, ultimately necessitating a massive rent extraction from U.S. taxpayers. In doing so, the paper will focus on several factors: (1) the fragmented oversight of the U.S. financial services sector which made effective oversight of LC financial institutions near impossible and opened manifold avenues for regulatory avoidance; (2) the use, by banks, of credit transfer mechanisms to attain relief from regulatory capital requirements; and (3) the use, by banks, of over-the-counter ("OTC") credit default swaps ("CDS") to attain relief from regulatory capital requirements. To better illustrate how LC financial institutions avoided regulation and the consequences of their regulatory avoidance, the paper will examine the provision of CDS to LC financial institutions by American International Group ("AIG") and the U.S. taxpayer bailout of that firm.

Because of the enormous amount of sovereign credit that had to be substituted for private capital during the financial crisis (which amount was greatly amplified precisely because of the regulatory arbitrage engaged in by LC financial institutions), the paper assumes that the net negative nature of regulatory avoidance by LC financial institutions is axiomatic. Therefore, the paper advances several possible reform measures that could eventually be implemented into a new legal framework to confront the problems that are posed by the avoidance of financial services regulations.
The Modern History of U.S. Financial Regulatory Oversight

2.1 The fragmented oversight of the U.S. financial services sector

The U.S. financial service sector regulations date back as far as 155 years. The National Currency Act, passed in 1863 and precursor to the National Bank Act implemented a national bank regime to be regulated by the Office of the Comptroller of the Currency (the “OCC”). This federal regime operated alongside already existing state banking regimes.

In 1871 the National Association of Insurance Commissioners was formed so as to coordinate the efforts of individual state insurance commissions. After the United States Supreme Court declared that insurance was interstate in nature and thus federal, Congress decided to “perpetuate the existing system of fragmented, state-by-state insurance regulation by adopting the McCarran-Ferguson Act.”

After the Great Depression, independent and insular regulatory models were advanced to address the ills of the financial markets. Congress passed the Glass-Steagall Act, created the Federal Deposit Insurance Corporation (the “FDIC”), and mandated the separation of commercial and investment banking. The economic turmoil of the 1930s also prompted the creation of federal regulators for other types of depositary institutions, including thrifts and credit unions. The Home Owners’ Loan Act of 1933 empowered the newly created Federal

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2 Ibid. at 317.
3 Ibid.
Home Loan Bank Board to charter and regulate federal thrifts, and the Federal Credit Union Act of 1934 created the Bureau of Federal Credit Unions to charter and supervise credit unions.\footnote{Government Accountability Office ("GAO"), Financial Regulation: A Framework for Crafting and Assessing Proposals to Modernize the Outdated U.S. Financial Regulatory System (United States, 2009) at 11.} Between 1980 and 1990, more than 1000 thrifts failed and in response, the Financial Institutions Reform, Recovery, and Enforcement Act of 1989 ("FIRREA") abolished the Federal Home Loan Board and established the Office of Thrift Supervision to improve thrift oversight.\footnote{Ibid.}

"[This new regulatory oversight framework, created in response to the Great Depression, was] not drafted by a thoughtful, multidisciplinary team drawing expertise from academics and real world practitioners, based on the results of carefully designed economic studies."\footnote{Pitt, note 1 supra at 317.} Rather, it was concocted by Thomas Corcoran and Benjamin Cohen, two young attorneys, and James Landis, a young professor of law at Harvard.\footnote{Ibid.} These men possessed no scholarly or practical experience in what they were attempting to regulate, yet their draftsmanship ultimately formed the backbone of U.S. financial services regulations.\footnote{Ibid.}

That framework generated "at least fifty-one regulators for insurance companies, fifty-seven for commercial banks and fifty-three for investment banks, not counting commodities, credit unions and allied regulators."\footnote{Ibid. at 318.} There are five federal and multiple state agencies that
oversee depositary institutions and futures trading is overseen by federal and state government entities and private sector organizations performing self-regulatory functions.\textsuperscript{10}

Thus, for the past 60 years the financial services sector in the U.S. has been blessed, or cursed, with federal regulatory bodies, self-regulatory bodies, private-sector regulatory bodies, individual and multiple state regulatory bodies, local regulatory bodies and global regulatory bodies, each struggling to define its role and justify its existence, often bestowing duplicative or conflicting regulations.\textsuperscript{11}

In this quagmire, esoteric innovations in financial products often and easily fell through the cracks of regulatory oversight.

2.2 The evolution of financial products (derivative products and their regulation)

Derivative products are essentially financial contracts, the value of which is derived from an underlying asset.\textsuperscript{12} Typically, derivate contracts reference the performance of (inter alia) equities, bonds, loans, interest rates, exchange rates and commodities, and while they come in many forms, options, forwards, futures, and swaps are the most commonly used varieties.\textsuperscript{13}

\textsuperscript{10} GAO, note 4 supra at 5.
\textsuperscript{11} Pitt, note 1 supra at 317.
\textsuperscript{13} Ibid.
Derivate trading grew from its rather humble beginnings into a multi-trillion dollar sector because it provides financial markets and market participants with three vital benefits: (1) risk management; (2) price discovery; and (3) liquidity enhancement.\(^\text{14}\)

However, the world of derivatives is complex and derivatives products can be used to skirt even adroit regulatory oversight. In fact, "[a]vailable empirical evidence supports the conclusion that the driving force behind the development of many financial derivatives [has been] the desire to reduce regulatory costs."\(^\text{15}\) Derivatives are an effective tool for regulatory avoidance because they are pliable and can be designed as the economic equivalent to an existing security, yet subject to differing tax, accounting, or other regulatory treatment. Thus, derivatives proved to be an efficient mechanism for eluding regulatory costs.\(^\text{16}\) The dynamic nature of derivative products has caused much mischief over the past 100 years, and thus far U.S. lawmakers and regulators have failed to regulate derivatives in a way that properly balances useful innovation with prudent oversight.

Attempts at regulating derivatives products trace back to the *Grain Futures Act* of 1922, pursuant to which "the trading of futures contracts was overseen by the Grain Futures Administration, an office within the Department of Agriculture."\(^\text{17}\) This reflected the nature of the products for which futures contracts had been traded in the U.S. at the time.\(^\text{18}\) In 1936 Congress confronted the practices of manipulation and cornering in the agricultural futures

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\(^{14}\) *Ibid.*


\(^{16}\) *Ibid.* at 228.

\(^{17}\) GAO, note 4 *supra* at 12.

markets with the *Commodity Exchange Act* of 1936.\(^{19}\) While the *Commodity Exchange Act* did not initially cover forward contracts (which were considered cash sales) that was changed in 1974 with the passage of the *Commodity Futures Trading Commission Act*. In addition to creating the Commodity Futures Trading Commission, that act expanded the definition of commodity to reference non-agricultural commodities, such as energy products, financial products and metals.\(^{20}\)

Although the *Commodity Futures Trading Commission Act*, in conjunction with the *Commodity Exchange Act* required that derivatives contracts trade on futures exchanges, forward contracts were excluded as actual delivery of the referenced good was contemplated.\(^{21}\) A second and notable exclusion was carved out by the Treasury Amendment to the *Commodity Futures Trading Commission Act* for OTC derivatives based on foreign exchange or U.S. Treasury securities.\(^{22}\)

Continued innovation in derivatives products further complicated the regulatory picture when “[i]n the 1980s [...] interest rate swaps and currency swaps were created with an unclear regulatory status.”\(^{23}\) Eventually, the Commodity Futures Trading Commission promulgated an exemption for these products in 1989 and a further exemption for OTC derivatives referencing energy products in 1993.\(^{24}\) Then, in November 1999, a study by the President’s Working Group

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\(^{19}\) Acharya, note 12 supra at 248.

\(^{20}\) *Ibid.*: The definition of commodity was expanded to include “all other goods and articles… in which contracts for future delivery are presently or in the future dealt in.”

\(^{21}\) *Ibid.*

\(^{22}\) *Ibid.*

\(^{23}\) *Ibid.*

\(^{24}\) *Ibid.*
on Financial Markets concluded that financial OTC derivatives ought to be exempted from the purview of the Commodity Exchange Act and the Commodity Futures Trading Commission.\textsuperscript{25} This ultimately led to the passage of the Commodity Futures Modernization Act of 2000 (the "CFMA") which established a principle-based structure for the regulation of futures exchanges and derivatives clearing organizations, and clarified that some off-exchange derivatives trading, and in particular trading on facilities only accessible to large sophisticated traders, would remain largely unregulated or exempt from regulation.\textsuperscript{26}

2.3 The evolution of banks and financial firms into large complex financial institutions

Until recently, investment bank products were unlike commercial bank products, and each was distinct from insurance company products.\textsuperscript{27} After the Great Depression each regulatory initiative had a mandate corresponding to distinct products and thus U.S. financial service firms were regulated based on "birth rather than on substance".\textsuperscript{28}

The viability of this fragmented attempt at oversight ebbed after Congress passed the 
Gramm-Leach-Bliley Act. The Gramm-Leach-Bliley Act repealed Glass-Steagall allowing for

\textsuperscript{25} Ibid.
\textsuperscript{26} GAO, note 4 supra at 12.
\textsuperscript{27} Pitt, note 1 supra at 318.
\textsuperscript{28} Ibid.
the consolidation of commercial banking and investment banking. This unleashed a groundswell of support for new financial products.\textsuperscript{29}

The modern and innovative financial service firms, having developed in conjunction with single focused and sluggish regulatory structures created distinct practice groups for products and/or services each of which fell under the watch of a regulator (supposedly) familiar with those products and/or services. But those regulators completely failed to curb the systemic risk that LC financial institutions were furtively spreading throughout the financial system. The independent regulatory bodies did not know how to regulate products that increasingly resembled financial products outside of their ken and their failure to adapt left open easily exploited loop-holes that a fragmented system of oversight could not plug.

\subsection*{2.4 Competition amongst the regulators}

As products and services evolve so to must their respective regulators, however, due to the novel and breakneck pace with which LC financial institutions innovate and the fragmented regulatory oversight of their innovations, this battle was lost before it was begun. This difficulty was compounded by a structural incentive to under-regulate. The fact is that the costs required to pass through regulatory hoops can be immense and according to a number of recent studies, may have led to deterioration in the U.S.' competitive edge for financial products and services prior to the financial crisis.\textsuperscript{30}

\textsuperscript{29} \textit{Ibid.}

\textsuperscript{30} \textit{Ibid.} See generally: The Committee on Capital Market Regulation (the "Paulson Committee") was formed by Secretary of the Treasury Henry Paulson in September 2006. The Paulson Committee delivered its interim report --
Financial markets are increasingly global and the U.S. is not the only hub of activity.\(^{31}\) Investors around the world can invest their money anywhere and there is increased global competition for every investment dollar.\(^{32}\) However, global competitors compete according to different regulations and thus, regulators competing for business in the short run, can, and did lose sight of the risks that go part-and-parcel with under-regulation. They feared that significant disparities in regulatory constraints and requirements across markets would encourage competitors subject to higher standards to evade them by non-compliance or by relocating to less regulated markets. And so, regulators, trying to maximize the attractiveness of their markets, adopted or modified rules, so as to encourage capital to flow in their direction.\(^{33}\)

The downward pressure that this regulatory arbitrage exerted upon regulatory agencies adversely affected oversight and set financial markets and financial market participants on a proverbial “race to the bottom.”

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\(^{32}\) Pitt, note 1 supra at 319.

\(^{33}\) Ibid. at 320.
For example, the CFMA which effectively deregulated OTC derivatives trading amongst LC financial institutions was enacted so that the U.S. could keep pace competitively, in the continuously evolving and increasingly global financial marketplace.\textsuperscript{34} Alan Greenspan, former Chairman of the Federal Reserve Board of the U.S. had earlier predicted that foreign markets would begin trading futures contracts referencing U.S. stocks thus directly competing with the U.S. financial markets for business.\textsuperscript{35} He therefore insisted that the U.S. would have to deregulate if it hoped to remain competitive in the OTC derivatives markets.\textsuperscript{36}

Thus, the passage of the CFMA (which enabled the United States to better compete with jurisdictions that attached a lower regulatory charge to the type of transactions contemplated by the CFMA), and the lack of regulatory oversight that followed deregulation in the OTC derivatives markets, originated, in part, from a desire to stem the downward pressure that regulatory arbitrage opportunities can, and did generate prior to the financial crisis. As this paper will demonstrate, such response is short term oriented and can lead to calamity.

\textsuperscript{34} David Esau, \textit{Joint regulation of Single Stock Futures: Cause or Result of Regulatory Arbitrage and Interagency Turf Wars?} (2002) 51 Cath. U. L. Rev. 917, 932.

\textsuperscript{35} \textit{Ibid.}

\textsuperscript{36} \textit{Ibid.}
3 Financial Arbitrage Theory And Its Application To Financial Regulations

3.1 Financial arbitrage theory

In finance "arbitrage is defined as the simultaneous purchase and sale of the same or essentially similar security in two different markets for advantageously different prices."\(^{37}\) The phenomenon can occur when one of three conditions is satisfied: (1) the same asset trades at different prices on different markets; (2) two assets with identical cash flows trade at different prices; or (3) an asset with a known price in the future trades at a price that differs from the future price when discounted to present value.\(^{38}\)

Similarly, regulatory arbitrage can occur when one of three conditions is present: (1) regulatory regime inconsistency exists; meaning that the same transaction receives different regulatory treatment under different regulatory regimes; (2) economic substance inconsistency exists: meaning that two transactions with identical cash flows receive different regulatory treatment under the same regulatory regime; or (3) time inconsistency is present: meaning that the same transaction receives different regulatory treatment in the future than it does today.\(^{39}\)

Prior to the financial crisis, LC financial institutions resorted primarily to regulatory regime inconsistency (as discussed in Section “4.7” below), and economic substance inconsistency (as discussed in Section “4.4” below), to avoid regulatory constraints.


\(^{38}\) *Ibid.* at 18.

\(^{39}\) *Ibid.*
3.2 Regulatory arbitrage

Theoretically, the effect of a regulation on a financial market participant is akin to a tax on a financial market participant. "The regulation reallocates consumer and producer resources to the regulating entity and/or certain private entities, and creates a potentially large deadweight loss." However, the profits that ensued after complex regulatory avoidance planning were substantial and shrewd management often embraced unnecessary regulatory charges \textit{ex ante}.

Market transaction costs are those costs involved with using the market to obtain a good or service. Coasian theorem (attributed to Ronald Coase) labels these "Coasian transaction costs" and dictates that firms will emerge when they can arrange and produce what they need in order to avoid "Coasian transaction costs" in a manner that is more efficient than could be accomplished without the firm structure.\textsuperscript{41} It follows that business structures and transactions will be modeled so as to avoid "Coasian transaction costs" such as (\textit{inter alia}) search and information costs; bargaining costs; maintaining trade secrets costs; and policing and enforcing costs to the extent possible.\textsuperscript{42}

However, today many business structures and transactions are being engineered in ways that do not attempt to avoid Coasian transaction costs. On the contrary, many business structures and transactions are modelled so as to include unnecessary "Coasian transaction costs". Moreover, much of this activity is the handiwork of sophisticated law firms acting for

\textsuperscript{40} Partnoy, note 15 \textit{supra} at 235.


\textsuperscript{42} \textit{Ibid}. 
sophisticated clients and dealing with large amounts of money. These parties simply do not abide ignorance in the modeling of transaction structures.\footnote{Fleischer, note 37 supra at 5.}

The justification for such structural engineering is the net benefits that flow to the transacting firms from strategic regulatory avoidance.\footnote{\textit{Ibid.} at 8.} Thus, regulatory arbitrage is a legal planning technique the occurrence of which is inadvertently encouraged by lawmakers and regulators when the "Coasian transaction costs" involved in avoiding regulatory compliance are less than the costs of complying with regulations. In essence, regulatory arbitrage "exploits gaps between the economic substance of a transaction and its legal or regulatory treatment, taking advantage of the legal system's intrinsically limited ability to attach formal labels that track the economics of transactions with sufficient precision."\footnote{\textit{Ibid.} at 3.}

The ability of lawmakers and regulators to deter regulatory arbitrage can be eroded further by the use of political pressure. A firm's influence and ability to "persuade" regulators that a transaction or business model does not do violence to regulations provides firms with a "forum" to discover viable routes for regulatory arbitrage, setting dangerous industry precedent in the process. AIG was able to engage in substantial regulatory arbitrage which ultimately led to catastrophe, in part, because the company had befriended politicians with campaign cash.\footnote{Bill Saporito, \textit{How AIG Became Too Big to Fail} (New York: Time Magazine, 2009). AIG split approximately $9.3 million between the Democratic and Republican parties from 1990 to 2008.}
and had spent more than US $70 million on lobbying efforts aimed at helping the company escape regulation.\textsuperscript{47}

Reduction in paid regulatory costs will redistribute funds from the government to the transacting parties. Thus, some observers have concluded that regulatory arbitrage does not change value but merely shifts it.\textsuperscript{48} However, as this paper will demonstrate, avoidance of financial service sector regulations can have drastic consequences and ultimately, unassuming third parties may have to swallow the hidden costs that the arbitraging of regulations can generate (such as the U.S. taxpayer bailout of AIG, a company that the U.S. government deemed too interconnected to fail, as will be discussed later in this paper).

4 Bank Capital Requirements And Capital Regulatory Arbitrage

4.1 Banks and capital requirements

Banks classify loans as assets (an entitlement to receive an income stream), and deposits and other obligations as liabilities on the balance-sheet. A bank's net assets (after subtracting liabilities) equals the bank's capital.\textsuperscript{49} For example, a bank with outstanding loans of US $1 million, holding US $900,000 in deposits has US $100,000 in capital. If a bank's assets drop in value, then less funds will be available to satisfy liabilities.

\textsuperscript{47} Ibid.

\textsuperscript{48} Fleischer, note 37 supra at 12.

Unlike typical businesses which are not required to hold specific ratios of capital to assets, banks perform maturity transformation which is seen as fundamental to economic stability.\textsuperscript{50} Governments have therefore, attempted to reduce the risk of bank insolvency via capital regulation.

While bank capital functions primarily as a safety-net, ensuring that a bank's net liabilities do not exceed net assets, it also serves other functions: (1) capital fosters confidence in the ability of banks to absorb unanticipated losses; (2) capital can be used to make uninsured depositors whole in the case of bank insolvency; (3) capital can be used for bank expansion; and at the same time (4) capital restrains rapid expansion and promotes conservative growth.\textsuperscript{51} The accepted standards of capital adequacy, however, have fluctuated throughout modern history.

In the late 1800s U.S. banks were required to maintain equity capital of 30 per cent of assets.\textsuperscript{52} This rose to over 50 per cent in the pre-bellum period.\textsuperscript{53} However, "[g]iven the rudimentary nature of 19th century payment systems, and the sporadic geographic distribution of reserves in a then agricultural economy, competition for bank credit was largely local."\textsuperscript{54} In the

\textsuperscript{50} Ibid.
\textsuperscript{51} Ibid. at 1774.
\textsuperscript{53} Ibid.
\textsuperscript{54} Ibid.
absence of competition banks could earn (and did earn) substantial net income to asset returns in spite of the aforementioned extremely onerous capital requirements.\textsuperscript{55}

However, increased consolidation of banking reserves and improvements in U.S. payment systems greatly enhanced the ability of banks to compete for new business.\textsuperscript{56} To narrow spreads, the ratios of retained capital to assets began to slowly decline.\textsuperscript{57} In spite of this pressure, average net income return on equity remained relatively stable, typically between 5 per cent and 10 per cent yearly from 1869 to 1966.\textsuperscript{58} "That meant that net income as a percentage of assets and the degree of leverage were largely proportional, and offsetting, during that century."\textsuperscript{59} Rates of return then began to rise after 1966 as banks began to engage in non-interest income activities including service charges, fees, net securitization income and investment banking and brokerage.\textsuperscript{60} The newly enlarged scope of banking services and the increasing interaction of financial intermediaries ("FIs") presented U.S. lawmakers and regulators with a difficult challenge. Determining appropriate standards for regulatory capital would now require international financial expertise and international consensus.

While almost 50 years later no international treaty requires banks to retain specific amounts of capital,\textsuperscript{61} capital adequacy regulations are virtually identical throughout the world.\textsuperscript{62}

\textsuperscript{55} \textit{Ibid.}: Net income to asset returns hovered above 200 basis points in the late 1880s and then above 300 basis points in the 1870s (compared with 70 basis points a century later).
\textsuperscript{56} \textit{Ibid.} at 28.
\textsuperscript{57} \textit{Ibid.}
\textsuperscript{58} \textit{Ibid.}
\textsuperscript{59} \textit{Ibid.}
\textsuperscript{60} \textit{Ibid.}
\textsuperscript{61} Tarbet, note 49 supra at 5.
This is due to the influence of the Basle Committee on Banking Supervision: a standing committee of the central bank governors of the Group of Ten which convenes at the Bank for International Settlements in Basle Switzerland. The Basle Committee conducts research on international banking and makes recommendations to the governors of the Group of Ten central banks. The Basle Committee's 1988 Basle Capital Accord (the "Accord") set the framework for capital regulatory requirements and by 1992 the Basle Committee reported that "[v]irtually all countries outside the membership . . . with international banks of significant size, have introduced, or are in the process of introducing, arrangements based on the [Accord]."64

The gravamen of the Accord is independent sovereign implementation of minimum regulatory capital requirements corresponding to the riskiness of a bank's assets.65 The Accord accomplished this by dividing assets into "risk buckets" and demanding that banks retain capital of 0 per cent, 1.6 per cent, 4.0 per cent and 8.0 per cent for assets belonging in each "risk bucket", respectively.66 Although superseded by later efforts of the Basle Committee which

62 Ibid. at 6.
63 Ibid.
66 Ibid.
were adopted in some foreign jurisdictions, the Accord was used to ascertain regulatory capital requirements in the U.S. up until the onset of the financial crisis.  

4.2 Implementation of the 1988 Basle Capital Accord in the U.S.

4.2.1 Tools to regulate safety and soundness prior to the 1988 Basle Capital Accord

Congress foisted the Accord upon U.S. banks in 1992 via the Federal Deposit Insurance Corporation Improvement Act ("FDICIA"). The preventative FDICIA regime provided the bank regulators with a large arsenal of tools that could be used to compel ailing institutions within their jurisdiction to comply with regulatory capital requirements. While regulators were given the discretion to choose the best tool(s) (from amongst several specified tools) for their purpose, their choices were limited to those specified (meaning that complete regulatory forbearance was not an option). This system was termed Prompt Corrective Action ("PCA").

The PCA regime supplemented the existing regulatory authority provided by the Federal

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67 Prior to the financial crisis, most banks in the US employed Basel I weights to comply with capital adequacy requirements, whereas most European banks employed Basel II standards (Viral Acharya and Philipp Schnabl, How Banks Played the Leverage Game (New York: John Wiley & Sons Inc., 2009) at 95).


69 See 12 U.S.C. § 1813q (Supp. II 1990): The regulator of national banks is the OCC; the regulator of state banks that are members of the Federal Reserve System is the Federal Reserve Board; and the regulator of state banks that are not members of the Federal Reserve Board is the FDIC.

Deposit Insurance Act, the International Lending Supervision Act of 1983 ("ILSA") and FIRREA. 71

Prior to the PCA regime the ILSA had already permitted appropriate regulators to set minimum capital requirements for banks, and to enforce those thresholds by issuing directives demanding action directly to the banks. 72 However, pursuant to the ILSA, prior to issuing a directive, regulators were required to issue notice to an institution, detailing the agency’s intention and the data used by the agency in coming to its determination. 73 Banks were then given an opportunity to respond, and explain why a directive should not issue before a final determination was made. 74 The regulatory determination under ILSA could direct a bank to raise capital by a specified date, submit a re-capitalization plan, or take other required action. 75

Under FIRREA, the most commonly used tool in the regulatory quiver was the cease-and-desist order, the granting of which was governed by 12 U.S.C. § 1818(b). 76 Such orders could force a bank to correct conditions, rather than merely demand that a bank stop certain activity. 77 For example, a cease-and-desist order could be used to force a bank to (inter alia) raise new capital, discharge managers, rectify unsafe or unsound practices, and/or take any other actions designed

73 See 12 C.F.R. 325.6(c)(1).
74 See 12 C.F.R. 325.6(c)(2).
75 See 12 C.F.R. 325.6(c)(3).
77 Scott, note 70 supra at 295.
to remedy violations of the law.\textsuperscript{78} Institutions were provided the right to a hearing before an Administrative Law Judge whose recommendation was only persuasive.\textsuperscript{79} The regulator’s final determination was then reviewable by a federal Court of Appeals.\textsuperscript{80} As an ambulatory measure, regulators could also pursue a temporary restraining order which a federal district court could then grant on an interim basis, without a hearing.\textsuperscript{81}

Of course, if the situation requires the use of a regulatory sledge hammer, rather than a regulatory scalpel, then the FDIC can suspend, or withdraw, an institution’s deposit insurance pursuant to 12 U.S.C. §1818(a)(2).\textsuperscript{82} But to suspend or withdraw deposit insurance, the FDIC is first required to give notice to a bank’s appropriate regulator, so that that agency can attempt to compel corrective action. The FDIC is then required to conduct a hearing, the determination of which is subject to judicial review.\textsuperscript{83}

4.2.2 Tools to regulate safety and soundness after the 1988 Basle Capital Accord

In conjunction with the implementation of the PCA regime (which set out specific agency actions in connection with an institution’s capital levels), Congress passed legislation requiring

\begin{itemize}
\item \textsuperscript{78} 12 U.S.C. § 1818(b)(6) – (8).
\item \textsuperscript{79} Morgan, note 76 supra at 8.
\item \textsuperscript{80} 5 U.S.C. § 706.
\item \textsuperscript{81} 12 U.S.C. § 1818(c).
\item \textsuperscript{82} See 12 U.S.C. § 1818(a)(2) (i)-(ii): if the FDIC finds unsafe or unsound practices in conducting the business of the institution; that the institution is in an unsafe or unsound condition; or a violation of law regulation or agreement.
\item \textsuperscript{83} 12 U.S.C. §1818(a)(5).
\end{itemize}
regulators to place institutions into one of five capital categories, bringing the U.S. in line with the Accord.\textsuperscript{84} Bank regulators were required to designate capital metrics for each category including leverage limits,\textsuperscript{85} risk-based capital requirements, and minimum capital levels corresponding with the minimum levels provided by the Accord.\textsuperscript{86} Ultimately, the regulatory agencies collectively settled on, and adopted the Capital Adequacy Guidelines,\textsuperscript{87} creating the following categories of bank capitalization:

(1) **Well capitalized**: the institution has a total risk based capital ratio of 10 per cent or greater, a Tier 1 risk based capital ratio of 6 per cent or greater, and a leverage ratio of 5 per cent or greater, and the institution is not subject to an order, written agreement, or capital directive, or PCA directive to meet and maintain a specific capital level for any capital measure;

(2) **Adequately capitalized**: the institution has a total risk-based capital ratio of 4 per cent or greater, and a leverage ratio of 4 per cent or greater (or a leverage ratio of 3 per cent or greater for composite 1 rated institutions that are not anticipating significant growth), and the institution does not meet the definition of well-capitalized;

(3) **Undercapitalized**: the institution has a total risk-based capital ratio that is less than 8 per cent, a Tier 1 risk-based capital ratio that is less than 4 per cent, or a leverage

\textsuperscript{84} 12 U.S.C. § 1831o(b)(1).
\textsuperscript{85} See F.R.B. SR 97-18: the leverage ratio is “the ratio of Tier 1 capital to average tangible assets, [which] are equal to total assets excluded from common equity in the calculation of Tier 1 capital.”
\textsuperscript{86} 12 U.S.C. § 1831o(c)(2).
\textsuperscript{87} See 12 C.F.R. 3.1 et seq.
ratio that is less than 4 per cent (or a leverage ratio that is less than 3 per cent for composite 1 rated institutions that are not anticipating significant growth);

(4) **Significantly undercapitalized**: the institution has a total risk-based capital ratio that is less than 6 per cent, a Tier 1 risk-based capital ratio that is less than 3 per cent, and a leverage ratio that is less than 3 per cent; and

(5) **Critically undercapitalized**: the institution has a ratio of tangible equity to total assets that is equal to or less than 2 per cent.\(^8\)

Under the PCA regime, once institutions fall into categories (3), (4) or (5), they are immediately subject to "mandatory supervisory actions," which are automatic minimum agency responses.\(^9\)

These mandatory supervisory actions include: (i) issuance of an agency directive, requiring an undercapitalized institution to submit a capital restoration plan that meets statutory requirements and regulatory approval;\(^10\) and (ii) enhanced scrutiny by the regulators, who monitor the institution’s safety and soundness, compliance with capital restoration plans and other PCA directives, and efforts to restore capital.\(^11\)

The aforementioned capital restoration plan details the institution’s efforts at restoring capital, setting forth the institution’s projected capital level for each year of the plan.\(^12\) In accepting a capital restoration plan, regulator’s must determine that the capital restoration plan is


\(^{9}\) See 12 C.F.R. 6.6(a)(2).

\(^{10}\) See 12 C.F.R. 6.5.


based on a realistic assumption and is likely to succeed,\textsuperscript{93} that it would not appreciably increase the institution’s risk exposure,\textsuperscript{94} and that it provides for guarantees by each company having control of the institution.\textsuperscript{95} If an institution and a regulator agree upon a capital restoration plan, then any subsequent failure to implement the capital restoration plan will subject the bank to civil monetary penalties.\textsuperscript{96} This is in addition to restrictions on the growth of the institution’s total assets,\textsuperscript{97} and restrictions on acquisitions, branching, and new lines of business without prior regulatory approval.\textsuperscript{98} Thus, many fundamental institutional operations automatically become subject to regulatory approval.

Furthermore, a regulatory agency is permitted to take actions against an institution in category (3) that is available against an institution in category (4) “if the agency determines that those actions are necessary to carry out the purpose of [PCA].”\textsuperscript{99}

In addition to being subject to the same mandatory supervisory actions as for category (3) institutions, category (4) institutions and category (5) institutions require prior written agency approval before paying bonuses or raises to senior executives.\textsuperscript{100} Furthermore, the FDICIA gives regulators the discretion\textsuperscript{101} to take further action but presumes regulators will do so “unless the

\begin{itemize}
\item \textsuperscript{93} 12 U.S.C. § 1831o (e)(2)(c)(ii).
\item \textsuperscript{94} 12 U.S.C. § 1831o (e)(2)(c)(iii).
\item \textsuperscript{95} 12 U.S.C. § 1831o (e)(2)(c)(ii).
\item \textsuperscript{96} Federal Deposit Insurance Act § 8(i)(2)(A).
\item \textsuperscript{97} 12 U.S.C. § 1831o(e)(3).
\item \textsuperscript{98} 12 U.S.C. § 1831o(e)(4).
\item \textsuperscript{99} 12 U.S.C. § 1831o(e)(5).
\item \textsuperscript{100} 12 U.S.C. § 1831o (f)(4).
\item \textsuperscript{101} 12 U.S.C. § 18310(f)(2).
\end{itemize}
agency determines that the action would not further the purpose of [PCA]." It is therefore likely that regulators would mandate the following: (i) that category (4) institutions and category (5) institutions recapitalize;\(^{103}\) (ii) restrictions on affiliate transactions;\(^ {104}\) (iii) restrictions on interest rates paid on deposits to rates paid on comparable deposits in the region;\(^{105}\) (iv) measures to restrict asset growth or reduce total assets;\(^ {106}\) (v) measures that require the institution or a subsidiary terminate or alter activities that the agency determines pose excessive risk to the institution;\(^ {107}\) (vi) measures that require the institution hold a new election of the board of directors;\(^ {108}\) (vii) measures that require the dismissal of directors and/or senior executive officers\(^ {109}\) and replacement with new officers (subject to agency approval);\(^ {110}\) (viii) restrictions on the acceptance of deposits from corresponding depository institutions;\(^ {111}\) (ix) measures that prevent a holding company from paying a dividend without regulatory approval;\(^ {112}\) (x) measures requiring merger or divestiture of the institution by its parent company;\(^ {113}\) (xi) measures requiring the institution to divest or liquidate any subsidiary that is in danger of becoming

\(^{102}\) 12 U.S.C. § 1831o(f)(3). See 57 Fed. Reg. 44866, 44869 (affirming agency presumption: "the agency must impose each of these actions unless the agency determines that the action would not further the purpose of § 38").


insolvent or that is likely to cause significant dissipation of the agency’s assets or earnings, and (xii) measures requiring a company that controls the institution to divest or liquidate non-bank affiliates. Furthermore, the agency may also take any other action that it determines would better carry out the purpose of PCA, or even impose restrictions available against critically undercapitalized institutions if the “agency determines that those restrictions are necessary to carry out the purpose of [PCA].”

Once an institution falls into category (5) the appropriate regulator must place the bank into conservatorship or receivership within 90 days unless, along with the FDIC, it agrees that another action is more appropriate. If the institution remains in category (5) after 60 days then the institution may make no payment of principal or interest on subordinated debt without prior agency approval. Furthermore, the FDIC must restrict the activities of the institution to prohibit the following activities without agency approval: “material transactions” other than in the course of business; extending credit for any highly leveraged transaction; amending its charter or bylaws unless forced by law; making any material change in accounting methods; engaging in transactions with affiliates; paying excessive compensation or bonuses; or paying interest above prevailing rates in the area.

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120 12 U.S.C. § 1831o(i)(2)(A) – (G).
Finally, once a bank has failed then the time for PCA has lapsed. In such circumstances the FDIC generally forces a merger or arranges for a consortium of banks to assume the failed bank’s assets and liabilities. On rare occasions the FDIC will close a bank and act as conservator or arrange for a bridge bank.

### 4.2.3 Actual Enforcement of regulatory capital requirements

In the period of time between the passage of the FDICIA and the onset of the financial crisis, there were very few formal actions (including PCA) to enforce bank compliance with the Capital Adequacy Guidelines. The material posted on the websites of the bank regulatory agencies establishes that notwithstanding the robust PCA arsenal provided by Congress, enforcement played an insignificant role in maintaining the capital adequacy of banks. To be sure, the Federal Reserve Board, the FDIC, and the OCC together reported on average initiating three PCAs each year from 1993 to 2001 (a grand total of 27 representing a miniscule percentage (0.003 per cent) of banks supervised) for capital inadequacy. Of these the OCC was responsible for 12, the FDIC for 10, and the Federal Reserve Board for 5.

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121 Scott, note 70 supra at 294.
122 Ibid.
123 Ibid. at 286.
124 Ibid. at 300.
125 Ibid.
126 Ibid.
Interestingly, not one of these actions concerned a major bank or a foreign one.\textsuperscript{127} Prior to the onset of the financial crisis, esteemed academic Hal Scott argued that this might mean that the “capital adequacy rules, or the supervisors who apply them, miss important problems or treat big players lightly,”\textsuperscript{128} and as it turns out, the professor was correct on both counts.

4.3 The onset of regulatory capital arbitrage

Regulatory capital arbitrage has as its objective the utilization of a mismatch in regulation in order to lower regulatory capital requirements while still complying with the Accord.\textsuperscript{129} The Accord was criticized (“early and often”) for permitting and even encouraging this kind of behaviour.\textsuperscript{130}

The simplicity of the Accord’s placement of assets into a limited number of “risk buckets” resulted in assets with dissimilar actual or “economic” risks being assigned the same capital charge (a phenomenon colloquially referred to as “capital light treatment”).\textsuperscript{131} It also failed to account for changes in the form of an asset that did not affect actual risk, but created a beast that was simply not recognized.\textsuperscript{132}

\textsuperscript{127} Ibid.
\textsuperscript{128} Ibid. at 318.
\textsuperscript{130} Scott, note 70 supra at 79.
\textsuperscript{131} Ibid.
\textsuperscript{132} Ibid.
As an example of the first kind of phenomenon, the rote assignment of all exposures involving a particular type of counterparty to a single “risk bucket” meant that the same risk weight would be assigned to a loan to a large, highly profitable firm as would be assigned to a loan to an embryonic start-up company.\(^\text{133}\) If the risk level assigned to a loan on the bank’s balance-sheet is low, a bank would have an incentive to replace that loan with a riskier loan requiring the same or less regulatory capital.\(^\text{134}\) This form of regulatory arbitrage was accomplished by "swapping high risk weight assets for low risk-weight assets." In this way the Accord actually encouraged regulatory capital arbitrage and excessive leverage.\(^\text{135}\)

As an example of the second kind of phenomenon, gaps in the coverage of the Accord created incentives for banks to securitize their assets (which the Accord had failed to address head-on)\(^\text{136}\) and retain a recourse position for only the least creditworthy tranche of securitization.\(^\text{137}\) Although the Accord provided a capital charge for that position, it was much lower that the charge that applied when all the securitized assets were held on the bank’s balance sheet (notwithstanding the fact that the retained tranche would bear all the credit losses associated with the original package of loans).\(^\text{138}\)

\(^{133}\) *Ibid.* at 80.

\(^{134}\) Greenspan, note 65 *supra* at 165.

\(^{135}\) Tarbet, note 49 *supra* at 14.

\(^{136}\) Scott, note 70 *supra* at 81.

\(^{137}\) *Ibid.*

\(^{138}\) *Ibid.*: [E]ven if it had been feasible to change the [Accord] rules to prevent the outcome just described, a bank might have been able to provide “indirect” credit enhancements to investors in the form of early amortization or fast-payout provisions, rather than providing a standard guarantee. These devices, which obviously create risk for the bank, are not covered [by the Accord] and thus require no capital charge.
Thus, the Accord’s primary failure was not permitting capital levels that were too low for the actual risk to which a bank was exposed, but rather that its risk metric was only obliquely connected to actual risk.\textsuperscript{139}

The use of the manifold regulatory capital arbitrage techniques available to attain capital relief was very popular prior to the financial crisis: primarily, the use of credit risk transfer mechanisms in the securitization markets,\textsuperscript{140} and the purchase of OTC derivative products to hedge credit risk exposure. In 1998, then Federal Reserve Board Governor, Laurence Meyer noted that

\textasciitilde{[}t\textasciitilde{]his arbitrary, [regulatory capital regime] has spurred what can only be termed an avalanche of financial innovations aimed at either evading or taking advantage of the capital standard.\textsuperscript{141}\textasciitilde

And this wasn’t difficult for the LC financial institutions. Regulations that imposed costs on non-derivative transactions were just structured as economically equivalent derivative transactions that avoided regulatory reach and/or reduced regulatory compliance costs. It was not long before Federal Reserve Board Vice Chairman Roger Ferguson commented that the Accord had “greatly reduced the usefulness of regulatory capital ratios at the largest banks and [thus provided] little useful information to the public or the supervisors.”\textsuperscript{142}

Finally, while under the traditional financial arbitrage theory, the exploitation of an arbitrage opportunity should eventually lead to the elimination of the opportunity and ultimately

\begin{footnotesize}
\textsuperscript{139} \textit{Ibid.} at 83.
\textsuperscript{140} Greenspan, note 65 \textit{supra} at 165.
\textsuperscript{141} Fein, note 129 \textit{supra} at 1.
\textsuperscript{142} Scott, note 70 \textit{supra} at 83 (citing Roger W. Ferguson, Jr., testimony before the Subcommittee on Financial Institutions and Consumer Credit of the Committee on Financial Services, US House of Representatives, June 19, 2003). Available online: \url{http://www.federalreserve.gov/boarddocs/testimony/2003/20030619/default.htm}.\end{footnotesize}
to an efficient system, the opportunities for regulatory capital arbitrage under the Accord are structural in nature. Thus, the opportunities to game the Accord will not be eliminated until both the Accord and the corresponding regulations governing regulatory capital requirements are changed.

4.4 Regulators understood that regulatory avoidance was occurring

Prior to the financial crisis many distinguished economists and financiers promoted regulatory avoidance. Former chairman of the Federal Reserve Board, Greenspan noted that such gaming of capital regulations could act "as a safety-valve" reducing overly strict regulatory capital requirements that were not warranted by an activity's economic risk. That "safety-valve", Greenspan felt, would help place banks on an even footing with competitors who do not have to adhere to regulatory capital requirements. That is, regulatory capital arbitrage was seen as a vehicle through which the effects of onerous capital requirements that may have otherwise precluded a bank from engaging in a low-risk, socially desirable lending activity (because returns to such regulatory capital would be too low) could be dampened.

143 Partnoy, note 15 supra at 226.
144 Ibid.
145 Greenspan, note 65 supra at 166.
While this argument has some purchase, it fails to recognize that the pursuit of capital relief is the pursuit of profit maximization and not net social welfare.\textsuperscript{147} "If there is one conclusion that analysts of the financial crisis all agree upon, it is that high bank leverage [...] made the [financial] crisis far worse."\textsuperscript{148} Greenspan’s so called “safety-valve” encouraged banks to take on too much leverage and in 2007 the house of cards came crashing down.

4.5 Credit risk transfer mechanisms

Prior to the onset of the financial crisis, LC financial institutions sought capital relief via credit risk transfer mechanisms\textsuperscript{149} (combined with CDS protection which will be examined in detail later).

While credit risk transfer mechanisms were supposed to generate liquidity and reduce systemic risk by transferring assets from a bank’s balance-sheet to a wide array of investors, they were used primarily in the pursuit of capital relief which ultimately had the exact opposite effect (as will be discussed in more detail below).\textsuperscript{150} This is because in utilizing credit risk transfer mechanisms banks “exposed themselves to the risk that a significant economy-wide shock would be sufficient to rapidly wipe out their capital base.”\textsuperscript{151} Credit risk transfer mechanisms were utilized for capital regulatory arbitrage in two ways: (1) banks created asset backed commercial

\textsuperscript{147} Ibid.
\textsuperscript{148} Acharya, note 67 supra at 83.
\textsuperscript{149} Ibid.
\textsuperscript{150} Ibid. at 84.
\textsuperscript{151} Ibid.
paper conduits ("conduits") and special investment vehicles ("SIVs" and together with conduits colloquially referred to as the "shadow banking sector"), which held assets that banks would have otherwise held on their balance-sheets; and (2) banks began investing in the commercial paper held in the shadow banking sector.

As noted above, the Accord requires that high quality assets held on a bank's balance-sheet be matched with up to 8.0 per cent of the value of those assets in the form of equity capital (the exact amount of capital required being tied to the "risk bucket" that a particular asset falls into) being held on the balance-sheet as well.152 This capital is a nuisance to profit centers which require leverage to enhance profit. However, in the shadow banking sector the Accord only required banks to hold equity capital against the recourse (liquidity enhancements and credit enhancements as more fully described below) provided to the conduits and SIVs.153 Thus, in the shadow banking sector on-balance-sheet loans and assets were being treated as off-balance-sheet contingent liabilities.154 While the remaining on-balance-sheet assets may have carried greater risk than the conduit and SIV securities did, reported capital ratios did not have to reflect the risk underlying the shadow banking sector's assets.155 Capital requirements for liquidity enhancements are only 0.8 per cent of asset value, and capital requirements for credit

152 Greenspan, note 65 supra at 164.
153 Acharya, note 67 supra at 89.
155 Mabel, note 146 supra at 236.
enhancement, while larger are still well below those imposed by the Accord’s various “risk buckets”. 156 The shadow banking sector had economized capital requirements for profit centers.

Furthermore, although credit risk transfer mechanisms were supposed to generate liquidity, by transferring assets from a bank’s balance-sheet to a wide array of investors, banks soon discovered that by investing in AAA rated tranches of securities held in the shadow banking sector (and each carrying a lower capital charge than did traditional bank loans), banks could free up even more capital and thus leverage even more. 157 In fact, prior to the onset of the financial crisis, approximately 50 per cent of all AAA rated asset backed securities remained within the banking, and the shadow banking system. 158

4.6 Understanding the shadow banking sector

The shadow banking sector first emerged as a way to provide insulation to investors from the possibility that an asset provider would become insolvent. Banks accomplished this by legally transferring assets to conduits and SIVs which were bankruptcy-remote entities (as more fully described below). 159 However, regulatory capital arbitrage soon became the driving force behind the use of conduits and SIVs. 160

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156 Acharya, note 67 supra at 89: While the recent Basel II scheme reduces some of the difference in capital requirements between on-balance-sheet and off-balance-sheet financing but does not completely eliminate it. (Ibid.).

157 Ibid. at 83.

158 Ibid. 85.


160 Ibid.
Conduits and SIVs are simply shell companies that hold various financial assets. They do not have employees or headquarters and their daily operation and management is overseen by an administrator (which is usually the commercial bank that created the vehicle).\textsuperscript{161} Conduits and SIVs are funded partially with a slice of equity but mostly with rollover finance in the form of asset backed commercial paper ("commercial paper").\textsuperscript{162} Generally, at least two rating agencies will have worked closely with the administrator in creating the vehicle. The rating agencies ensure that conduit and SIV assets are backed by recourse guarantees (sufficiently generous) so as to earn some vehicle securities the highest credit rating.\textsuperscript{163}

What distinguishes the shadow banking sector from other shell companies created by banks (to hold financial assets) is that they are provided with extensive recourse to bank balance-sheets.\textsuperscript{164} Recourse is a contractual arrangement that shifts risk from conduits and SIVs back to the bank that created the vehicle, thus potentially negating the credit risk transfer that the vehicles were created to effect (unless the assets have been dispersed outside of the banking system).\textsuperscript{165} Recourse was provided in two ways: (1) banks guaranteed conduit and SIV liquidity risk ("liquidity enhancement"); and (2) banks contractually committed to provide insurance against conduit and SIV credit losses ("credit enhancement").\textsuperscript{166} While liquidity enhancement was typically provided by the vehicle’s administrator alone, credit enhancement was often

\textsuperscript{161} Acharya, note 67 supra at 88.

\textsuperscript{162} Ibid. at 87.

\textsuperscript{163} Ibid. at 89.

\textsuperscript{164} Ibid. at 87: Contrast this with collateralized debt obligations, which hold financial assets but have no recourse to bank the balance-sheet. (Ibid.).

\textsuperscript{165} Ibid.

\textsuperscript{166} Ibid.
provided by the administrator as well as other LC financial institutions.\textsuperscript{167} What made conduits and SIVs bankruptcy remote was the fact that resorting to recourse was ordinarily not discretionary. In fact the legal charter of most conduits and SIVs prevented those vehicles from declaring bankruptcy before drawing upon their full lines of permitted liquidity and credit enhancement.\textsuperscript{168}

In theory then, commercial paper investors enjoyed four levels of investment protection: (1) if a vehicle’s assets had not defaulted but were insufficient to cover claims, conduits and SIVs could draw upon their liquidity enhancement; (2) if a vehicle’s assets had defaulted, conduits and SIVs could draw upon their credit enhancement to cover credit losses; (3) if both of those options failed, then commercial paper investors could sell the highly rated conduit or SIV assets; and finally (4) the short term maturities associated with commercial paper products allowed for rapid revision of investment strategy, in that investors could simply decline to roll-over maturing investments.\textsuperscript{169}

Misguided by the perception that both effective investor protection and effective capital relief were the sole outputs of credit risk transfer mechanisms, the commercial paper markets and the shadow banking sector together enjoyed explosive growth prior to the financial crisis. The amount of commercial paper issued in the U.S. grew from US $866 billion in January 2006 to US $1.22 trillion in 2007, and what is more, bank-like entities not subject to bank-like regulation

\textsuperscript{167} Ibid.
\textsuperscript{168} Ibid.
\textsuperscript{169} Ibid.
ballooned to hold roughly US $10 trillion in assets (approximately the same aggregate value as traditional banking entities at the time).\textsuperscript{170}

Ultimately, credit risk transfer mechanisms failed to transfer credit risk out of the banking system. Prior to the onset of the financial crisis as much as 30 per cent of all AAA rated commercial paper created for risk transfer purposes was held by non-originating banks and roughly 20 per cent remained in conduits and SIVs (which given recourse features, also belonged to the banks).\textsuperscript{171} The remaining 50 per cent was distributed amongst other market participants (mainly money market funds, hedge funds and credit funds, which parties are heavily depended upon to provide crucial liquidity to the banking sector).\textsuperscript{172}

In hindsight, banks were using the shadow banking sector to bet on aggregate risk. That is, while conduit and SIV assets were generally low risk in nature, their risk was highly correlated and created substantial roll-over risk during periods of aggregate asset value erosion.\textsuperscript{173}

4.7 Taking back the shadow banking sector’s assets

As market conditions deteriorated prior to the onset of the financial crisis, commercial paper investors became increasingly unwilling to roll over their maturing investments. The problems this posed to the shadow banking sector were exacerbated by the demands of the rating

\textsuperscript{170} FS\textit{A}, note 31 \textit{supra} at 20.

\textsuperscript{171} Acharya, note 67 \textit{supra} at 97.

\textsuperscript{172} \textit{Ibid}.

\textsuperscript{173} \textit{Ibid.} at 98.
agencies for conduits and SIVs to increase recourse provisions or face imminent ratings downgrades.\footnote{174} When, on August 9, 2007 BNP Paribas suspended the calculation of the net asset value of three money market funds that had invested heavily in commercial paper, the run on the shadow banking sector began.\footnote{175} Impending commercial paper maturities led to an explosion in interbank lending rates, a reflection of the opaque nature of the shadow banking sector where banks had no certainty as to who was exposed to what.\footnote{176} Inevitably, commercial paper investors refused to roll-over their maturing investments \textit{en-masse} until the Federal Reserve Board guaranteed investments in money market mutual funds (which are the primary investors in asset backed commercial paper) on September 18, 2007.\footnote{177} To further still investor nerves in the commercial paper markets, the Federal Reserve Board created a liquidity facility to directly purchase asset backed commercial paper on October 27, 2007.\footnote{178} Nevertheless the run on the shadow banking system had been severe, and by January 2008 the commercial paper market had dropped in value by almost 50 per cent, to US $797 billion.\footnote{179}

Although the great majority of conduits and SIVs had enjoyed only partial recourse prior to the financial crisis,\footnote{180} banks by-and-large decided to take conduit and SIV assets back onto their balance-sheets. Banks may have done this to protect their reputations or perhaps to avoid

\footnote{174}{\textit{Ibid.} at 89.}
\footnote{175}{\textit{Ibid.} at 90.}
\footnote{176}{\textit{Ibid.}}
\footnote{177}{\textit{Ibid.}}
\footnote{178}{\textit{Ibid.}}
\footnote{179}{\textit{Ibid.}}
\footnote{180}{In January 2007, there were 234 partially supported programs with total commercial paper outstanding of US $889 billion or 72.4 per cent of total asset backed commercial paper. (\textit{Ibid.} at 92).}
fraud allegations by commercial paper investors. But ultimately, the banks that had received the most capital relief via the shadow banking sector and thus carried the most capital-light assets (paradoxically, the safest banks according to the Accord) suffered both the greatest losses and the greatest equity price declines throughout the financial crisis.

4.8 The credit default swap markets

While the fifteen years prior to the financial crisis saw an explosion in the trading of OTC derivatives, the most dramatic growth occurred in the market for CDS. These products first emerged in the mid-1990s and by 2007 the market had cultivated over US $60 trillion in outstanding notional value (from US $631 billion in 2001). This growth emanated from the fact that these products provided under-priced capital relief as a result of inefficient oversight and regulatory arbitrage by LC financial institutions.

CDS contracts provide "protection buyers" with a form of insurance from "protection sellers" against the default (a “credit event”) of a debt or a class of debts (the “reference asset(s)”). The "protection buyer" pays the "protection seller" a periodic trifle fee (“the credit swap premium”) until the maturity of the contract or the occurrence of the credit event,

182 Acharya, note 67 supra at 86.
183 FSA, note 31 supra at 81.
184 Unterman, note 159 supra at 16.
whichever comes first.\textsuperscript{185} On the occurrence of a credit event, the protection buyer receives the difference between the par value of the reference asset and its market value.\textsuperscript{186}

Banks bought CDS protection to attain capital relief on the assets that they chose to keep on their balance-sheets. The OCC and the Federal Reserve Board jointly allowed this because risk was supposedly insured necessitating a smaller capital safety-net.\textsuperscript{187} For example, whereas the Accord generally requires that high quality assets held on a bank’s balance-sheet be matched with up to 8.0 per cent of the value of those assets in the form of equity capital (as noted above), the 1995 Amendment to the Capital Accord to Incorporate Market Risks (which provided capital requirements for exposure to general market risk for all positions held in an institution’s trading account) encouraged regulators to embrace CDS as a direct credit substitute.\textsuperscript{188} Thus, after purchasing CDS insurance from a AAA rated CDS provider (such as AIG), banks had to retain capital only in relation to net default exposure (with a new base regulatory capital requirement of 20 per cent of the original 8.0 per cent).\textsuperscript{189} The price of the credit swap premium was irrelevant.

\textsuperscript{185} \textit{Ibid.}

\textsuperscript{186} Acharya, note 12 supra at 237.


\textsuperscript{189} F.R.B. SR 97-18 (GEN), note 187 supra.
Bank's never anticipated the occurrence of a credit event. Rather, banks purchased CDS protection for the regulatory relief that the protection afforded them. 190

OTC trading of CDS created three distinct problems: (1) CDS insurance gave way to unjustified leverage in the banking system; (2) the complete lack of transparency to credit default exposure (given the bilateral nature of the OTC marketplace) amplified protection buyer panic during the financial crisis; and (3) the risk of aggregated credit default was highly correlated. We will consider each of these problems in turn.

Whereas a bank will normally invest in assets that promise the highest rate of return with the lowest corresponding risk, the ability to use CDS for regulatory capital arbitrage made high-yield loans a poor investment. Even if a bank could earn more on each dollar, capital reserve requirements would still limit the amount of money that a bank could use to invest. 191 CDS insurance allowed banks to reduce the US $800 million retained capital for every US $10 billion of corporate loans on their balance-sheets to US $160 million, thus providing CDS insured banks the ability to loan up to five times more on the same capital. 192 This ticket to leverage was mispriced in that protection sellers did not have the means to pay default protection when highly correlated CDS credit risk positions began to move against them en masse and so this was not factored into the cost of the credit swap premiums.

192 Liu, note 187 supra.
Further, the bilateral nature of the OTC marketplace made it impossible to quantify counterparty risk exposure.\textsuperscript{193} In fact CDS exposures were not included in the financial statements of LC financial institutions before 2007.\textsuperscript{194} For example, AIG did not disclose its subprime-related CDS exposure until August 2007, and then it did so only in a perfunctory fashion.\textsuperscript{195} Further, outstanding notional CDS was merely estimation, made after collecting and examining surveys of protection buyers and protection sellers.\textsuperscript{196} This process greatly distorted the exposure picture. For example, if a protection buyer purchases US $100 million in CDS protection from a protection seller and that protection seller than hedges that exposure by purchasing CDS protection from AIG, all three counterparties would be surveyed.\textsuperscript{197} These surveys, taken together, would indicate an increase of US $300 million in outstanding notional principal, although in essence the transaction involves only one protection buyer, one ultimate protection seller and a total US $100 million of new CDS exposure.\textsuperscript{198} Had CDS markets been more transparent, counterparties would have better appreciated the capacity of protection sellers to make good on their CDS commitments (both before and after the onset of the financial crisis).

\textsuperscript{193} Unterman, note 159 supra at 17.


\textsuperscript{195} \textit{Ibid.} at 435: Compare AIG Quarterly Report (Form 10-Q) (May 10, 2007) (not detailing its CDS exposure), with AIG Quarterly Report (Form 10-Q), at 65 (Aug. 8, 2007) (At June30, 2007, the notional amount of this credit derivative portfolio was $465 billion, including $64 billion from transactions with mixed collateral that include U.S. subprime mortgages.).


\textsuperscript{197} \textit{Ibid.}

\textsuperscript{198} \textit{Ibid.:} "The settlement of CDS contracts written on Lehman Brothers, following its bankruptcy in September 2008, provides a striking example of this phenomenon. About 400 billion of CDSs were presented for settlement, but once all the offsetting trades were netted out, it was estimated that only about 5 billion ultimately changed hands."
Finally, the CDS default exposure was highly correlated both as to asset sectors and as to protection sellers. Indeed, the ten largest protection sellers currently account for almost 90 per cent of the outstanding notional CDS value.\(^{199}\) The failure of even one of these protection sellers would be a blow to LC financial institution protection buyers, the world over, whose simultaneous balance-sheet write-offs could spark panic.\(^{200}\)

5 Regulatory Arbitrage Allows AIG To Insure Against Loss That AIG Cannot Afford

5.1 A brief history of AIG

AIG is an international insurance provider that was founded 90 years ago when an American named Cornelius Vander Starr created the company’s “earliest predecessor company in Shanghai.”\(^{201}\) By 2007 AIG had become one of the largest companies in the world, with assets of over US $1 trillion, more than 74 million customers, more than 116,000 employees\(^{202}\) and a presence in more than 130 countries.\(^{203}\) With great success AIG had earned a AAA credit default rating. In 2006, only nine private sector companies in the world carried such a rating (Berkshire

\(^{199}\) Ibid.

\(^{200}\) FSA, note 31 supra at 82: "In the one major counterparty default, Lehman's, the market operated as anticipated. But the fact that it was not a major problem on this occasion does not prove that it might not be in the future."


\(^{202}\) Ibid.

Hathaway and AIG being the only financial institutions so rated, as well as GE, an industrial company that engages in the provision of financial services).\textsuperscript{204} The AAA rating implied that the chances of AIG defaulting on its CDS commitments were \textit{de minimus}.\textsuperscript{205}

In the years leading up to the financial crisis, AIG exploited its AAA rating by expanding its product line to meet the demands of CDS protection buyers. While the core principal of the U.S.'s national-coordinated financial accreditation system for insurers is the requirement that insurers maintain conservative reserves to ensure that their obligations are honoured,\textsuperscript{206} oversight for the new CDS products was virtually non-existent. Thus, although AIG's insurance businesses remained stable throughout the financial crisis, the company's new role in the provision of capital relief products ultimately brought down the entire enterprise.

\section*{5.2 The business of capital relief}

In 1987 AIG created AIG Financial Products ("AIGFP") to provide clients with risk management solutions.\textsuperscript{207} One such solution was the sale of CDS to financial institutions to protect against the default of certain securities.\textsuperscript{208} AIGFP's CDS portfolio was "largely

\begin{thebibliography}{9}
\bibitem{205} Joe Nocera, \textit{Propping Up a House of Cards} (New York: The New York Times, February 2009). "Today there are only five triple A rated companies – Berkshire Hathaway, AIG and GE all having been downgraded. (Paulson, note 133 \textit{supra.} at 447).
\bibitem{207} Testimony of the Chairman and Chief Executive Officer of American International Group, note 130 \textit{supra.}
\bibitem{208} \textit{Ibid.}
\end{thebibliography}
originated between 2003 and 2005 and was facilitated by AIG’s full and unconditional guarantee (extending to all AIGFP transactions since its creation), enabling AIGFP to assume the parent’s AAA credit rating for all market transactions and counterparty negotiations.\textsuperscript{209}

AIGFP would earn a miniscule fee for providing CDS coverage (US 0.02 cents for each dollar insured per year).\textsuperscript{210} For AIGFP this represented considerable income when multiplied by hundreds of billions of dollars and for protection purchasers it appeared that their credit default exposure had been transferred to AIGFP.

AIGFP protection purchasers benefitted from two regulatory capital arbitrage opportunities afforded via holding AIGFP CDS: (1) financial institutions attained capital relief (as described above); and (2) AIG’s AAA credit rating was exploited and assumed by all the guaranteed securities. This made selling (or investing in) the securities easier (albeit, unjustifiably so) and it made AIGFP’s CDSs extremely popular.\textsuperscript{211} In fact, by September 12, 2008, when AIG’s AAA credit rating was downgraded, AIGFP’s CDS portfolio included over US $440 billion in CDS exposure (and a total notional value of US $2.7 trillion).\textsuperscript{212} AIGFP knew that CDS was being used to game regulatory requirements, in fact it even labelled this part of its business “regulatory capital relief.”\textsuperscript{213}


\textsuperscript{210} Liu, note 187 supra.

\textsuperscript{211} Nocera, note 205 supra.

\textsuperscript{212} Saporito, note 46 supra.

\textsuperscript{213} Nocera, note 205 supra.
5.3 AIG’s regulatory arbitrage

AIGFP was able to lever itself so drastically because AIG had successfully gamed the fragmented U.S. financial service sector regulations. Because OTC CDS were exempted from regulation under the auspices of the Commodity Futures Modernization Act of 2000 neither the Commodity Futures Trading Commission, nor state regulators were monitoring AIGFP’s CDS exposure.\textsuperscript{214} AIG took advantage of this lack of oversight with the purchase of a savings and loan in 1999, which purchase enabled AIG to select the federal Office of Thrift Supervision as the primary regulator for AIGFP.\textsuperscript{215} AIGFP (based in London) then evaded local regulation on account of the fact that it was already subject to the oversight of an “equivalent regulator” (the federal Office of Thrift Supervision).\textsuperscript{216} At no time prior to the onset of the financial crisis had the federal Office of Thrift Supervision been adequately equipped to oversee a company as large, as complex, and as innovative as AIG and therefore no one recognized (1) the liquidity risk posed to AIG by AIGFP’s CDS positions; (2) “the susceptibility of highly illiquid, complex instruments to downgrades in the ratings of the company or the underlying securities and to declines in the market value of securities”,\textsuperscript{217} or (3) the massive amount of funds that would be required to meet collateral calls and cash demands should highly correlated credit events come to pass.\textsuperscript{218} Ultimately, this lack of oversight gave AIGFP the means to bring down AIG.

\textsuperscript{214} Testimony of the Superintendent of the New York State Insurance Department, note 206 supra.
\textsuperscript{215} Ibid.
\textsuperscript{216} Ibid.
\textsuperscript{217} Testimony of the Acting Director of the Office of Thrift Supervision, note 209 supra.
\textsuperscript{218} Ibid.
AIGFP had not been required to put reserves aside for unregulated OTC CDS exposures and it hadn’t. AIGFP’s leverage was more akin to that of an investment bank than an insurance company, but AIGFP didn’t hedge its positions as investment banks do, it bore the risk as insurance companies do.219 In this way AIGFP bet more than twice the market value of AIG via OTC CDS.220

Caught unaware of AIGFP’s CDS exposures were AIGFP’s regulators as well as AIGFP’s counterparties. Indeed, the bilateral nature of the OTC marketplace allowed AIGFP to hide those exposures from counterparties (as noted above). Thus AIGFP’s CDS protection buyers did not and could not consider either AIGFP’s aggregate CDS positions or AIGFP’s interconnectedness with the rest of the financial system. Instead, AIGFP’s counterparties relied on rating agencies for information on the company’s default risk, which ratings “are sluggish in capturing credit risk information and are potentially inaccurate.”221 Their reliance on rating agencies meant that AIGFP’s counterparties [never] fully internalized the benefits of its margining on other counterparties, resulting in low overall margins, [allowing] AIG[FP] to underwrite a systemically large amount of CDS protection. Had the counterparties been aware of AIG[FP]’s total exposure, they might well have insisted on larger margins, which would have restricted AIG[FP]’s ability to accumulate such large positions.222

The terms of AIGFP’s CDS contracts stated that AIG would post collateral under three circumstances: (1) if mortgage bonds were downgraded; (2) if mortgage bonds were deemed to

219 Nocera, note 205 supra.

220 Testimony of the Superintendent of the New York State Insurance Department, note 206 supra.

221 Acharya, note 196 supra. at 258.

222 Ibid. at 259.
have lost value; or (3) if AIG’s own credit rating was downgraded.\textsuperscript{223} Should all of these events occur, AIG would have been required to post even more collateral.\textsuperscript{224} Unfortunately, this is exactly what happened on September 17, 2008, when AIG was downgraded to A- by Standard & Poor’s and to A2 by Moody’s.\textsuperscript{225} These downgrades automatically triggered contractual calls upon AIGFP to post US $14.5 billion in collateral placing a crushing burden on AIGFP’s liquidity position.\textsuperscript{226} Unable to meet the collateral calls and unable to access alternative funding amid the frozen financial markets AIG found itself insolvent.\textsuperscript{227}

5.4 The highly interconnected nature of AIG’s credit default swap exposures to other large complex financial institutions around the world compels the U.S. government to substitute sovereign credit for private capital so as to prevent AIG’s downfall.

AIG’s bankruptcy could have given rise to two forms of systemic stress: (1) AIG had not hedged its CDS exposures; and (2) the highly concentrated insurance market for financial claims would have ground to a halt.


\textsuperscript{224} Ibid.

\textsuperscript{225} Acharya, note 196 \textit{supra.} at 258.

\textsuperscript{226} Bruno, note 203 \textit{supra} at 22.

\textsuperscript{227} Testimony of the Acting Director of the Office of Thrift Supervision, note 209 \textit{supra.}
Although AIGFP’s CDS exposures were tied to improbable losses, were those losses to occur they would likely have been systemic in nature, causing CDSs to be highly correlated.\textsuperscript{228} In the event that AIGFP could not satisfy those highly correlated CDS commitments, AIGFP’s counterparties would be faced with severe write-offs.\textsuperscript{229} Treasury Secretary Henry Paulson feared that the drastic reductions to counterparty capital would set-off “a meltdown [that] would have been just catastrophic”\textsuperscript{230} AIGFP’s counterparties included many of the world’s largest financial institutions and it is unlikely that they would have been able to obtain additional capital amidst frozen financial markets had AIGFP defaulted.\textsuperscript{231}

To address this situation the Federal Reserve Board shifted AIGFP’s CDS portfolio into two federal entities called Maiden Lane II and Maiden Lane III. Together, these vehicles were endowed with US $52.5 billion in taxpayer money to protect AIG from future ratings downgrades.\textsuperscript{232} In addition, the federal Treasury used US $40 billion in Troubled Asset Relief Program funds to purchase senior preferred shares in AIG and warrants for an additional 2 per cent of the company’s shares.\textsuperscript{233} The U.S. taxpayer bailout of AIG saved AIGFP’s counterparties and thus served as a conduit for the bailout of financial institutions the world over.\textsuperscript{234} It also cost U.S. taxpayers over US $182.5 billion.

\textsuperscript{228} Acharya, note 196 supra. at 259.
\textsuperscript{229} Ibid.
\textsuperscript{231} Bruno, note 203 supra at 22.
\textsuperscript{232} Paulson, note 204 supra. at 393.
\textsuperscript{233} Ibid.
\textsuperscript{234} Bruno, note 203 supra at 23.
While AIG has made some progress in paying back the bailout funds via asset sales such as the sale of its foreign life insurance business Alico for US $15.5 billion, and the potential sale of its Asian life insurance business AIA for US $35.5 billion, AIG will still owe the U.S. government at least US $50 billion. This debt now includes more than US $5.5 billion in interest and fees stemming from AIG’s revolving line of credit with the Federal Reserve Board and US $46.8 billion still owed to the federal Treasury. Although officials at AIG have insisted that the company can partially repay the debt from revenue, the company continues to lose money and it is therefore unclear whether or not AIG will ever be able to pay back the bailout funds in their entirety. In the first quarter of 2010, AIG lost US $9 billion and the company has continued (as recently as February 26, 2010) to claim that it may be unable to continue as a going concern “[w]ithout additional support from the U.S. Government, in the future...” If AIG is unable to repay the bailout debt via asset sales and revenue, it is likely that the company will attempt to negotiate a conversion of the U.S. government’s private interest in

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237 Ibid.

238 Ibid.

239 Christine Seib, AIG Cuts its Losses but May Need More State Aid (London: Times Online, 2010). Available online: <http://business.timesonline.co.uk/tol/business/industry_sectors/banking_and_finance/article7042632.ece>. See also AIG’s February 26, 2010 Form 10-K, available online: <http://www.sec.gov/Archives/edgar/data/5272/000104746910001465/a2196553z10-k.htm#ck15501_item_6._selected_financial_data>. 
the company into common shares which can then be sold over time. However, such conversion would adversely affect the value of the Government’s investment which would thereafter be tied to unpredictable market forces.

6 Potential Reform Measures

6.1 Enhanced capital and liquidity requirements as well as a focus on multiple measures to stem regulatory capital arbitrage

The financial crisis has left many lawmakers and regulators to conclude that a “significantly higher capital to asset ratio requirement, both economic and regulatory, [...] must be reached if intermediation is to be restored to the point where banks and other intermediaries are confident that they have a sufficiently secure capital cushion to lend freely.” However, determining the appropriate levels of regulatory capital necessitates a consideration of the leverage that FIs require to remain competitive. Without adequate leverage, markets cannot provide a rate of return on financial assets high enough to attract capital to that activity. Yet at too great a degree of leverage, bank solvency is at risk. To find the right regulatory balance regulators must seek to find the highest average ratio of capital to assets that the banking system

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240 Goldman, note 236 supra.: The same strategy employed with Citigroup and General Motors. (Ibid).
241 Ibid.
242 Greenspan, note 52 supra. at 28.
243 Ibid. at 29: In fact, the necessity of leverage for profitability may mean (as has been argued) that risks (and sometimes very large risks) may not be entirely dispensable, and that on rare occasions, government bailouts of the private sector may be inescapable. (Ibid. at 31).
can tolerate before a significant number of banks are required to raise their margin and/or shrink their size.\textsuperscript{244}

Greenspan has suggested that a regulatory capital requirement of 13 per cent to 14 per cent of assets would give regulators sufficient leeway to raise capital requirements, if necessary, provided that in the process, the scope of banking activities was not unduly restricted.\textsuperscript{245} Greenspan has further suggested that such enhanced regulatory capital requirements in conjunction with regulatory liquidity requirements would be enough to address “almost all of the financial regulatory structure shortcomings exposed by the onset of crises.”\textsuperscript{246}

However, there is no persuasive reason for future regulations to focus solely on one ratio (capital to suitably risk-weighted assets). An enhanced focus, entailing a consideration of “bank balance-sheets, as equity or credit analysts would, could include several indicators (such as loans-to-deposits, insured deposit-to-assets, holdings of liquid treasuries and OECD government bonds relative to assets, etc.).”\textsuperscript{247} In addition to newly enhanced regulatory capital and liquidity requirements, a more expansive assessment of firm health would better serve regulators by (1) alerting them of the need for further investigation earlier; and by (2) making future regulatory avoidance much more challenging.\textsuperscript{248} For example the regulatory capital arbitrage that precipitated the financial crisis

produced [sizeable] reductions, not only in risk weights but also in deposits-to-asset ratios and gave rise to relatively flat loans-to-deposit

\textsuperscript{244} Ibid. at 29.
\textsuperscript{245} Ibid. at 30.
\textsuperscript{246} Ibid. at 22.
\textsuperscript{247} Acharya, nota 67 supra. at 86.
\textsuperscript{248} Ibid.
ratios. This combination flags an early warning signal that warrants further scrutiny.\textsuperscript{249}

Exterior market indicators, such as CDS fees for financials and financial commercial paper spreads, which both experienced steady growth prior to the onset of the financial crisis should be used by market participants (in conjunction with the foregoing indicators) to impose competitive discipline on banks when effective government oversight is lacking.\textsuperscript{250} Exterior market indicators should not, however, be used to impose regulatory discipline as firm management may be incapable of correcting these measures via internal fixes amidst crises conditions (potentially setting a firm on a reinforcing downward spiral).

6.2 Improvements to U.S. accounting standards could stymie future regulatory avoidance

Banks used off-balance-sheet credit risk transfer mechanisms such as conduits and SIVs to easily game regulatory capital requirements. U.S. generally accepted accounting principles, which did not require the on-balance sheet treatment of the financial positions of such vehicles greatly complicated the picture of bank risk exposures.\textsuperscript{251} As a result of these porous U.S. accounting standards, U.S. banks were able accord opaque, off-balance-sheet treatment to as much as 40 per cent of their assets.\textsuperscript{252} Such regulatory gaming was far more difficult in Europe

\textsuperscript{249} Ibid.
\textsuperscript{250} Ibid.
\textsuperscript{251} Ibid.
\textsuperscript{252} Ibid.
where banks that adhered to the International Financial Reporting Standards were required to treat conduits and SIVs as on-balance-sheet for accounting purposes.\textsuperscript{253}

Further, different national accounting standards made comparisons of LC financial institutions (such as return on assets) very challenging for regulators and market participants alike, to the detriment of more strictly regulated LC financial institutions (as a result of the higher regulatory costs that those banks endured prior to the onset of the financial crisis and the fact that those banks couldn’t escape the wrath that panic left in the wake of the financial crisis).\textsuperscript{254}

Accounting standards for FIs should therefore be uniform, where possible, and should require that bank financial positions be accurately and fully presented on-balance-sheet. This would assist regulators and market participants in imposing competitive discipline upon LC financial institutions.

6.3 Common law uncertainty to reduce the occurrence of regulatory arbitrage

Financial market participants searching for efficiencies will generally find uncertain costs undesirable, and the uncertainty posed by \textit{ex post} common law litigation could be used to stymie the efforts of \textit{ex ante} regulatory avoidance. While it is admittedly ironic that such an unsophisticated solution to such a highly innovative challenge may prove effective, financial

\textsuperscript{253} \textit{Ibid.}

market participants may simply be unable to completely avoid *ex post* regulatory charges via *ex ante* regulatory avoidance.\(^{255}\) Further, LC financial institutions (which have already suffered much reputational damage as a result of the financial crisis), would likely seek to avoid litigation and associated adverse rulings (which would likely have a negative effect upon enterprise reputation and value) wherever feasible. Moreover, the unique ability of *ex post* litigation to set costly legal precedent would provide an incredibly effective *ex ante* deterrent against the exploitation of regulatory arbitrage opportunities. Indeed, it is this concern that has driven banks to settle virtually the entire handful of disputed cases involving derivatives out-of-court.\(^{256}\) At the very least, it is likely that the uncertainty raised by the possibility of *ex post* common law litigation would have an immediate chilling effect on "the most speculative and exotic, as well as the pure "end-run," [regulatory arbitrage] derivatives transactions..." (this in spite of the fact that such an approach would initially be quiet limited in scope in comparison to the manifold forms that regulatory arbitrage can take).\(^{257}\) It should be noted, however, that the difficulties inherent in discerning (*inter alia*) which forms of regulatory arbitrage are deserving of opprobrium and when, and quantifying damages fairly and accurately, all the while balancing the public policy favouring certainty in contractual relations could prove to be an insuperable challenge.

Damages stemming from regulatory avoidance can be computed and awarded as is necessary to meet one of two ends: (1) to compensate the harm that regulatory arbitrage has caused (to third party welfare); or alternatively, (2) as is necessary to deter the exploitation of regulatory arbitrage opportunities in the future. As an alternative or perquisite to a damages

\(^{255}\) Partnoy, note 15 *supra.* at 253.
\(^{256}\) *Ibid.* at 254.
remedy, the ability of regulators to issue cease-and-desist orders that prohibit certain forms of regulatory avoidance could aid deterrence. Each of these models will be considered in turn.

6.3.1 A compensation based damages regime

Under a corrective justice based regime, a victim’s loss would be measured as the difference between his position and the position that he would have occupied had it not been for the violation.\textsuperscript{258} In the regulatory arbitrage context, such a model would likely accord standing to any person who experiences the effects of the regulatory avoidance, limited only by principles of remoteness, uncertainty and mitigation.\textsuperscript{259} However, the plaintiff would be required, in any event, to establish on the balance of probabilities, that he or she has suffered a loss, and that the loss has been caused by the defendant’s wrong.\textsuperscript{260}

It is not clear how a loss to public welfare generally or, alternatively, a loss of business at any one financial institution could be attributed directly (and calculated with any degree of accuracy) to another institution’s regulatory avoidance transaction(s) (as opposed to an infinite number of alternative factors). Furthermore, some forms of regulatory avoidance may actually bestow benefits upon competitors and/or public welfare (as Greenspan argued prior to the financial crisis). This makes it very difficult to justify compensation for regulatory avoidance, particularly during boom economic times when the benefits of regulatory arbitrage are felt much

\textsuperscript{258} Ibid.

\textsuperscript{259} Jeffrey Berryman, Thomas Cromwell, Stanley Sadinsky, Jamie Cassels, David Mullan and Stephen Waddams, Remedies: Cases and Materials 3rd Edition. (Toronto: Edmond Montgomery Publicaitons Limited, 1997) at 3.

\textsuperscript{260} Ibid.
more acutely than are the potential burdens. In sharp contrast, during financial crises, when the benefits of regulatory avoidance are a memory and it is too late to contain the spread of systemic stress, the list of potential plaintiffs could be endless, making a compensatory regime an administrative nightmare.

6.3.2 A deterrence based damages regime

Under a deterrence based damages regime, damages would likely be computed based upon the profits that the arbitrageur earned from engaging in a regulatory avoidance transaction or a series of regulatory avoidance transactions (such as the fees earned setting up a transaction or a series of transactions, regulatory charges that would have been paid but for the regulatory avoidance, nominal profits earned from a transaction or a series of transactions, etc. as is appropriate under the circumstances). The costs of regulatory avoidance are ultimately shifted to the public to the detriment of social welfare (particularly when LC financial institutions are deemed too big and too interconnected to fail and are bailed out; as was the case with AIG). Although deterrence based damages awards would largely disregard any third party welfare loss resulting from regulatory avoidance, the possible imposition of a fine that would deprive the regulatory arbitrageur of its profits would likely succeed in rendering the avoidance project unattractive ex ante. Further, the possibility that some regulatory arbitrage violations may go undetected can be addressed by dividing any award of damages by the probability of

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apprehension and conviction (which is the function of trebling the award of damages in the antitrust context).  

In the regulatory arbitrage context, deterrence based damages would be used to prevent harm to social welfare, therefore, a deterrence based model would likely accord standing to bank regulators alone. Restraining forms of business transactions *ex ante* is only justified when those transactions entail net negative implications for social welfare and adroit bank regulators who are experienced and insulated from the prevailing economic climate are best positioned to determine which forms of regulatory arbitrage do so, and the appropriate response.

As some transactions that are not structured specifically to avoid regulation, can incidentally be used as regulatory avoidance vehicles, the imposition of unforeseeable *ex post* charges could potentially inject too much uncertainty into contractual relations to be justifiable. The best solution will, therefore, strike a proper balance between the competing policy goals by requiring that market participants possess some degree of knowledge about the suspect nature of a transaction or a series of transactions before being held liable for damages. Without a knowledge requirement, a deterrence based damages regime would be doomed to fail in any

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262 *Ibid.* at 552.

263 However, this is subject to regulatory capture: regulatory capture occurs when a regulator created to act in the public interest acts instead to further special interests. In regulated industries generally, participants with “skin in the game” will be more motivated to attempt to influence regulators to act (in accordance with their interests) than members of the general public will be. This discrepancy is amplified in the financial services sector on account of the esoteric nature of the many, and continuously evolving, financial products and services offered (a barrier to entry that renders most industry outsiders and neophytes financially illiterate). Further, regulators are often informed by, and act upon, the recommendations of expert bodies, specifically formed to study particular issues. The members of those bodies typically include current and/or former industry insiders who are experts in their respective fields, but whose recommendations may be tainted by bias in favour of the special interests that they have associated with.

264 Purchasing CDS, for example, which can be used to legitimately hedge default exposure or, alternatively, to attain capital relief.
event; market participants that are completely unaware of a transaction’s potential to be used for regulatory avoidance simply would not be deterred from entering into such a transaction.

A knowledge requirement could take many forms but it is suggested that actual knowledge of the proscribed nature of particular forms of regulatory arbitrage (whether imputed from legal precedent or from a regulator’s cease-and-desist order) or objective unconscionable regulatory avoidance (which would leave suitable discretion to award damages in extreme instances of clearly negative regulatory avoidance) be alternative prerequisites to an award of deterrence based damages. This approach acknowledges that some forms for regulatory arbitrage may in fact be beneficial to social welfare, as noted above, and balances deterrence with the need for certainty in contractual relations.

It follows that alternative forms of deterrence, such as the ability to unwind impugned transactions *ex post* or affect rights as between parties to a transaction (later determined to be a proscribed form of regulatory arbitrage) may be warranted in some circumstances, but only where all of the parties to a transaction possessed actual knowledge (at the time of transacting) of the proscribed nature of the particular form of regulatory arbitrage they are engaged in, or, where justified, in cases of unconscionable regulatory avoidance.

6.3.3 A cease-and-desist order

Bank regulators have experience using cease-and-desist orders pursuant to FIRREA (as discussed in Section “4.2” above), either to force a bank to correct conditions or, alternatively, to
demand that a bank stop certain activity. Cease-and-desist orders can either be consented to, or instituted by formal proceedings. They can be used by regulators to compel regulated entities within their ken to refrain from engaging in suspect transactions (at least during the pendency of an examination wherein an impugned form of regulatory arbitrage can be thoroughly scrutinized), and further, they can be used to provide market participants with actual knowledge of the suspect nature of a particular form of regulatory arbitrage. This would require that cease-and-desist orders in the regulatory arbitrage context be made public and accessible to all market participants.

6.4 Compensation schemes that mitigate short-term profit incentives

AIGFP brought in approximately 17 per cent of AIG’s total operating income in 2005. As that department’s CDS fees were classified as income on AIG’s balance-sheet AIGFP employees took home enormous compensation packages: in 2005, the roughly 300 AIGFP employees were compensated an estimated US $500 million. This was the product of misaligned compensation strategies, as demonstrated by the following analogy:

[s]uppose there is demand in the economy for insurance against certain bad, but infrequent, outcomes, say outcomes that occur on average once every seven years. A profit center inside an insurance firm identifies this demand and designs a product that will provide a payout to investors if

265 Scott, note 70 supra at 295.
266 Morgan, note 76 supra at 6.
268 Ibid. at 201.
these outcomes arise. The product is akin to the insurance company writing an out-of-the-money put option to investors. Investors are willing to pay a fee for this product as long as the insurance firm has a sufficiently healthy balance-sheet (at least from the outside). Now, the bad outcomes occur infrequently, so how is the profit center to be compensated in the meanwhile? The wrong rule, and unfortunately the one that has been the most prevalent in financial firms, is to reward the profit center based simply on the net fees it generated from selling the insurance in the past year. Under this rule, the profit center has an incentive to sell large quantities of the insurance to the market, thereby generating so-called fake “alpha” and resulting in generous bonuses at the end of each year. In the process, firm risk gets built up to a point where, when the put option is exercised, the firm is unlikely to have enough cash to pay off all the investors, and will probably be close to default. But by this time, the profit center and the firm will have grown so large that they are too big to fail and very likely will be rescued by the government.269

Financial firms should attempt to align key employee compensation with the long term success of the enterprise. This would not necessitate unreasonable constraints. For example, compensation paid in company equity and combined with mandatory holding periods of up to 5 years after an employee’s departure from the firm (with exemptions for the liquidation of certain reasonable amounts within each year of the 5 year holding period) would go a long way; tethering employee incentives to the company’s future operations, as opposed to the profit center’s short run ability to draw in profit.270

Further, regulatory inducements that impel individual employees of financial market participants to uncover regulatory arbitrage opportunities, such as "whistle-blower" statutes may


270 Ibid. at 181.
help align the incentives of individual employees with the interests of the regulators, thus leading to the early discovery and plugging of regulatory loopholes.  

6.5 Enhanced oversight of the credit default swap markets

The use of derivatives needn’t cause financial crises. That is, the financial crisis was not a product of derivatives trading in isolation, but rather a product of both (1) the way in which derivatives products were cleared; and (2) the way in which derivatives products were used by LC financial institutions to increase their exposure to risk.  However, it is very difficult to supervise risk proactively without standard regulation that provides consistency and transparency in the market. Therefore, regulators should develop rules regarding risk management practices, the reporting of trades, collateral requirements and measures to improve transparency in the derivatives markets.

6.5.1 Regulation of the credit default swap markets before the financial crisis

CDS’ role in worsening the financial crisis was primarily the result of OTC traded contracts. These are bilateral agreements that typically reference collateral depending on the rating of the counterparties. OTC contracts can be highly beneficial to FIs in that the

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271 Partnoy, note 15 supra. at 254.
272 Acharya, note 12 supra. at 235.
273 Unterman, note 159 supra at 20.
274 Acharya, note 12 supra. at 235.
275 Ibid.
customized structure of each contract makes it possible to hedge risk exactly as a firm's needs dictate. OTC markets are also invaluable to market participants in general, in that much of the financial sector's innovation takes place in these largely unregulated markets.

As housing prices began to deteriorate in the run up to the financial crisis, it became apparent that many highly levered LC financial institutions would sustain massive losses. Uncertainty as to who was exposed to what (as a result of OTC trading) then created confusion that spread throughout the entire system. Further, the bilaterally set collateral and margin requirements in OTC trading [did] not take account of the counterparty risk externality that each trade impose[d] on the rest of the system, [and allowed] systemically important exposures to be built up without sufficient capital to mitigate associated risks.

There exists no economic or policy reason for allowing CDS markets to go on unregulated, and the size, volatility and complexity of the markets demand immediate supervision at least to some degree. The financial crisis proved that transparency is crucial to future financial stability, and so any future regulatory action should aim to increase transparency, at least to the regulator. The availability of information relating to price, volume and counterparty positions would both help manage systemic risk and stop systemic stress from infecting the entire financial system during financial shocks. For example, had regulators known about AIGFP's unhedged CDS positions they could have taken proactive action to

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276 Ibid.
277 Ibid. at 241.
278 Ibid. at 244.
279 Ibid.
280 Ibid. at 243.
281 Ibid.
prevent AIG’s meltdown. And had counterparties known about AIGFP’s unhedged CDS positions, they would likely have been reluctant to purchase additional CDS protection from the company (had a better alternative been available).

Figure 1 (located in Appendix A), illustrates the potential interaction among six FIs in the OTC market. As Figure 1 demonstrates, there are 15 possible bilateral transactions to which these counterparties may, or may not be exposed. It is thus impossible for any party to determine with certainty the credit risk of their counterparties. Figure 2 (located in Appendix A directly below Figure 1) illustrates the potential interaction among six FIs, each utilizing a central clearinghouse ("CCH") as a common intermediary. The counterparty relationships depicted in Figure 2 are far more transparent with regard to market positions than are those in Figure 1. In addition to improved transparency with regard to market positions the CCH can demand the posting of appropriate collateral and margin, thus virtually eliminating counterparty credit risk. Thus, although OTC markets should continue to be the birthplace of innovation for sparsely traded derivatives contracts, as the demand for new products grow, regulations should require that those contracts be traded via a CCH regime, and if standardized to a sufficient degree via an exchange market structure ("EMS").

\[282\] Ibid.
\[283\] Ibid.
\[284\] Ibid. at 245.
\[285\] Ibid. at 244.
\[286\] Ibid. at 245.
\[287\] Ibid. at 244.
\[288\] Ibid.
6.5.2 Potential degrees of future oversight

6.5.2.1 Registry regime

The minimum degree of oversight suggested for OTC markets is a central registry of bilateral positions taken by counterparties. The registry could hold collateral, mark deals and collateral to market and assist with the transfer of funds. However, a registry regime suffers from three important limitations: (1) counterparty credit risk would remain unabated; (2) counterparty credit risk would prevent two offsetting contracts from being netted out (distorting perceptions of market risk, as discussed above); and (3) regulators would be unlikely to have access to all the information that would be desirable to effectively counter systemic risk. It follows that a registry regime should be mandated only for embryonic OTC derivatives markets (markets that have not matured to a point at which they have the potential to spread systemic risk).

6.5.2.2 Centralized clearinghouse regime

As noted above, a CCH could act as a common intermediary thus taking on the role of counterparty and guarantor to the original counterparties to a derivative transaction. The CCH could set uniform margin and collateral requirements which would effectively eliminate

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289 Acharya, note 196 supra at 261.
290 Ibid.
291 Ibid.
counterparty risk so long as the CCH is not itself at risk of default.\textsuperscript{292} Further, under a CCH regime, offsetting positions can be netted out, providing market participants with a clearer picture of risk exposures. Thus, a CCH regime would be ideal for derivatives products that are mature enough to spread systemic risk, but that are not standardized enough for listing on an EMS.

6.5.2.3 Exchange market structure

The most centralized and paternal market structure for derivatives trading is an EMS (which would completely eliminate the bilateral trading of contracts and instead publish product prices to a broad range of participating investors).\textsuperscript{293} As with a CCH regime, an EMS would allow for offsetting contracts to be netted out providing market participants with a clearer picture of risk exposures. However, unlike an FI operating in a CCH regime, an EMS FI can easily enter into an offsetting transaction on the exchange, thus quickly exiting any previous position.\textsuperscript{294} Further, whereas the stability of a CCH regime depends, to a large extent on the solvency of the CCH, an EMS can rely on market makers, and, if necessary, the exchange clearinghouse to raise capital from market participants.\textsuperscript{295} An EMS thus offers the most protection against the spread of systemic risk and is therefore the best option for products that are standardized enough to be listed on an exchange.

\textsuperscript{292} Ibid.
\textsuperscript{293} Ibid.
\textsuperscript{294} Ibid. at 262.
\textsuperscript{295} Ibid.
The recommended oversight of the credit default swap market

The CDS market is clearly mature enough to spread systemic risk (as demonstrated by AIG’s near collapse) and therefore neither bilateral OTC trading nor a registry regime can afford adequate oversight. As between a CCH regime and an EMS, two attributes specific to CDS mitigate towards their listing on an EMS going forward.

First, under either a CCH regime or an EMS, regulators would have to set the initial and maintenance margin requirements based on an estimation of daily price fluctuations.296 Those margin requirements should be enough to cover any loss that would occur, even as a result of an unusual price fluctuation.297 However, on the happening of a credit event, the liability of a CDS protection seller can immediately jump, possibly up to the entire amount of protection. It therefore follows that ‘[n]o margin requirement less than 100 per cent of the total notional principal can provide full protection against counterparty risk...’298 When that risk is entirely born by a CCH then that CCH may be subject to significant default risk whenever correlated credit events occur.299 This is exactly what occurred during the financial crisis. This default risk has the potential to destroy the safety-net provided by the common intermediary in a CCH regime. In contrast, the ability of market makers to raise capital on an exchange would provide protection buyers with an extra level of comfort in an EMS.300 Second, OTC CDS contracts were highly standardized even before the financial crisis as to maturities and miscellaneous

296 Ibid. at 264.
297 Ibid.
298 Ibid.
299 Ibid.
300 Ibid. at 262.
contractual terms (most provisions having been selected from standardized optional provisions in an International Swaps Derivatives Association agreement).\textsuperscript{301} It follows that an EMS is best suited for CDS market oversight.

Currently, two EMS’ are being developed by regulators (one jointly by the Chicago Mercantile Exchange and the hedge fund Citadel and another by the Intercontinental Exchange).\textsuperscript{302} However, the Federal Reserve Board has advocated a CCH regime, and the Depository Trust and Clearing Corporation and the LCH.Clearnet Group have announced plans to create the world’s largest derivatives CCH, which would also clear CDS transactions.\textsuperscript{303}

7 Conclusion

The inadequate oversight of U.S. financial services created an environment that encouraged the avoidance of financial regulations by LC financial institutions. This severely worsened the financial crisis ultimately bringing the global financial system to the brink of collapse. The fix necessitated the extraction of massive rents from U.S. taxpayer who may never be repaid in full (but sometimes you have to bite off your leg to get out of life’s traps). Going forward, it is imperative that lawmakers, regulators, and LC financial institutions actively and continually adjust their governance, so as to better promote the long term stability of the global financial system (and correspondingly net social welfare). While at the end of the day it may be impossible to prevent financial market participants from attempting to avoid costly financial

\textsuperscript{301} Ibid.
\textsuperscript{302} Ibid. at 266.
\textsuperscript{303} Ibid. at 267.
service sector regulations altogether, regulators must strive to become better acquainted with
both the products that they are regulating as well as the way that those products are being
regulated outside of their jurisdictions, and this requires a great deal of financial literacy. Only
with international consensus and sophisticated understanding of state-of-the-art financial services
can lawmakers and regulators ensure that the LC financial institutions in their jurisdictions are
enduring the costs of prudent regulation and avoiding future financial crises (and not the other
way around).
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Appendix A

Figure 1:

Figure 2: