2009

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Recommended Citation

Douglas W. Arner, *The Global Credit Crisis of 2008: Causes and Consequences*, 43 INT'L L. 91 (2009)
<https://scholar.smu.edu/til/vol43/iss1/16>

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The Global Credit Crisis of 2008: Causes and Consequences

DOUGLAS W. ARNER*

Abstract

This article discusses the current global financial crisis and its implications for international finance and financial regulation. The article begins with a discussion of the causes of the crisis, particularly the role of regulatory incentives underlying excessive international and domestic borrowing, lending, and investment. From this basis, the article looks to the international responses to the crisis, focusing on the Financial Stability Forum and the Group of Twenty. In this context, it considers issues relating to systemic risk and financial stability, with particular attention to possible regulatory changes and their implications for international finance.

I. Introduction

During 2008, for the first time since the 1930s, the world economy experienced a systemic financial crisis: on September 18, the international financial system was on the precipice of collapse, and global credit markets essentially ceased to function for the following four weeks. While the ultimate economic impact of this financial crisis—the Global Credit Crisis of 2008—is still unknown, following a series of dramatic events including the failure of major financial institutions and significant government interventions in financial systems around the world, it is now unlikely that either the global or any major domestic financial system will collapse, causing the onset of an economic depression of the sort unseen since the 1930s. The causes of the global credit crisis are now generally un-

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The author would like to thank the following for comments on an earlier version of this article: Chantal Hébert, Young In, Emily Lee, Paul Lejot, Qiao Liu, Matthew Morgan, Anthony Neoh, Joseph Norton, Michael Panton, and Nick Stroemer, as well as participants in seminars in Freiburg, Hong Kong, Kuala Lumpur, Washington D.C., and Zurich. All errors and opinions unless otherwise noted are those of the author. This research has been supported by the Hong Kong Research Grants Council General Research Fund grant number HKU 7401/05H.

derstood, however, and major initiatives are underway around the world to reform financial regulation, with far reaching consequences for the future of global finance.

In essence, the credit crisis resulted from an unprecedented period of excessive borrowing, excessive lending, and excessive investment incentivized by a series of significant economic and regulatory factors. Excessive borrowing and lending most directly arose in the context of the market for subprime residential mortgages in the United States, especially during 2005 and 2006. Excessive borrowing and lending, however, were also prevalent in virtually all asset classes globally, including commercial real estate, corporate lending (especially for mergers and acquisitions and private equity transactions), commodities, and international (especially emerging markets) equities. These excesses were not limited to the United States; they were truly global, impacting almost every market and asset class. This broad-based excessive borrowing and lending was fueled by excessive investment from a wide range of investors around the world.

Excessive borrowing, lending, and investment were inextricably interconnected through a range of transaction structures derived from well understood techniques of securitization. Essentially, securitization is a transaction structure in which loans (such as loans secured by residential real estate, i.e., mortgages) are pooled together ("repackaged") as collateral underlying the issuance of securities, predominantly debt securities.¹ Securitization allows originators (such as banks) of assets (such as residential mortgages) to transform a future stream of revenue (i.e., loan repayments) into a present value pool of capital, which can then be used to support further lending. In order to be effective, this process requires investors willing to purchase the resulting securities. In the typical transaction structure, the collateral is transferred to a separate legal entity—a special purpose vehicle (SPV)—which in turn issues the securities purchased by investors and uses the proceeds from the sale of securities to purchase the pool of collateral from the originator. This structure is the most commonly used structure in the United States and in other common law countries around the world. In civil law countries (especially in continental Europe), the norm has been for the bank to issue the securities directly with the backing of a legally isolated pool of collateral—"covered bonds."²

At its simplest, securitization makes a great deal of sense: it allows the distribution of risks to a wider pool of investors, thereby reducing the cost of borrowing for ultimate borrowers and reducing the risk to lenders of defaults on underlying loans.³ At the same time, however, the structure has the potential to provide significant incentives to abuse, and this quality, in many ways, lies at the heart of the current credit crisis. Especially in the United States and the United Kingdom, loans came to be made not by banks with an on-going interest in their repayment, but instead by specialists—mortgage brokers for real estate and a range of financial institutions, especially investment banks, for corporate loans—intent on profiting from charging to arrange loans and not on maintaining an interest in the ability of the borrower to repay in the future.

1. See Douglas Arner, *Emerging Market Economies and Government Promotion of Securitization*, 12 DUKE J. COMP. & INT'L L. 505, 505 (2002) [hereinafter *Emerging Markets*].

2. The key difference between covered bonds and securitized transactions is that covered bonds remain on the issuer's consolidated balance sheet. See Douglas W. Arner, Paul Lejot & Lotte Schou-Zibell, *The Global Credit Crisis and Securitisation in East Asia*, 3 CAPI. MARKETS L. J. 291, 299 (2008).

3. See *id.*; See also *Emerging Markets*, *supra* note 1.

Figure 1: Generic securitization

Securitization was thus the central linkage between excessive investment in credit securities and excessive borrowing and lending. Excessive investment was largely the result of two economic factors: first, the period of low interest rates in Japan after the onset of its banking crisis at the beginning of the 1990s and in the United States following the bursting of the dot.com bubble in 2001; and second, the imbalances in saving and investment between the Anglo-American economies, especially the United States and United Kingdom, and the rest of the world, especially Japan, China, and major oil-producing countries such as Russia and Saudi Arabia.⁴ The combination of low interest rates and large volumes of investment funds from outside the United States and the United Kingdom supported massive investment in debt securities in New York and London designed to produce an appealing combination of perceived safety and attractive yields.⁵

In addition to issues that arose in the context of relatively simple securitization transactions, the technology of securitization was expanded over the past decade to encompass a range of ever-more complex techniques and structures, including structured investment vehicles (SIVs) and conduits, collateralized debt obligations (CDOs), collateralized loan obligations (CLOs), synthetic securitizations, and a range of other exotics such as CDO squared and synthetic CDOs. Many of these took the technology of securitization (pooling of risks, off-balance sheet structure, capital markets funding) and combined it with that of over-the-counter (OTC) derivatives, especially credit derivatives such as credit default swaps (CDSs).⁶ Of these, probably the most significant are CDOs and CDSs.

4. See MARTIN WOLF, *FIXING GLOBAL FINANCE* (2008).

5. Perceived safety resulted both from a general failure to analyze risks appropriately and specifically from rating agency failures. See Arner, Lejot & Schou-Zibell, *supra* note 2.

6. For discussion, see FINANCIAL STABILITY FORUM, *REPORT OF THE FINANCIAL STABILITY FORUM ON ENHANCING MARKET AND INSTITUTIONAL RESILIENCE* (Apr. 2008), available at <http://www.fsforum.org/>

While the term CDO is in many ways generic and could easily describe any collateralized security, such as residential mortgage backed securities (RMBS), more generally the term is applied to transactions that are essentially securitizations of a variety of other securitized assets such as RMBS. Thus, at its simplest, a CDO may be a securitization of securitizations. Often, however, a variety of other assets may be pooled with more traditional asset backed securities (ABS), most commonly CDSs.

Figure 2: Simplified CDO CDS 1

A CDS is a bilateral derivative transaction, which may be seen as a type of protection against default or as a synthetic loan.⁷ In essence the seller of a CDS agrees to pay the buyer if a credit event, typically some sort of default by an unrelated borrower, occurs. The buyer of the CDS agrees to pay the seller a stream of payments roughly equivalent to the payments that would be made by the identified but unrelated borrower. As such, the seller of the CDS receives a stream of payments that mimic a loan—thus, for one party, the CDS is a form of synthetic loan: a mechanism to acquire credit risk of an unrelated party. If the notional creditor defaults, the seller must pay the value of the defaulted obligation or deliver the underlying obligation to the buyer. The buyer in turn purchases a form of protection against the default of the underlying borrower/obligation, thereby hedging an actual credit to the notional borrower or speculating on notional credit risk. As such, a CDS can be used instead of actual assets (such as mortgage loans) in the context

publications/r_0804.pdf hereinafter *Financial Stability Forum*; BANK OF ENGLAND, FINANCIAL STABILITY REPORT (Oct. 2008), available at <http://www.bankofengland.co.uk/publications/fsr/2008/fsrfull0810.pdf>; FINANCIAL SERVICES AUTHORITY, THE TURNER REVIEW: A REGULATORY RESPONSE TO THE GLOBAL BANKING CRISIS (Mar. 2009), available at http://www.fsa.gov.uk/pubs/other/turner_review.pdf.

7. See BERRY HSU, DOUGLAS ARNER, K. S. TSE & SYREN JOHNSTONE, *Financial Markets in Hong Kong: Law and Practice* CH. 6 (2006).

of a CDO. In addition, a CDS could be used to protect against default on underlying assets in the context of an ABS or CDO structure.

Figure 3: Credit default swap (CDS) Bank B: Protection seller

While such transaction structures in hindsight may seem an obvious source of risk, in fact, in the period leading up to the global credit crisis, such techniques received important support and developmental incentives from regulators around the world, especially through the internationally developed and globally implemented Basel Capital Accords.⁸ This combination of debt capital market technology, regulatory incentives, excessively low interest rates, and massive global investor demand set the stage for the crisis.

By the end of 2006, real estate prices in the United States and a range of other Western countries had reached unsustainable levels.⁹ As central banks around the world began to raise interest rates to address potential inflationary concerns resulting from rapid global economic growth, weaker residential mortgage borrowers in the United States began to have difficulties meeting their obligations, and defaults on loans began to increase. At the same time, as new purchasers stopped entering the markets, real estate prices began to decrease rapidly, triggering a downward spiral that ultimately impacted all asset classes except U.S., Japanese, and German government bonds and led ultimately to the systemic crisis in the U.S. and global financial systems of September and October 2008.

This process, triggered by peaks in residential mortgage markets and growing defaults, was rapidly transmitted through the structures of securitization throughout the financial system. At the initial stage, market participants began to question who would be impacted by residential real estate price decreases and increasing defaults on subprime loans. Historically, in previous real estate crises, banks that had made the loans were expected to feel the impact.¹⁰ Due to securitization, however, banks no longer owned the underlying

8. See Arner, Lejot & Schou-Zibell, *supra* note 2.

9. See WOLF, *supra* note 4; Financial Stability Forum, *supra* note 6.

10. See CHARLES P. KINDLEBERGER, *MANIAS, PANICS AND CRASHES: A HISTORY OF FINANCIAL CRISES* (4th ed. 2000).

loans, and the question arose as to who in fact owned the securities that were becoming impaired. This confusion brought a classic case of adverse selection: because no one knew who owned the loans (as a result of their repackaging and re-repackaging into CDOs, etc.), markets ceased to deal in instruments the values of which were now uncertain. In addition, throughout the first half of 2007, investor preferences changed from high-yield credit products to simpler investments, such as emerging market equities and commodities.¹¹ As markets for complex debt securities ceased to function due to adverse selection and changes in investor preferences, markets began to lose confidence in those firms that had been very active in these markets, realizing that as the music ceased, they were likely to be found holding large amounts of impaired and now unmarketable loans and securities. Institutions such as Northern Rock in the United Kingdom and Bear Stearns in the United States found themselves unable to fund their continuing operations, eventually requiring resolution through government intervention.

Following the demise of Bear Stearns in March 2008, market confidence continued to deteriorate, with financial institutions increasingly wary of dealing with one another, even in the context of short-term interbank borrowing and lending. At the same time, markets began to scrutinize institutions viewed as heavily exposed, such as monoline insurance companies, which provided credit support in the context of securitizations and CDOs; investment banks such as Lehman Brothers and Merrill Lynch; mortgage lenders such as Washington Mutual (WaMu) and Hypo Real Estate; quasi-public mortgage market institutions such as Fannie Mae and Freddie Mac; CDS providers such as AIG; and banking groups that had most actively pursued the originate-and-distribute model of business such as Citigroup, UBS, and Royal Bank of Scotland.¹² In each of these cases, potential systemic risk existed.

Systemic risk is defined as:

the risk that an event will trigger a loss of economic value or confidence in, and attendant increases in uncertainty about, a substantial portion of the financial system that is serious enough to quite probably have significant adverse effects on the real economy. Systemic risk events can be sudden and unexpected, or the likelihood of their occurrence can build up through time in the absence of appropriate policy responses. The adverse real economic effects from systemic problems are generally seen as arising from disruptions to the payment system, to credit flows, and from the destruction of asset values.¹³

While in each case there was potential systemic risk, it was the bankruptcy of Lehman Brothers on September 15, 2008, that finally triggered a systemic financial crisis in the United States, causing “a loss of economic value or confidence in, and attendant increases in uncertainty about, a substantial portion of the financial system that [was] serious enough to quite probably have significant adverse effects on the real economy”¹⁴ that triggered the global systemic financial crisis of autumn 2008.

11. See WOLF, *supra* note 4; Financial Stability Forum, *supra* note 6.

12. See Arner, Lejot & Schou-Zibell, *supra* note 5.

13. GROUP OF TEN, CONSOLIDATION IN THE FINANCIAL SECTOR 126-127 (Bank for Int’l Settlements 2001), available at <http://www.bis.org/publ/gten05ch3.pdf>.

14. *Id.* at 126.

As a result of the crisis, the governments of the United States, the European Union, and Switzerland, among others, were forced to intervene dramatically in order to prevent the systemic financial crisis from becoming a systemic financial collapse. These governments intervened through, among other things, interest rate cuts, massive liquidity infusions, capital injections, guarantees, and asset purchases. These actions, while sufficient to prevent the collapse of the global financial system and most domestic financial systems (Iceland being the exception), were not sufficient to prevent major adverse economic consequences, albeit less severe to date than those of the 1930s. In addition, the systemic financial crisis has highlighted the need for significant changes in both domestic and global financial regulation to prevent future systemic financial crises.

Following this introduction, this article first discusses the background to and causes of the financial crisis, focusing on significant legal and regulatory factors (Section II). In section III, the article reviews the initial events involving systemic risk and the responses thereto. Section IV discusses international responses to improve financial regulation to prevent future crises. Finally, section V concludes with a brief discussion of possible implications for the future of global finance.

II. Background and Causes

As is often the case with financial crises,¹⁵ many of the underlying factors leading to the global credit crisis of 2008 arose from responses to previous crises. In this case, certain underlying factors date as far back as the design of the U.S. financial regulatory system during the Great Depression of the 1930s. The most important elements, however, developed primarily from reactions in the 1980s and 1990s to the developing country debt crisis of the 1980s and the Asian financial crisis of the 1990s.

A. 1929-1983: BACKGROUND

One of the underlying causes of the global credit crisis of 2008 was a divergence between domestic regulatory structures and the realities of global finance. This divergence was most acutely felt in the United States but was also seen in problems that emerged in the countries of the European Union among others.

In the context of the United States, one must look back to the previous major systemic financial crisis and resultant economic collapse: the 1920s and the Great Depression of the 1930s. The 1920s was a period of then unprecedented optimism and economic growth in the United States. It was also a period of financial excess, especially over-borrowing, over-lending, and over-investment. Unlike the 2000s, these excesses focused on the stock market and culminated in the Great Crash of 1929.¹⁶ The dramatic increase in stock prices in the 1920s had been underpinned by large amounts of lending for stock purchases. With the dramatic decline of 1929, lenders called in loans and borrowers were forced to sell assets—stock, property, bonds, etc.—to repay loans, triggering a further

15. See FINANCIAL CRISES IN THE 1990S: A GLOBAL PERSPECTIVE (Douglas Arner, Mamiko Yokoi-Arai & Zhongfei Zhou eds., 2002).

16. See generally JOHN KENNETH GALBRAITH, THE GREAT CRASH OF 1929 (1954); MILTON FRIEDMAN & ANNA JACOBSON SCHWARTZ, A MONETARY HISTORY OF THE UNITED STATES (1971); KINDLEBERGER, *supra* note 10.

decline in asset prices, further margin calls, and massive deleveraging.¹⁷ This process caused widespread losses to market participants and lenders, resulting in losses of confidence in markets and among market participants, consequent bank failures, and collapses in lending to businesses, consumption, and investment. Eventually, the process spiraled into the huge economic collapse of the 1930s known as the Great Depression. The newly elected Roosevelt administration responded with the New Deal legislation, but ultimately it was the economic stimulus provided by World War II that finally brought the United States out of the Great Depression.¹⁸

The financial response, however, differed dramatically from the response to the current crisis: instead of government intervention at an early stage, the Hoover administration focused on market-based solutions, closing banks, liquidating firms, real estate, farmers, etc. It was in many ways the response to the financial shock that ensured that the economic consequences would be severe.¹⁹

In addition to its economic interventions, the Roosevelt administration also initiated the wholesale redesign of the U.S. financial system through legislation and regulation designed to: (1) prevent the sorts of excesses seen in the 1920s; (2) reduce the risks of future financial crises becoming systemic; and (3) ensure that the financial system supported economic growth rather than speculation.²⁰

The Roosevelt financial system was based on a series of legislation designed to address all aspects of the U.S. financial system. Essentially, this legislative package established a financial system divided into banking, securities, and insurance sectors, with the intention of reducing contagious risks and excesses that seemingly characterized the 1920s.²¹ Policy and financial matters would be coordinated in the government by the Secretary of the Treasury and the Treasury Department. The Federal Reserve System, established in the wake of the Bankers' Panic of 1907, would be reinforced in its dual role of focusing on the sometimes conflicting objectives of monetary stability and full employment.²²

Building on the existing framework established in the wake of the previous global systemic crisis of the 1870s, the banking sector would be regulated at both the state and federal level, with state banks regulated at the state level and national banks regulated by the Treasury's Office of the Comptroller of the Currency²³. Significantly, the Glass-Steagall Act banned banks from participating in non-banking activities. Supporting the regulatory framework, a system of deposit insurance and bank insolvency resolution was

17. See GALBRAITH, *supra* note 16.

18. *Id.*

19. See generally JOHN KENNETH GALBRAITH, *THE GREAT CRASH OF 1929* (1954); MILTON FRIEDMAN & ANNA JACOBSON SCHWARTZ, *A MONETARY HISTORY OF THE UNITED STATES* (1971); KINDLEBERGER, *supra* note 10.

20. See generally U.S. TREASURY, *BLUEPRINT FOR A MODERNIZED FINANCIAL REGULATORY STRUCTURE* (2008), available at <http://www.treas.gov/press/releases/reports/Blueprint.pdf> [hereinafter Treasury Blueprint]; See also CHRISTOPHER D. OLIVE & DOUGLAS ARNER, *Sectoral Regulation: Financial Services Modernization in the US and the Gramm-Leach-Bliley Act of 1999*, in *FINANCIAL REGULATION—A GUIDE TO STRUCTURAL REFORM* CH. 5 (Douglas Arner & Jan-Juy Lin eds., 2003) [hereinafter Olive & Arner].

21. See Treasury Blueprint, *supra* note 20.

22. See FEDERAL RESERVE, *THE FEDERAL RESERVE SYSTEM: PURPOSES AND FUNCTIONS* (2005) [hereinafter *Federal Reserve*].

23. For the best discussion of the development of banking and banking law in the United States, see MARK J. ROE, *STRONG MANAGERS, Weak Owners: The Political Roots of American Corporate Finance* (2d ed. 1994).

established at a federal level through the Federal Deposit Insurance Corporation (FDIC).²⁴ In addition, a range of home finance agencies were established to support broad-based individual home ownership, including the Federal Housing Association, the Federal Home Loan Banks, the Federal Savings and Loan Insurance Corporation, and the Federal National Mortgage Association (Fannie Mae).²⁵

The securities sector was to be primarily regulated by the Securities and Exchange Commission (SEC) under the various securities laws.²⁶ The term “investment bank” resulted from the division of existing financial conglomerates into banks, securities firms (investment banks), and insurance companies. In addition, state securities regulators were to continue their regulation activities within their respective states.²⁷ Matters relating to accounting were also placed within the purview of the SEC.²⁸ Insurance matters were left purely to state law and state regulators.²⁹

With certain changes, this regulatory system continues to exist. At the same time, however, the financial and economic environment in which it operates has changed completely, not least as a result of globalization, technology, and complexity. Prior to the 1980s, the most significant change to this design was the creation of the Commodities Futures Trading Commission (CFTC) to regulate commodities markets in 1974, following a series of commodities related crises.³⁰ Additionally, in 1975, the SEC ended the previously existing system of fixed commissions for securities brokers (“May Day”).³¹ Although May Day reduced costs and increased competition, it eventually led to the need for investment banks to move into ever more risky areas of business in order to increase profits. In addition, Fannie Mae was privatized in 1968 and joined by the Federal Home Loan Mortgage Corporation (Freddie Mac) in 1970. These two government sponsored enterprises (GSEs), though explicitly not part of the U.S. government, were viewed by markets as implicitly guaranteed by it.

As can be seen, the complexity of this system was certain to produce overlaps and gaps: these were to be brought dramatically to light in 2008.

B. 1983-1998: LAYING THE FOUNDATIONS

In 1983, the global financial system experienced its next major episode of systemic risk, but one that did not lead to a systemic crisis in international financial system: the Developing Country Debt Crisis. This crisis was the result of excessive lending and borrowing by international banks and developing countries, fueled by massive deposits of oil revenue

24. The Banking Act of 1933, Pub. L. No. 73-66, 48 Stat. 162, created the FDIC to regulate participants in the commercial bank deposit insurance system.

25. See Treasury Blueprint, *supra* note 20.

26. See generally MARC I. STEINBERG, UNDERSTANDING SECURITIES LAW (4th ed. 2007).

27. See *id.*

28. See Marc I. Steinberg, Douglas W. Arner & Christopher D. Olive, *The Development of Internationally Acceptable Accounting Standards: A Universal Language for Finance in the 21st Century?*, 27 SEC. REG. L. J. 324 (1999).

29. See Federal Reserve, *supra* note 22.

30. See *id.*

31. See JOEL SELIGMAN, THE TRANSFORMATION OF WALL STREET: A HISTORY OF THE SECURITIES AND EXCHANGE COMMISSION AND MODERN CORPORATE FINANCE (3d ed. 2003).

from oil producing countries ("petrodollars").³² The crisis was triggered when interest rates were raised dramatically in the United States to combat severe inflation that had developed across the 1970s, leading to the inability of developing country borrowers to meet their interest obligations, which were based on floating rates of interest in the context of large syndicated loans among major international banks. These massive defaults essentially destroyed the capital base of the world's largest international banks.

Most importantly for present purposes, the developing country debt crisis of the 1980s led developed country governments (led by the United States and the United Kingdom) to develop a new internationally agreed minimum capital standard, the Basel Capital Accord of 1988.³³

1. *The 1988 Basel Capital Accord*

In 1988, the Basel Committee on Banking Supervision (Basel Committee), hosted by the Bank for International Settlements (BIS), reached a secret agreement (subsequently published) regarding an agreed approach among the Group of Ten (G-10) developed nations concerning the regulation of bank capital of internationally active banks (1988 Basel Accord).³⁴ Although only intended to apply to internationally active G-10 banks, the 1988 Basel Capital Accord, in the following decade and a half, became the international standard for bank capital regulation around the world and has been implemented through formal domestic legal arrangements in more than 100 countries.³⁵ At its simplest, the 1988 Accord was intended to: (1) reduce systemic risk through requiring banks to hold a minimum amount of capital against risks, and (2) limit regulatory competition and arbitrage, thereby providing a level playing field for internationally active banks.³⁶ In essence, the first goal was a response to the problems that resulted from the 1980s debt crisis, wherein large international banks made significant loans to developing countries, which subsequently defaulted. These defaults raised a very real risk of an international systemic banking crisis. Failure of the majority of the world's ten largest banks was only averted through careful regulatory forbearance and financial restructuring efforts (for both the international banks and their developing country borrowers) across the second half of the 1980s.

The 1988 Accord is a fairly simple framework, focusing on one aspect: capital in relation to credit risk in banks. At its heart is the equation that total capital divided by total

32. See THE INTERNATIONAL DEBT CRISIS IN HISTORICAL PERSPECTIVE (Barry Eichengreen & Peter H. Linder eds., 1994).

33. See generally JOSEPH JUDE NORTON, DEVISING INTERNATIONAL BANK SUPERVISORY STANDARDS (1995). See also Carl Felsenfeld & Genci Bilali, *The Role of the Bank for International Settlements in Shaping the World Financial System*, 25 U. PA. J. INT'L ECON. L. 945 (2004); Duncan E. Alford, *Basle Committee International Capital Adequacy Standards: Analysis and Implications for the Banking Industry*, 10 DICK. J. INT'L L. 189 (1992).

34. See BASEL COMMITTEE ON BANKING SUPERVISION, INTERNATIONAL CONVERGENCE OF CAPITAL MEASUREMENT AND CAPITAL STANDARDS (1988), available at <http://www.bis.org/publ/bcbst04a.pdf?no-frames=1> (hereinafter 1988 Basel Capital Accord).

35. For assessments, see International Monetary Fund [IMF], Reports on the Observance of Standards and Codes, <http://www.imf.org/external/np/rosc/rosc.asp?sort=topic#BankingSupervision> (last visited Apr. 6, 2009).

36. See 1988 Basel Capital Accord, *supra* note 34.

risk-adjusted assets must equal at least 8 percent.³⁷ The simple definition has two major components: (1) capital and (2) risk-adjusted assets. Under the 1988 framework, capital is divided into two forms: Tier 1 and Tier 2, of which Tier 1 capital must make up at least 50 percent of total capital.³⁸ Tier 1 capital is essentially shareholder equity, while Tier 2 capital includes a variety of forms of subordinated debt.

Total-risk adjusted assets are primarily composed of a bank's loan portfolio. Loans (and related debt instruments) are grouped into four "baskets": Category 1, Category 2, Category 3, and Category 4.³⁹ Each category very loosely groups together different forms of obligations based on simple risk classifications and assigns a weighting to those assets:

Category 1: Primarily Organization for Economic Cooperation and Development (OECD) country and local government securities—0 percent,

Category 2: Primarily interbank claims—20 percent,

Category 3: Primarily debt secured by real property—50 percent,

Category 4: All other obligations, including, most importantly, private sector corporate debt—100 percent.⁴⁰

In addition to primary assets (e.g., loans), the 1988 Accord also provides mechanisms for drawing certain otherwise off-balance sheet obligations into total risk-adjusted assets for purposes of capital. Once again, off-balance sheet obligations are grouped into four baskets, each with a different conversion factor: 100 percent, 50 percent, 20 percent, and 0 percent.⁴¹

Overall, this simple framework, while not very precise in term of risk calculation, provides a central element of bank regulation for the majority of economies around the world. It also provided, perhaps, the major incentive to the development of the originate and distribute model of finance that, when taken to excess, has subsequently come to be seen as one of the most significant underlying causes of the global credit crisis of 2008.

2. *Regulatory Origins of Securitization*

Increasingly harmonized capital regulation, which created strong transaction incentives among both bank originators and bank investors, has driven bank demand for securitization since the late 1980s. This form of capital regulation created potential value and the enabling devices for securitization to reduce transaction costs. Just as transaction costs are regarded by institutional economists as the catalyst for the transformation of firms as economic organizations, so regulation has a similar effect among financial intermediaries. In recent years, this fact seems also to have been magnified, with intense transaction use spread among a broadening population of banks. In terms of transnational commercial law, securitization by capital-regulated intermediaries has arguably been an intrinsic part of the Basel process.

The 1988 Accord's application of banded weightings to loans and other risk assets—together with standard capital provisioning and the creation of distinct tiers of regulatory

37. *Id.* at para. 44.

38. *Id.* at para. 14.

39. *Id.* at para. 22.

40. *Id.* at Annex 2.

41. *Id.* at Annex 3.

capital—immediately became critical in credit preferences, although not in overall credit creation. Capital-intensive instruments, such as committed stand-by lines of credit, quickly lost favor, especially where competition eroded compensation for such lines. Banks that had formerly targeted net returns on assets as a measure of operating performance found that peer pressure made it essential to manage the accumulation of risk and both actual and regulatory capital according to a series of metrics, including returns on risk-adjusted assets, and on the component layers of regulatory capital set by the Basel Committee.

The result was a profound effect on transaction costs and an encouragement for many firms to separate credit origination from considerations of risk accumulation. It thus helped intensify the rewards of active organizational and balance sheet management. The 1988 Accord also induced portfolio arbitrage and credit distortions in order to reinforce the development of securitization and credit risk transfer markets.⁴² Securitization and credit risk transfer can thus be seen as secondary results of harmonized regulatory principles and a substantial explanation of securitization and other forms of credit risk transfer developed by banks since the late 1980s.

As the 1988 Accord created incentives for both systemic and transactional arbitrage,⁴³ the emphasis in bank securitization changed from elective strategy to regulatory arbitrage. Not only did the introduction of the first capital accord cause banks to manage their credit portfolios to meet regulatory incentives, making securitization a commonly used tool, it also acquainted many investor classes with both securitized transactions and regulatory capital instruments.

3. *Consequences for Debt Capital Markets*

In addition to the 1988 Basel Capital Accord, the 1980s debt crisis also triggered two major behavioral changes in debt capital markets, largely because the crisis had emanated from large syndicated loans. In the aftermath of the crisis, banks began trading loans originating from developing country syndicated loans.⁴⁴ This loan trading constituted the beginning of a major conceptual shift in banking: a bank could make a loan to a borrower but did not necessarily have to hold the loan to term. Rather, loans could be bought and sold amongst first banks and then other financial institutions such as investment funds. Additionally, because banks had lost money as a result of defaults on syndicated loans, they became increasingly interested in bond markets, wherein they could originate loans (and charge fees for arranging the financing) then sell on the risk to a range of investors around the world. The banks were thus insulated from potential defaults. In addition, the eventual resolution program (Brady bonds) relied on securitization techniques, which consequently became more widely known and accepted.⁴⁵

This trend was further reinforced by experiences in the U.S. Savings and Loan Crisis of the 1980s. In the late 1980s, the U.S. savings and loan (S&L), or thrift industry, which

42. See Andreas Jobst, *The Regulatory Treatment of Asset Securitisation: The Basel Securitisation Framework Explained*, 13 J. FIN. REG. & COMPLIANCE 15 (2005).

43. Which Basel II in part aims to remove. See *id.*

44. See ROSS P. BUCKLEY, *Emerging Markets Debt: An Analysis of the Secondary Market* (1999).

45. See *id.*

had been created in the late 1800s to support local saving and lending, essentially failed.⁴⁶ As part of the New Deal legislation in the 1930s, the S&L industry became highly regulated in terms of deposit and lending rates and opportunities, being essentially limited to residential real estate. In the late 1970s, these institutions were substantially deregulated and allowed to engage in a much wider range of business, largely similar to that of commercial banks. During the 1980s, S&Ls expanded lending dramatically; however, it terminated at the end of the decade with real estate price declines and widespread S&L failures.⁴⁷

Of present importance, securitization was widely used as a tool in the resolution of failed S&Ls by the Resolution Trust Corporation (RTC),⁴⁸ thereby reinforcing understanding and acceptance of resulting securities.

The further impact of modern transaction technology and capital regulation was to steadily encourage the prolific transfer of credit risk to hedge funds and other lightly-regulated intermediaries and encourage the creation of SIVs and investment conduits designed to maximize the returns from capital and accounting arbitrage. In the past decade, this behavior, in turn, has influenced the nature, composition, and funding of all bank risk assets and has radically altered the use of structured finance techniques by many banks, especially an elite group of major banks that is most committed to structured finance and risk management and that represents a powerful participatory lobby in the Basel process.

4. *The Asian Financial Crisis of 1997-1998*

Caused largely by improperly designed regulatory systems supporting overinvestment in real estate, the Asian financial crisis fundamentally laid the foundations of the global financial imbalances that fueled the global credit crisis of 2007-2008. Specifically, Asian countries faced a series of currency, financial, and economic crises that forced them to turn to international organizations such as the International Monetary Fund (IMF) for assistance, assistance that came with very economically and politically unpleasant strings derived from the Washington Consensus economic policies.⁴⁹ As a result of the crisis, Asian countries and other emerging market countries, including Japan, South Korea, China, and, eventually, India, Russia, and Brazil, among others, concluded that the best prevention in the future against any currency, financial, and economic crises was export-led growth supported by undervalued currencies and massive accumulation of foreign exchange reserves.⁵⁰ Export-led growth in turn relied on consumption primarily in the United States, with consumer lending supported through low interest rates maintained through investment of large portions of foreign exchange reserves resulting from exports in U.S. government and agency securities.

46. See *THE SAVINGS AND LOAN CRISIS: LESSONS FROM A REGULATORY FAILURE* (James R. Barth, Susanne Trimboth & Glenn Yago eds., 2004).

47. See *id.*

48. Established by the Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA), Pub. L. No. 101-73, 103 Stat. 183.

49. See DOUGLAS W. ARNER, *FINANCIAL STABILITY, ECONOMIC GROWTH AND THE ROLE OF LAW* (2007); Arner, Yokoi-Arai & Zhou, *supra* note 15.

50. See Wolf, *supra* note 4. See also Douglas Arner, Paul Lejot & Wei Wang, *Assessing East Asian Financial Cooperation and Integration*, SINGAPORE Y.B. INT'L L. (forthcoming 2009).

5. *The Collapse of LTCM*

In many ways, the final episode of the Asian financial crisis was a serious domestic financial crisis in Russia in August 1998, which, in turn, caused the near failure of the world's largest and most famous hedge fund: Long Term Capital Management (LTCM).⁵¹ The U.S. Treasury and Federal Reserve, viewing LTCM's collapse as a potential systemic risk, organized a private sector bailout of the firm by a series of the world's largest financial institutions.⁵² While the firms involved eventually profited significantly, there were two unintended consequences. First, financial market participants came to believe that the U.S. Federal Reserve would not allow a systemically important financial institution (even an unregulated firm such as a hedge fund) to fail, and second, regulators came to believe that the key systemic risks lay not in the regulated institutions but in unregulated investment firms such as hedge funds.

C. 1998-2004: A NEW MODEL?

By the end of the 1990s, this series of underlying events led to the view that a new model of banking had emerged. This model was based on several elements, most importantly universal banking and the originate and distribute business model, both of which received important support from international financial regulatory standards.

1. *The New Model: Universal Banking and Originate and Distribute*

Unlike the system of finance established in the United States in the 1930s, the new model of finance was based on a European-style model of universal banking rather than on the U.S. New Deal's strict sectoral separation.⁵³

This aspect was secured with the repeal of Glass-Steagall in 1999 through the Gramm-Leach-Bliley Financial Modernization Act of 1998 (GLBA).⁵⁴ As a result of this change, competition between commercial banks and investment banks for securities business increased dramatically, forcing the investment banks into ever more risky reliance on proprietary trading—speculating with their own capital and using leverage to increase returns.

Second, the model was based on securitization, now termed the “originate and distribute” model.⁵⁵ Under the originate and distribute model, financial institutions would originate assets, such as loans, and then repackage these and sell them to investors. The resulting funds would be used to originate more assets, which in turn would be repackaged and sold, recommencing the cycle. From the standpoint of financial institutions, this model had two benefits. First, it increased profitability by increasing the velocity of transactions that in a low interest rate environment relied more on fees charged for origination

51. For more information on LTCM, its near failure, its subsequent recapitalization and implications for dealing with systemic risk in the United States, see U.S. GEN. ACCOUNTING OFFICE, RESPONSES TO QUESTIONS CONCERNING LONG-TERM CAPITAL MANAGEMENT AND RELATED EVENTS, GGD-00-67R (2000), available at <http://www.gao.gov/archive/2000/gg00067r.pdf> [hereinafter GAO Responses]; U.S. GEN. ACCOUNTING OFFICE, Long-Term Capital Management: Regulators Need to Focus Greater Attention on Systemic Risk, GGD-00-3 (1999).

52. See GAO Responses, *supra* note 51.

53. See FINANCIAL REGULATION—A GUIDE TO STRUCTURAL REFORM (Douglas Arner & Jan-Juy Lin eds., 2003).

54. See Olive & Arner, *supra* note 20.

55. See Arner, Lejot & Schou-Zibell, *supra* note 2.

than on spread-based income produced over the life of the asset. Second, it reduced risks of any potential defaults because the originators did not own the assets originated; instead, the resulting securities were widely distributed in the markets. From the standpoint of regulators, this model likewise had two benefits. First, banks were less risky because they were holding fewer loans and hence were exposed less to default risk in any future economic downturn. Second, repackaging and distributing credit risks widely into the market brought down the charges that lenders had to charge borrowers, increasing home ownership and economic activity. Unfortunately, these benefits, when taken to excess, also turned out to be the greatest weakness of the new model.

2. *Regulatory Reinforcement of the New Model*

Importantly, international regulatory changes provided significant incentives for these changes. In the context of international capital standards, over time and in reaction to various international banking crises, the 1988 Accord was modified in certain significant ways through a variety of "amendments." Of most significance are four amendments.

First, the Accord was amended in July 1994 to redefine countries that can qualify for OECD weighting, disqualifying countries that have rescheduled external debt within the previous five years.⁵⁶ This amendment was a specific reaction to the Mexican financial crisis of 1994. (Mexico had immediately prior to the crisis become an OECD member, a factor that incentivised international lending.)⁵⁷ This amendment reinforced procyclical effects of the Accord in encouraging lending to emerging market OECD members but dramatically reducing it following any restructuring.

Second, the Accord was amended in April 1995 to recognize netting in the treatment of off-balance sheet items.⁵⁸ This amendment was a regulatory recognition of the development of OTC swap markets during the 1980s and 1990s. Specifically, regulatory recognition of netting underpinned netting as one of the banks' most significant tools to reduce counterparty credit risk exposures. This move towards collateralization of counterparty risks through marketable securities accelerated in the wake of the failure of LTCM. Unfortunately, however, the premise rested on two assumptions: (1) that collateral can be valued and (2) that collateral can be sold (i.e. that the securities are liquid). Both assumptions were to fail in 2008 for the majority of collateral.

Third, the Capital Accord was amended in January 1996, and modified in September 1997, to incorporate market risks.⁵⁹ Previously, the 1988 Accord only dealt with credit (i.e. counterparty) risk. But following the failure of Barings Bank in 1995, regulators became acutely aware of banks' exposures to securities activities and therefore moved to address such risks ("market risk") through two alternative approaches: a standardized approach and an internal models-based approach. The internal models-based approach allowed banks to develop their own internal quantitative models to determine capital to be

56. BASEL COMMITTEE ON BANKING SUPERVISION, AMENDMENT TO THE 1988 CAPITAL ACCORD RECOGNITION OF COLLATERAL (1994), available at <http://www.bis.org/publ/bcbs14a.pdf?noframes=1>.

57. See Douglas W. Arner, *The Mexican Peso Crisis: Implications for the Regulation of Financial Markets*, 4 LAW & BUS. REV. AM. 28, 28-69 (1996) [hereinafter *Mexican Peso Crisis*].

58. BASEL COMMITTEE ON BANKING SUPERVISION, BASEL ACCORD: TREATMENT OF POTENTIAL EXPOSURE FOR OFF-BALANCE-SHEET ITEMS (1995), available at <http://www.bis.org/publ/bcbs18.pdf?noframes=1>.

59. BASEL COMMITTEE ON BANKING SUPERVISION, AMENDMENT TO THE CAPITAL ACCORD TO INCORPORATE MARKET RISKS (1996), available at <http://www.bis.org/publ/bcbs24.pdf?noframes=1>.

held against market risks. Regulators believed such models (especially those of the largest and most sophisticated banks), based on proprietary mathematical structures derived from modern finance and other disciplines such as physics, to be superior to any possible regulatory standard. While the failure of LTCM tested excessive reliance on quantitative modeling, regulators continued to allow banks to hold capital for market risks solely on the basis of their own internal models.

Fourth, the Accord was amended in April 1998 to reduce the risk weighing for claims on regulated securities firms, subject to certain conditions, and substituted "loans" for "claims" in parts of the text.⁶⁰ Essentially, the view was that by the end of the 1990s, securities firms (especially the major international investment banks) had become sufficiently regulated to merit similar treatment as banks in the context of capital requirements relating to interbank lending. As a result, securities firms (and major financial center banks) came to rely ever more heavily on short-term interbank funding, money market funding, and capital market funding mechanisms rather than on traditional deposits.

These changes also had important consequences for investment banks. Traditionally, investment banks had relied on advisory, fee-based transaction arrangements and advice—"merchant banking."⁶¹ This sort of business is relatively low risk because the financial institution is not putting its own capital at risk. Following World War II, this business was bolstered with the addition of brokerage, which until 1975 was highly profitable and low risk in the context of a system of fixed commissions.⁶² Following May Day and the gradual encroachment of commercial banks into traditional investment banking business (in which they were bolstered by availability of deposits and interbank financing), especially in the wake of the repeal of Glass-Steagall, investment banks found that in order to maintain and increase profitability, they had to have access to their own capital (hence the rush to list across the 1990s) and that they had to put their capital at risk, especially through proprietary trading in the late 1990s and increasing leverage prior to 2008.

The combination of proprietary trading, leverage, and the originate and distribute model would prove toxic to many of the largest, most famous and seemingly most sophisticated international financial institutions in 2008.

D. 2005-2006: TAKING IT TO EXCESS AND THE ROLE OF BASEL II

As is invariably the case in finance, reasonable ideas were eventually taken to excess and resulted in crisis.⁶³ In this case, the period of greatest excess was 2005-2006. During this period, borrowers, lenders, arrangers of transactions, credit support providers such as insurance companies, investors, and advisors such as rating agencies all came together in an environment of low interest rates, freely available capital, and regulatory distraction to produce the greatest financial crisis since the 1930s. During this period, consumer lending and borrowing in the United States and United Kingdom (among others) reached new levels of excess, with borrowers of lesser credit quality (including the now infamous sub-

60. BASEL COMMITTEE ON BANKING SUPERVISION, AMENDMENT TO THE CAPITAL ACCORD (1998), available at <http://www.bis.org/publ/bcbs36.pdf#noframes=1>.

61. See ROY C. SMITH & INGO WALTER, *GLOBAL BANKING* (2d ed. 2003); STEPHEN VALDEZ, *AN INTRODUCTION TO GLOBAL FINANCIAL MARKETS* (5th ed. 2007).

62. See SELIGMAN, *supra* note 31; SMITH & WALTER, *supra* note 61.

63. See KINDLEBERGER, *supra* note 10.

prime lending in the United States, of which the most extreme example was in the form of "NINJA" borrowers—no income, no job, or no assets). Commercial lending for real estate, M&A, and private equity propelled markets to new heights. Investors pursued yield with little consideration for risk. Arrangers and advisors such as ratings agencies became caught up in the fee generating orgy. At the same time, regulators, thinking originate and distribute, on balance, was beneficial for financial stability and economic growth, focused on other areas such as Basel II, hedge funds, and sovereign wealth funds.

1. *Advanced Originate and Distribute*

From the late 1990s, the majority of large international banks and investment banks came to adopt the new model of originate and distribute universal banking. During the 2000s, this model was taken further, with the development of an essentially manufacturing model of debt securities.⁶⁴ Under the manufacturing model, financial institutions would, on a continual basis, either create or purchase underlying assets from other originators. The assets would be pooled together into structured pools of risks designed to appeal to various classes of investors and held. Such pooling would take place either on an on-balance sheet or an off-balance sheet through separate, though often not truly independent, entities such as conduits and SIVs. Pools, where necessary, would be supplemented by synthetic credit risk through CDSs to meet the requirements of complex quantitative models designed on the basis of portfolio theory to reduce risk and enhance return, including those of ratings agencies.

Pools then would be used to back a structure of securities rated by external credit ratings agencies. Resulting securities would be sold or held ("warehoused") depending on prevailing market conditions, with purchasers including banks and investment banks (both of which viewed highly rated securities as desirable investments and also useful for regulatory and risk management purposes, including collateralization); insurance companies; and pension and investment funds, including hedge funds, all of which viewed the products as desirable investments and useful collateral. Funds resulting from sales of securities, which might in turn be repackaged into CDOs and eventually CDO squareds, etc., would be used to collect new assets, thus continuing the process, so long as investors continued to be willing to purchase the resulting securities.

2. *Rating Agencies*

As noted above, rating agencies played a key role in the advanced originate and distribute model. The rating agencies have been criticized periodically for slow analytical reaction to deteriorating credit risks, rapid reappraisals, and an asymmetric view of credit improvements and declines. Concern over their structured finance activity is different and more fundamental. The effect of rapid changes in rating is less seen in sober reassessments and changes in expectations of the kind predicted by market economists, but in quantum-like, non-granular reactions. A fall in credit rating below a set level may cause no change in intellectual sentiment but a conditioned and often compulsory sale by institutional investors constrained by ratings-based investment criteria. The implication, rarely acknowledged outside the gossip of market professionals, is that ratings rarely in-

64. See Arner, Lejot & Schou-Zibell, *supra* note 2; FINANCIAL STABILITY FORUM, *supra* note 6; BANK OF ENGLAND, *supra* note 6; TURNER REVIEW, *supra* note 6.

duce or inform a portfolio investment decision, but may permit it to happen (institutional investors frequently having contractual-or regulated-ratings minimum mandates for investments) or provide exculpatory evidence if the decision later proves mistaken.

It has been recognized for some time that credit rating agencies can engage in commercially conflicted activities. IOSCO's code of conduct drew attention to this concern as a regulatory issue but only extended to the general mission of the agencies, not their analytical techniques, which were viewed as sacrosanct in much the same way as many internal quantitative models under the Basel market risk framework prior to the 1998 near-collapse of LTCM.⁶⁵ Criticism of the agencies has focused on two particular conflicts of interest, namely compensation being met by issuers whose securities the agencies appraise and the possibility that a rating agency, parent or, affiliate may derive revenue or other benefits from issuers or their advisors. This focus neglects a specific, actual conflict inherent in the origination process for structured transactions, and which the recent dislocation has exposed to far wider concern. It arises from the quasi-origination function that the leading rating agencies undertook whenever many complex transactions were under negotiation, and it is this aspect of the current rating agency model that is likely to be reconsidered in the medium-term. In addition, it is highly likely that quantitative risk modeling will be generally subject to an increase in regulatory minimum-setting and scrutiny, not only in structured transaction ratings but in a range of regulatory risk considerations.

3. *Basel II*

Significantly, these excesses received regulatory support through the replacement for the 1998 Basel Capital Accord—Basel II. Recognizing that the 1988 Accord suffered from numerous problems (especially relating to the way in which it deals with risk classification) and also as a result of the Asian financial crisis, the Basel Committee began work on developing a new capital accord in 1999. After approximately five years of discussion, consultation and market testing, in 2004, the Basel Committee released the final agreed framework.⁶⁶ In 2005, the Committee released a slightly revised and updated version to address certain aspects of trading activities⁶⁷ and, in 2006, released a comprehensive document incorporating unchanged elements of the 1988 Accord and subsequent amendments into a single framework.⁶⁸

Basel II is intended to provide an overall system of risk-based supervision and risk management (internal and market) for banks. It focuses on five major categories of risk: (1) credit, (2) market, (3) operational, (4) liquidity, and (5) legal.⁶⁹ This framework involves four levels: (1) identification of risk, (2) risk measurement, (3) risk disclosure, and (4) in-

65. Int'l Org. of Sec. Comm'ns [IOSCO], *Code of Conduct Fundamentals for Credit Rating Agencies* (December 2004), available at <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD180.pdf>.

66. BASEL COMMITTEE ON BANKING SUPERVISION, INTERNATIONAL CONVERGENCE OF CAPITAL MEASUREMENT AND CAPITAL STANDARDS: A REVISED FRAMEWORK (Bank for Int'l Settlements, 2004), available at <http://www.bis.org/publ/bcbs107.pdf?noframes=1>.

67. BASEL COMMITTEE ON BANKING SUPERVISION, INTERNATIONAL CONVERGENCE OF CAPITAL MEASUREMENT AND CAPITAL STANDARDS: A REVISED FRAMEWORK (Bank for Int'l Settlements, 2005), available at <http://www.bis.org/publ/bcbs118.pdf?noframes=1>.

68. BASEL COMMITTEE ON BANKING SUPERVISION, INTERNATIONAL CONVERGENCE OF CAPITAL MEASUREMENT AND CAPITAL STANDARDS: A REVISED FRAMEWORK—COMPREHENSIVE VERSION (Bank for Int'l Settlements, 2006) ("Basel II"), available at <http://www.bis.org/publ/bcbs128.pdf?noframes=1>.

69. *Id.*

ternal risk management.⁷⁰ Following this framework, Basel II implements a number of changes through elements based upon three “pillars”: Pillar I addresses minimum capital requirements; Pillar II addresses supervisory review; and Pillar III addresses market discipline through disclosure requirements.⁷¹ The system is intended to be an evolutionary system that can develop over time. The three pillars are intended to support the fundamental objectives of (1) “strengthen[ing] the soundness and stability of the international banking system while” (2) “maintaining sufficient consistency that capital adequacy regulation will not be a significant source of competitive inequality among internationally active banks” through “promot[ing] the adoption of stronger risk management practices by the banking industry.”⁷² As with the 1988 Accord, Basel II is intended to apply to the consolidated activities of internationally active banks, initially G-10 but gradually incorporated into other systems.⁷³

In attempting to achieve these objectives, Basel II incorporates a number of significant elements, including a menu-based approach to capital charges, greater use of both credit assessments by rating agencies and through banks’ own internal models, increased recognition of a variety of risk mitigation techniques, a new charge for operational risk, and new requirements relating to supervisory review and new market disclosure obligations imposed on banks.

In relation to Pillar I (revised minimum capital requirements), the minimum ratio and definition of capital required by the essential equation remain largely unchanged. The main changes relate to the denominator, which is now the sum of risk-weighted assets, market risk and operational risk charges. Market risk essentially remains, as under the 1996 Amendment, with a standardized approach and an internal models based (IRB) option. For the new operational risk charge, there are three options: Basic Indicator, Standardized, and Advanced Measurement Approaches (essentially IRB).⁷⁴

In relation to credit risk, there is now a standardized approach and two IRB approaches (foundation and advanced). The standardized approach includes much greater specificity in relation to risk weightings (often based on ratings by external agencies) as well as new operational requirements.⁷⁵ In addition, it allows much greater use of credit risk mitigation techniques, such as collateral, guarantees and credit derivatives, and on-balance sheet netting. The two IRB approaches are based on banks’ internal risk models and include rules relating to the use of IRB models (qualification), data requirements, and minimum charges. In terms of asset classes, separate requirements address: (1) corporate, sovereign, and bank exposures; (2) retail exposures; (3) equity exposures; (4) purchased receivables; and (5) securitization.⁷⁶

Pillar II includes four central principles.⁷⁷ First, banks “should have a process for assessing their overall capital adequacy in relation to their risk profile and a strategy for

70. *Id.*

71. *Id.*

72. *Id.* at 2.

73. *Id.* at 7.

74. *Id.* at 144-47.

75. *Id.* at 19-51.

76. *Id.* at 63-86.

77. *Id.* at 205-12.

maintaining their capital levels" (Principle 1).⁷⁸ Second, "[s]upervisors should review and evaluate banks' internal capital adequacy assessments and strategies, as well as their ability to monitor and ensure their compliance with regulatory capital ratios. Supervisors should take appropriate supervisory action if they are not satisfied with the result of this process" (Principle 2).⁷⁹ Third, "[s]upervisors should expect banks to operate above the minimum regulatory capital ratios and should have the ability to require banks to hold capital in excess of the minimum" (Principle 3).⁸⁰ Fourth, "[s]upervisors should seek to intervene at an early stage to prevent capital from falling below the minimum levels required to support the risk characteristics of a particular bank and should require rapid remedial action if capital is not maintained or restored" (Principle 4).⁸¹

Pillar III deals with the supervisory review process through which supervisors should monitor the activities of banks.

Overall, three elements of Basel II provided the most significant incentives to the excesses of the final years preceding the crisis of 2008: (1) greater recognition of quantitative risk modeling, (2) reliance on credit ratings, and (3) regulatory recognition of credit risk mitigation techniques, especially credit derivatives.

First, while the LTCM episode highlighted the potential dangers of overreliance on quantitative modeling for risk management purposes, Basel II adopted many of the techniques developed for market risk and allowed those to be applied not only to market risk but also to credit and operational risk capital requirements, albeit with greater limits than in the context of market risk.⁸² Under the Basel II framework, banks were encouraged to develop internal risk models for all major categories of risks, with regulators setting minimum parameters in which these models were to operate and be recognized for regulatory purposes. The intention was to bring regulatory, economic, and accounting capital into alignment. The result was to place enhanced reliance on quantitative risk management techniques that proved to be less robust than previously thought when subjected to circumstances of extreme stress.

Second, Basel II, especially in the context of the standardized approaches, relies heavily on external credit ratings for assignment of risk weights to varying categories of assets. The intention was that use of external ratings would reduce the arbitrariness of the 1988 risk weightings and enhance their reasonableness from a market standpoint. The result was that rating agencies received a substantial regulatory enhancement of the usage of their products and increased market confidence therein. At the same time, as with the earlier amendment dealing with risk weighting of restructuring OECD members, reliance on credit ratings enhanced the procyclicality of capital regulation. In good times, ratings were high with lower capital requirements and higher demand for highly rated products. When the cycle turned, credit ratings were downgraded aggressively, leading to higher capital requirements and need for capital.

Third, Basel II, in increasing regulatory recognition of risk mitigation techniques (based largely on the experiences of the earlier amendment to recognize netting), increased the

78. *Id.* at 219.

79. *Id.* at 223.

80. *Id.* at 225.

81. *Id.* at 226.

82. For discussion, see Daniel K. Tarullo, *BANKING ON BASEL: THE FUTURE OF INTERNATIONAL FINANCIAL REGULATION* (2008). See also Arner, Lejot & Schou-Zibell, *supra* note 2.

use of both collateral and credit derivatives, especially CDSs. In relation to collateral, recognition was extended beyond traditional high quality government bonds to a range of other highly rated debt securities. Such recognition increased the demand for such securities, especially among regulated financial institutions; however, during 2008, many of the securities proved difficult to value or valueless and illiquid, thereby greatly reducing their value as collateral and at the same time impairing capital of regulated institutions. Perhaps more significantly, Basel II recognized CDSs from two angles: first as a credit risk mitigation technique, and second as a means to acquire credit risk for portfolio purposes. As a credit risk mitigation technique, financial institutions received strong incentives to use CDSs to manage credit exposures, thereby providing an important incentive to market development. At the same time, however, this usage dramatically increased counterparty risks among financial institutions and the major dealers, which were assumed, incorrectly, to be not allowed to fail, on the basis of LTCM experiences.

Most significantly, Basel II, through a combination of regulatory recognition of CDSs and internal risk modeling, provided a strong incentive for financial institutions to view credit on a portfolio basis (as had traditionally been done with market risk, such as equity securities). Where banks were unable to purchase the credit risk (through loans or bonds) necessary from the standpoint of portfolio construction, they were able to use CDSs to acquire synthetic credit risk. While a portfolio approach to credit is probably the correct approach for a complex institution, the use of CDSs brought with it counterparty risk to the major dealers, such as Lehman and AIG. Such regulatory recognition also supported the use of CDSs in the context of structured finance, for example in the context of CDOs.

III. Consequences and Responses

Towards the end of 2006, rising interest rates, subprime delinquencies, and downgrades of structured products began to shake confidence in the new financial paradigm. By summer 2007, the tide had turned, resulting in a freeze in markets in August 2007, significant equity market corrections, cuts in interest rates, and a seeming return to normalcy in the U.S. stock markets, with foreign equity and global commodities markets being simultaneously propelled to new heights as money moved out of credit and into other opportunities.⁸³ At the same time, the failure of Northern Rock in the United Kingdom in September was followed by the beginning of the onset of the credit crisis globally as adverse selection, loss of confidence, and changes in investor preferences weakened global credit markets.⁸⁴

Key stresses emerged early in 2008 in the context of monoline insurance companies. Historically, monolines had played an important, though low profile, role in the municipal bond markets, providing third party guarantees to enhance debt securities. During the 1990s, as markets for securitization and complex debts instruments developed, monolines became involved in providing credit support through various forms of insurance at various levels in ABS and CDOs. As such securities faced increasing rating downgrades across 2007 and early 2008, it became obvious that monolines would be called on to provide support to a much greater extent than anyone had expected (especially the monolines,

83. See Arner, Lejot & Schou-Zibell, *supra* note 2.

84. *Id.*

which had underpriced their products). As a result, the monolines themselves came under threat of credit downgrade, with the risk that their downgrade would result in further downgrades of securities and massive losses among holders.

Consequently, the New York Insurance Commissioner (the state regulator and the most important regulator for the U.S. insurance industry) organized a capital infusion, along the lines of previous LTCM experience, sufficient to defuse any potential systemic risks arising from this source.

A. BEAR STEARNS

The next major event, in March 2008, was the failure of Bear Stearns, the fifth largest U.S. investment bank and the one with the least diversified business and the greatest direct involvement in debt capital markets.⁸⁵ While problems had been developing for some months, Bear Stearns faced severe liquidity problems on March 14, 2008, forcing the Federal Reserve Bank of New York to provide emergency funding through J.P. Morgan.⁸⁶ Nonetheless, after the markets closed that day, it became apparent that the emergency funding could not halt Bear Stearns' downward spiral, prompting Bear Stearns to conclude that it would need to file for bankruptcy protection on March 17, 2008, unless it was acquired by another firm.⁸⁷ On March 16, 2008, J.P. Morgan agreed to buy Bear Stearns with financing support from the New York Fed.⁸⁸ In May of 2008, the sale was completed.⁸⁹

At the time, the events surrounding Bear Stearns were unprecedented. For the first time, a major investment bank that was well-capitalized and apparently fully liquid experienced an enormous loss of confidence that denied it not only unsecured financing, but short-term secured financing, even when the collateral consisted of agency securities with a market value in excess of the funds to be borrowed.⁹⁰ Counterparties would not provide securities lending services and clearing services, and prime brokerage clients moved their cash balances elsewhere. These decisions of counterparties, clients, and lenders to no longer transact with Bear Stearns in turn influenced other counterparties, clients, and lenders to also reduce their exposure to Bear Stearns.

B. FANNIE MAE AND FREDDIE MAC

As central institutions in the U.S. mortgage market, Fannie Mae and Freddie Mac were logical concerns for market participants. In this context, the GSEs were the largest par-

85. Jeff Pruzan, *Timeline: Bear Stearns' Year of Turmoil*, FIN. TIMES, Mar. 14, 2008, available at http://www.ft.com/cms/s/d7936764-f1d5-11dc-9b45-0000779fd2ac,dwp_uuid=1c573392-3015-11da-ba9f-00000e2511c8.

86. See Press Release, Federal Reserve, The Federal Reserve is Monitoring Market Developments Closely and Will Continue to Provide Liquidity as Necessary to Promote the Orderly Functioning of the Financial System (Mar. 14, 2008), available at <http://www.federalreserve.gov/newsevents/press/monetary/20080314a.htm>.

87. *Id.*

88. Office of Inspector Gen., Office of Audits, Sec. Exch. Comm'n, Report No. 446-A, SEC's Oversight of Bear Stearns and Related Entities: The Consolidated Supervised Entity Program iv (2008).

89. *Id.* See Bear Stearns, <http://www.bearstearns.com/> (last visited Apr. 6, 2009).

90. SEC Report, *supra* note 88, at v.

ticipants in the U.S. markets, through guarantees, purchases, and securitization of “conforming loans.”⁹¹ The GSEs, though technically not backed by the U.S. government, were implicitly assumed by markets to be so backed. During July 2008, the markets tested this assumption. The result was explicit government backing for the two institutions through the Housing and Economic Recovery Act of 2008.⁹²

Unfortunately, by the beginning of September, losses of market confidence meant that the explicit guarantee of the two GSEs was no longer sufficient, and to prevent their bankruptcy, the U.S. Treasury under HERA, placed them into a Federal Housing Finance Agency (FHFA) conservatorship on September 7.⁹³ Essentially, Fannie and Freddie posed systemic risk not only because of their central role in U.S. mortgage markets, but also because they are the largest issuers of U.S. government agency debt securities. Importantly, these securities are held by financial institutions and institutional investors (including insurance companies and pensions funds) around the world. In addition, foreign governments including China (300+ billion dollars) and Japan (200+ billion dollars) are very large purchasers and holders of such securities.⁹⁴ A default by Fannie and Freddie undoubtedly would have triggered not only a systemic financial crisis in the United States, but also a severe economic crisis, as the U.S. government became unable to fund itself through debt sales.

While this re-nationalization of the U.S. GSEs addressed their systemic risk, it did not prevent the final trigger of the systemic crisis: the failures of Lehman Brothers and AIG.

C. SYSTEMIC CRISIS

On September 15, Lehman Brothers, the fourth largest U.S. investment bank, filed for Chapter 11 bankruptcy protection. With 680 billion dollars in assets, 650 billion dollars in liabilities and over 100,000 creditors around the world, this is the largest and most complex bankruptcy in history.⁹⁵ This event would come to be seen as the trigger for the subsequent systemic crisis.

Over the preceding weekend, the U.S. Treasury and Federal Reserve organized a series of meetings, similar to those previously organized for LTCM in 1998, to try to find a private sector resolution for Lehman Brothers along the lines of that organized for Bear Stearns in March.⁹⁶ For a range of reasons, however, including the unwillingness of the U.S. government to provide sufficient financing, no private sector solution was possible. At the time, the decision was made that a failure of Lehman would not pose systemic risk and that therefore it must be allowed to fail. Unfortunately, in hindsight, this decision

91. See Fannie Mae, <http://www.fanniemae.com/index.jhtml> (last visited Apr. 6, 2009) and Freddie Mac, <http://www.freddie.com/> (last visited Apr. 6, 2009).

92. On Jul. 30, 2007, the U.S. Congress introduced what would become known as the Housing and Economic Recovery Act of 2008 (HERA), Pub. L. No. 110-289, 122 Stat. 2654.

93. Press Release, U.S. Treasury, Statement by Secretary Henry M. Paulson, Jr. on Treasury and Federal Housing Finance Agency Action to Protect Financial Markets and Taxpayers (Sep. 7, 2008), *available at* <http://www.treas.gov/press/releases/hp1129.htm>.

94. U.S. Treasury & Federal Reserve, Major Foreign Holders of Treasury Securities (Mar. 16, 2009), *available at* <http://www.ustreas.gov/tic/mfh.txt>.

95. See Lehman Brothers, <http://www.lehmanbrothers.com/> (last visited Mar. 23, 2009).

96. See Press Release, U.S. Treasury, Paulson Statement on SEC and Federal Reserve Actions Surrounding Lehman Brothers (Sep. 14, 2008), *available at* <http://www.treas.gov/press/releases/hp1134.htm>.

was incorrect, and the insolvency would have unintended consequences as the firm's positions in equity, debt, and derivatives markets around the world dramatically increased uncertainty (if Lehman failed, anyone could fail) and shattered already weak confidence among financial market participants.

Around the same time, after pulling out of the bidding for Lehman, Bank of America agreed to acquire Merrill Lynch, the third largest U.S. investment bank.

Finally, the same weekend, American International Group (AIG), at the time the world's largest insurance company (with over one trillion dollars in assets globally), announced that it required a loan from the Federal Reserve in order to survive.⁹⁷ This announcement was a shock, as insurance companies are not regulated by the Federal Reserve, and there were serious questions regarding the legality of any such support.⁹⁸ During the preceding weekend, the Federal Reserve and the Treasury had discovered that AIG had become one of the largest counterparties in the global CDS market. The realization was that, with the downgrade, AIG would be unable to meet calls for additional collateral on these positions and would default. The default (due to the influence of Basel II in European financial markets especially) would probably cause the insolvency of many of the world's largest financial institutions, once again a certain case of systemic risk.

As a result, on Tuesday, September 16, the Treasury guaranteed a two year, eighty-five billion dollar bridge loan from the Federal Reserve, resulting in a 79.9 percent equity stake for the U.S. government.⁹⁹ Unlike in the case of Lehman, creditors and counterparties were protected.

By Thursday, September 18, the series of events proved too much for the global financial system, and it began to collapse. Most significantly, the collapse was triggered by uncertainty, loss of confidence, and adverse selection, but also by direct losses resulting from the collapse of Lehman. On September 18, the U.K. government announced that Lloyds TSB would takeover Halifax Bank of Scotland (HBOS), which otherwise would have failed.¹⁰⁰ In the United States, the oldest money market fund, the Reserve Primary Fund with sixty-two billion dollars in assets announced that as a result of total losses on 785 million dollars in commercial paper (short term debt) issued by Lehman, it would have to close and would not be able to pay its customers in full.¹⁰¹ This event, known as

97. *American International Group: Hearing Before the H. Comm. on Financial Services*, 111th Cong. (Mar. 24, 2009) (statement of Ben Bernanke, Chairman, Federal Reserve Board).

98. See 12 U.S.C.A. § 343 (West 2001). Although contentious because AIG, as an insurance company, is not regulated by the Federal Reserve, section 13(3) of the Federal Reserve Act was used to provide the necessary authority.

99. Press Release, Federal Reserve (Sept. 16, 2008) (announcing that the Federal Reserve Board, with full support of the Treasury Department, authorizes the Federal Reserve Bank of New York to lend up to eighty-five billion dollars to the American International Group (AIG)), available at <http://www.federalreserve.gov/newsevents/press/other/20080916a.htm>. See also Press Release, Federal Reserve (Oct. 8, 2008) (announcing that the Federal Reserve Board authorizes Federal Reserve Bank of New York to borrow securities from certain regulated U.S. insurance subsidiaries of AIG), available at <http://www.federalreserve.gov/newsevents/press/other/20081008a.htm>. On Oct. 8, 2008, the Federal Reserve took further action to replenish AIG's liquidity, with the FRBNY agreeing to borrow up to 37.8 billion dollars in investment-grade, fixed-income securities from AIG in return for cash collateral. *Id.*

100. *Bank Shares Fall Despite Bailout*, BBC NEWS, Sept. 18, 2008, available at <http://news.bbc.co.uk/2/hi/business/7622380.stm>.

101. See Tara S. Bernard, *Money Market Funds Enter a World of Risk*, N.Y. TIMES, Sept. 17, 2008, available at <http://www.nytimes.com/2008/09/18/business/yourmoney/18money.html?em>.

"breaking the buck," in general, along with preceding rumors, triggered a run on money market funds with outflows of 200 billion dollars from September 15-19.¹⁰² In the context of the U.S. financial system, money market funds are at the heart of funding, with over three trillion dollars in assets.¹⁰³ The same day, Putnam announced the failure of a retail fund (twelve billion dollars) and Bank of New York Mellon of an institutional fund, all in addition to the failure of three Lehman money market funds.¹⁰⁴

At this point, panic set in in earnest, with market participants driving gold prices up a record amount and short term U.S. Treasury bills down to the lowest level (0.02 percent) since 1941 in a violent rush to safe assets. On September 18, the global financial system was collapsing. If it were to collapse, the global financial system and economy would follow as in the Great Depression.

In order to stop or slow the collapsing of the financial system, in addition to the bolstering of traditional short-term liquidity mechanisms, the Fed acted to increase liquidity dramatically. Despite the creation and bolstering of these mechanisms (the forward TAF created later in September aside¹⁰⁵), the financial death spiral continued. On the afternoon of September 18, the U.S. Treasury announced a guarantee of money market funds of up to fifty billion dollars through the Exchange Stabilization Fund, established in 1934 to protect the value of the U.S. currency in international markets and last used to provide financial support to Mexico during the Tequila Crisis of 1994-1995.¹⁰⁶ Additionally, the Fed announced a new program to support the money markets, the Asset Backed Commercial Paper (ABCP) Money Market Mutual Fund (MMMF) Liquidity Facility (AMLF).¹⁰⁷ These emergency actions helped stabilize money market outflows, but the credit markets, especially the interbank markets, ceased to function and essentially remained in the same state until the week of October 13.

On another front around the same time, in exception to the theme of sole U.S. action, the SEC, in concert with the U.K. Financial Services Authority (FSA)¹⁰⁸ and a wide range of other securities regulators around the world, temporarily banned short sales of financial

102. See Naohiko Baba, Robert N. McCauley & Srichander Ramaswamy, *US Dollar Money Market Funds and Non-US Banks*, BIS Q. REV., Mar. 2009.

103. See *id.*

104. See Diana B. Henriques, *Professional Money Fund is Closed by Putnam*, N.Y. TIMES, Sept. 18, 2008, available at <http://www.nytimes.com/2008/09/19/business/19money.html>.

105. Press Release, Federal Reserve (Sept. 29, 2008) (announcing the commitment of the Federal Reserve and other central banks to further coordinate actions to expand significantly the capacity to provide U.S. dollar liquidity) available at <http://www.federalreserve.gov/newsevents/press/monetary/20080929a.htm>. On September 29, 2008, the Fed introduced another new program, the FTAF, designed to provide reassurance to market participants that term funding will be available over year-end.

106. Press Release, U.S. Treasury, Treasury Announces Guaranty Program for Money Market Funds (Sept. 19, 2008), available at <http://www.treasury.gov/press/releases/hp1147.htm>. See also Press Release, Federal Reserve, Federal Reserve Board Announces Two Enhancements to Its Programs to Provide Liquidity to Markets (Sept. 19, 2008), available at <http://www.federalreserve.gov/newsevents/press/monetary/20080919a.htm>. For a discussion of the use of the Exchange Stabilization Fund during the Tequila Crisis, see *Mexican Peso Crisis*, *supra* note 57.

107. Press Release, Federal Reserve (Sept. 19, 2008) (announcing two enhancements to the Federal Reserve Board's programs to provide liquidity to markets), available at <http://www.federalreserve.gov/newsevents/press/monetary/20080919a.htm>.

108. Press Release, FSA (Sept. 18, 2008) (announcing FSA's statement on short positions in financial stocks), available at <http://www.fsa.gov.uk/pages/Library/Communication/PR/2008/102.shtml>.

stocks "to prohibit short selling in financial companies to protect the integrity and quality of the securities market and strengthen investor confidence."¹⁰⁹

On September 20, in order to resuscitate the U.S. credit markets, which had suffered the financial equivalent of a heart attack and were now on liquidity life support provided by the Federal Reserve, U.S. Treasury Secretary Paulson approached the U.S. Congress and asked for authorization to issue up to 700 billion dollars of Treasury securities to finance the purchase of "troubled assets" under the "Troubled Assets Relief Plan" (TARP).¹¹⁰ This proposal essentially called a time out in the financial crisis, and the system went on hold (on continuing Federal Reserve life support) while the U.S. Congress discussed the plan. The bill, however, was met with American public outrage.

Had the plan been adopted quickly, it is possible (though certainly unknown) that the TARP may have prevented the credit crisis from becoming a systemic financial crisis, with consequent impact on the real economy. The structure could have addressed two problems simultaneously: illiquidity of structured products and impairment to bank capital, with problem assets removed from banks and held by the U.S. government until more normal conditions returned, thus allowing banks to focus on improving their business going forward.

While the U.S. financial crisis did not worsen dramatically during the week of September 20, the credit markets essentially did not function, and it can be said that it was in this period that the United States witnessed the first systemic crisis in the U.S. financial system since the 1930s. At the same time, however, the United States did not see a systemic collapse of the financial system in September 2008, which we did see following 1929. Nonetheless, as the discussions lengthened, individual financial institutions began to fail, most significantly WaMu in the United States.

On September 25, the U.S. Office of Thrift Supervision (OTS) closed WaMu, the largest remaining S&L in the United States and now the largest bank failure in U.S. history.¹¹¹ Thereafter, the FDIC held a bidding process that resulted in J.P. Morgan's acquisition of the majority (307 billion dollars) of WaMu's assets and deposits (188 billion dollars) for a payment of 1.9 billion dollars to the FDIC.¹¹² Importantly, stockholders and bondholders (46.6 billion dollars) were wiped out, with the exception of holders of securities from a four billion dollar covered bond program.¹¹³ The consequences of the WaMu failure were considerable, with much of its debt held by financial institutions around the world. This failure seriously worsened the financial condition of financial institutions around the world and worsened the condition of the U.S. financial system.

By this time, the financial crisis was taking its toll globally. On September 29, in order to prevent major financial institution failures, the United Kingdom nationalized Bradford

109. Press Release, SEC, SEC Halts Short Selling of Financial Stocks to Protect Investors and Markets (Sept. 19, 2008), *available at* <http://www.sec.gov/news/press/2008/2008-211.htm>.

110. Press Release, U.S. Treasury, Fact Sheet: Proposed Treasury Authority to Purchase Troubled Assets (Sept. 20, 2008), *available at* <http://www.ustreas.gov/press/releases/hp1150.htm>.

111. Press Release, FDIC, JPMorgan Chase Acquires Banking Operations of Washington Mutual: FDIC Facilitates Transaction that Protects All Depositors and Comes at No Cost to the Deposit Insurance Fund (Sept. 25, 2008), *available at* <http://www.fdic.gov/news/news/press/2008/pr08085.html>.

112. *Id.*

113. See Press Release, FDIC, CONTINUATION OF CONTRACTS TRANSFERRED FROM WASHINGTON MUTUAL BANK (Sept. 26, 2008), *available at* <http://www.fdic.gov/news/news/press/2008/pr08085c.html>.

& Bingley;¹¹⁴ Belgium, Netherlands, and Luxembourg nationalized Fortis;¹¹⁵ Germany announced the first rescue of Hypo Real Estate;¹¹⁶ Iceland nationalized its third-largest bank Glitnir;¹¹⁷ and in the United States, FDIC and the Federal Reserve helped facilitate the sale of Wachovia, the sixth largest U.S. bank by assets (700 billion dollars, with 400 billion dollars in deposits) to Citigroup.¹¹⁸ The same day, the U.S. House of Representatives rejected the proposed TARP in the form of the Emergency Economic Stabilization Act of 2008 (EESA), driving what had been a systemic financial crisis into a potentially systemic economic crisis.¹¹⁹ On September 30, France and Belgium rescued Dexia, and Ireland announced a blanket guarantee of all deposits in its financial system.

During the week after the failure of the TARP in the United States, global stock prices dropped viciously, and the credit crisis moved from a financial event to an economic event, as credit ceased to be available not only across the financial system but also across the economy, and the public lost confidence in the financial system.

D. INTERNATIONAL AND DOMESTIC RESPONSES

With significant impetus from these events, the U.S. Senate passed a revised bill on October 1, with the House following suit, and the President signing the EESA on October 3, 2008. By this time, however, the financial crisis had moved to the real economy, and a TARP alone was apparently insufficient to hide the problems or prevent the resulting damage. During the following week, domestic responses appeared rapidly, including a 200 billion pound (300 billion dollars) rescue package from the United Kingdom, focusing on three elements: capital, liquidity, and funding.¹²⁰ These elements would subsequently become central to the international response to the systemic crisis that was to emerge the following week.

1. *Global Financial Response*

During the week of October 6-10, 2008, a comprehensive global response emerged. While not sufficient to prevent the systemic financial crisis or significant economic damage, the response has been sufficient to resuscitate the U.S. and global financial systems.

114. See Press Release, H.M. Treasury, Bradford & Bingley plc, Sept. 29, 2008, available at http://www.hm-treasury.gov.uk/press_97_08.htm.

115. See Reed Stevenson, *Details of Fortis Partial Nationalization*, REUTERS UK (Sept. 29, 2008), available at <http://uk.reuters.com/article/hotStocksNews/idUKLT21933020080929>.

116. Press Release, Hypo Real Estate, Hypo Real Estate Group has Secured Major New Funding Facility, (Sept. 29, 2009), available at http://www.hyporealestate.com/eng/pdf/PI-HREG_29.09.2008_engl.pdf.

117. *Iceland Nationalises Glitnir Bank*, BBC NEWS, Sept. 29, 2009, available at <http://news.bbc.co.uk/1/hi/business/7641753.stm>.

118. See Press Release, U.S. Treasury Department, Statement by Secretary Paulson on the Sale of Wachovia Bank (Sept. 29, 2008), available at <http://www.treasury.gov/press/releases/hp1164.htm> (confirming systemic risk); Press Release, Federal Reserve Bank of Richmond, Federal Reserve Ready to Provide Liquidity in Wachovia Transition (Sept. 29, 2008), available at http://www.richmondfed.org/press_room/press_releases/banking/2008/wachovia_transaction_20080929.cfm (confirming liquidity provision); Press Release, FDIC, CITIGROUP INC. TO ACQUIRE BANKING OPERATIONS OF WACHOVIA (SEPT. 29, 2008), available at <http://www.fdic.gov/news/news/press/2008/pr08088.html>.

119. Emergency Economic Stabilization Act of 2008, H.R. 1424, 110th Cong. (2008).

120. Press Release, HM Treasury, Financial Support to the Banking Industry, Press Notice 100/08 (Oct. 8, 2008), available at http://www.hm-treasury.gov.uk/press_100_08.htm.

Signaled by the Group of Seven (G-7), on October 10, 2008, the comprehensive approach included the following elements: (1) use of "all available tools to support systemically important financial institutions and prevent their failure;" (2) ensuring that financial institutions "have broad access to liquidity and funding;" (3) establishing recapitalization schemes so banks can "raise capital from public as well as private sources;" (4) ensuring "robust and consistent" protection for depositors; and (5) taking action to "restart the secondary market for mortgages and other securitized assets."¹²¹

This statement was reaffirmed by the full membership of the IMF and World Bank,¹²² as well as the Financial Stability Forum (FSF) and the European Union, with actions directly following the agreed approach. In addition, on October 8, 2008, the world's major central banks announced their first globally coordinated interest rate cut, with the U.S. Federal Reserve, the European Central Bank (ECB), the Bank of England, the Bank of Sweden, the Swiss National Bank (SNB), and the Bank of Canada all cutting interest rates by fifty basis points (BPS) and issuing a coordinated statement for the first time.¹²³ Further, in the aftermath of the G-7 and IMF/World Bank/FSF meetings the following weekend, the Federal Reserve dramatically increased the provision of liquidity in dollars to the world's major central banks. These efforts built on earlier efforts, namely the December 2007 authorization by the Federal Reserve of temporary reciprocal currency arrangements (swap lines) with the ECB, the Bank of Canada, the Bank of England, and the SNB for a total of up to twenty-four billion dollars.¹²⁴ By late September 2008, the Federal Reserve had made similar arrangements with the Bank of Japan, the National Bank of Denmark, the Bank of Norway, the Reserve Bank of Australia, and the Bank of Sweden. The aggregate amount authorized over this period rose from twenty-four billion dollars to 620 billion dollars.¹²⁵ By October 13, 2008, the Federal Reserve had agreed to provide unlimited dollar liquidity to the ECB, the Bank of England, the SNB, and the Bank of Japan.¹²⁶

While not sufficient to prevent widespread economic consequences, this coordinated approach and subsequent actions at the domestic and international level have been sufficient both to prevent the collapse of the global financial system and to begin to return it to operation. As a result, attention has now turned towards addressing the economic conse-

121. Group of Seven, G7 Finance Ministers and Central Bank Governors Plan of Action, Washington, D.C., (Oct. 10, 2008), *available at* <http://www.g8.utoronto.ca/finance/fin081010.htm> (last visited Jan. 25, 2009).

122. See Press Release, International Monetary Fund, Communiqué of the International Monetary and Financial Committee of the Board of Governors of the International Monetary Fund ¶ 3, IMF Press Release No. 08/240 (Oct. 11, 2008), *available at* <http://imf.org/external/np/sec/pr/2008/pr08240.htm>.

123. Press Release, U.S. Federal Reserve, Joint Statement by Central Banks (Oct. 8, 2008), *available at* <http://www.federalreserve.gov/newsevents/press/monetary/20081008a.htm>.

124. Press Release, U.S. Federal Reserve (Dec. 12, 2007) (announcing measures taken by the Bank of Canada, the Bank of England, the European Central Bank, the Federal Reserve, and the Swiss National Bank "to address elevated pressures in short-term funding markets"), *available at* <http://www.federalreserve.gov/newsevents/press/monetary/20071212a.htm>.

125. Press Release, U.S. Federal Reserve (Sept. 29, 2008) (announcing "coordinated actions" undertaken by central banks "to expand significantly the capacity to provide U.S. dollar liquidity"), *available at* <http://www.federalreserve.gov/newsevents/press/monetary/20080929a.htm>.

126. Press Release, U.S. Federal Reserve (Oct. 13, 2008) (announcing "further measures" undertaken by several central banks "to improve liquidity in short-term U.S. dollar funding markets"), *available at* <http://www.federalreserve.gov/newsevents/press/monetary/20081013a.htm>. All of these temporary reciprocal swap facilities have been authorized through April 30, 2009. *Id.*

quences (a discussion beyond the scope of this article) and the necessary reforms of financial regulation.

IV. Implications for Financial Regulation

In this context of financial regulatory reactions to the crisis, those offered by the FSF and the Group of 20 (G-20) have emerged as the most significant at the international level.

A. FINANCIAL STABILITY FORUM

In April 2008, during the initial stages of the crisis, the FSF¹²⁷ met and released a significant report, albeit one which, in many ways, would be overshadowed by subsequent events.¹²⁸ In this report, the FSF focused on regulatory reforms in five main areas, namely: (1) prudential oversight, especially capital, liquidity, and risk management; (2) transparency and valuation; (3) role and uses of credit ratings; (4) authorities' responsiveness; and (5) arrangements for dealing with financial stress.¹²⁹ Within these five areas, seven issues received the most attention: (1) risk disclosures of the exposures and financial condition of individual financial institutions; (2) a direction to the International Accounting Standards Board (IASB) to address off-balance sheet treatment and valuation of complex securities; (3) changes to Basel II, especially to address treatment of securitization and off-balance sheet activities; (4) new standards for liquidity; (5) attention to use of credit ratings and regulation of credit ratings agencies through International Organization of Securities Commissions (IOSCO), the Joint Forum, and domestic regulators; (6) development of supervisory colleges for financial institutions; and (7) in respect to OTC derivatives, developing a CDS clearing house, including bilateral and multilateral netting mechanisms, systems to address defaults, and mechanisms for trading and settlement.¹³⁰

The FSF met again in October 2008, in the context of the G-7 finance ministers meeting taking place at the same time as the IMF/World Bank annual meeting. In its subsequent report, the FSF reaffirmed the contents of the April 2008 report, but it also significantly extended its attention to four new areas: (1) improving international interaction and consistency of emergency arrangements and responses (an issue that had clearly

127. The Financial Stability Forum, formed in 1999 in the wake of the Asian financial crisis, comprises financial authorities from developed financial systems (Australia, Canada, France, Germany, Hong Kong, Italy, Japan, Netherlands, Singapore, Switzerland, United Kingdom, United States, European Central Bank) and the major international financial institutions (Bank for International Settlements [BIS], IMF, World Bank), international regulatory and supervisory bodies (Basel Committee, International Organization of Securities Commissions [IOSCO], International Association of Insurance Supervisors [IAIS], International Accounting Standards Board [IASB]), and committees of central bank experts (Committee on the Global Financial System [CGFS], Committee on Payment and Settlement Systems [CPSS]). See Financial Stability Forum: About the FSF-History, <http://www.fsforum.org/about/history.htm> (last visited Mar. 23, 2009); see also Financial Stability Forum, About the FSF-Overview, <http://www.fsforum.org/about/overview.htm> (last visited Mar. 23, 2009).

128. See generally FIN. STABILITY FORUM, REPORT OF THE FINANCIAL STABILITY FORUM ON ENHANCING MARKET AND INSTITUTIONAL RESILIENCE (2008), available at http://www.fsforum.org/publications/r_0804.pdf (last visited Jan. 25, 2009).

129. *Id.*

130. *Id.*

become important by this time); (2) mitigating procyclicality, including in the context of capital, loan-loss provisioning, compensation, and valuation/leverage; (3) addressing the scope of financial regulation to emphasize currently unregulated aspects; and (4) better integrating macroeconomic oversight and prudential supervision.¹³¹ Both of these reports from the FSF have subsequently been largely subsumed in the November 2008 G-20 statement.

B. GROUP OF TWENTY (NOVEMBER 2008)

On November 15, 2008, following two days of meetings in Washington D.C., the leaders of the G-20¹³² released their *Declaration of the Summit on Financial Markets and the World Economy*.¹³³ In this declaration, the G-20 discussed the causes of the crisis, committed to supporting an open global economy, and defined a range of actions to be taken (under the supervision of G-20 finance ministers) to reform financial regulation to avoid future crises.¹³⁴ More specifically, the G-20 members stated that:

[W]e must lay the foundation for reform to help to ensure that a global crisis, such as this one, does not happen again. Our work will be guided by a shared belief that market principles, open trade and investment regimes, and effectively regulated financial markets foster the dynamism, innovation, and entrepreneurship that are essential for economic growth, employment, and poverty reduction.¹³⁵

While the majority of press and market attention focused on the various global economic aspects (and the general lack of tangible success in this respect to date),¹³⁶ in many

131. Fin. Stability Forum, REPORT OF THE FINANCIAL STABILITY FORUM ON ENHANCING MARKET AND INSTITUTIONAL RESILIENCE: FOLLOW-UP ON IMPLEMENTATION 2 (2008), available at http://www.fsforum.org/press/pr_081009f.pdf.

132. The G-20, formed in 1999 in the wake of the Asian financial crisis, comprises Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, United Kingdom, United States, European Union, IMF, and World Bank. See THE GROUP OF TWENTY: A HISTORY 8 (2007), available at <http://www.g20.utoronto.ca/g20history.pdf>. In addition, the United Nations Secretary General and the FSF Chair were invited to attend the November 2008 meeting. *Id.*

133. Group of Twenty [G-20], *Declaration of the Summit on Financial Markets and the World Economy* (Nov. 15, 2008), available at http://www.g20.org/Documents/g20_summit_declaration.pdf [hereinafter *G-20 Declaration*]. Certain aspects, especially those relating to the global economy and the international financial architecture, build upon the G-20 finance ministers' communiqué from the previous week. See G-20, Meeting of Ministers and Governors, São Paulo, Braz., Nov. 8-9, 2008, *Communiqué*, available at http://www.g20.org/Documents/2008_communique_saopaulo_brazil.pdf.

134. *Id.*

135. *G-20 Declaration*, *supra* note 133 at ¶ 2.

136. Specifically, the G-20 recognized that:

[R]eforms will only be successful if grounded in a commitment to free market principles, including the rule of law, respect for private property, open trade and investment, competitive markets, and efficient, effectively regulated financial systems. These principles are essential to economic growth and prosperity and have lifted millions out of poverty, and have significantly raised the global standard of living.

Id. at ¶ 12. In this context, the G-20 highlighted aspects relating to (1) trade, (2) development, and (3) other issues, including "energy security and climate change, food security, the rule of law, and the fight against terrorism, poverty and disease." *Id.* at ¶ 15. With respect to trade, the G-20 rejected protectionism; commit-

ways, the most significant aspects of the proposed remedies relate to reform of financial regulation while at the same time avoiding over-regulation. As the G-20 members stated: "Recognizing the necessity to improve financial sector regulation, we must avoid over-regulation that would hamper economic growth and exacerbate the contraction of capital flows, including to developing countries."¹³⁷ In this context, the G-20 established five main principles to guide reforms: (1) strengthening transparency and accountability; (2) enhancing sound regulation; (3) promoting integrity in financial markets; (4) reinforcing international cooperation; and (5) reforming the financial architecture.¹³⁸ For each of these five principles, the leaders established a detailed action plan, incorporating immediate actions (to be taken by March 31, 2009) and medium-term actions.¹³⁹ The detailed Action Plan establishes the core content of the refinements to international financial regulatory standards to take place. In addition, the leaders tasked finance ministers to give highest priority to six areas: (1) mitigating against procyclicality in regulatory policy; (2) reviewing and aligning global accounting standards, particularly for complex securities; (3) strengthening the resilience and transparency of credit derivatives markets and reducing their systemic risks, including by improving the infrastructure of the OTC markets; (4) reviewing compensation practices as they relate to incentives for risk taking and innovation; (5) reviewing the international financial architecture; and (6) defining the scope of systemically important financial institutions and determining their appropriate regulation and oversight.¹⁴⁰

As was already mentioned above, these same issues were, for the most part, addressed in detail by the FSF in its April 2008 report. The November 2008 G-20 Declaration, however, establishes the framework for the content of financial regulation going forward. To follow up on commitments from the November 2008 summit, the G-20 agreed to meet again in April 2009 in London.

1. *Principles and Action Plan*

In issuing the November 2008 Declaration, the G-20 agreed that the following overriding principle should guide reform efforts to avoid future crises:

Regulation is first and foremost the responsibility of national regulators who constitute the first line of defense against market instability. However, our financial markets are global in scope, therefore, intensified international cooperation among regulators and strengthening of international standards, where necessary, and their

ted for the next twelve months not to "rais[e] new barriers to investment or to trade in goods and services, impos[e] new export restrictions, or implementing [WTO] inconsistent measures to stimulate exports;" and instructed G-20 trade ministers to successfully conclude the WTO Doha Development Agenda. *Id.* at ¶ 13. With respect to development, the G-20 reaffirmed the Millennium Development Goals, previously made development assistance commitments, and the 2002 Monterrey principles for financing development. *See id.* at ¶ 14.

137. *Id.* at ¶ 12.

138. *See id.* at ¶ 9.

139. *See generally* G-20, Summit on Financial Markets and the World Economy, Action Plan (Nov. 15, 2008), available at http://www.g20.org/Documents/g20_summit_declaration.pdf [hereinafter *G-20 Action Plan*].

140. *See G-20 Declaration*, *supra* note 133 at ¶ 10.

consistent implementation is necessary to protect against adverse cross-border, regional and global developments affecting international financial stability.¹⁴¹

As noted above, in its Declaration, the G-20 established five main principles to guide reforms. To support progress toward achieving these principles, the G-20 has established a “comprehensive work plan” under the authority of the G-20 finance ministers, who are “responsible for the development and implementation of these recommendations drawing on the ongoing work of relevant bodies, including the [IMF], and expanded [FSF], and standard setting bodies.”¹⁴² The Action Plan includes both “Immediate Actions” to be undertaken by March 31, 2009, and also “Medium-term actions,” for which no specific deadline is set in the Declaration.

a. Transparency and Accountability

Under the first principle, the G-20 committed to “strengthen financial market transparency, including by enhancing required disclosure on complex financial products and ensuring complete and accurate disclosure by firms of their financial conditions.”¹⁴³ The principle thus highlights two central aspects of the crisis: (1) transparency of complex financial products such as CDOs and (2) transparency of firms themselves. In addition, the principle highlights that “[i]ncentives should be aligned to avoid excessive risk-taking,” another central feature of the crisis.¹⁴⁴

The Action Plan contains five points for immediate action and three points for medium-term action.¹⁴⁵ Four of the immediate actions address accounting and disclosure: (1) valuation of securities including complex illiquid products, especially during times of stress; (2) required disclosures of complex instruments; (3) accounting and disclosure standards for off-balance sheet vehicles; and (4) review of the membership and governance of the IASB.¹⁴⁶ The final point is unusual in that it requests private sector bodies to produce unified best practices for hedge funds, with responsibility for review of these standards placed on finance ministers drawing upon analysis of regulators, the FSF, and other relevant bodies.¹⁴⁷

The medium-term actions, on the other hand, address three points.¹⁴⁸ First, global accounting standards bodies should work intensively to create a single set of global accounting standards. Second, regulators, supervisors, accounting standard setters, and the private sector should ensure consistent application and enforcement of accounting standards. Third, financial institutions should enhance risk and loss disclosures, with regulators focusing on completeness, including off-balance sheet activities.¹⁴⁹

141. *Id.* at ¶ 8.

142. *G-20 Action Plan*, *supra* note 139.

143. *G-20 Declaration*, *supra* note 133 at ¶ 9.

144. *Id.*

145. *G-20 Action Plan*, *supra* note 139.

146. *See G-20 Action Plan*, *supra* note 139.

147. *See id.*

148. *Id.*

149. *Id.*

b. Regulation

Under the second principle, the G-20 committed to: (1) strengthening financial regulatory regimes, prudential oversight, and risk management; and (2) ensuring that “all financial markets, products and participants are regulated or subject to oversight, as appropriate to their circumstances.”¹⁵⁰ In particular, the G-20 highlighted for attention (1) credit rating agencies, (2) the goal of making regulatory regimes more effective over the economic cycle while “ensuring that regulation is efficient, does not stifle innovation, and encourages expanded trade in financial products and services,” and (3) a new commitment to transparent assessments of national regulatory systems.¹⁵¹

In support of these objectives, the Action Plan addresses three areas: (1) regulatory regimes; (2) prudential oversight; and (3) risk management.¹⁵²

i. Regulatory Regimes

In relation to regulatory regimes, for immediate action, the IMF, FSF, and regulators are directed to “develop recommendations to mitigate procyclicality,” which should specifically include a review of the impacts that valuation, leverage, bank capital, executive compensation, and provisioning may have.¹⁵³ As was noted previously, the current capital adequacy framework is by its nature procyclical. While policymakers have been aware of this reality for many years, this is the first time there has been an international commitment to consider and address the issue. In addition, the Action Plan addresses four medium-term actions. The first is a commitment by countries and regions to “review and report on the structure and principles of its regulatory system to ensure it is compatible with a modern and increasingly globalized financial system.”¹⁵⁴ In this context, all members of the G-20 have specifically committed to undertake a Financial Sector Assessment Program (FSAP) review.¹⁵⁵ The second is a direction to regulators and standard setters to conduct two reviews: a review of “the differentiated nature of regulation in the banking, securities, and insurance sectors”¹⁵⁶ and a review of “the scope of financial regulation, with a special emphasis on institutions, instruments, and markets that are currently unregulated.”¹⁵⁷ This point is key: regulation will be reviewed to address regulatory arbitrage and to cover existing gaps between regulators and jurisdictions.

The third action is a direction to address resolution and insolvency regimes in order to ensure that they “permit an orderly wind-down of large complex cross-border financial institutions.”¹⁵⁸ Once again, this issue has been recognized for some years, but it has been too complicated and politically sensitive to address. While in no way simple, this issue is the starting point for addressing a central weakness in the legal framework for global finance.

150. *G-20 Declaration*, *supra* note 133 at ¶ 9.

151. *Id.*

152. *See G-20 Action Plan*, *supra* note 139.

153. *Id.*

154. *Id.*

155. *Id.*

156. *Id.*

157. *Id.*

158. *Id.*

The fourth action addresses capital adequacy, specifically that “[d]efinitions of capital should be harmonized in order to achieve consistent measures of capital and capital adequacy.”¹⁵⁹ One aspect of the crisis, triggered especially by the failure of WaMu, has been a realization by markets and regulators that Tier 1 (equity) capital is the only capital that really matters and that the various forms of debt comprising Tier 2 (and Tier 3 in the context of market risk) did not create the desired monitoring effect and in the context of the crisis in fact exacerbated problems, as holders of financial institution debt often were financial institutions themselves.

ii. Prudential Oversight

In relation to prudential oversight, the Action Plan specifies four immediate and two medium-term actions. Two of the four immediate actions address credit rating agencies, specifically that regulators and IOSCO should make sure that agencies meet international standards, especially in relation to (1) conflicts of interest, (2) increasing disclosure to investors and issuers, and (3) differentiating ratings for complex products.¹⁶⁰ Interestingly, IOSCO is mandated to actually review CRA compliance.

The third immediate action addresses capital, specifically that banks maintain adequate capital and that international standards are strengthened for banks’ securitization and structured finance activities.¹⁶¹

The fourth immediate action addresses CDSs and OTC derivatives, including the launch of CDS central counterparty systems, reduction of systemic risks in CDS and OTC derivatives transactions, development of exchange-traded or electronic trading platforms for CDSs, expansion of OTC derivatives market transparency, and improvement of the robustness of OTC derivatives infrastructure.¹⁶² This action has very important implications for the OTC derivatives markets, especially CDSs. The preference is to move these out of the OTC space and into a much more transparent and regulated context.

There are two medium-term actions. The first mandates the registration of credit rating agencies.¹⁶³ The second addresses liquidity from two angles: liquidity supervision of cross-border banks and central bank liquidity operations for cross-border banks.¹⁶⁴

iii. Risk Management

Risk management includes seven immediate and two medium-term actions. The seven immediate actions address: (1) enhanced international guidance for banks’ risk management; (2) enhanced liquidity risk management and creating strong liquidity cushions; (3) more timely and comprehensive measurement of risk concentrations and large counterparty risk positions across products and geographies; (4) improved internal risk management models and reporting; (5) a direction to the Basel Committee to develop new stress testing models; (6) redesigned compensation schemes to provide appropriate incen-

159. *Id.*

160. *Id.*

161. *Id.*

162. *Id.* at 3.

163. *Id.*

164. *Id.*

tives; and (7) more effective risk management and due diligence of structured products and securitization.¹⁶⁵

The two medium-term actions are both potentially far reaching in their implications. Under the first, standard-setters and others should “ensure that regulatory policy makers are aware and able to respond quickly to evolution and innovation in financial markets and products.”¹⁶⁶

Under the second, “[a]uthorities should monitor substantial changes in asset prices, and their implications for the macro-economy and the financial system.”¹⁶⁷ While central bankers spent a great deal of time over the past decade arguing about whether or not asset prices should be taken into account in the context of macroeconomic management, it appears the debate is now over on this point.

c. Integrity

Under the third principle, the G-20 committed to:

Protect the integrity of the world’s financial markets by bolstering investor and consumer protection, avoiding conflicts of interest, preventing illegal market manipulation, fraudulent activities and abuse, and protecting against illicit finance risks arising from non-cooperative jurisdictions.¹⁶⁸

In respect to the final point, the G-20 highlighted information sharing, especially with respect to bank secrecy and transparency.¹⁶⁹

The Action Plan reflects this statement closely, with three immediate actions, addressing: (1) enhancement of regulatory cooperation; (2) promotion of information sharing regarding market stability and ensuring that domestic legal provisions are adequate; and (3) review of conduct rules and sanctions regimes for cross-border misconduct.¹⁷⁰ Two of the three medium-term actions, however, go much further. The first supports the ongoing work of the FATF and the World Bank–U.N. Stolen Asset Recovery Initiative.¹⁷¹ The second requires national and international measures to protect the global financial system from “uncooperative and non-transparent jurisdictions that pose risks of illicit financial activity.”¹⁷² The third directs the OECD and national authorities to promote tax information exchange but extends this goal much further into enforcement: “Lack of transparency and a failure to exchange tax information should be vigorously addressed.”¹⁷³

In this area, the key target is unregulated off-shore jurisdictions that have played a central role in structured finance by providing the SPVs at the heart of most structured transactions in the global markets and often the legal entity at the heart of investment institutions such as hedge funds. The clear objective is to bring off-shore jurisdictions to

165. *Id.*

166. *Id.*

167. *Id.*

168. *G-20 Declaration*, *supra* note 133, at 3.

169. *Id.*

170. *G-20 Action Plan*, *supra* note 139, at 4.

171. *Id.*

172. *Id.*

173. *Id.*

at least the same standard of regulation as existed in major financial centers prior to the crisis.

d. International Cooperation

Under the fourth principle, the G-20 committed to formulate national regulations in a "consistent manner."¹⁷⁴ In this respect, the G-20 highlighted two aspects: (1) enhancement of cooperation and coordination "across all segments of financial markets, including . . . cross-border capital flows;" and (2) as a matter of priority, the need to strengthen crisis prevention, management, and resolution.¹⁷⁵

The two immediate actions are significant. Under the first, supervisors are directed to "establish supervisory colleges for all major cross-border financial institutions Major global banks should meet regularly with their supervisory college for comprehensive discussions of the firm's activities and assessment of the risks it faces."¹⁷⁶ Under the second, "[r]egulators should take all steps necessary to strengthen cross-border crisis management arrangements, including on cooperation and communication with each other and with appropriate authorities, and develop comprehensive contact lists and conduct simulation exercises, as appropriate."¹⁷⁷

The two medium-term actions are also of significance. The first requires authorities to be forward-looking in international regulatory approaches, while the second addresses the governmental interventions taken during the crisis and their eventual resolution; specifically, "[a]uthorities should ensure that temporary measures to restore stability and confidence have minimal distortions and are unwound in a timely, well-sequenced and coordinated manner."¹⁷⁸

e. International financial architecture

Under the fifth principle, the G-20 committed "to advancing the reform of the Bretton Woods Institutions so that they can more adequately reflect changing economic weights in the world economy."¹⁷⁹ While aspects of the reform of the international financial architecture are beyond the scope of the present article,¹⁸⁰ the G-20 highlighted one aspect of significance for financial regulation: the FSF and other major standard-setting bodies should review and expand their membership among emerging economies.¹⁸¹ Subsequent to this direction, the FSF, Basel Committee, and IOSCO have all announced membership expansion.¹⁸²

174. *G-20 Declaration*, *supra* note 133, at 3.

175. *Id.*

176. *G-20 Action Plan*, *supra* note 139, at 4.

177. *Id.*

178. *Id.* at 4-5.

179. *G-20 Declaration*, *supra* note 133, at 3.

180. For discussion of the international financial architecture and international financial standards, see R. Weber & D. Arner, *Toward a New Design for International Financial Regulation*, 29 U. PA. J. INT'L L. 391 (2008).

181. See *G-20 Action Plan*, *supra* note 139, at 5.

182. See Press Release, FSF, The Financial Stability Forum Decides to Broaden its Membership (Mar. 12, 2009), available at http://www.fsf.org/press/pr_090312b.pdf (discussed in further detail below); Press Release, Basel Committee, Expansion of Membership Announced by the Basel Committee (Mar. 13, 2009), available at <http://www.bis.org/press/p090313.htm> (Australia, Brazil, China, India, Mexico, Russia, and South

2. Key Tasks and Working Groups

As noted above, the G-20 tasked finance ministers to give highest priority to six areas: (1) mitigating against procyclicality in regulatory policy; (2) reviewing and aligning global accounting standards, particularly for complex securities; (3) strengthening the resilience and transparency of credit derivatives markets and reducing their systemic risks, including by improving the infrastructure of the OTC markets; (4) reviewing compensation practices as they relate to incentives for risk taking and innovation; (5) reviewing the international financial architecture; and (6) defining the scope of systemically important financial institutions and determining their appropriate regulation and oversight.¹⁸³ In addition, the G-20 established four working groups to meet and report back prior to the April leaders' meeting: (1) working group 1 on enhancing sound regulation and increasing transparency (chaired by India and Canada); (2) working group 2 on reinforcing international cooperation and promoting integrity in financial markets (chaired by Mexico and Germany); (3) working group 3 on reforming the IMF (chaired by South Africa and Australia); and (4) working group 4 on the World Bank and other multilateral development banks (MDBs) (chaired by Indonesia and France). In addition, the G-20 deputy finance ministers and deputy central bank governors were tasked to address macroeconomic cooperation, including both growth and negative spillovers. Unlike previous crises, in which the G-10 was typically tasked to report back via working groups, for the first time, the G-20 working groups were chaired by both a developed and a developing country member.

C. GROUP OF TWENTY (APRIL 2009)

On April 2, 2009, the G-20 leaders met a second time in London to address issues relating from the financial crisis and resulting economic crisis. In their communiqué,¹⁸⁴ the leaders revisited many of the issues discussed in November 2008, stating: "We face the greatest challenge to the world economy in modern times . . . A global crisis requires a global solution."¹⁸⁵ To address the financial and economic crisis and prevent future crises, the leaders pledged "to do whatever is necessary" to: (1) restore confidence and growth; (2) repair the financial system; (3) "strengthen financial regulation to rebuild trust"; (4) fund and reform the international financial institutions; (5) reject protectionism and promote global trade and investment; and (6) "build an inclusive, green, and sustainable recovery."¹⁸⁶ If the Washington communiqué provided the outline of the content of

Korea); Press Release, IOSCO, IOSCO Technical Committee Invites Brazil, China and India to Join its Membership, IOSCO Press Release IOSCO/MR/02/002/2009 (Feb. 19, 2009), available at <http://www.iosco.org/news/pdf/IOSCONEWS136.pdf>.

183. *G-20 Declaration*, *supra* note 133, at 4.

184. G-20, *The Global Plan for Recovery and Reform* (Apr. 2, 2009), available at <http://www.g20.org/Documents/final-communique.pdf> [hereinafter G-20 Leaders' Statement].

185. *Id.*, ¶ 2.

186. *Id.*, ¶ 4. Issues concerning reform of the international financial architecture are beyond the scope of the current article. For detailed discussion, see Douglas W. Arner & Ross Buckley, *Redesigning the Architecture of the Global Financial System*, (AIIFL, Working Paper 7, forthcoming May 2009), available at www.aiifl.com. See also G-20, *Declaration on Delivering Resources through the International Financial Institutions*, (Apr. 2, 2009), available at http://www.g20.org/Documents/Fin_Deps_IFI_Annex_Draft_02_04_09_-_1615_Clean.pdf; G-20, *G-20 Working Group 3: Reform of the IMF—Final Report* (Mar. 2009), available at http://www.g20.org/Documents/g20_wg3_010409.pdf; G-20, *G-20 Working Group 4—The World Bank and Other Multilateral*

international financial regulation going forward, the London communiqué provides the outline of the system of international financial regulation as well as additional detail regarding content. At the same time, details of the reform of the international financial institutions such as the IMF is left for the next leaders' summit.

1. *Leaders' Statement and Financial Regulation*

In relation to financial regulation and supervision, the leaders committed to "build a stronger, more globally consistent, supervisory and regulatory framework for the future financial sector, which will support sustainable growth and serve the needs of business and citizens."¹⁸⁷ In this regard, the leaders argued that regulation and supervision must be designed to: "promote propriety, integrity and transparency; guard against risk across the financial system; dampen rather than amplify financial and economic cycle; reduce reliance on inappropriately risky sources of financing; and discourage excessive risk-taking."¹⁸⁸ Regulators and supervisors are tasked to: "[1] protect consumers and investors, [2] support market discipline, [3] avoid adverse impact on other countries, [4] reduce the scope for regulatory arbitrage, [5] support competition and dynamism, and [6] keep pace with innovation."¹⁸⁹

Significantly, the leaders committed to continued implementation of the November Action Plan, with substantial progress in all areas relating to financial regulation,¹⁹⁰ and also extended their commitments in nine major areas,¹⁹¹ with finance ministers responsible for implementation and the IMF and FSF / Financial Stability Board monitoring and reporting at the next G-20 Finance Ministers' meeting to be held in autumn 2009.¹⁹² First, the G-20 agreed to rename and reconstitute the FSF as the Financial Stability Board (FSB), including all G-20 countries, FSF members, Spain, and the European Commission.¹⁹³ As discussed further below, this is the foundation of reform of the system of international financial standards as opposed to their content, the focus of the Washington meeting. Second, the FSB and IMF were directed "to provide early warning of macroeconomic and

Development Banks: Final Report (Mar. 2009), available at http://www.g20.org/Documents/g20_wg4_010409.pdf.

187. G-20 Leaders' Statement, *supra* note 184, ¶ 13.

188. *Id.*, ¶ 14.

189. *Id.*

190. *Id.*, ¶ 15. See G-20, *Progress Report on the Actions of the Washington Action Plan* (Apr. 2, 2009), available at http://www.g20.org/Documents/FINAL_Annex_on_Action_Plan.pdf.

191. G-20 Leaders' Statement, *supra* note 184, ¶ 15. See also G-20, *Declaration on Strengthening the Financial System* (Apr. 2, 2009), available at http://www.g20.org/Documents/Fin_Deps_Fin_Reg_Annex_020409_-1615_final.pdf [hereinafter G-20 Financial System Declaration]; G-20, *G20 Working Group 1—Enhancing Sound Regulation and Strengthening Transparency: Final Report* (Mar. 2009), available at http://www.g20.org/Documents/g20_wg1_010409.pdf [hereinafter G-20 Working Group 1 Report]; G-20, *G20 Working Group on Reinforcing International Cooperation and Promoting Integrity in Financial Markets (WG2): Final Report* (Mar. 2009), available at http://www.g20.org/Documents/g20_wg2_010409.pdf [hereinafter G-20 Working Group 2 Report].

192. G-20 Leaders' Statement, *supra* note 184, ¶ 16.

193. *Id.*, ¶ 15. On Mar. 12, 2009, the FSF announced the expansion of its membership along these lines, with the inclusion of: Argentina, Brazil, China, the European Commission, India, Indonesia, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Spain, and Turkey. Press Release, FSF, Financial Stability Forum Decides to Broaden its Membership (Mar. 12, 2009), available at http://www.fsforum.org/press/pr_090312b.pdf.

financial risks and the actions needed to address them.”¹⁹⁴ Third, the G-20 committed “to reshape our regulatory systems so that our authorities are able to identify and take account of macro-prudential risks.”¹⁹⁵ Fourth, regulation is to be extended to “all systemically important financial institutions, instruments and markets,” including systemically important hedge funds.¹⁹⁶ While the first part of this statement is a reiteration of the agreed approach from November 2008, it is significant that the commitment (and with it, regulation) has now been explicitly extended to hedge funds.

Fifth, the leaders endorsed the FSF’s new principles on pay and compensation¹⁹⁷ and committed to supporting “sustainable compensation schemes and the corporate social responsibility of all firms.”¹⁹⁸ The result is a globally agreed approach to financial sector compensation and its regulation—potentially one of the most far-reaching consequences of the credit crisis. Sixth, in the context of eventual recovery, the leaders agreed to “improve the quality, quantity, and international consistency of capital,” including with regulation to “prevent excessive leverage and require buffers of resources to be built up in good times.”¹⁹⁹ Seventh, the G-20 committed “to take action against non-cooperative jurisdictions, including tax havens,” standing ready “to deploy sanctions to protect our public finances and financial systems.”²⁰⁰ Eighth, the G-20 called on “accounting standard setters to work urgently with supervisors and regulators to improve standards on valuation and provisioning and achieve a single set of high-quality global accounting standards.”²⁰¹ Ninth, the G-20 agreed “to extend regulatory oversight and registration to Credit Rating Agencies to ensure that they meet the international code of good practice.”²⁰² These final two commitments largely reiterate November commitments but with some reinforcement. In relation to other commitments, an annex to the leaders’ statement provides greater detail.

194. G-20 Leaders’ Statement, *supra* note 184, ¶ 15.

195. *Id.*

196. *Id.* In March 2009, IOSCO released for comment standards for regulation of hedge funds. IOSCO Technical Committee, *Hedge Funds Oversight: Consultation Report* (Mar. 2009), available at <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD288.pdf>.

197. FSF, *FSF Principles for Sound Compensation Practices* (Apr. 2009), available at http://www.fsforum.org/publications/r_0904b.pdf.

198. G-20 Leaders’ Statement, *supra* note 184, ¶ 15.

199. *Id.*

200. *Id.* The statement takes a very firm line in this context: “The era of banking secrecy is over.” *Id.* In this respect, the G-20 “noted” the publication by the OECD of a list of countries assessed by the OECD’s Global Forum on Taxation vis-à-vis international tax information exchange standards. *Id.* See OECD Global Forum on Taxation, *A Progress Report on the Jurisdictions Surveyed by the OECD Global Forum in Implementing the Internationally Agreed Tax Standard* (Apr. 2009), available at <http://www.oecd.org/dataoecd/38/14/42497950.pdf>.

201. G-20 Leaders’ Statement, *supra* note 184, ¶ 15.

202. *Id.* See IOSCO Technical Committee, *Code of Conduct Fundamental for Credit Rating Agencies* (May 2008), available at <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD271.pdf>; IOSCO Technical Committee, *International Cooperation in Oversight of Credit Rating Agencies—Note* (Mar. 2009), available at <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD287.pdf>; IOSCO Technical Committee, *A Review of Implementation of the IOSCO Code of Conduct Fundamentals for Credit Rating Agencies* (Mar. 2009), available at <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD286.pdf>. See also Press Release, IOSCO, IOSCO Update on Progress Made in Addressing G-20 Concerns, IOSCO Media Statement IOSCO/MS/05/2009 (Apr. 3, 2009), available at <http://www.iosco.org/library/statements/pdf/statements-5.pdf>.

2. *G-20 Declaration on Strengthening the Financial System*

In one of two annexes to the G-20 Leaders' Statement, the G-20 provided additional detail in respect of their major commitments in the area of financial regulation.²⁰³ Specifically, the G-20 Financial System Declaration provides additional detail in eight major areas:²⁰⁴ (1) Financial Stability Board, (2) international cooperation, (3) prudential regulation, (4) scope of regulation, (5) compensation, (6) tax havens and non-cooperative jurisdictions, (7) accounting standards,²⁰⁵ and (8) credit rating agencies.²⁰⁶

a. Financial Stability Board

As noted above, the G-20 leaders agreed to reconstitute the FSF as the FSB. According to the G-20 Financial System Declaration, the FSB will:

[1] assess vulnerabilities affecting the financial system, [and] identify and oversee required actions; [2] promote co-ordination and information exchange among authorities responsible for financial stability; [3] monitor and advise on market developments and their implications for regulatory policy; [4] advise on and monitor best practice in meeting regulatory standards; [5] undertake joint strategic reviews of the policy development work of the international Standard Setting Bodies [such as the Basel Committee, IOSCO, etc.] to ensure their work is timely, coordinated, focused on priorities, and addressing [any] gaps; [6] set guidelines for, and support the establishment, functioning of, and participation in, supervisory colleges, including through ongoing identification of the most systemically important [cross-border] firms; [7] support contingency planning for cross-border crisis management, particularly with respect to systemically important firms; and [8] collaborate with the IMF to conduct Early Warning Exercises to identify and report to the IMF's International Monetary and Financial Committee and the G-20 Finance Ministers and Central Bank Governors on the build up of macroeconomic and financial risks and the actions needed to address them.²⁰⁷

In turn, FSB members, subject to FSB elaboration and reporting, commit to: (1) "pursue the maintenance of financial stability;" (2) "enhance the openness and transparency of the financial sector;" (3) "implement international financial standards"; and (4) "agree to undergo periodic peer reviews."²⁰⁸

203. The G-20 Financial System Declaration, *supra* note 191, is largely based on analysis and recommendations contained in the G-20 Working Group 2 report, *supra* note 191.

204. G-20 Financial System Declaration, *supra* note 191.

205. Discussion of accounting standards in the G-20 Financial System Declaration is largely identical to that in the G-20 Leaders' Statement and will not be discussed in further detail below.

206. Discussion of credit rating agencies in the G-20 Financial System Declaration is largely identical to that in the G-20 Leaders' Statement and will not be discussed in further detail below.

207. G-20 Financial System Declaration, *supra* note 191, at 1. See Press Release, FSF, Financial Stability Forum Re-established as the Financial Stability Board (Apr. 2, 2009), available at http://www.fsforum.org/press/pr_090402b.pdf. For detailed discussion, see Michael Taylor & Douglas W. Arner, *The Financial Stability Board: Hardening the Soft Law of International Financial Regulation?*, (AIIFL, Working Paper 6, forthcoming Apr. 2009), available at www.aiifl.com.

208. G-20 Financial System Declaration, *supra* note 191, at 1.

b. International Cooperation

In relation to international cooperation, the G-20 leaders agreed:

[1] to establish the remaining supervisory colleges for significant cross-border firms by June 2009, building on the 28 already in place; [2] to implement the FSF principles for cross-border crisis management immediately,²⁰⁹ and that home authorities of each major international financial institution should ensure that the group of authorities with a common interest in that financial institution meet at least annually; [3] to support continued efforts by the IMF, FSB, World Bank, and [Basel Committee] to develop an international framework for cross-border bank resolution arrangements; [4] the importance of further work and international cooperation on the subject of exit strategies; and [5] that the IMF and FSB should together launch an Early Warning Exercise at the 2009 Spring Meetings of the IMF.²¹⁰

In this context, the most significant element is the increased focus on mechanisms to address failure of financial institutions operating on a cross-border basis—a problem that is not easy to solve and one that will probably require significant time and effort to agree any sort of workable approach.²¹¹

c. Prudential Regulation

In respect of prudential regulation, the G-20 made eight specific commitments, with four of these addressing capital. Specifically, until economic recovery becomes certain, the current 8 percent minimum international capital adequacy ratio standard will remain unchanged.²¹² In addition, capital levels above that level “should be allowed to decline to facilitate lending” as required in the context of poor economic conditions.²¹³ “[O]nce recovery is assured, prudential regulatory standards should be strengthened,” however, specifically with capital requirements above the current minimum standards and also (returning to the reality that in the context of the crisis, equity capital has become far more important) that “the quality of capital should be enhanced.”²¹⁴ Significantly, the G-20 also committed to implementation of Basel II: “all G-20 countries should progressively adopt the Basel II capital framework,” although in a revised form reflecting experiences and lessons of the credit crisis.²¹⁵

209. See FSF, *FSF Principles for Cross-Border Cooperation on Crisis Management* (Apr. 2009), available at http://www.fsforum.org/publications/r_0904c.pdf.

210. G-20 Financial System Declaration, *supra* note 191, at 2.

211. For discussion of related issues, see Douglas Arner & Joseph Norton, *Building a Framework to Address Failure of Complex Global Financial Institutions*, HONG KONG L. J. (forthcoming 2009).

212. G-20 Financial System Declaration, *supra* note 191, at 2.

213. *Id.*

214. *Id.* The Basel Committee is directed to develop guidelines for harmonization of the definition of capital by the end 2009 and to review minimum levels of capital and develop recommendations in 2010. *Id.* See Press Release, Basel Committee, Initiatives on Capital Announced by the Basel Committee (Mar. 12, 2009).

215. G-20 Financial System Declaration, *supra* note 191, at 2. See Basel Committee, *Revisions to the Basel II Market Risk Framework* (Jan. 2009), available at <http://www.bis.org/publ/bcbs148.htm>; Basel Committee, *Guidelines for Computing Capital for Incremental Risk in the Trading Book* (Jan. 2009), available at <http://www.bis.org/publ/bcbs149.htm>; Basel Committee, *Proposed Enhancements to the Basel II Framework* (Jan. 2009), available at <http://www.bis.org/publ/bcbs150.htm>.

Beyond capital, the FSB, the Basel Committee, the BIS Committee on the Global Financial System, and the IASB are tasked to implement recommendations to address procyclicality by end 2009.²¹⁶ Further, in addition to capital and aspects of procyclicality, for the first time the G-20 committed to “a simple, transparent, non-risk based measure which is internationally comparable, properly takes into account off-balance sheet exposures, and can help contain the build-up of leverage in the banking system,” essentially a leverage ratio to restrict overall leverage across the financial system.²¹⁷ Returning to themes relating to securitization from the November statement, the Basel Committee is tasked to develop a framework by 2010 to improve “incentives for risk management of securitization, including considering due diligence and quantitative retention requirements.”²¹⁸ Finally, in addition to capital and leverage standards, the G-20 committed to a new liquidity standard, with the Basel Committee tasked to develop “by 2010 a global framework for promoting stronger liquidity buffers at financial institutions, including cross-border institutions.”²¹⁹

d. Scope of Regulation

Following the November 2008 G-20 Declaration agreeing all systemically important financial institutions, markets and instruments be subject to appropriate regulation, in April 2009, the G-20 Financial System Declaration provides a much greater level of detail. Specifically, the April Declaration includes eight aspects. First, regulatory systems will be reformed “to ensure authorities are able to identify and take account of macro-prudential risks across the financial system including in the case of regulated banks, shadow banks, and private pools of capital to limit the build up of systemic risk,” with the FSB, BIS and international standard setters tasked to develop specific “macro-prudential tools” and report by autumn 2009.²²⁰ Second, a statement that “large and complex financial institutions require particularly careful oversight given their systemic importance.”²²¹ While seemingly self-evident, this reflects an important shift in emphasis from the pre-crisis (in which such firms were viewed as better able to address the risks they faced than regulators) to the post-crisis period (in which financial institutions’, especially large financial institutions, internal risk management systems will be closely monitored by regulators). In support of this, G-20 national regulators will have the powers necessary to gather “relevant information on all material financial institutions, markets, and instruments in order to assess the potential for their failure or severe stress to contribute to systemic risk.”²²² In addition, “in order to prevent regulatory arbitrage, the IMF and the FSB will produce guidelines for national authorities to assess whether a financial institution, market, or an instrument is systemically important by the next” G-20 finance ministers and central bank governors meeting in autumn 2009.²²³

216. See FSF, *Report of the Financial Stability Forum on Addressing Procyclicality in the Financial System* (Apr. 2009), available at http://www.fsforum.org/publications/r_0904a.pdf.

217. G-20 Financial System Declaration, *supra* note 191, at 2.

218. *Id.*

219. *Id.* at 3. See Basel Committee, *Principles for Sound Liquidity Risk Management and Supervision* (Sep. 2008), available at <http://www.bis.org/publ/bcbs144.pdf?noframes=1>.

220. G-20 Financial System Declaration, *supra* note 191, at 3.

221. *Id.* For discussion, see Arner & Norton, *supra* note 211.

222. G-20 Financial System Declaration, *supra* note 191, at 3.

223. *Id.*

Beyond traditionally systemically significant firms, as noted above, “hedge funds or their managers will be registered and will be required to disclose appropriate information on an ongoing basis to supervisors or regulators, including on their leverage, necessary for assessment of the systemic risks that they pose individually or collectively.”²²⁴ At the same time, supervisors will require “institutions which have hedge funds as their counterparties have effective risk management,” including “mechanisms to monitor the funds’ leverage and set limits for single counterparty exposures.”²²⁵ In relation to credit derivatives, “standardisation and resilience of credit derivatives markets, in particular through the establishment of central clearing counterparties subject to effective regulation and supervision,” will be promoted with industry tasked to “develop an action plan on standardisation by autumn 2009.”²²⁶ Finally, in relation to keeping pace with future innovation, G-20 members “will each review and adapt the boundaries of the regulatory framework regularly to keep pace with developments in the financial system and promote good practices and consistent approaches at the international level.”²²⁷

e. Compensation

As noted above, the G-20 April communiqué contained a strong commitment on compensation, which has been supported by the release of related principles from the FSF. According to the G-20 and the FSF, the principles require: “firms’ boards of directors to play an active role in the design, operation, and evaluation of compensation schemes; compensation arrangements, including bonuses, to properly reflect risk and the timing and composition of payments to be sensitive to the time horizon of risks,” with payments not finalized “over short periods where risks are realised over long periods; and firms to publicly disclose clear, comprehensive, and timely information about compensation” to stakeholders, including shareholders.”²²⁸ Significantly, the G-20 committed that national supervisors implement the principles in order to be effective for 2009 compensation arrangements, with the Basel Committee integrating the principles into guidance by autumn 2009, with supervisors assessing firm compensation and inventing as necessary.²²⁹

f. Tax Havens and Non-Cooperative Jurisdictions

Building on statement from November, the G-20 made strong commitments regarding tax havens in the April 2009 communiqué. In respect of actions, the G-20 Financial System Declaration includes a “toolbox” of six measures:

[1] increased disclosure requirements on the part of taxpayers and financial institutions to report transactions involving non-cooperative jurisdictions; [2] withholding taxes in respect of a wide variety of payments; [3] denying deductions in respect of expense payments to payees resident in a non-cooperative jurisdiction; [4] reviewing tax treaty policy; [5] asking international institutions and regional development banks

224. *Id.*

225. *Id.*

226. *Id.*

227. *Id.* at 4.

228. *Id.*; FSF, Compensation Principles, *supra* note 197.

229. G-20 Financial System Declaration, *supra* note 191, at 4.

to review their investment policies; and, [6] giving extra weight to the principles of tax transparency and information exchange when designing bilateral aid programs.²³⁰

In addition to tax haven issues, the G-20 Financial Systems Declaration also tasks the FSB and IMF to develop a similar mechanism for international prudential regulatory standards.²³¹ This latter indicates that the existing system of international financial standards for the first time will be given an effective enforcement mechanism based on those previously used in the context of money laundering and now tax havens.

V. Conclusion

Preventing and addressing systemic risk is the fundamental aspect of financial regulatory design. Such design requires the following elements to be addressed: first, a robust financial infrastructure (especially payment and settlement systems); second, well managed financial institutions with effective corporate governance and risk management systems; third, disclosure requirements sufficient to support market discipline; fourth, regulatory systems designed to reinforce management and market discipline as well as limiting and monitoring potential risks across all financial institutions; fifth, a lender of last resort to provide liquidity to financial institutions on an appropriate basis; sixth, mechanisms for resolving problem institutions; and seventh, mechanisms to protect financial services consumers in the event of financial institution failure.²³²

First, in relation to infrastructure, the central weakness exposed by the crisis has been in relation to the current bilateral structure of OTC derivatives transactions. In this context, the bilateral structure resulted in counterparty risks that were not adequately addressed either by market participants or regulators.

Second, in relation to financial institution corporate governance, in contrast to the expectations of former Federal Reserve Chairman Alan Greenspan,²³³ financial institutions did not well manage their own risks or businesses. This failure is certainly one that was central in the credit crisis.

Third, disclosure requirements were not sufficient to support transparency and market discipline. In fact, systemic risks arose due to asymmetric information—essentially, weaknesses in transparency and disclosure. Such issues are characteristic of the highly complex structured products that acted as the transmission mechanisms of the excesses preceding the crisis and adverse selection issues during the crisis. The activities of rating agencies exacerbated such issues both prior to and during the crisis.²³⁴

Fourth, in relation to prudential regulation, in most cases, systemic risk did not arise from areas that were the subject of regulatory responsibility. Rather, in most cases, risks arose primarily from areas that were largely unregulated. Examples include mortgage broker activities, off-balance sheet activities of banks and securities firms, OTC deriva-

230. *Id.* at 4-5.

231. *Id.* at 5.

232. See generally Arner, *supra* note 49. For an alternate view of systemic risk, see S. Schwarcz, *Systemic Risk*, 97 GEO. L.J. 193 (2008).

233. *Hearing on the Financial Crisis and the Role of Federal Regulators Before the H. Comm. of Government on Oversight & Government Reform*, 110th Cong. (2008) (statement of Dr. Alan Greenspan, former Chairman, U.S. Federal Reserve Board), available at <http://oversight.house.gov/documents/20081023100438.pdf>.

234. See Arner, Lejot & Schou-Zibell, *supra* note 2.

tives, and non-traditional activities of insurance companies. In these cases, risks often arose from regulatory arbitrage—financial firms actively moving activities outside of regulated areas. In addition, such regulatory arbitrage was in many cases made possible by the splintering of financial regulation in the United States and the European Union across a large number of regulators, with individual regulators usually less concerned about activities falling outside of the scope of their major responsibilities. In addition, systemic risks arose due to improperly designed prudential regulatory standards, especially in relation to capital, liquidity, and leverage.

Fifth, systemic risk arose due to the lack of appropriate mechanisms to deal with problems that arose from unregulated or unexpected sources. Examples include the necessity of rescuing AIG and also the lack of a mechanism for appropriately resolving the Lehman Brothers crisis. In particular, not only are systems required to deal with banks (especially those of systemic significance), but also needed are mechanisms capable of dealing with non-banks and/or financial conglomerates.

Finally, consumer protection structures, such as deposit insurance, did not meet the realities of major financial systems in the context of a serious financial crisis and had to be extended to new areas (businesses and money markets) in order to prevent both bank runs and new forms of bank run-like withdrawals from core funding areas of the financial system.

As noted above, preventing and addressing systemic risk is the fundamental aspect of financial regulatory design. In looking forward, the global credit crisis of 2008 highlights the urgent need to redesign both the global and domestic financial regulatory systems not only to properly address systemic risk but also to support its proper functioning (i.e. financial stability). At the same time, financial regulatory design should extend beyond addressing systemic risk to broader concerns of financial stability.²³⁵ Schinasi provides the most comprehensive definition of financial stability:

Financial stability is a situation in which the financial system is capable of satisfactorily performing its three key functions simultaneously. First, the financial system is efficiently and smoothly facilitating the intertemporal allocation of resources from savers to investors and the allocation of economic resources generally. Second, forward-looking financial risks are being assessed and priced reasonably accurately and are being relatively well managed. Third, the financial system is in such condition that it can comfortably if not smoothly absorb financial and real economic surprises and shocks.²³⁶

This definition implies that the objective is:

maintaining the smooth functioning of the financial system and maintaining the system's ability to facilitate and support the efficient functioning and performance of the economy; and having in place the mechanisms to prevent financial problems from becoming systemic or from threatening the stability of the financial and economic system, but without undermining the economy's ability to sustain growth and perform its other important functions.²³⁷

235. See Arner, *supra* note 49.

236. GARRY SCHINASI, *SAFEGUARDING FINANCIAL STABILITY: THEORY AND PRACTICE* 82 (2006).

237. *Id.* at 100.

This definition thus extends beyond crisis prevention and addressing systemic risk to support for financial development and thereby, directly or indirectly, economic growth.

The plan outlined by the G-20 and being implemented by the FSB and others provides a significant comprehensive outline of the major issues that are to be addressed in this respect. At the same time, the plan does not provide a significant amount of guidance in respect of the future of finance. As demonstrated by the role of regulation in the global credit crisis of 2008, financial regulation plays a central role in the structure of finance, financial institutions, and financial transactions.

While the eventual outlines are unclear, a number of implications appear certain. First, policymakers will focus on enhancing the linkage between finance and the real economy, thus reducing the financialization that became characteristic of global finance in the years immediately preceding the crisis. In broad terms, finance will become less significant in the global economy. At the same time, there is likely to be a divergent approach between individual jurisdictions, with some jurisdictions determining that financial institutions will not be allowed to fail. The corollary of this approach is restrictive regulation in terms of products and activities. Other jurisdictions will continue to allow a more permissive approach to finance, and it is these jurisdictions that eventually will emerge as the major global financial centers. Second, for at least a number of years, financial institutions and transaction structures will become significantly less complex and significantly more transparent. While securitization and covered bond structures should return, the more complex products such as CDO squareds are likely not to become common again in the foreseeable future. Financial institutions themselves will also become significantly less complex. These two factors will significantly reduce the role of off-shore jurisdictions, except to the extent that global finance moves to these centers due to the restrictive versus permissive divergence highlighted above. Third, unregulated portions of the financial system will become regulated, with the focus on OTC derivatives and hedge funds. The former are likely to move increasingly to central counterparty structures or exchange-based platforms, while the latter will face increased disclosure requirements and leverage restrictions. In this context, individual jurisdictions will reform domestic financial structures along lines appropriate to the activities they will permit within their respective financial systems. The highest profile example of regulatory structure reform will likely be the United States; significant structural changes are also likely in the countries of the European Union that have adopted the euro as a common currency.²³⁸ For off-shore jurisdictions, this reform will mean that even if they continue to adopt a more permissive approach, they will be forced to meet minimum international regulatory and transparency standards emanating from the FSB. Fourth, quantitative finance, especially risk modeling, will receive much less regulatory trust. This decrease in trust will extend not only to rating agencies and their models but also has important implications for the future of financial education and the requirements of financial institutions and regulatory agencies. Finally, as a result of cooperative efforts, international cooperation and related institutional structures will have an increasing role, either as a result of a continued mandate for economic and financial globalization or as a result of any possible decision to limit the role of global finance.

238. See THE HIGH-LEVEL GROUP ON FINANCIAL SUPERVISION IN THE EU, REPORT (Feb. 2009), *available at* http://ec.europa.eu/internal_market/finances/docs/de_larosiere_report_en.pdf; Turner Review, *supra* note 6.