Global Business & Development Law Journal

Volume 23
Issue 1 *Symposium: Local to Global: Rethinking Spheres of Authority After a World Financial Crisis*

Article 2

1-1-2010

Central Banks and Central Bank Cooperation in the Global Financial System

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Symposium
Local to Global: Rethinking Spheres After a World Financial Crisis

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** B.S., M.A., J.D., LL.M. The author wishes to thank Professor Charles Adams, Lee Kuan Yew School of Public Policy, National University of Singapore for sharing his wealth of knowledge, Shigeru and Michiko Odajima for their earlier support, and Etsuko Amano for her unwavering encouragement.

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I. INTRODUCTION

During 2008 and 2009, the world experienced the worst financial crisis since the 1930s, along with the most severe global recession since World War II. Unlike the Great Depression of the 1930s, when policy mistakes by central bankers worsened and prolonged the financial and economic crisis, central banks helped avoid systemic financial collapse during the recent crisis and lessened its most malign economic consequences. While it was not uncommon for central banks to cooperate in the 1920s and 1930s, their actions were very often nationalistic or mutually competitive. By contrast, the extent of coordinated efforts from 2008 has been unprecedented. Looking forward, experiences from the latest global financial crisis present the potential for increased central bank cooperation in the future, perhaps with formalization and legalization in certain contexts (especially East Asia).

This Article begins with a discussion of the evolution of central banks, focusing on those most historically significant in the global financial system: the Bank of England, the U.S. Federal Reserve System, and the European Central Bank and its principal forerunners. Following this discussion, the Article considers the roles and functions of modern central banks, focusing on certain unusual characteristics: namely, central banks are state entities responsible for specific functions but have often been largely independent in pursuing those objectives, both historically and in the modern era, which increasingly has seen central bank governance given statutory independence. This makes central banks unusual actors in international law and in their relations. They cooperate freely, but in ways that are often informal and not addressed in formal international arrangements. From this basis, the Article turns to the actions of the major central banks in the context of the global financial crisis, including their extensive coordination and cooperation. It concludes by considering whether experiences during the latest major crisis set the stage for further development of central bank cooperation mechanisms, focusing on specific areas of common international concern.

II. EVOLUTION OF CENTRAL BANKS

The term "central bank" was something of an ambiguous expression until the late seventeenth century, as there was neither an agreed-upon definition of the term nor a clear concept of what constituted "central bank" functions. The phrase found regular use only in the nineteenth century. R.S. Sayers, for example, in his study of the Bank of England during its early years stated: "At the end of the nineteenth century . . . 'central bank' meant scarcely more than a single bank distinguished from others by unique public responsibilities eclipsing its commercial interests."[1] Thus, the evolution of central banks is remarkable. Today's entities are powerful in setting and managing domestic policies, with a handful of central banks influential in the international arena, setting trends and norms which other central banks often emulate.

In the delegation of authority to central banks by their governments, many of the central banks of today are awarded a high degree of independence, a concept considered in the following section. While modern observers argue that such independence contributes heavily to general confidence and is essential to domestic economic stability, early central banks enjoyed little such political and economic latitude, and were often given poorly-defined objectives. Even today, the specific functions of central banks can greatly vary from country to country. Thus, the range of functions is largely dictated by the relationship between the central bank and its government's policy objectives. Almeida, Fry, and Goodhart, for example, have found that the monetary policies of a central bank are largely determined by the exchange rate regime employed, given the state's general fiscal stance.[2]

The majority of central banks, as we know them today, emerged during the nineteenth century. Some began informally within the commercial sector, acting as neutral clearing houses for established banks. Banks such as the Swedish Riksbank and the Bank of England were early models that showed the influence that central banks could exert. Others (such as the Bank of France, established in 1800; Bank of the Netherlands in 1814; Bank of Spain in 1856; and Bank of Japan in 1882) further exemplified the need for a state to have a centrally derived source of monetary control.[3] The importance of a central bank was further articulated at the International Financial Conference in Brussels in 1920, where it was suggested that a central bank was necessary for a state to fulfill its economic potential.[4] The establishment of central banks such as the Bank of Australia in 1924, the Bank of Canada in 1935, and a large number of banks throughout Africa and South America spoke to this perceived need. While some argue there may be stages in economic development when the necessity of a central bank is uncertain, nonetheless, central banks have become an essential element in both the industrialized and developing world and in both existing and new states.

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1. 1 R.S. SAYERS, THE BANK OF ENGLAND 1891-1944, at 1 (1976).

2. MAXWELL J. FRY, CHARLES A. E. GOODHART & ALVARO ALMEIDA, CENTRAL BANKING IN DEVELOPING COUNTRIES: OBJECTIVES, ACTIVITIES AND INDEPENDENCE 27-32 (1996),

3. M.H. DE KOCK, CENTRAL BANKING 4-7 (4th ed., Crosby Lockwood Staples 1974). For a brief review of the early history of central banking, see generally *id.* at 1-16.

4. Yann Decorzant, Univ. of Geneva, Dep't of Econ. History, *Private and Public Initiatives in the Economic and Financial Organization of the League of Nations in the Early 1920's*, 2007 EUR. BUS. HIST. ASS'N 9-10, *available at* http://www.unige.ch/ses/istec/EBHA2007/papers/Decorzant.pdf.

Maxfield cites an adage commonly heard in the international financial sector: "'New nations acquire a flag, write a national anthem, and constitute a central bank.'"[5]

This Article now briefly examines the evolution of the Bank of England, the Federal Reserve, and the European Central Bank as the three main central banks that have taken visible leadership roles in combating the global financial crisis.

A. Bank of England

The Bank of England (BOE) was founded in 1694 by William Paterson, who gathered a group of London businessmen together for the purpose of raising and lending £1,200,000 to the government in return for a royal charter and associated privileges.[6] Although the Bank ultimately grew into the model of modern central banking we know today, its origin did not reflect that of a central bank and differed considerably from its continental counterparts. Where the continental banks were directly involved in credit and finance throughout their respective countries, the BOE differed in that it was a private bank which had little functional involvement in commercial lending in the United Kingdom, and had few branches, either in London or elsewhere. In terms of ordinary banking, there were many other organizations whose activities dwarfed those of the BOE.

The Bank was born into a period of economic and political upheaval, with the opulent lifestyles of the Stuart monarchs driving London into near insolvency. The tax base was negligible, and the state had no effective means of revenue collection. Further, high inflation through currency debasement was ever-present, helping to create an economic climate that was precarious at best, with crisis after crisis being the norm. The BOE was not initially intended to function as a central bank, but was forged to meet the seemingly unending war-financing needs of William III and other monarchs: "for most of the first 120 years of the Bank's existence the nation was either preparing for war, waging war, or seeking retrenchment after war."[7] Thus the ongoing task of funding war efforts defined the primary activities of the BOE in its early years, deepening the government's dependency on the bank. This often resulted in the early renewals of the bank's charter (with each renewal accompanied by further exclusive privileges).[8] At that point the bank was considered part of the "public

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5. SYLVIA MAXFIELD, GATEKEEPERS OF GROWTH: THE INTERNATIONAL POLITICAL ECONOMY OF CENTRAL BANKING IN DEVELOPING COUNTRIES 3 (1997).

6. Bank of England, About the Bank: Major Developments, http://www.bankofengland.co.uk/about/history/major_developments2.htm (last visited Mar. 29, 2010); See JOHN CARSWELL, THE SOUTH SEA BUBBLE (Sutton Pub., 2002) (1960).

7. H.V. Bowen, *The Bank of England During the Long Eighteenth Century, 1694-1820, in* THE BANK OF ENGLAND: MONEY, POWER AND INFLUENCE 1694-1994, at 5 (Richard Roberts & David Kynaston eds.,1995) [hereinafter MONEY, POWER AND INFLUENCE].

8. For discussion of early corporate charters and their role, see Douglas Arner, *Development of the American Law of Corporations to 1832*, 55 SMU L. REV. 23 (2002).

exchequer." It also established the norm of perpetual public lending to the government, solidifying the idea of a continuing "national debt." Though there were ongoing questions regarding the relationship between the Bank and the crown—including the constitutionality of the BOE—its rising economic importance cemented the case for a national central bank. In every sense, the BOE became an essential driving force of empire.

In addition to funding military spending, the Bank acted as administrator for government annuities, managed the national debt, and provided deposit and credit arrangements for various government departments, among other functions: "In these capacities the Bank made itself the cornerstone of the City and of London's financial markets, and, as a prototype quasi-central bank, it had developed a position of great influence well beyond the world of government finance."[9] The Bank was also the *de facto* protector of the gold standard and custodian of its own gold reserves, which assured the convertibility of sterling. The latter part of the nineteenth century saw the Bank being given some of the characteristics of modern central banks.[10] The 1844 Bank Charter Act, for example, granted exclusive note issuing rights which were tied to the Bank's gold reserves, and required a separation of note issuance from banking operations. Further, by restricting English commercial banks from issuing notes, the Act sought to address the inherent instability brought about by hundreds of country banks each issuing their own notes and frequently being unable to honor them, leading to frequent bank failures.[11] Thus the Act granted monopoly power to the BOE, solidifying its position as the new preeminent banking power within the empire, in spite of the fact that it remained a private bank.

Both the influence and obligations of the Bank came under increased scrutiny during the later part of the nineteenth century with the failure of Overend, Gurney & Company. This was a London wholesale discount bank that had established itself as a "banker's bank" after providing liquidity to other banks during the crisis of 1825, cutting into both the BOE's profits and clients. However, mismanagement at Overend, Gurney coincided with a general tightening of credit and the bank became unable to meet its obligations. The result was a general run on deposits, leading Overend, Gurney to seek assistance from the BOE. The BOE had already determined that mismanagement had carried Overend, Gurney into insolvency and therefore allowed the bank to fail, in spite of the systemic risk presented. That risk was realized in the financial crisis which followed, involving the failure of dozens of other banks and companies.[12] The BOE, in essence, sent a message assaulting the moral hazard

9. Bowen, *supra* note 7, at 11.

10. For further discussion, see CHRISTOS HADJIEMMANUIL, BANKING REGULATION AND THE BANK OF ENGLAND (1996).

11. PHILIP GEDDES, INSIDE THE BANK OF ENGLAND 24 (1987).

12. *See* Richard Roberts, *The Bank of England and the City*, *in* MONEY, POWER AND INFLUENCE, *supra* note 7, at 157-159.

associated with the "too big to fail" mantra. Regardless of size and importance, any bank that became inappropriately managed could not look to the BOE to be rescued.

However, the BOE did react in 1890 when Baring & Co quickly became insolvent due to defaults on loans made to Argentinean borrowers.[13] A crisis ensued that threatened to overwhelm London's financial markets, endangering the City's global reputation. London was faced with the prospect of a systemic financial failure; the collapse of Baring would have been catastrophic. However, Baring's liabilities were twice the reserves of the BOE. Faced with a crisis, the BOE gathered support from other great banking names and provided liquidity for both Baring and the market at large. The BOE was instrumental in facilitating the continued functioning of the financial markets, moving closer to the traditional model of a central bank.

The year 1914 initiated shifts in the central banking paradigm. The Federal Reserve Act of 1913 took full effect, creating the infrastructure of the modern U.S. payment and reserve system. The Act had significant global implications for the direction which central banks would subsequently take as they continued to evolve: "It was no less true in Britain, where, without benefit of law, the rotating, part-time, amateur company of merchants that had managed the Bank of England since 1694 was replaced by a full-time bureaucracy."[14] In addition, the outbreak of World War I saw a practical joining between the Bank of England and the Treasury, further solidifying the BOE's status as financier of the state. Having left the gold standard in 1931, the Bank was nationalized as a public corporation in 1946 and thereafter functioned fully as a central bank.

The Bank of England played a leading role during several crises of the last few decades. The Bank was granted operational independence over monetary policy in 1997, which gave it responsibility for monetary policy. During the global financial crisis that began in 2007, the Bank operated as a lender of last resort, supporting individual entities (such as Northern Rock) and the U.K. financial markets. Its involvement as a leading global central bank has been vital during the crisis, as it adjusts policy actions in coordination with the Federal Reserve, the ECB and other important banks such as the Bank of Japan.[15]

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13. *See* Juan-Huitzi Flores, *Lending Booms, Underwriting and Competition: The Baring Crisis Revisited* 1 (Univ. Carlos III De Madrid, Working Papers in Economic History, WP 07-01, 2007), *available at* http://emlab.berkeley.edu/users/webfac/eichengreen/e210a_sp06/flores_lending_booms.pdf.

14. JOHN H. WOOD, A HISTORY OF CENTRAL BANKING IN GREAT BRITAIN AND THE UNITED STATES 277 (2005).

15. *See* Mike Peacock, *Crisis Has Legs Despite Central Bank Endeavour*, REUTERS UK, Dec. 13, 2007, http://uk.reuters.com/article/idUKL1339203520071213.

B. U.S. Federal Reserve

The Federal Reserve system has a notable history and has been highly influential both domestically and internationally. The United States was one of the last advanced nations to establish a central bank, due to the political opposition of interest groups within the industrial and agricultural sectors. Such opposition was responsible for the closures of Alexander Hamilton's First Bank of the United States in 1811, and the Second Bank of the United States, closed by Andrew Jackson in 1836.[16] The closure of the nation's first two central banks due to political in-fighting had a significant and widespread effect on the U.S. economy. In spite of the enactment of the National Banking Act in 1863, which established a system of nationwide banks, there was ongoing instability within the financial sector due to currency and liquidity limitations. These factors gave rise to repeated banking crises which had increasingly damaging consequences throughout the economy. In 1873 and 1893, for example, national banks failed due to scarce liquidity and repeated consumer deposit runs. The Panic of 1907, however, had long-term implications in that it initiated widespread banking reforms.[17]

The Panic of 1907 occurred as the New York Stock Exchange fell by extraordinary levels during a deeply entrenched recession. Combining failed attempts to corner the copper market coupled with recurring bank runs and an abrupt retraction in credit and liquidity, and without a national lender of last resort, panic spread quickly from the streets of downtown New York across the nation.[18] It is worthwhile noting however, that excessive speculation, brokerage firm failures, and bank runs were not the initial triggers to the panic: "[T]the shock that set in motion the events to create the Panic was the earthquake in San Francisco in 1906. The devastation of that city drew gold out of the world's major money centers. This created a liquidity crunch that created a recession starting in June of 1907."[19]

The long-term effect of the Panic of 1907 was not limited to the event itself, but more so to the response. The reaction of industrialists such as J. Pierpont Morgan ultimately led to the legislative action that created the Federal Reserve System. Wall Street's preeminent banking power who was responsible for saving the U.S. Treasury in the 1893 panic, Morgan was instrumental in gathering

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16. For an interesting and illustrative history, see generally ROGER T. JOHNSON, HISTORICAL BEGINNINGS. . .THE FEDERAL RESERVE (Mary Jane Coyle ed., 1999), *available at* http://www.bos.frb.org/about/pubs/begin.pdf. For a legal and political economic analysis, see MARK J. ROE, STRONG MANAGERS, WEAK OWNERS (1996).

17. For a detailed discussion of the Panic of 1907, see ROBERT F. BRUNER & SEAN D. CARR, THE PANIC OF 1907: LESSONS LEARNED FROM THE MARKET'S PERFECT STORM (2007).

18. *Id.* at 37-41, 151-171; CHARLES P. KINDLEBERGER, MANIAS, PANICS, AND CRASHES: A HISTORY OF FINANCIAL CRISES 94-96 (4th ed. 2000).

19. Abigail Tucker, *The Financial Panic of 1907: Running from History*, SMITHSONIAN.COM, Oct. 10, 2008, http://www.smithsonianmag.com/history-archaeology/1907_Panic.html.

support from other economic elites such as John D. Rockefeller, George B. Cortelyou, and James Stillman in order to sustain the banking system. Morgan was equally responsible for providing liquidity to the New York Stock Exchange over several days of tenuous trading.[20]

The third attempt to establish a U.S. central bank came about due to concerns over concentrations of power. While Morgan was instrumental in saving the banking system and preventing Wall Street from collapsing, considerable concern developed that the federal monetary system should not be dependent or over-influenced by any individual, corporation or closed community. Created by the Aldrich-Vreeland Act, the National Monetary Commission conducted investigations in 1908 into the causes of the panic and additionally focused on banking and currency reform. The Committee also examined the influence of the "money trust" (funds provided by financiers such as Morgan and close associates), and the intertwining relationships of their business holdings. Congress debated the Committee's findings for almost two years, culminating in the Federal Reserve Act enacted by President Woodrow Wilson on December 22, 1913.[21]

The Federal Reserve System consists of seven Board Members appointed by the U.S. President and twelve Reserve Banks located throughout the country. The Federal Open Market Committee is the decision-making entity of the Federal Reserve System, overseeing open market activities and functioning through the Federal Reserve Bank of New York:

> A major component of the System is the Federal Open Market Committee (FOMC), which is made up of the members of the Board of Governors, the president of the Federal Reserve Bank of New York, and presidents of four other Federal Reserve Banks, who serve on a rotating basis. The FOMC oversees open market operations, which is the main tool used by the Federal Reserve to influence overall monetary and credit conditions.[22]

While neoclassical opinion views the formation of the Federal Reserve as a domestic instrument designed to stabilize a fragmented banking system, much of the language of the 1913 Act was oriented towards empowering the new Reserve Banks with the ability to conduct international operations, and to lead the U.S. dollar towards becoming an international reserve currency in global trade: "Internationally the goals were to facilitate the development of the dollar as an international currency (whose value would be subject to central policy on the

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20. *See* RON CHERNOW, THE HOUSE OF MORGAN: AN AMERICAN BANKING DYNASTY AND THE RISE OF MODERN FINANCE 121-30 (2001).

21. ELMUS WICKER, THE GREAT DEBATE ON BANKING REFORM: NELSON ALDRICH AND THE ORIGINS OF THE FED 1-8 (2005)

22. PUBLICATIONS COMMITTEE, BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM, THE FEDERAL RESERVE SYSTEM: PURPOSES & FUNCTIONS 3 (9th ed.2005).

margins) in conjunction with the foreign expansion of American joint-stock banks."[23]

The goals of central banks throughout the world differ according to their given authority. The objectives of the Federal Reserve are outlined in its statutory language. The Federal Reserve's Board of Governors works to promote maximum employment and stable prices, with a focus on moderate long-term interest rates. As the Federal Reserve has grown, so its mandate has encompassed economic goals for monetary policy that are broader than many other models, including those of the ECB and BOE. This has not been free from criticism. Bofinger points out that while the Federal Reserve System has not conducted monetary policy on an ad-hoc basis, it has pursued an "eclectic approach" which has not always presented a well defined policy framework.[24]

The still young Federal Reserve Bank was tested during the 1929 market crash and the Great Depression of the 1930s:

> From 1930 to 1993 nearly 10,000 banks failed . . . Many people blamed the Fed for failing to stem speculative lending that led to the crash, and some also argued that inadequate understanding of monetary economics kept the Fed from pursuing polices that could have lessened the depth of the Depression.[25]

Subsequent legislation, such as the Glass-Steagall Act of 1933 (repealed in 1980 and 1999), and the Banking Act of 1935, instituted changes to the Fed's structure. The Korean conflict saw the beginnings of a more independent central bank in terms of the use of monetary policy tools. After a period in the 1970s when policy became discredited by volatile currency markets and alarming inflation rates, the Federal Reserve appeared to restore stability and confidence, and by the 1990s was seen as generally effective in using monetary policy to combat a number of domestic financial crises. Given its record of technical innovation, and sizeable and highly competent resources, the Federal Reserve has become the world's most influential central bank. Its policy decisions are closely watched and emulated by other central banks and subjected to the most critical evaluations.

The recent financial crisis was more global in scope and far more complex than any of its antecedents, although many aspects resemble past dislocations. The Federal Reserve moved quickly and aggressively to restore confidence, utilizing tools and resources that were not available in the past. While the Federal

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23. J. LAWRENCE BROZ, THE INTERNATIONAL ORIGINS OF THE FEDERAL RESERVE SYSTEM 50 (1997).

24. PETER BOFINGER, MONETARY POLICY: GOALS, INSTITUTIONS, STRATEGIES, AND INSTRUMENTS 307-08 (2001).

25. Federal Reserve Education, History of the Federal Reserve, http://www.federalreserveeducation.org/FED101_HTML/History/index.cfm (last visited Apr. 6, 2010). For the most significant discussions, see JOHN KENNETH GALBRAITH, THE GREAT CRASH 1929 (2009); MILTON FRIEDMAN & ANNA J. SCHWARTZ, A MONETARY HISTORY OF THE UNITED STATES, 1867-1960 (1971).

Reserve has taken a leading role in combating the crisis, it is ineffective acting alone. Thus, the coordinated efforts of several leading central banks are vital to stabilizing global markets and reestablishing confidence.

C. European Central Bank

The European Central Bank (ECB) was established as the result of an unprecedented period of political and economic integration, which, in itself, is rich in history. The move towards European economic integration after World War II became an increasingly important objective in acquiring lasting security.[26] Eilstrup-Sangiovanni and Verdier have argued that most theories of integration point to solutions of problems related to asymmetrical information and lowering transaction costs. In the case of the European Union however, they argue that the move towards integration was to prevent the rise of any one regional hegemony, and permanently to eliminate conflicts between states of unequal power and influence.[27]

The trend towards integration gave rise to a series of treaties among certain European states (the European Atomic Energy Community Treaty, the European Coal and Steel Community Treaty, and the Treaty of Rome to create a European Economic Community). In 1967 these treaty bodies became known as the European Communities. At the end of the 1960s, financial and monetary integration were first endorsed, with impetus from the collapse of the Bretton Woods fixed exchange rate system in 1971-73. Discussions of cooperation for European exchange rate stability were formalized into commitments for a single currency in the 1980s and 1990s.[28] The Single European Act in 1987 and the Maastricht Treaty in 1993 were significant in achieving economic and monetary integration.[29] Despite a collapse in the Exchange Rate Mechanism (ERM) in 1992-93, the European Monetary Institute (EMI), the predecessor to the ECB, was established to oversee the introduction of the single European currency along with providing the foundation for the future ECB under the Maastricht Treaty. The ECB, inaugurated in 1998 pursuant to the Maastricht Treaty, assumed its major mandate when the euro was introduced as an accounting currency on January 1, 1999, during the third stage of economic and monetary union.[30]

Today, "[t]he ECB is the central bank for Europe's single currency, the euro. The ECB's main task is to maintain the euro's purchasing power and thus price

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26. For detailed discussion, see BARRY EICHENGREEN, THE EUROPEAN ECONOMY SINCE 1945 (2006).

27. Mette Eilstrup-Sangiovanni & Daniel Verdier, *European Integration as a Solution to War*, 11 EUR. J. INT'L REL. 99, 99-100 (2005).

28. *See* Mads Andenas, Douglas Arner & Mei-wah Leung, *The Future of the European Single Market for Financial Services* (Asian Inst. of Int'l Fin. L., Working Paper No. 8, 2010).

29. *See* Delegation of the European Commission to the USA, European Union, The European Union: A Guide for Americans 3 (2009), http://eurunion.org/eu/images/PDF/euguide2009.pdf.

30. European Central Bank, Economic and Monetary Union (EMU), http://www.ecb.int/ecb/history/emu/html/index.en.html (last visited Apr. 6, 2010).

stability in the euro area. The euro area comprises the 16 European Union countries that have introduced the euro since 1999."[31] Modeled largely on the German central bank, the Bundesbank, the ECB's purchasing power and price stability objectives effectively make inflation targeting the core objective of monetary policy, although it is not explicitly stated as such. The ECB utilizes a strategy that emphasizes the pursuit of an announced numerical inflation target characterized by "a high degree of transparency and accountability."[32] The transparency of the ECB is, however, an uncertain issue that contrasts with inflation targeting models elsewhere. There have been calls for the ECB to move towards the more commonly used flexible inflation targeting model rather than the more rigid model employed by the Reserve Bank of New Zealand, which pioneered explicit inflation targeting in the 1980s.[33] In terms of targeting, the ECB's objective is a Eurozone inflation rate of approximately 2% over the medium-term. In fact, it is the sole primary objective to which other considerations are subordinate. This contrasts to the twin mandate of the Federal Reserve, which is required to pursue both price stability and full employment.

While price stability is the ECB's central objective, it also issues banknotes, monitors foreign reserves, and implements monetary policy for the Euro System. That System is comprised of the ECB itself and the National Central Banks (NCBs) of those E.U. states that have adopted the euro as their official currency. While the implementation of monetary policy falls within the scope of the ECB, policy formation is derived externally. Monetary policy decisions within the Euro System are determined by a Governing Council rather than the ECB. This consists of six members of the Executive Board of the ECB in addition to eleven NCB governors . Thus, the ECB is analogous to the status of regional reserve banks in the Federal Reserve System. The ECB is not omnipotent, as it relies heavily on interactions with other organizations to advance its policy goals. Howarth and Loedel compare the ECB to the analysis of government and societal structure described in Thomas Hobbes's *Leviathan*, likening the ECB to "a supreme ruler that is nonetheless greatly restrained in its actions by natural law and constitutional structure."[34]

While the ECB continues to build monetary policy credibility, there are questions as to the Eurozone's fiscal authority and whether it is sufficiently

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31. European Central Bank, The European Central Bank, http://www.ecb.int/ecb/html/index.en.html (last visited Apr. 6, 2010).

32. Lars E.O. Svensson, *Inflation Targeting*, THE NEW PALGRAVE DICTIONARY OF ECONOMICS ONLINE (Steven Durlauf & Steven N. Durlauf eds., 2d ed. 2008), http://www.dictionaryofeconomics.com/article?id=pde2008_I000095.

33. *See* GUILLERMO DE LA DEHESA, SHOULD THE ECB ADOPT A FLEXIBLE INFLATION TARGETING? (European Parliament, Economic and Monetary Affairs Committee, Briefing Paper for the Monetary Dialogue of March 2008), *available at* http://www.europarl.europa.eu/document/activities/cont/200803/20080312ATT23990/20080312ATT23990EN.pdf.

34. DAVID HOWARTH & PETER LOEDEL, THE EUROPEAN CENTRAL BANK: THE NEW EUROPEAN LEVIATHAN? 177 (2003).

developed to support the ECB. There are no clear legal outlines, and presumptions are more the norm rather than mere guidance provided by black letter law. While the national fiscal authorities of each member state stand by their own national bank, there is no specified authority that fiscally stands behind and would provide capital for the ECB if needed. Nonetheless, as overseer to the economic stability of the eurozone, the ECB has become influential both within and outside the European Union. In joining with other central banks from the leading industrialized nations, the ECB is now vital to coordinated efforts in meeting the challenges of the global financial crisis.

D. Summary

The major central banks have rich and colorful histories, providing interesting reflections of not only the banks themselves but of the socio-political climate that existed during their respective developments. The establishment of a central bank has become an integral part in both industrialized and developing nations. Although the debates will continue regarding the role central banks should be assigned, they are arguably instrumental in ensuring financial stability. By striving to maintain stability, affecting exchange rates, and shaping monetary policy, central banks are able to facilitate broad international cooperation.

Central banks have grown and solidified their positions by taking increasing responsibilities for safeguarding national economies. They have, in turn, strived to separate themselves from political influence by functioning as independent entities. This independence most exemplifies the rise of the modern central bank. It is this aspect of the development of central banking to which we now turn.

III. CENTRAL BANKS AND CENTRAL BANKING

Central banks play the primary role in shaping monetary policy and maintaining financial stability in economies around the world. Although designated as "banks," central banks do not customarily take deposits or lend money as the commercial sector is understood to do. A central bank, as the name indicates, stands at the core of the financial system. It is an agency responsible for issuance of currency, operation of monetary policy (including open market operations), and engagement in activities designed to facilitate healthy business interactions (e.g., serving as an intermediary between banks and as the state's principal bank). The central bank can be a government agency (in most cases) or a privately owned institution (now rare), or a mixture of the two. However, regardless of the ownership structure, the central bank is a state or quasi-governmental organization. As such, its goals may include a broad set of objectives such as maintaining the value of currency, supporting financial stability, and promoting employment and economic growth in the economy. Although the responsibilities of central banks vary, each is clearly at the center of the financial system it oversees.

A. Central Bank Functions

At the heart of modern central banking are two objectives: monetary stability and financial stability, often supplemented by economic and/or financial development.[35]

1. Monetary Stability

One of the most important duties of the central bank is to conduct monetary policy in the pursuit of monetary stability, which is customarily seen as a relatively low nominal rate of price inflation. A central bank achieves this goal by influencing the money aggregates, in some cases with specific interest rate or exchange rate objectives, and in others by setting targets for monetary base expansion. Whereas in the 1980s central bank practice focused on money supply control as a proxy for inflation targeting, the majority of leading central banks have since the 1990s adopted an approach that regards interest rates or exchange rates as instruments that influence the outcome of monetary growth and price inflation, with objectives set across a range of monetary variables and economic expectations.[36] This pragmatism reflects the influential thinking of Charles Goodhart, formerly of the BOE, that explicit target setting in monetary policy causes a breakdown in the statistical relationship between the available policy instrument and the target variable.[37]

Most central banks are given primary responsibility for preserving the value of the currency, making price stability the core goal of the majority. The key consideration underscoring the importance of inflation control is that high, unstable inflation will adversely affect socio-economic conditions. First, high inflation will steadily erode real incomes thus causing reduced living standards. Second, unstable inflation will create uncertainty for investors, commercial organizations and government agencies in planning and decision making. Empirical evidence suggests that unstable inflation will increase the difficulties for people in making decisions as to consumption, investment and production, which will ultimately reduce general economic growth. Third, a higher rate of domestic inflation compared to inflation in neighboring countries will cause real domestic interest rates to lose competitiveness, and put downward pressure on the domestic currency.

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35. For detailed discussion, see ROSA LASTRA, CENTRAL BANKING AND BANKING REGULATION (1996); DOUGLAS W. ARNER, FINANCIAL STABILITY, ECONOMIC GROWTH AND THE ROLE OF LAW (2007).

36. A survey of monetary policy approaches appears in *67th Annual Report*, 1996-1997 BANK FOR INT'L SETTLEMENTS 140-60, *available at* http://www.bis.org/publ/ar67f01.pdf.

37. *See* C.A.E. GOODHART, MONEY, INFORMATION AND UNCERTAINTY (2d ed. 1989).

2. *Financial Stability*

A second key function of any central bank is to support financial stability. The central bank is important in ensuring the safety and integrity of the financial system (especially the banking system). This it can do in a number of ways, including macroeconomic surveillance, prudential regulation and supervision, as well as serving as lender of last resort. Additionally, central banks are often responsible for the smooth functioning of the government securities markets and money transmission systems.

While banking supervision is typically thought to be a common activity of a central bank, this is often not the case. The BOE for example, had its banking supervisory powers passed to the Financial Services Authority in 1998;[38] the U.S. Federal Reserve, at present, only regulates bank holding companies, while regulation of national banks is the responsibility of the Office of the Comptroller of the Currency (OCC), and regulation of members of the deposit insurance system is separately regulated by the Federal Deposit Insurance Corporation (FDIC).

In relation to lender of last resort function, if bank depositors seek to withdraw their deposits for whatever reason, the bank will use reserves of cash and marketable securities to meet the resulting demand. With reserves depleted, the bank must reduce its balance sheet assets by recalling loans, and use incoming receipts to replenish its reserves. However, the contractual conditions of loans mean that this may take some time, while deposit withdrawal may be rapid. The central bank stands ready to inject emergency liquidity in such cases, by lending to the bank to the fullest extent that it can provide acceptable collateral to secure. This function can replenish bank reserves quickly and prevent a systemic loss of confidence. When the crisis eases, the bank provided with lender of last resort assistance will repay the loans and return to an adequate reserve level, usually with a smaller balance sheet. Clearly such a mechanism serves to protect against banking sector panic.

In this context, as seen in the case of Lehman Brothers in September 2008, it is often difficult to evaluate a troubled entity to determine if intervention is an appropriate option[39] Allen and Gale point to the many commentators who questioned the necessity of the Federal Reserve's 1998 intervention in facilitating a takeover of the hedge fund Long Term Capital Management (LTCM).[40] Central bank legislation often minimizes the lender of last resort language: "This is probably out of deference to the fear of many central bankers that moral hazard

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38. STEPHEN VALDEZ, AN INTRODUCTION TO GLOBAL FINANCIAL MARKETS 55 (5th ed. 2007).

39. Martin Hutchinson, *The Wrong Rescues*, ASIA TIMES ONLINE, Sep. 24, 2008, http://www.atimes.com/atimes/Global_Economy/JI24Dj02.html; Chris Isidore, *Why they let Lehman Die*, CNNMONEY, Sep. 15, 2008, http://money.cnn.com/2008/09/15/news/companies/why_bear_not_lehman/index.htm.

40. FRANKLIN ALLEN & DOUGLAS GALE, BANK FOR INT'L SETTLEMENTS, LIQUIDITY, ASSET PRICES AND SYSTEMIC RISK, *available at* http://www.bis.org/cgfs/conf/mar02a.pdf.

would be encouraged even by merely officially recognising the rights and duties of the central bank and the private banks in situations of systemic financial instability."[41] Concerns over the moral hazard presented by the presence of a lender of last resort are in no sense new. Walter Bagehot addressed the issue in his 1873 work, *Lombard St*: "If the banks are bad, they will certainly continue bad and will probably become worse if the government sustains and encourages them. The cardinal maxim, is that any aid to a present bad bank is the surest mode of preventing the establishment of a future good bank."[42]

3. Banker's Bank

Finally, the central bank also serves as the banker's bank. First, the central bank holds other banks' reserves. Second, the central bank makes loans to other banks as a means of influencing liquidity and short-term interest rates. Third, central banks are generally responsible for overseeing national payment systems and often act as their central operator. The central bank also plays a role as the government's bank, providing currency and savings services. Finally, the central bank often issues currency and may issue and deal in government securities on behalf of the state.

B. Power, Influence, and Central Banking in the Modern Era

The formation of key institutions, such as the BOE, the Federal Reserve, and the ECB, has played not only critical roles in maintaining financial stability within their respective domestic arenas, but has also acted as a catalyst in setting practice within an increasingly globalized financial system. In analyzing central banks in developing countries, Maxfield asserts that the costs associated with poor monetary practices by central banks are amplified by globalization and financial integration, thus requiring a more sophisticated and internationally aware conduct of monetary policy.[43] While globalization continues to be a frequently heard mantra, it is not at all new and has been present throughout history. The force of globalization in a very real sense spurred the development of central banks, the subject of this section.

The rise in power and influence of central banks in the modern era may be attributed, in part, to a question of mistrust of politicians and the political process. With increasingly volatile markets and, at times, extended periods of high inflation, there is a widely held view that politicians are unable to satisfactorily negotiate monetary policy, their actions more orientated toward

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41. WILLEM BUITER, CTR. FOR ECON. POLICY RESEARCH, CAN CENTRAL BANKS GO BROKE? (2008), http://www.cepr.org/pubs/policyinsights/PolicyInsight24.pdf.

42. WALTER BAGEHOT, LOMBARD STREET: A DESCRIPTION OF THE MONEY MARKET 100-01 (1920).

43. MAXFIELD, *supra* note 5, at 9.

perpetuating and solidifying their political power and influence rather than addressing real economic concerns.

There is a perception that continued inflationary concerns are largely unmet when the political process is the controlling factor: "Politicians were not sufficiently credible to be able to reduce the level of inflation. . . . They sacrificed the need to keep to medium-term inflationary targets in order to boost their short term electoral needs."[44] Goodhart has stated that competing information from opposing politicians (claiming their monetary policy proposals to be superior to those of their opponents) is likely to be self-deceptive, leaving the electorate confused. Goodhart has also asserted, however, that central banks counter this situation by providing a more credible direction which is not swayed by an interest to remain politically viable.[45]

Traditionally, the perception has been that monetary policy's primary tool for meeting economic objectives is the application of qualitative or quantitative control over monetary growth. In recent decades central banks, responding to inadequacies within the political process as cited above, have moved away from that model, orientating themselves toward short-term interest rate movements.[46] With that has come the need for increased independence as central banks expand their capabilities to meet complex challenges that are global in nature. The multiple objectives employed by many central banks (such as the Federal Reserve) have also contributed to a need for independence. It is that independence which most typifies the rise of modern central banks.

1. Central Bank Independence

In recent years, many states have enacted legislation solidifying central bank operational independence, thus removing them from many aspects of government control and influence: "Countries ranging from Eritrea to Malta, France, Kazakhstan, New Zealand, England, and Chile have recently approved, or contemplated, new central bank legislation. Between 1990 and 1995 at least thirty countries, spanning five continents, legislated increases in the statutory independence of their central banks."[47] Yet, few aspects of central banking prompt as much disagreement as the nature of independence. Although controversial, the subject of central bank independence serves as a primary example of the rise in power and influence modern central banks now exert. It can be argued that independence has allowed central banks the flexibility to utilize increasingly creative tools in combating the highly complex global financial crisis.

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44. ROBERT ELGIE & HELEN THOMPSON, THE POLITICS OF CENTRAL BANKS 18-19 (1998).

45. C.A.E. GOODHART, THE CENTRAL BANK AND THE FINANCIAL SYSTEM 67-68 (1995).

46. Todd Keister, Antoine Martin & James McAndrews, *Divorcing Money From Monetary Policy*, FRBNY ECON. POL'Y REV. 41 (2008).

47. MAXFIELD, *supra* note 5, at 3.

The question of independence may be as old as banking itself, but the topic has taken on increased importance in the modern era, with Bade and Parkin among the first to fully articulate an index based in legal and institutional attributes.[48] In essence, the appreciation for the study of central banking independence is related to the search for effective monetary policies in the face of increased globalization and interdependent markets, or as B.W. Fraser terms it, a search for a new anchor: "it is a recognition that the anchors which held prices stable in earlier eras—first the gold standard, then the Bretton Woods system—had come adrift and something else had to be put in their place."[49]

It is accepted that to constrain inflation expectations or deflationary pressures and maintain monetary stability, a central bank must maintain independence. The case for central bank independence is well known. Delegating monetary policy to an agent (e.g., the central bank), whose preferences are more inflation-averse than society's at large serves as a commitment device that permits sustaining a lower rate of inflation than would otherwise be possible.[50] As economist and central bank governor Stanley Fischer puts it:

They are arguments from the world of the second best. In a first-best world, monetary and fiscal policy would be perfectly coordinated and chosen, and there would be no need for an independent central bank. But in the imperfect world in which most central bankers ply their trade, political systems tend to behave myopically, favoring inflationary policies with short-run benefits and discounting excessively their long-run costs. An independent central bank, given responsibility for price stability, can overcome this inflationary bias.[51]

Indeed, insulating monetary policy from the political process avoids the aforementioned problems and helps enforce a low inflation equilibrium. The empirical evidence that, on average, countries with more independent central banks have lower inflation, at no cost in terms of growth or the variability of growth, is pervasive. A country is more likely to have low inflation if its central bank is more independent. For example, in 1993 Alesina and Summers reported a significant negative correlation between the index of central bank independence and average inflation rate. They also identified a negative correlation between central bank independence and variance of the inflation rate—a measure of the stability of macroeconomic policies.[52]

While the overriding thought is that the concept of independence relates to a separation of central banking decisions from the political process, there is no

48. ROBIN BADE & MICHAEL PARKIN, UNIVERSITY OF WESTERN ONTARIO, DEP'T OF ECON., CENTRAL BANK LAWS AND MONETARY POLICY (1988).

49. B.W. Fraser, *Central Bank Independence: What Does it Mean?*, RESERVE BANK OF AUSTRALIA BULLETIN, Dec. 1994, *available at* http://www.rba.gov.au/publications/bulletin/1994/dec/pdf/bu-1294-1.pdf

50. Alberto Alesina & Lawrence H Summers, *Central Bank Independence and Macroeconomic Performance: Some Comparative Evidence*, 25 J. MONEY CREDIT & BANKING 151, 151-52 (1993).

51. Stanley Fischer, *Maintaining Price Stability*, THE REGION, June 1997, http://www.minneapolisfed.org/publications_papers/pub_display.cfm?id=3637.

52. Alesina & Summers, *supra* note 50.

agreement upon the indicators that define independence.[53] By necessity, there will always be a connection between central banks and governments. The question, in reality, is what degree of independence is practical. No clear consensus is yet to prevail. Elgie and Thompson, for example, state that political independence and economic independence are the indicators of central bank independence: "'Political independence' may be defined as the central bank's ability to make policy decisions without interference from the core executive," [while] economic independence may be defined as the central bank's ability to use the full range of monetary policy instruments without restrictions from the core executive."[54]

In an earlier period when few central banks were formally independent but all aspects of financial and monetary policy were far less closely observed and reported than today, transnational credit arrangements were typically negotiated with a high degree of secrecy that excluded legislators and members of government. For example, a line of credit of US$3.0 billion in favor of the BOE was negotiated in 1964 by a eleven central banks and others through the Bank for International Settlement (BIS) and with the Federal Reserve as the effective leader.[55] These discussions were withheld from cabinet discussion in London by an inner group of ministers, and presented by the then prime minister in a wholly different light to prefatory FOMC discussions as the work and indefatigability of the British government.[56]

Cukierman, Web, and Neyapti, in attempting to measure independence, concluded four primary components: how appointments are made; the use of policy targets; third party conflict resolution between a central bank and the executive branch; and rules limiting funding to the government.[57] Considering the degree of independence, Buiter stated that the ECB is the most independent central bank due to its ability to set operational objectives and the self-governing nature of its goals.[58] Bofinger, while factoring in personal independence (the removal of the threat of dismissal of the central bank governor by the finance minister or head of government), concurs with Buiter by stating that in accordance to those indicators, "the ECB is currently the most independent central bank in the world."[59]

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53. For example, Parkin developed a sixteen-cell construct which distinguished between various types of central bank independence. *See* Michael Parkin, *Domestic Monetary Institutions and Deficits in* DEFICITS 310-337 (J.M. Buchanan et al. eds., 1987).

54. ELGIE & THOMPSON, *supra* note 44, at 18.

55. *35th Annual Report*, 1964-1965 BANK FOR INT'L SETTLEMENTS 122. For a narrative of a Federal Reserve Bank of New York officially responsible for central bank negotiations in 1961-1975, see CHARLES A. COOMBS, THE ARENA OF INTERNATIONAL FINANCE (1976).

56. *See* 1 RICHARD CROSSMAN, THE DIARIES OF A CABINET MINISTER:, MINISTER OF HOUSING 1964-66, at 57, 71 (1975) (briefly discussing the secretive negotiations that lead to the deal).

57. Alex Cukierman, Steven B. Webb & Bilin Neyapti, *Measuring the Independence of Central Banks and its Effect on Policy Outcomes*, 6 WORLD BANK ECONOMIC REV. 353 (1992).

58. WILLEM H. BUITER, RETHINKING INFLATION TARGETING AND CENTRAL BANK INDEPENDENCE 21 (2006).

59. BOFINGER, *supra* note 24, at 205.

While the pursuit of independence may be the objective of many central banks, Buiter argues that by function, central banking independence leads to less substantive accountability, with the citizenry forced to accept only formalized accountability. He defines formal accountability as: "the aspect of responsibility involving giving, *ex-post*, a statistical or judicial explanation for events, actions and outcomes."[60] Substantive accountability means that, following such reporting, explanation and justification, judgment (or other pleasant or unpleasant consequences), may follow.

Extending that argument, it could be posited that central banks, in executing legitimate independence are by necessity substantively unaccountable *if* they function without fear of reprisal or sanction (save for incapacity or willful misconduct).

The legitimacy or justification of central bank independence may be weighed against its effectiveness in providing stable financial markets and supporting economic activity. Despite a significant amount of legislation to support independence throughout the world, the impact is debatable and the empirical evidence remains decidedly mixed. Maxfield elaborates: "While evidence suggests that central bank independence is associated with low inflation, at least in highly industrialized economies, there is less corroboration of a hypothesized connection between central bank independence and *overall* economic health."[61] Anecdotal support for this assertion can be seen from the decade of deflationary conditions in Japan, notwithstanding the independent standing of the Bank of Japan, and its mandate to promote favorable economic conditions.

Grilli *et al* found that independence (political and economic) was negatively correlated to the inflation rate level, and found no significant correlation to the overall growth rate in real GNP.[62] However, it should be pointed out that this, in itself, is not evidence of causality. Pollard, in accessing a number of studies, has concluded that the mixed results may lie with the varying definitions of independence; further, there could be significant ideological differences and objectives between a central bank and the executive branch which adversely influence their relationship: "Theoretical studies indicate that an independent central bank can increase policy conflicts with the government whenever the preferences of the two differ and, in so doing, worsen the economic performance of a country."[63]

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60. BUITER, *supra* note 58, at 22.

61. MAXFIELD, *supra* note 5, at 13.

62. Vittorio Grilli, Donato Masciandaro & Guido Tabellini, *Political and Monetary Institutions and Public Financial Policies in the Industrial Countries*, 6 ECON. POL'Y 342, 374 (1991).

63. Patricia S. Pollard, *Central Bank Independence and Economic Performance*, FED. RESERVE BANK OF ST. LOUIS REVIEW, Jan.-Feb. 1993, at 21, 35, *available at* http://research.stlouisfed.org/publications/review/93/07/Bank_Jul_Aug1993.pdf.

2. *Independence Under Attack: A Precedent for the Future?*

In spite of the fact that an independent central bank has not definitively been quantitatively proven to positively shape economic growth in real terms, they nonetheless continue to flourish and are viewed as essential in a developed economy. A further inquiry explores the apparent contradiction in the relationship between the government and a central bank by questioning why a government would cede authority over monetary policy to an entity that is (hypothetically) independent of its influence, and which may act contrary to its desires.

Goodman addresses this question and posits three primary reasons. First, he notes the government's ability to reap the political rewards of central bank independence (and any positive aspects of performance), which is then translated into an increase in electoral support. Second, he argues that social coalitions, which reflect policy preferences, dictate economic choices. The third reason is the overall positive impression of central banks expressed by global leaders. All three factors contribute to the desire of a government to grant monetary policy independence to its central bank.[64]

It can be argued, however, that in the face of difficult fiscal and monetary environments, such as the aftermath of the global financial crisis, the commitment to central bank independence breaks down. The recent removal of Iceland's central bank governor, David Oddsson during the global financial crisis, for example, may have signaled the beginning of a trend towards attacks upon central bank independence.[65]

While independence may be the rallying call among central banks, its sustainability may come under fire as banks trespass into politically sensitive areas. As "more uncertain questions open up, politicians will be tempted to break central bank independence and take back decision-making."[66] Most recently, this has been seen in the United States with a range of calls to limit the independence of the Federal Reserve. At the same time, there has been no similar trend in Europe. Additionally, in Asia and elsewhere outside the Western developed economies, central bank independence in operations and governance has been seldom granted, and appears to be less valued than the state's capacity to influence domestic or external monetary policy. It is likely that increasing attention will focus in future on these closely connected political and economic structures, as expressed, for example, in China's central bank, the People's Bank of China (PBOC).

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64. JOHN B. GOODMAN, MONETARY SOVEREIGNTY: THE POLITICS OF CENTRAL BANKING IN WESTERN EUROPE 7-8 (1992).

65. Mary Stokes, *Iceland's Rollback of Central Bank Independence: Sign of Things to Come Elsewhere?*, RGE EUR. ECONOMONITOR, Apr. 9, 2009, http://www.rgemonitor.com/euro-monitor/256339/icelands_rollback_of_central_bank_independence_sign_of_things_to_come_elsewhere.

66. Guido Tabellini, *Why Central Banking is No Longer Boring*, VOX, June 23, 2008, http://voxeu.org/index.php?q=node/1259.

C. *Summary*

The debate concerning the sustainability of the independence of central banks in the wake of a complex financial crisis is a discord that is in the early stages. Nonetheless, today's central banks are using their self-governing authority to navigate through the difficulties of a financial crisis unprecedented since the Great Depression. While central banks adhere to domestic concerns and act autonomously, their independence allows the growth of international cooperation that is increasingly vital to support a state's economic viability. It is with the global crisis in mind that this Article moves forward to investigate the anatomy of a crisis and the resulting international cooperative efforts.

IV. CRISIS AND DOMESTIC CENTRAL BANK INTERVENTION

Central banks play a critical role in maintaining the financial strength and viability of domestic and global financial markets. Schinasi argues that when central banks ensure the proper functioning of payment systems and influence the real economy by using monetary policy, they are, in essence, playing their natural role of ensuring financial stability.[67] Thus, their importance during economically challenging environments is, by necessity, more pronounced. In the aftermath of the September 11th, 2001 terrorist attacks, for example, the Federal Reserve moved quickly to assure the markets by issuing a short statement: "The Federal Reserve System is open and operating. The Discount Window is available to meet liquidity needs."[68] While modest in verbiage, the statement was significant and ensured the continuing operation of banks by providing any marginal liquidity needed to help banks meet unforeseen payment requirements.[69]

The global financial crisis, however, has not been responsive to short statements, nor has the crisis been confined to a single sector. Rather, it has had far reaching implications and has required central banks to use increasingly creative measures to help prevent a general collapse of credit markets in a fashion not seen since the 1930s. This article briefly dissects the crisis before moving towards central bank responses.

A. *Anatomy of a Crisis*

For the first time since the 1930s, the United States experienced in 2008 a systemic financial crisis. On September 18, 2008, the financial system came close to collapse and most global credit markets ceased to function for the

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67. Int'l Monetary Fund [IMF], International Capital Markets Department, *Responsibility of Central Banks for Stability in Financial Markets* 7 (IMF Working Paper 03/121, 2003) (*prepared by* Garry J. Schinasi).

68. Federal Reserve Education, *supra* note 25.

69. *See generally* James J. McAndrews & Simon M. Potter, *Liquidity Effects of the Events of September 11, 2001*, FRBNY ECON. POL'Y REV. (2002).

ensuing four weeks. The ultimate economic impact of this financial crisis—the subprime crisis of 2007 originating in the United States, which evolved contagiously into a global financial crisis in 2008 to 2009—is not yet known. Yet following a series of dramatic events, including the failure of major financial institutions and significant government interventions in the financial system, it is clear that the U.S. and global financial systems will not collapse and that an economic depression of the sort unseen since the 1930s will not take place. Nonetheless, the financial crisis has resulted in the most severe recession in the United States and in the global economy since the 1930s.

Systemic risk is defined as:

> [T]he 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.[70]

Preventing and addressing systemic risk is the essential function of central banks in their pursuit of financial stability. While the major central banks were not able to prevent a systemic financial crisis, their actions were vital in preventing a systemic financial and economic collapse.

B. Federal Reserve

The primary central banks at the epicenter of the crisis, the Federal Reserve, the BOE, and the ECB, initially responded to the crisis with a domestic focus. The U.S. domestic responses at the initial stages of the crisis were largely dictated by moves by the U.S. Federal Reserve, often under Section 13 of the Federal Reserve Act. The initial strategies were predominately focused on providing liquidity to the money markets in order to bring down the cost of interbank lending, asset purchases, and depositor and debt guarantees. These strategies are still employed today in various ways. It can be argued that the Fed's initial strategy was not wholly successful, as it failed to address the core issue of inter-bank confidence: "Central banks cannot compensate for this lack of confidence simply by injecting additional liquidity. On the contrary, the financial

70. GROUP OF TEN, REPORT ON CONSOLIDATION IN THE FINANCIAL SECTOR 126 (Jan. 2001), *available at* http://www.bis.org/publ/gten05.htm.

market participants themselves must take the fundamental steps needed to restore this confidence."[71]

The failure of Lehman Brothers, the intervention by the government into AIG, Freddie Mac and Fannie Mae, along with the failure of Washington Mutual, the largest bank failure in U.S. history, spoke to the realization of the risk of a domestic systemic implosion. The fall of Lehman, for example, had significant, far reaching implications: "Following Lehman Brothers' bankruptcy on 15 September, conditions in financial markets deteriorated to new lows. Liquidity demand surged while perceived counterparty risk rose to record highs, resulting in the virtual shutdown of the unsecured interbank lending market."[72]

Further, the failures of Freddie Mac and Fannie Mae in the preceding month exemplified the possibility of the financial crisis becoming an economic crisis. As these government sponsored enterprises (GSEs) are the largest issuers of U.S. agency securities, their default would have jeopardized the U.S. government's ability to fund itself through debt sales. While the GSEs were not explicitly backed by the government, support was nonetheless seen by the passage of the Housing and Economic Recovery Act of 2008.[73]

As has been noted, the U.S. response during the early stages also included the Federal Reserve functioning as a lender of last resort, and working to facilitate agreements between many other entities. Working in conjunction with the U.S. Treasury, the Federal Reserve facilitated the acquisition of Bear Stearns by JPMorgan Chase, for example, while also overseeing the resolution of Wachovia Bank. Furthermore, large financial institutions such as Citigroup and Merrill Lynch took sizeable write-offs as holders of securities that had become impossible to value, further eroding general confidence.[74] While acknowledging that intervention can be counterproductive, Ben Bernanke of the Federal Reserve viewed it as a matter of public policy and asserted that the intervention as lender and facilitator of last resort in the above examples were necessary: "[I]n my view, the failure of a major financial institution at a time when financial markets are already quite fragile poses too great a threat to financial and economic stability to be ignored. In such cases, intervention is necessary to protect public interest."[75]

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71. Peacock, *supra* note 15.

72. Bank for Int'l Settlements [BIS], *International Banking and Financial Market Developments*, BIS QUARTERLY REV., Dec. 2008, at 44, *available at* http://www.bis.org/publ/qtrpdf/r_qt0812.pdf (internal citation omitted).

73. Housing and Economic Recovery Act of 2008, Pub. L. No. 110-289, 122 Stat. 2654, *available at* http://www.gpo.gov/fdsys/pkg/PLAW-110publ289/content-detail.html; *see generally* Zachary A. Goldfarb, David Cho & Binyamin Appelbaum, *Treasury to Rescue Fannie and Freddie*, WASH. POST, Sept. 7, 2008 *available at* http://www.washingtonpost.com/wp-dyn/content/article/2008/09/06/AR2008090602540.html?hpid=topnews (discussing the Bush administration's plan to intervene in the private financial market after Fannie Mae and Freddie Mac could no longer fund mortgages).

74. *See* Michael J. de la Merced, *Bankers Face Grim Truth: Worst is Yet to Come*, N.Y. TIMES, Dec. 12, 2007, *available at* http://www.nytimes.com/2007/12/12/business/12place.html.

75. Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Reserve Sys., Speech at the Greater

The Federal Reserve response at the onset of the crisis can best be described as ad hoc attempts intended to slow the collapse of the financial system, while also attempting to increase short-term liquidity. With early responses being eclectic in nature, there was early criticism that the Federal Reserve did not fully appreciate the depth of the crisis and, thus, did not move with the proper sense of urgency.[76] In response to the criticisms, the Federal Reserve initiated, and then strengthened, a series of short-term measures in hopes of stabilizing the markets.[77] In December of 2007 the Federal Reserve introduced Term Auction Facility (TAF), which focused on auctioning discount credit while expanding what they accepted as collateral.[78] Furthering the desire to promote liquidity by offering treasuries, the Reserve created the Term Securities Lending Facility (TSLF).[79] Additionally, the Asset Backed Commercial Paper (ABCP), Money Market Mutual Fund (MMMF), and Liquidity Facility (AMLF) Programs were geared toward supporting the money markets against significant redemptions by investors, which, due to general illiquidity caused acute problems for money market mutual funds.[80] Arguably the most sweeping of government actions was the Troubled Assets Relief Plan (TARP), which, after considerable debate and delay, was passed under the Emergency Economic Stabilization Act of 2008.[81]

Although TARP has been lauded as having promoted financial stability by its continued injection of capital into key financial institutions,[82] by the time it became law in October 2008, the financial crisis had already significantly affected the real economy. TARP was insufficient to stem the damage, and credit and finance markets continued to be dysfunctional, above all with significant hoarding of liquidity by risk averse lenders. Issues relating to TARP's implementation concern the reluctance of smaller banks to accept funds due to a presumed stigma of accepting public support and due to concomitant government restrictions on operations. While large entities such as Goldman Sachs and

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Austin Chamber of Commerce: Federal Reserve Policies in the Financial Crisis (Dec. 1, 2008), *available at* http://www.federalreserve.gov/newsevents/speech/bernanke20081201a.htm.

76. Alister Bull, *Fed Deflects Criticism with Credit Crisis Steps*, EARTHTIMES, Dec. 12, 2007, *available at* http://www.earthtimes.org/articles/show/157724.html.

77. *See* Riccardo DiCecio & Charles S. Gascon, *New Monetary Policy Tools?*, FED. RESERVE BANK OF ST. LOUIS: MONETARY TRENDS, May 2008, *available at* http://research.stlouisfed.org/publications/mt/20080501/cover.pdf.

78. Press Release, Bd. of Governors of the Fed. Reserve Sys. (Dec. 12, 2007) (on file with author), *available at* http://www.federalreserve.gov/newsevents/press/monetary/20071212a.htm.

79. Press Release, Bd. of Governors of the Fed. Reserve Sys. (Mar. 11, 2008) (on file with author), *available at* http://www.federalreserve.gov/newsevents/press/monetary/20080311a.htm.

80. Federal Reserve Discount Window and Payment System Risk, Asset Backed Commercial Paper (ABCP) Money Market Mutual Fund (MMMF) Liquidity Facility (AMLF or "the Facility"), http://www.frbdiscountwindow.org/mmmf.cfm?hdrID=14 (last visited Apr. 6, 2010) (follow "How will this program support money market mutual funds?" link).

81. Emergency Economic Stabilization Act of 2008, Pub. L. No. 110-343, 122 Stat. 3765.

82. *See* Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Reserve Sys., Testimony Before the Committee on Financial Services, U.S. House of Representatives: Troubled Asset Relief Program and the Federal Reserve's Liquidity Facilities (Nov. 18, 2008).

JPMorgan are aggressively repaying the federal funds, many smaller banks have withdrawn their request, lessening TARP's impact.[83] The experience with TARP was not unique. More than $125 billion in funds offered to banks by Bank of Japan and the Japanese Ministry of Finance was met with resistance by many of Japan's largest banks.[84]

In coordinating with Federal Reserve actions, the Treasury Department began to periodically purchase preferred stock from a number of U.S. banks under a Capital Purchase Program in an effort to generate additional liquidity. Further, in coordinating with the Treasury's Capital Assistance Program (CAP), which makes capital available to financial institutions as a bridge to private capital in the future, the Federal Reserve devised a forward-looking assessment protocol intended to weigh the financial condition of large U.S. bank holding companies (BHCs). Under the auspices of the Supervisory Capital Assessment Program (SCAP), on May 7, 2009, the Federal Reserve Bank released the first results of "stress tests" to estimate the resilience of the subjects to further shocks. Of the nineteen banks tested, nine were found to be adequately capitalized, with the others subject to various degrees of possible future capital or liquidity shortfalls.[85] Citigroup and Bank of America were found to need the most capital, with Citigroup projected to require $50 billion, and Bank of America nearly $35 billion.[86] Stress tests will undoubtedly result in higher bank capital, liquidity and leverage requirements to enable the BHC's to withstand a prolonged recession, and may improve transparency by providing more standardized risk-related information. The Federal Reserve, while fully engaged in international interbank cooperation, continues to work with various agencies of the government in pursing strategies which can overcome the current financial crisis and reestablish domestic stability.

C. Bank of England

The BOE increased over time the aggressiveness of its responses to the crisis, having been criticized for earlier mishandling of troubled banks in 2007, when it seemed to over-emphasize the moral hazard associated with lender of last resort assistance. Mortgage lender Northern Rock, for example, suffered a severe deposit run but was subjected to a slow BOE response, which some observers cite as a prevailing reason for the bank's later failure and nationalization.[87] The

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83. Tom Braithwaite, *Tarp Demand Hit by 'Stigma'*, FIN. TIMES (U.K.), May 21, 2009, at 5.

84. Lindsay Whipp, *Japan Banks Urged to Seek Public Help*, FIN. TIMES (UK), Mar. 23, 2009, at 2.

85. Press Release, Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Reserve Sys., (May 7, 2009) (on file with author), *available at* http://www.federalreserve.gov/newsevents/press/bcreg/20090507a.htm.

86. Francesco Guerrera & Greg Farrell, *Citigroup and BofA Need Most Capital*, FIN. TIMES (ASIA), May 7, 2009, at 1.

87. *See* Tom Bower, *How Richard Branson Lost Northern Rock*, SUNDAY TIMES (U.K.), Jul. 20, 2008, *available at* http://business.timesonline.co.uk/tol/business/industry_sectors/banking_and_finance/article4363029.ece.

Financial Service Authority (FSA)—the U.K. financial regulator—has acknowledged shortcomings in its supervisory approach that were highlighted by Northern Rock's collapse.[88]

Following its initially slow response, the BOE responded to the credit crisis by injecting cash into troubled banks on a coordinated basis. Like the Federal Reserve and European Central Bank, the BOE was authorized in March 2009 to institute a £150bn quantitative easing program to support the purchase of securities such as government and high-grade corporate bonds.[89] While quantitative easing has its own adverse inflationary potential, it is the transference of risk onto the BOE's balance sheet that is becoming problematic. Under the BOE's Special Liquidity Scheme, less liquid securities were accepted and the term of its operations extended by accepting collateral of longer tenors. The BIS expressed concern at increasing central bank balance sheets (in some cases doubling), which had become burdened by the acquisition of large quantities of toxic securities for which no market value could be ascertained.[90]

The impact of this burden was seen when in May 2009, Standard & Poor's altered its outlook for Britain's AAA/Aaa sovereign credit rating.[91] Although Spain, Ireland, and Greece have seen their credit ratings lowered,[92] the United Kingdom was the first major economy to be threatened with a downgrade, and while it carries a lower degree of gross debt as a percent of GDP than other Group of 7 nations, its exposure to risk is clear, either through higher debt service costs or from a reduced demand for future debt issues. The UK is not alone however, among leading nations being cited for increasing debt burden and potentially precarious financial standing. Moody's Investor Services has warned that the U.S. risks its Aaa credit rating if it fails to experience an economic upturn and initiate more definitive action to arrest a soaring budget deficit.[93] The BOE, however, continues to use a combination of monetary strategies to address domestic instability in support of its overall objective of inflation targeting, which will ultimately present significant challenges in the medium and long-term.

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88. *Timeline: Northern Rock Bank Crisis*, BBC NEWS, Feb. 18, 2008, *available at* http://news.bbc.co.uk/2/hi/business/7007076.stm.

89. Bank of England, Monetary Policy, Quantitative Easing *available at* http://www.bankofengland.co.uk/monetarypolicy/assetpurchases.htm. Julia Kollewe, *Bank of England Cuts* Rates to 0.5% and *Starts Quantitative* Easing, GUARDIAN (U.K.), Mar. 5, 2009, http://www.guardian.co.uk/business/2009/mar/05/interest-rates-quantitative-easing.

90. Bank for Int'l Settlements [BIS], *Highlights of International Banking and Financial Market Activity*, BIS QUARTERLY REV., Mar. 2009, at 19, *available at* http://www.bis.org/publ/qtrpdf/r_qt0903.htm.

91. Chris Giles and Dave Shelloc, *S&P warns Britain it could lose top credit rating over debt level*, FINANCIAL TIMES (Europe), May 22, 2009.

92. Andrew Hay, *Spain Sees Risk of Debt Rating Downgrade*, FORBES, Jan. 13, 2009, http://www.forbes.com/feeds/afx/2009/01/13/afx5912798.html.

93. Michael Mackenzie & Gillian Tett, *Moody's Warns US over Credit Rating Fears*, FIN. TIMES (U.K.), Feb. 3, 2010.

D. European Central Bank

It is often taken that the ECB modeled its financial crisis response on Federal Reserve actions. That assessment would fail in that it does not reflect the depth of ECB policy strategies, which are unique to its environment. Specifically, this characterization ignores fundamental differences between the economic structures of the United States and the European Union and which of necessity require different responses. While the United States has a market-based financial system, the E.U. financial system is predominately bank-centered. Thus the ECB's primary crisis response focuses on ensuring the stability of the banking sector and the continued access to bank credit by consumers. Small and medium sized enterprises (SMEs) in the E.U. traditionally have no material reliance on market-based funding, thereby emphasizing the ECB's commitment to stabilizing banks, which are a primary funding source for SMEs and other enterprises.

The onset of the crisis saw ECB strategy focus on the traditional tool of short-term interest rate cuts so as to stimulate liquidity. While the ECB continues to maintain low interest rates, this approach is incapable of ameliorating conditions of acute illiquidity. The ECB therefore increased the aggressiveness of its rate cuts.[94] In the early phase of the crisis in 2007, the ECB provided 95 billion ($131 billion) in loans to forty-nine financial institutions, the first central bank to make such a sizable commitment.[95] In spite of this direct infusion, the ECB continues to use interest rates as a tool, although it has since varied its approach. In normally conditions central bank funds are made available at short maturities through an auction process with rates determined by successful bids. During the crisis, the ECB set both available amounts and interest rates as well as providing greatly extended maturity dates. By guaranteeing liquidity at exceptionally low interest rates, the ECB sought to encourage interbank market confidence.

As noted above, the ECB's assigned objective is price stability. While it pursues its objective with consideration for specific inflation targets, the ECB nonetheless employed a wide range of policies during the crisis. For example, it applied quantitative easing to purchase securities and bank loans, aligning with Federal Reserve and BOE practices.[96] While the mechanical process equates to quantitative easing, Jean-Claude Trichet, ECB president, insisted that the ECB was "not embarking" on a quantitative easing program.[97]

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94. Joellen Perry, *ECB Lowers Rate to 1%, Plans to Purchase Bonds*, WALL ST. J., May 8, 2009, at A6, *available at* http://online.wsj.com/article/SB124167884631295369.html.

95. Simon Kennedy, *Central Banks Move to Counter Liquidity Crunch*, MARKETWATCH, Aug. 9, 2007, http://www.marketwatch.com/story/central-banks-move-to-boost-market-liquidity.

96. Ambrose Evans-Pritchard, *European Central Bank Falls into Line and Embraces Quantitative Easing*, TELEGRAPH (U.K.), May 8, 2009, http://www.telegraph.co.uk/finance/financetopics/financialcrisis/5292781/European-Central-Bank-falls-into-line-and-embraces-quantitative-easing.html.

97. Ralph Atkins & Chris Giles, *ECB Cuts Rates to Combat Recession*, FINANCIAL TIMES (Asia), May 8, 2009.

The hallmark of the ECB's efforts during the crisis has been flexibility. Trichet continually stated that no initiative was beyond bounds. The ECB employed certain non-standard policy instruments in its effort to mitigate the worst recession in Europe since World War II, with its president citing the collapse of Lehman Brothers as justification for discarding tradition.[98] The resulting mindset has been a hardened resolve and willingness to consider any option that may contribute to a eurozone recovery.

E. Summary

In this section the Article explored the domestic responses of the leading central banks, the Federal Reserve, BOE, and ECB. While the larger objectives of a stable domestic economy are common threads, the mechanics of how to pursue that goal that goal are uniquely different, shaped, in part, by historical and cultural influences. Even if the three principle central banks employ similar monetary tools, its use within a larger array of monetary policy options will vary from central bank to central bank.

While the sophistication of the three central banks is well documented, it has also become quite apparent that no single state possessed the resources and ability to stem the global downward spiral. Thus central bankers and international organizations have strongly emphasized collaborative action. This is not a new aspect of monetary policy, but cooperation became more urgent as the crisis of 2007-09 unfolded, which is the focus of the following section.

V. INTERNATIONAL CENTRAL BANK COOPERATION

Central bank coordination was a predominant feature in the systemic phase of the global financial crisis. While governments in the United States and Europe were hampered by legislative debates (forestalling much needed rescue packages), their central banks worked in concert to prevent a global systemic financial collapse. The need for cooperation can be seen in the many routes by which shocks are transmitted from one country to another and there is evidence to associate greater financial globalization with the contagion seen earlier in the Asian regional crisis of 1997-98 as well as other emerging market crises of confidence. Rapid losses of confidence cross borders rapidly, and can induce permanent contractions in economic activity. Finally, the widespread need for reserve currency liquidity adds to the importance of explicit coordinated policy actions.

Lines made among central bank have been of three main kinds: short-term credit lines, foreign exchange (FX) swap lines and repurchase ("repo") lines, with the last being less common. The credit and swap lines allow short-term

98. Ralph Atkins, *ECB has more measures up its sleeve*, FINANCIAL TIMES, May 2, 2009.

advances in a designated currency, usually US dollars as the dominant post-1945 currency of trade, or one or both of the currencies of the participants. These lines were used on occasions prior to the collapse of the fixed exchange rate regime in 1971-73, typically to bridge to medium-term credit expected from the International Monetary Fund (IMF) or some collaborative plan. Swap lines have been used more frequently, notably after currency convertibility was adopted by industrialized economies from 1958, and acted as a liquidity device by providing for simultaneous spot and forward FX transactions. As liquidity instruments, FX swap lines are effectively repo lines involving amounts of currency rather than securities. In the 1960s, the forward unwinding trade was conducted at the same exchange rate as the opening spot trade but this practice lapsed as the fixed exchange rate era ended and terms of line usage became negotiable.[99]

Lines were informal and event-driven until the late 1950s during the first phase of the Bretton Woods regime, after which the progressive introduction of currency convertibility for current exchange transactions encouraged leading central banks to establish annually renewable standing lines. This period lasted beyond the end of the Bretton Woods and Smithsonian agreements until the late 1990s, during which many OECD central banks engaged from time-to-time in currency intervention or acted as lenders of last resort with collaborative support. Lines were drawn regularly in the 1960s and 1970s, but became generally disused in the mid-1980s and increasingly regarded as an "obviously anachronistic setup."[100] Almost all central bank lines were allowed to lapse after 1999 upon the creation of the single European currency.

OECD central banks allowed almost all lines to lapse in 1999 knowing that that third millennium technology would allow new lines to be established almost instantly upon shocks being recognized and decisions being taken for their creation. September 2001 became the first such event. On September 11 and 12, the Federal Reserve sanctioned the creation of swap lines for an initial period of 30 days with the Bank of Canada, BOE and ECB in respective amounts of $10 billion, $30 billion, and $50 billion.[101] The primary purpose was to fund those counterparties that provided secured lender of last resort facilities in US dollars to local and foreign banks within their jurisdiction, not all such banks being eligible to seek funds from the New York Federal Reserve for lack of collateral in their U.S. branches or subsidiaries.

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99. In 1978 a weakened US dollar allowed the Bundesbank to win improved terms on short-term FX swaps with the Federal Reserve. *See generally* Federal Reserve, Transcripts and other Historical Materials, 1978, http://www.federalreserve.gov/monetarypolicy/fomchistorical1978.htm; Federal Reserve, Meeting of Federal Open Market Committee: Minutes for July 18, 1978 Meeting, *available at* http://www.federalreserve.gov/monetarypolicy/files/fomcmoa19780718.pdf.

100. Federal Reserve, Meeting of Federal Open Market Committee: Transcript of Dec. 19, 1995 Meeting, at 4, *available at* http://www.federalreserve.gov/monetarypolicy/files/FOMC19951219meeting.pdf (quoting Federal Reserve Chairman Alan Greenspan).

101. BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM, ANNUAL REPORT (2001) at 4-5.

In the 2007-09 global crisis, a relatively new use of swap lines involved transnational funding by certain major central banks to allow counterparts to conduct lender of last resort operations in foreign currencies, essentially to help mitigate paralysis in the international interbank markets. This form of use had not been widely contemplated prior to 2007, including in Asia notwithstanding its indirect relevance to factors contributing to the 1997-98 Asian financial crisis.[102]

While cooperation continues to remain an important focus as the world recovers, there are questions how it is defined, or how its characteristics are identified. Cooper broadly distinguishes between six types of cooperation: exchanges of information; the need to standardize concepts to fill gaps in information; exchanges in dialogue concerning the objectives of central bank policies; the need to share their perceptions of the economic outlook; standardization of shared information so that all facets can be accurately compared; and commonly agreed actions.[103]

While Cooper correctly notes relevant aspects of cooperation, and there continue to be numerous calls for increased coordination in the face of clear threats to global market stability, it is often difficult moving the political rhetoric of coordination to actual practice. This is due, in part, to the fact that domestic legal and regulatory frameworks, along with domestic economics and politics, by necessity, guide domestic policy. Despite clear incentives to coordinate their actions, the Federal Reserve and the ECB, for example—contrary to press statements—had significant difficulty moving in concert during the initial stages of the crisis.[104] As states initially focused, almost exclusively, on national interest instead of international collaboration, the domestic focus grossly misinterpreted systemic problems and issues related to asymmetric information. This has been cited as a significant factor—even within Europe—of the start of the crisis, with commentators stating that the lack of a comprehensive European-wide plan to work with the Federal Reserve equated to an "appalling lack of international coordination."[105] The initial collective efforts have been called disjointed, specifically Germany's reluctance to accept that the reality of the crisis.[106]

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102. Capital flight from East Asia in 1997 included a withdrawal of lending by Japanese banks. It has been suggested that this was effectively a credit run, since those banks were forced to redirect capital at home because of domestic loan and accounting losses, and were themselves unable fully to fund their US dollar offshore lending, *See* Robert McCauley, *Comment on 'Regional & Global Responses to the Asian Crisis'* 2 ASIAN ECON. POL. REV. 71-72 (2007). Similar but less severe circumstances arose in late 2008 among Korean banks such that the Bank of Korea drew upon Federal Reserve and Bank of Japan swap lines specifically to provide domestic banks with foreign currency liquidity. *See* Bank of Korea, ANNUAL REPORT (2008), 32-33, http://eng.bok.or.kr/.

103. Richard N. Cooper, Almost a Century of Central Bank Cooperation (2006) (unpublished article, *available at* http://www.economics.harvard.edu/files%20/faculty/12_Almost_a_Century_bis.pdf).

104. Krista Hughes & Mark Felsenthal, *Central Banks Poles Apart on Interest Rates*, REUTERS, Feb. 1, 2008, http://www.reuters.com/article/ousiv/idUSL3169011420080201.

105. Michael R. Sesit, *Me-First Attitude Won't Rescue Banks, Economy*, BLOOMBERG NEWS, Oct. 10, 2008, http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aU4_32gXh8Tk.

106. Simon Kennedy, *Paulson, Trichet Hope Markets Will Reward Initiatives*, BLOOMBERG NEWS, Oct.

Countries instead initially pursued separate domestic agendas, reducing the effectiveness of their actions. Forni, Gerali, and Pisani later conducted simulations using a dynamic stochastic general equilibrium model to explain the differing effects on monetary and fiscal policy between unilateral and coordinated monetary policy action. The authors used the Bank of Italy as a unilateral actor compared to the ECB. They concluded that collaborative action increased the impact on monetary and fiscal policies by more than 30% over that of emergency policies implemented state-by-state.[107] International monetary officials from both developed and developing nations therefore continue to advance the idea of cross-border coordination. It has been frequently shown that effective policy coordination will often facilitates positive price movements in the markets.[108]

A. *A History of Cooperation*

As mentioned previously, after the initial stages of the crisis took effect and the actions of individual states were found ineffective in supporting confidence, the focus shifted to international coordination. While the media has often used superlatives such as "unprecedented" and "remarkable" (in spite of the slow coordinated start) to describe the level of coordination that ultimately took place, central banking cooperation, while haphazard and episodic at times throughout history, is not at all a new or novel concept. Pre-1914 saw regular international central bank cooperation, most of which concerned covering gold loses. In the 1890 Baring crisis for example, the Bank of France loaned 75 million francs to the BOE; there was also regular central bank cooperation between the Swedish and Danish central banks.[109] Pre-1914 saw, in fact, a considerable number of examples of international central bank cooperation, often regarding measures in support of convertibility:

> A number of central banks, when faced with pressure on their reserve position, borrowed directly from foreign commercial banks or foreign governments. Thus, the bank of Finland negotiated foreign short-term credits, equivalent to 10 million Finish marks, from German, British, and Swedish bankers in 1892, and the same amounts from a Swedish bank in 1908 and again in 1913. Likewise, in 1890 the bank of England obtained

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13, 2008, http://www.bloomberg.com/apps/news?pid=20601085&sid=a6cw22uigFhc&refer=europe.

107. Lorenzo Forni, Andrea Gerali & Massimiliano Pisani, The Macroeconomics of Fiscal Consolidations in a Monetary Union: the Case of Italy (Oct. 22, 2008) (unpublished manuscript, *available at* http://www.eief.it/files/2008/11/paper_fiscal_22ott08.pdf).

108. Kristina Cooke, *US Stocks-Central Bank Cooperation Spurs Wall Street Rebound*, REUTERS, Dec. 12, 2007, http://uk.reuters.com/article/usMktRpt/idUKN1263159920071212.

109. ARTHUR I. BLOOMFIELD, MONETARY POLICY UNDER THE INTERNATIONAL GOLD STANDARD: 1880-1914, at 56 (1959).

1.5 million pounds sterling in gold by the sale of Treasury bonds in its portfolio to the Russian Government.[110]

Flandreau sees the results as motivated by national interests:

> [W]hat has been interpreted as cooperation was the product of the selfish interest of central banks: they helped each other only when this provided a direct benefit to them, instead of mutually adjusting towards some cooperative equilibrium as hypothesized by the cooperation view.[111]

Inter-war cooperation was seen through a number of lending situations which foreshadowed the forthcoming League of Nations stabilization loan packages. But as Eichengreen has pointed out, the traditional forms of central bank cooperation during those years were tenuous, with the Federal Reserve not always favoring multilateral cooperation.[112] However, an example of international cooperation emerged from a strong relationship which had developed during the 1920s between Montagu Norman of the BOE and Benjamin Strong, president of the new Federal Reserve.[113]

While initially created in 1930 to administer the Young Plan at the close of World War II, it can be stated that the concept of central banking coordination was institutionalized through the BIS. The BIS is the world's most long-standing international financial organization, and has as its primary mandate to act "as a forum for discussion and cooperation among central banks and the financial community."[114] Headquartered in Basel, Switzerland, the BIS today is the international organization of central banks. In acting as a bank to central banks and other organizations, the BIS aims to promote monetary and financial stability by facilitating policy analysis and formation, and by being a center for monetary research. When the BIS functions as counterparty in financial transactions its actions help facilitate the free flow of liquidity to central banks.

The institutionalization of the concept of central banking coordination is further seen through entities such as the IMF, the World Bank, the Organization of Economic Cooperation and Development (OECD), and the Financial Stability Board (FSB), all of which facilitate communication between central banks. In addition, the various "G"s—the most important of which are the G-7 and the

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110. *Id.* at 57.

111. Marc Flandreau, *Central Bank Cooperation in Historical Perspective: A Skeptical View*, 50 ECON. HIST. REV. 4, 735, 737 (1997).

112. BARRY EICHENGREEN, GOLDEN FETTERS: THE GOLD STANDARD AND THE GREAT DEPRESSION, 1919-1939, at 31-32 (1992).

113. Cooper, *supra* note 103, at 1-2; Eichengreen, *supra* note 112, at 209; *See also* LIAQUAT AHAMED, LORDS OF FINANCE: THE BANKERS WHO BROKE THE WORLD 24, 503 (2009).

114. Bank for International Settlements: BIS Mission Statement, http://www.bis.org/about/mission.htm (last visited Apr. 3, 2010).

Group of Twenty (G-20)—meet with heads of various levels of government, as well as ministers of finance and central bank governors.

As one example, the FSB (previously the Financial Stability Forum - FSF) was created in 1999 in the wake of the Asian financial crisis.[115] It was formed to facilitate better cross-border coordination and efficiency: its primary objective being the pursuit of market stability through increased information exchange and increased cooperation in supervision and surveillance.[116] As the FSF was originally established by the G-7 finance ministers and central bank governors, there have been claims that developing countries had little input or opportunity to influence policy formation. In response, the FSB recently expanded its membership to include the G-20 and other countries.[117] Additionally, the FSF expanded its role to include increased oversight and regulatory powers.[118]

As has been demonstrated, the concept of central bank cooperation is not new, even if unpredictable and sporadic. Often tenuous and frequently faced with nationalistic and political agendas, central bank cooperation has, nonetheless, been present in various degrees among the advanced economies. The global financial crisis of 2007-09 has helped redefine concepts of central banking cooperation. National market interdependence continues to motivate policy makers to call for increased joint efforts in the wake of the ineffectiveness of unilateral actions. The vast resources and technical expertise of the United States had little impact in stemming the tide during the early stages of the crisis and the Federal Reserve at first pursued unilateral measures which had little real impact on market behavior. The BOE has been noted for its exceptionally slow response in intervening into troubled entities. In continental Europe, a lack of dialogue and collaboration was clear within the ECB. Even today, ECB officials from different countries project contradictory signals, making it difficult for global markets to judge the ECB's true position.[119] The Bank of Japan, struggling with the impact of a "lost decade" of slow growth and general deflation has experimented with quantitative easing and a zero interest rate policy (ZIRP) but failed to develop a viable domestic response. Its ability to coordinate actions with its international counterparts was consequently delayed. As the ineffectiveness of unilateral domestically oriented policy initiatives became evident, central banks began

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115. *See* Douglas W. Arner & Michael W. Taylor, *The Global Financial Crisis and the Financial Stability Board: Hardening the Soft Law of International Financial Regulation?*, 32 U. OF NEW SOUTH WALES L.J. 488, 490 (2009).

116. Financial Stability Board, Overview, http://www.financialstabilityboard.org/about/overview.htm (last visited Mar. 9, 2010).

117. Press Release, Financial Stability Forum, Financial Stability Forum decides to Broaden its Membership (Mar. 12, 2009), *available at* http://www.financialstabilityboard.org/press/pr_090312b.pdf.

118. Caroline Binham & John Rega, *Financial Stability Forum Gets Bigger Role, New Name*, BLOOMBERG NEWS, Apr. 2, 2009, http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aVL.EF.XKPPA.

119. Simone Meier, *ECB Officials Clash on Next Steps, Snubbing Truce*, BLOOMBERG NEWS, May 14, 2009, http://www.bloomberg.com/apps/news?pid=newsarchive&sid=au4tW.rEzqi8.

coordinated efforts which slowly started to thaw frozen markets. It is to that period that this Article now turns.

B. Central Bank Coordination in the Global Financial Crisis

"None of our countries acting alone could end this crisis."
—*Nicolas Sarkozy, French President*[120]

The coordination effort between central banks during the global financial crisis had their roots in a November 2007 G-20 meeting held in South Africa. Although reform of international financial institutions was a major agenda issue, the meeting instead focused on the realization that a crisis was at hand and a joint response was needed. After the summit closed, G-20 ministers issued a communiqué stressing the presence of a slowdown in the global economy with a duration that was difficult to predict. It stated further that market turbulence from the preceding summer was the manifestation of a deeper problem, more prolonged in nature than previously anticipated, and announced an agreement between central bank governors acknowledging shared global responsibility in rectifying the problem. Those were problems which particularly related to more effective supervision, risk assessment, and increased transparency.[121] Adding to that, the United States stated a need to focus on the evaluation of complex derivatives while examining the role of credit rating agencies.[122]

In the following days a series of announcements were made intended to telegraph the idea that monetary authorities were no longer limiting themselves to domestic solutions: "In a simultaneous announcement to markets, the Federal Reserve, the European Central Bank, the Bank of England, the Bank of Canada and the Swiss National Bank committed to pumping more liquidity into financial markets and accepting wider collateral from commercial banks in return for central bank funds."[123]

This first significant announcement concerning joint efforts had ramifications on several levels: "The joint operation, by the Fed, the Bank of England, the European Central Bank, the Swiss National Bank and the Bank of Canada, was both an admission by them of the seriousness of the situation and an attempt to

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120. James G. Neuger, *Europe Vows Bank Support, Bids to Stop Financial Rot (Update1)*, Bloomberg News, Oct. 12, 2008, http://www.bloomberg.com/apps/news?pid=20601087&sid=ake_hIeoOmBo.

121. The Group of Twenty Finance Ministers and Central Bank Governors [G-20], *Communiqué: Meeting of Finance Ministers and Central Bank Governors, Kleinmond, South Africa* (Nov. 17-18, 2007), *available at* http://www.mof.go.jp/english/if/g20_071118.pdf.

122. Press Release, U.S. Department of the Treasury, Statement by U.S. Treasury Secretary Henry M. Paulson, Jr. at the G-20, HP-688 (Nov. 18, 2007), *available at* http://www.treasury.gov/press/releases/hp688.htm.

123. Chris Giles & Gillian Tett, *Central Banks Tear up the Rules of Intervention*, FIN. TIMES (U.K.), Dec. 12, 2007, *available at* http://www.ft.com/cms/s/0/58e2e50e-a8c2-11dc-ad9e-0000779fd2ac.html.

do something about it . . . ."[124] The idea of accepting wider forms of collateral was seen in the Federal Reserve creating the TAF, whereby funds were auctioned off using the changed collateral requirements. Further, temporary currency arrangements were made with a number of countries. These swap lines were initially established with the ECB and the Swiss National Bank, providing $20 billion and $4 billion, respectively.[125] Much of the early coordinated response dealt with increasing swap lines between the United States and other countries, as Washington moved to keep the U.S. dollar available for foreign central banks to lend to their banks to both meet reserve requirements and to ensure liquidly. Bernanke, on one aspect of the benefits of swaps, stated:

Because short-term funding markets are interconnected, the provision of dollar liquidity in major foreign markets eases conditions in dollar funding markets globally, including here in the United States. Importantly, these swap arrangements pose essentially no credit risk because our counterparties are the foreign central banks themselves, which take responsibility for the extension of dollar credit within their jurisdictions.[126]

The United States subsequently increased the number of countries to which swap arrangements are made. Swap lines established between the United States and Brazil, for example, were executed to prevent spillover into the emerging Brazilian economy. A move which, as stated by Brazilian Central Bank President, Henrique Meirelles, showed the Federal Reserve's confidence in South America's largest economy.[127] By September 2008, swap agreements had risen from $290 billion to over $620 billion, seen in either new arrangements or increases in swap authorization limits with the following banks: Bank of Canada, BOE, Bank of Japan, National Bank of Denmark, ECB, Bank of Norway, Reserve Bank of Australia, Bank of Sweden, and Swiss National Bank.[128] Smaller swap lines to support the provision of U.S. dollar liquidity were established with the Central Bank of Mexico, the Bank of Korea, and the Monetary Authority of Singapore for up to $30 billion each.[129] Following Washington's lead in fostering interbank cooperation, central banks in Japan and China arranged swap lines with

124. David Smith, *Central Bankers Riding to the Rescue*, THE SUNDAY TIMES (U.K.), Dec. 16, 2007, *available at* http://business.timesonline.co.uk/tol/business/industry_sectors/banking_and_finance/article3055820.ece.

125. Press Release, Board of Governors of the Federal Reserve System (Dec. 12, 2007), *available at* http://www.federalreserve.gov/newsevents/press/monetary/20071212a.htm.

126. Ben S. Bernanke, Chairman of the Board of Governors of the U.S. Federal Reserve System, Speech to the Greater Austin Chamber of Commerce in Austin, Texas: Federal Reserve Policies in the Financial Crisis (Dec. 1, 2008), *available at* http://www.federalreserve.gov/newsevents/speech/bernanke20081201a.htm.

127. *US Fed Offers Currency Swap Lines to Brazil, UK, Switzerland*, MERCO PRESS, Feb 5, 2009, http://en.mercopress.com/2009/02/04/fed-extends-currency-swap-lines-to-brazil-and-mexico.

128. Press Release, Board of Governors of the Federal Reserve System (Sep. 29, 2008), *available at* http://federalreserve.gov/newsevents/press/monetary/20080929a.htm.

129. Press Release, Board of Governors of the Federal Reserve System (Oct. 29, 2008), *available at* http://www.federalreserve.gov/newsevents/press/monetary/20081029b.htm.

South Korea in an effort to stabilize the Korean currency, the won.[130] An argument may be made, however, that China's actions are not tantamount to actual cooperation for the sake of global stability, but part of Beijing's growing desire to moderate the role of the U.S. dollar as the global currency.[131] This offshore liquidity allowed Federal Reserve counterparties to fund the U.S. dollar liabilities of the banks they supervise, with the peak of line usage being 583 billion in December 2008.[132]

Establishing foreign exchange swap lines has been prominent in central banking cooperative measures but not the sole instrument used. Utilizing interest rates to promote monetary policy objectives has also important , with the ability to control short-term interest rates a basic Federal Reserve policy tool used to influence the economy and to spur private sector borrowing. While an important strategy, it has not always been executed in a coordinated fashion. The Federal Reserve and the ECB, for example, have taken opposite approaches: with the Federal Reserve aggressively cutting rates, while the ECB reacts less quickly with an overall appreciation for the possible inflationary impact.

In spite of the initially differing monetary views, a coordinated joint interest rate effort did eventually materialize, with many commentators stating that the simultaneous reductions of interest rates from the key central banks exemplified the height of deliberate central bank cooperation. According to Bernanke:

> [O]n October 8 (2008), the Federal Reserve announced a reduction in its policy interest rate jointly with five other major central banks—the Bank of Canada, the Bank of England, the ECB, Sveriges Riksbank, and the Swiss National Bank. . .[the] joint action was motivated by the abatement of inflationary pressures and increased indications of economic slowing in our respective economies. In addition, the coordinated rate cut was intended to send a strong signal to the public and to markets of our resolve to act together to address global economic challenges.[133]

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130. Tina Wang, *Neighbors Help Seoul Stave Off Currency Crisis*, FORBES.COM, Dec. 12, 2008, http://www.forbes.com/2008/12/12/korea-china-swap-markets-currency-cx_twdd_1212markets2.html?feed=rss_markets.

131. Sheo Nandan Pandey, *China and the Diplomatic Play at G-20 London Summit*, (South Asia Analysis Group,Paper No. 3153, Apr. 19, 2009), http://www.southasiaanalysis.org/papers32/paper3153.html; *China's Plan to End the Dollar Era*, Editorial, FIN. TIMES (U.K.), Mar. 24, 2009.

132. Yves Mersch, Governor of the Central Bank of Luxembourg, Speech to East Asia-Pacific Region & the Euro Area Central Bank High-Level Seminar: The Framework for Short-term Provision of International Reserve Currencies to Sovereign States and their Central Banks (Feb. 10, 2010) (transcript available at http://www.bis.org/review/r100212d.pdf).

133. Ben S. Bernanke, Chairman of the Board of Governors of the U.S. Federal Reserve System, Speech to the Fifth European Central Bank Central Banking Conference in Frankfurt Germany: Policy Coordination Among Central Banks (Nov. 14, 2008) (transcript available at http://www.federalreserve.gov/newsevents/speech/bernanke20081214a.htm).

Bryant drives home the importance of coordination of short-term interest rate movements: "Domestic goals and needs differ across the major countries. Given cross-border contagion and disruptive herd behavior, however, consultations among central banks leading to mutually-timed announcements of monetary-policy actions could help to restore confidence."[134] The challenges of a low interest rate strategy come from the difficulty in maintaining those rates, especially for the United States and Japan, for example, which as of March, 2010 continue to hold their rates close to zero as part of a Keynesian macroeconomic interest rate policy. Historically, the inability to hold interest rates has had adverse impacts on a struggling economy, as shown by the Great Depression and experience in Japan during the 1990s.

While the South African G-20 Summit can be credited as the start of formalized collaborative efforts, subsequent meetings in Washington D.C. in November 2007 and London in April 2008 promoted the idea of explicit central bank cooperation. The Washington Declaration presented after the conclusion of the summit spoke to key areas such as determining the root causes of the crisis; actions to be taken; reforming financial markets; tasking monetary officials; and renewing commitments to an open global economy.[135] Fundamental to the concluding theme at the summit was that central bank cooperation was effective in combating the crisis. Despite its considerable shared optimism, it was pointed out that nothing tangible truly resulted from the Washington meeting, with Venezuelan President Hugo Chavez calling it a meeting of the rich and "a waste of time."[136] Not withstanding Chavez's anti-capitalist rhetoric, Johnson called the summit unnecessary, given the results: "This is plain-vanilla stuff they could have agreed on without holding a meeting."[137] A successful counterargument to Johnson's statement, however, might focus on the intangibles that an image of solidarity presents, and on the need to continue to make unifying statements followed by action.

A central theme of the G-20 London Summit was the reaffirming of the importance of the IMF's role in the current financial crisis. By allocating an additional $1 trillion to augment the IMF's lending capability, the G-20 reaffirmed the IMF's responsibility as economic forecaster, policy advisor, global lender (liquidity provider), and the organization charged with maintaining economic surveillance.[138] An important aspect of the London summit was a

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134. Ralph C. Bryant, *International Cooperation for the Financial Crisis*, THE BROOKINGS INSTITUTION, Oct. 2, 2008, http://www.brookings.edu/opinions/2008/1002_financial_crisis_bryant.aspx.

135. G-20, *The Declaration of the Summit on Financial Markets and the World Economy* (Nov. 15, 2008), *available at* http://georgewbush-whitehouse.archives.gov/news/releases/2008/11/20081115-1.html.

136. Patricia Rondon, *Chavez: G20 Meeting of the "Rich" a Waste of Time*, REUTERS, Nov. 14, 2008, http://www.reuters.com/article/G20/idUSN1444794220081114.

137. Mark Landler, *World Leaders Vow Joint Push to Aid Economy*, N.Y. TIMES, Nov. 16, 2008, at A1, *available at* http://www.nytimes.com/2008/11/16/business/worldbusiness/16summit.html.

138. Int'l Monetary Fund [IMF], IMF Survey Magazine: Policy, *G-20 Reaffirms IMF's Central Role in Combating Crisis* (Apr. 3, 2009), http://imf.org/external/pubs/ft/survey/so/2009/NEW040309A.htm.

recognition that the crisis had deepened since the Washington meeting and that stimulus packages, on their own merit, were not panaceas for the financial crisis.[139] Much of the focus was on the importance of establishing cross-border crisis management structure by the FSB, IMF, World Bank, and central banks, in addition to the creation of an early crisis warning system by the IMF and FSB. U.S. Treasury secretary Tim Geithner, among others, has expressed doubt, however, whether central banks or regulators can legitimately provide such an early warning system.[140] While unity was the underscored theme, there was friction as to how the crisis should be handled, with some leaders wary of unprecedented state spending and the long-term ramifications of the packages discussed. Then Japanese prime minister Taro Aso, in signaling his country's new found readiness to take a leading role in cooperative actions to stem the crisis, addressed the differences in the views concerning the spending packages in simple pragmatic fashion: "There are countries that understand the importance of fiscal mobilization and there are some countries that do not."[141]

C. Summary

As has been shown, central bank coordination is not at all new, and has existed between industrialized nations for more than a century. The aftermath of the September 11th, 2001 terrorist attacks are often used as a benchmark for international central bank cooperation. The level of collaborative action between states in the context of the more recent global financial crisis was, however, exceedingly more complex and far reaching than at any other time in modern history.

Responses by central banks have included varying combinations of liquidity provision, interest rate cuts, and other policy initiatives from other actors, such as deposit and/or debt guarantees and capital injections. While utilized domestically at first, the need to coordinate such strategies became all too apparent during the early stages of the crisis. Parak of the Bank of Sweden has reflected on the importance of coordinating such initiatives:

> Due to the global scope of the crisis, countries must coordinate measures to solve it. Separate national solutions could result in higher crisis management costs than would otherwise be the case. In all of these areas

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139. Op-Ed., *G-20 Reality Check: an Awareness that Stimulus has Limits*, WALL ST. J., Apr. 3, 2009, at A16, *available at* http://online.wsj.com/article/SB123872213415985213.html.

140. Interview by Felix Salmon with Tim Geithner, President, Federal Reserve Bank of New York, (Mar. 06, 2008) (transcript available on http://www.portfolio.com/views/blogs/market-movers/2008/03/06/tim-geithner-on-the-financial-crisis-a-mock-interview/).

141. Mure Dickie, *Aso Lays Bare G20 Split Over Downturn*, FIN. TIMES (U.K.), Mar. 31, 2009, http://www.ft.com/cms/s/0/137b240e-1e23-11de-830b-00144feabdc0.html.

where supervision and regulation need to be improved, they must be coordinated and harmonized internationally.[142]

Collaborative efforts tested both the resolve and resources of leading central banks. While the efforts have led to greatly swollen central bank balance sheets, there have been positive results, albeit at times difficult to ascertain clearly, with each G-20 member now emerging from recession.

While there continues to be conflicting global opinions on the mechanics of how the crisis should have been handled, the issues are not at all imprisoned in the present tense. The issues of debate are no longer confined to analyzing which central bank intervention initiative is appropriate under which conditions, but have also turned towards how these initiatives will be disengaged; in essence, what exit strategies exist? Rogoff suggests that central banks must eventually end their support and allow a normal consolidation within the banking industry. He specifically addresses the idea that what has happened to the banking industry cannot be pinned solely on speculative housing activity, but is more so evidence of a fundamental shift within the financial industry.[143] The IMF's Strauss-Kahn has reiterated the importance of an exit strategy, specifically citing that coordination is even more important during exit stages because of the difficult political choices which must be made.[144] Ben Bernanke, in a 10 page February 2010 statement, reiterated the fact that the Federal Reserve must start scaling back the extraordinary measures taken at the onset of the crisis, but offered no commensurate timetable.[145]

The focus on coordination is not only evident from the strategies presently utilized by central banks but also regarding efforts to prevent such a crisis in the future by establishing integrated surveillance and response measures. Thus, the focus on coordination has correctly shifted to a more forward-looking perspective. One area where a forward-looking perspective is apparent is that of governance. In analyzing the crisis it has become evident that regulatory issues were at its epicenter. From a transactional perspective, inadequate regulatory structures allowed reckless issuance of credit without appropriate due diligence. Individual nations are now aware of the need for tighter financial regulation. Thus it may be asserted that the importance of joint cooperative measures have been advantageous, eclipsed only by the importance of future central bank

142. Barbro Wickman-Parak, Deputy Governor of the Sveriges Riksbank, Speech to the Swedish Bankers Association in Stockholm: The Financial Crisis from a Central Bank Perspective (Nov. 12, 2008) (transcript available at http://www.bis.org/review/r081119d.pdf).

143. Kenneth Rogoff, *Do Central Banks Have an Exit Strategy?*, THE BROOKINGS INSTITUTION, Sept. 15, 2008, http://www.brookings.edu/opinions/2008/0915_central_banks_rogoff.aspx.

144. Int'l Monetary Fund [IMF], IMF Survey Magazine: In the News, *Policy Makers Need to Address Systemic Risk, Says IMF*, (May 15, 2009) http://www.imf.org/external/pubs/ft/survey/so/2009/NEW051509A.htm.

145. Sewell Chan, *Fed outlines its Crisis Exit Strategy, but no Timetable*, THE INTERNATIONAL HERALD TRIBUNE, February 11, 2010, at P1.

cooperation in defining regulatory and oversight supervisory protocols. With a growing perception that the worst has passed, the view is now to promote international practices with a preventative objective. The very nature of the definition of "crisis," however, necessitates an element of the unknown and unexpected. Nonetheless, central banks are focused on preventing or mitigating damages by maintaining close coordinated efforts.

VI. LOOKING FORWARD

Although central bank cooperation takes place today through many forums, including the G-20, IMF and FSB, the only international institution devoted purely to central bank cooperation is the BIS. It has fifty-six member central banks, representing a large percentage of the global economy. In addition to research, meetings and events, and financial services support to central banks, the BIS hosts a number of central bank committees. These include the Basel Committee on Banking Supervision, the Committee on the Global Financial System, the Committee on Payment and Settlement Systems, and the Irving Fisher Committee (dealing with central banks statistics), essentially covering the major roles and functions of modern central banks. In addition, the BIS hosts several related, but independent, organizations: the FSB, International Association of Deposit Insurers (IADI) and the International Association of Insurance Supervisors (IAIS). At the same time, the BIS is an unusual international institution; its members are not governments but rather central banks, often with high levels of independence. It is, thus, more akin to a private members' club for central banks, rather than a traditional international organization, or even an industry or self-regulatory organization. Despite its unusual international character, the BIS has served as an effective forum for central bank cooperation for almost eighty years, and few if any of its members would prefer any other structure.[146]

At the same time, the BIS is not the only international central bank organization; there are several regional organizations, with the ESCB in the E.U. by far the most formal and developed.[147] In addition, central banks in Asia have organized a number of organizations,[148] with the Executives' Meeting of East Asia Pacific Central Bank (EMEAP) and South East Asian Central Banks Research and Training Centre (SEACEN) supporting cooperation in policy areas and training respectively.

Simmons has asserted that central bank cooperation is dependent on central bankers agreeing on theory; a consensus on goals with a social paradigm; the

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146. Until 2002, BIS shareholders included a number of large commercial sector banks as a legacy of its early life.

147. For a detailed discussion *see* Andenas, Arner & Leung, *supra* note 28.

148. For a detailed discussion, *see* Douglas Arner, Paul Lejot & Wei Wang, *Assessing East Asian Financial Cooperation and Integration*, 12 SINGAPORE YEARBOOK OF INT'L L. 1 (2010).

technical and institutional ability to reach those goals; and an open political environment which fosters cooperation between international central banks.[149] Central banks today agree on the problems and challenges they face, and are starkly aware that overcoming complex hurdles requires a joint response. Further, while opinions vary on how to address the issues, there is a consensus among central bankers regarding overriding goals and their importance to their respective societies. Finally, the political and diplomatic will of the leading economies are inherently linked to the success of any initiative. Weighing these factors against Simmons's prerequisites, it can be argued that central banks are now at a level of cooperation not previously seen. It can also be anticipated that central banks from around the world will continue to work together to address new shocks and challenges.

Looking forward, the global financial crisis has put into stark relief the twin roles of central banks: monetary stability and financial stability. While many central banks (including arguably the Federal Reserve and BOE) focused mainly on monetary policy and less on financial stability before the global financial crisis, going forward, central banks will be highly focused on financial stability. In this context, a number of issues have arisen: the need for effective macroprudential surveillance, comprehensive coverage of prudential regulatory systems, mechanisms to address crises (such as liquidity mechanisms), and systems to resolve crises which take place (such as deposit insurance and financial institution insolvency systems). In the context of a global financial system, domestic central banks are unable to address these issues entirely on their own. As a result, cooperation mechanisms in all areas are likely to be enhanced.

Beyond financial stability—as was the case with the development of the euro and the ECB in the wake of the collapse of the Bretton Woods international monetary system in the 1970s, and the development of the initial steps in East Asia following the Asian financial crisis at the end of the 1990s—countries and regions are increasingly considering mechanisms to address monetary stability in a global context. These issues are likely to foreshadow increasing formality in the context of monetary arrangements.

Finally, the global financial crisis has seen the emergence of the PBOC as a new leading player. As the central bank for the world's third largest economy (after the United States and the Eurozone) and the world's largest holder of foreign reserves, it seems likely that the character of international central bank cooperation will change with the PBOC gaining influence similar to the Federal Reserve and the ECB, and of potentially greater significance than the BOE and the Bank of Japan.

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149. Beth A. Simmons, *The Future of Central Bank Cooperation*, (BIS Working Paper No. 200, Feb. 2006), *available at* http://www.bis.org/publ/work200.pdf?noframes=1.

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