

The Future of Central Bank Cooperation

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Central bank cooperation has a long history. From the episodic efforts to support the 19th century gold standard to the personal interactions of interwar central bankers, to the institutionalized post-war efforts to maintain fixed exchange rates, to the post-Bretton Woods progress in developing standards for prudential bank regulation, central bankers have progressively consulted and coordinated their activities. Such cooperation has always been shaped by a few perennial parameters. Can they agree on theory (end-means relationships)? To what extent can central bankers agree on goals (social purpose)? Do they have the capacity (technical and institutional) to achieve their collective goals? Does the broader political environment facilitate or impede cooperation?

It is easy to assume, in writing a paper on the “future of central bank cooperation”, that such cooperation is (1) easily observable (implicit in the assumption that a non-participant can meaningfully write about it), and (2) a good thing. Neither of these assumptions is without controversy, however. First, central bank cooperation is *factually* controversial. Looking over the historical record, there are important disagreements over *whether*, in fact, central bankers have cooperated at various historical moments. The passage of time does not seem to have settled the debate over whether, for example, central bankers in the 19th century were mutually cooperative or merely opportunistic.¹ Much depends on how one defines cooperation. The dictionary defines

¹ Barry Eichengreen, for example, has developed an explanation for the success (stability) of the 19th century gold standard that rests largely on the “linchpin” of international cooperation (Eichengreen 1992). Other scholars have responded that 19th century cooperation was little more than ad hoc specific actions

cooperation as “joint operation or action”; its antonym is “competition.” Joint action can be shallow or deep; deep cooperation is marked by policy adjustments that differ from those that would have been taken unilaterally, and which are taken specifically to address a collective good or mutual interest (Downs, Rocke, and Barsoom 1996; Keohane 1984).

“Deep” central bank cooperation can be *normatively* controversial as well.

Theoretical controversies rage about whether – and the extent to which – exchange rate or monetary policy coordination actually improves outcomes over well-designed unilateral policies (Obstfeld and Rogoff 2002). Moreover, to countries who are excluded from decision-making, policy coordination may look more like a cartel than cooperation.

Global standards for the supervision and regulation of internationally active banks for example can be interpreted as serving disproportionately the interests of major banks in the leading jurisdictions. Some of the more profound forms of central bank cooperation can be expected to raise domestic political controversies as well: there are bound to be domestic voices concerned that collective interests might sacrifice an important national interest. The historical reluctance of the United States to officially allow the Federal Reserve to participate in the activities of the BIS largely reflects such a concern.²

Despite these concerns, central banks have accomplished a lot through collective effort, which bodes well for the future. Collectively produced and shared information is

taken for self-gain but lacking any institutionalization and taken without any perception of supporting a public good (Flandreau 1997).

² In deciding not to allow Fed participation in the BIS at its founding, the Hoover Administration felt constrained by Congressional sentiments of this kind. In Stimson’s words, the Fed would be barred from participating “to prevent our friends on the Hill from running amuck.” Stimson to Hoover, June 8, 1929, as quoted by (Costigliola 1973) p. 478. Similarly in 1994, in hearings that touched on whether or not the Fed should take up its seat on the Board of the BIS, the subcommittee chair expressed concern “whether this would put the Federal Reserve at some point in time...in conflict with the domestic independence they exercise.” Rep. Paul Kanjorski, Chair, U.S. Monetary Policy. *Hearing of the Economic Growth and Credit Formation Subcommittee of the House Banking Committee*. Witness: Alan Greenspan. Federal News Service, July 22, 1994.

increasingly rich and user-friendly. Central bank independence from regular government interference is fairly (though not universally) robust, reducing (though not eliminating) political frictions. Cooperation in some areas appears to be cumulative, involving positive feedback loops through which central bankers continue to develop and improve on past achievements, successfully learning while doing despite an increasingly complex global financial environment. In their collective regulatory capacity, for example, it is hard to imagine a return to the free-for-all that existed prior to the 1980s. Additionally, central banks also seem to have developed a reasonably robust response to financial crises, though efforts here have plateaued far short of acting as lenders of last resort. The ability of central bankers to assemble very short-term financial packages to contain crises (as a bridge to more substantial – and more conditional – IMF assistance) has been an important example of the rapid response of which central banks may be uniquely capable. We are a very long way from 1931.

However, in areas such as setting exchange rates or other macroeconomic policies, central bank cooperation is as difficult and controversial as ever. At the theoretical level, there are important debates over whether central banks should do anything other than tend to domestic price stability. Optimism in the 1980s of the joint gains to be had from coordinating monetary policies has given way to greater skepticism that such coordination could ever really “get it right.” Legitimate questions have even been raised about the efficacy of official international interventions in foreign exchange markets of the major floating currencies. Moreover, with the imbalances reflected in rapidly expanding Asian, and particularly Chinese, dollar reserves, the global political economy is changing in ways that will challenge existing institutions and practices.

This essay explores the future of central bank cooperation along a continuum from “easy” to “difficult.” The first section lays the foundation for assessing future collaboration by observing the central banks and governors themselves. The second section examines what I have been able to find on the state of the presentation and sharing of information among central banks. The trajectory here, I argue, is really quite positive. The third section discusses cooperative standard setting, and the fourth looks at extraordinary emergency central bank assistance. Finally, I examine the most difficult issue facing central bank cooperation in the near future: imbalance at the core of the international economy. I conclude with some observations about the political-economic and institutional environment.

I. Players and Institutions: an Overview

Before we look into cooperation itself, it is useful to have a look at the players involved. The number of central banks has increased tremendously over the past century, as the number of independent countries has grown, and as more countries have established monetary authorities (See Figure 1). Membership in the BIS has grown over time as well, even exceeding overall central bank growth since 1995.

[FIGURE 1 ABOUT HERE]

In addition to the number of member banks, the prospects for cooperation are often assumed to depend on the time horizons of the players. Worldwide, most, but not

all, central banker governors have a definite term of office ranging from three to eight years; with five-year terms the most common (see Table 1). On the whole, BIS member bank governors tend to have longer statutory terms than do non-members. Governors that have “indefinite terms” – which I interpret as serving at the pleasure of the government – are much less likely to be BIS members than those with definite terms.

[TABLE 1 ABOUT HERE]

[TABLE 2 ABOUT HERE]

However, actual terms in office can vary significantly from official terms and in recent years more central bank governors have tended to leave office *before the end of their term* (if one is specified) than at the end of their term (see Table 2). Multiple terms and early terminations account for significant deviations from formal term provisions. Figure 2 gives a sense of how long central bank governors of the G-10 and G-20 have actually remained in office during the post war period. During these years, governors from the G-10 countries have held their posts for a little over an average of 8 years. Governors of the remaining G-20 countries, on the other hand, have held their positions for under 5 years. Actual term heterogeneity is much higher among the remaining G-20 members than the G-10 as well.³

[FIGURE 2 ABOUT HERE]

³ The standard deviation for CB governors’ term for the G-10 is 2.55; for the remainder of the G-20 it is 3.24.

The broader institutional context in which central banks operate has been changing in important ways as well. The home states of BIS member banks for most of the post war years were converging toward democratic governance. Using a common measure of democratic participation, the “polity score”⁴ we can see a big positive shift (as well as a strong reduction in the standard deviation) took place with the democratic consolidation of Eastern Europe in the 1990s. Since 1990, however, the significant expansion of membership to Latin American and Asian countries reverses both of these trends.

[FIGURE 3 ABOUT HERE]

The changing political organization of BIS member states raises the possibility of some states trying to exert political control over central bank governors. While evidence is hard to come by, it is at least possible to look at the relationship between elections and the turnover of governors (see Figure 4). Among BIS members, election years and replacement of central bank governors appear practically to take a random walk. About 20 percent of all election years are also years in which the governor of the central bank is replaced within 6 months before or after an election. Never does the number of such coincident years exceed 4, consistent with the received wisdom that most of the BIS member banks, at least in the democracies, enjoy a high degree of political independence.

[FIGURE 4 ABOUT HERE]

⁴ The polity score is a commonly used measure of the degree of democracy that includes components measuring the extent of the franchise, political competition, free elections, and checks on executive power. See <http://www.cidcm.umd.edu/inscr/polity/>.

If we focus in for a moment on the G-10 group of central bankers, some other interesting points that are potentially relevant for cooperation emerge. Suppose we take a snapshot of the background characteristics of the 10 (actually 11) governors for 1990, 2000, and 2005, coding for whether each has had experience as the following (note these are not mutually exclusive):

- Staff of the Ministry of Finance/Treasury
- Other government position
- Industry experience
- Private finance experience
- Academic background
- Worked at the IMF
- Worked at the OECD

Coding for each for the G-10 governors and calculating and then summing the standard deviation reveals a noticeable increase in homogeneity of backgrounds over time.

[FIGURE 5 ABOUT HERE]

The notable shift in the governors' backgrounds, however, is more interesting than the aggregate dispersion. Over these 15 years, G-10 central bank governors are much less likely to have an industry or private financial background. They are somewhat less likely to have worked for an international economic organization, though there has been a slight increase in this proportion between 2000 and 2005. Experience in the

finance ministry has just about held constant, while “other” government experienced has increased somewhat. But the most significant trend to be revealed by a look at these men’s bios is the *sharp and persistent rise in their academic background*. In 1990, only 1 out of 10 governors had spent much (post PhD) time in the academy. Among the current G-10 governors, 6 were once academics (to some degree).

This survey seems to suggest that central bankers are “structurally” and attitudinally fairly well-placed to take a cooperative approach to monetary and financial problems, and may be even more so in the future. Cooperation seems most likely among the obvious candidates: the G-10, and to a lesser extent the G-20 and the rest of the BIS. Bankers associated with these institutions, especially the G-10, are more likely to have longer terms (*de jure* and *de facto*) and hence longer time horizons. Their polities and economies are much more homogenous than are other groupings’. Up to the early 1990s, BIS members increasingly enjoyed the legitimacy that comes with democratic governance, while the political cycles and bank staffing cycles tend to run quite separately within these countries. G-10 governors are increasingly likely to be academics, interested in learning and persuasion; possibly more open than others to the power of evidence and reasoned argument. Of course, as Bordo points out in his comments that follow, the increased sophistication of central bankers may also improve their handling of monetary policy, reducing the *need* for international cooperation in the future.

In any case, this cozy homogeneity alone will not provide ready answers to some of the most difficult problems that will face central bank cooperation in the future. Globalization has brought a plethora of heterogeneous players to the fore. The

interconnectedness of financial markets will make it increasingly difficult to handle systemic risks from a narrow decision-making base. Tectonic plates are shifting in the global economy as China – increasingly powerful, steadfastly heterodox – seeks influence and the protection of her interests. However, rather than delve immediately into an analysis of cooperative approaches to address the East-West economic imbalance, I turn first to a far simpler problem: information sharing.

II. Shallow Cooperation: Information Sharing

It is hard to imagine central bankers accomplishing much in common without sharing information that is relevant to economic and regulatory policymaking in an increasingly interdependent world. The major central banks have been exchanging policy-relevant information for the better part of a century. In fact, information gathering and dissemination was one of the primary purposes of the Bank for International Settlements; I have argued elsewhere that one of the crucial initial functions of the BIS was to provide credible information about Germany's capacity to pay reparations in order to overcome informational asymmetries between Germany and her creditors (Simmons 1993). Practically every commentary on the BIS acknowledges the continuing role the institution plays with respect to information generation and sharing among central banks (Baer 2000; Bernholz 2003; Fratianni and Pattison 2001; Howell 1993).

Good economic and financial information is something easily taken for granted these days. Financial crises have revealed serious weaknesses, but have also created demands for more transparency and disclosure. The BIS has assisted in the development

of principles of transparency in central banking,⁵ and the International Monetary Fund has issued a series of “Reports on Observance of Standards and Codes”⁶ that use these principles as a guideline. For their part, IMF members can submit to voluntary reviews, which can be quite revealing. To analyze how well BIS members performed in this regard I read through sections of the reports for the three areas most relevant to central banking: monetary policy, banking supervisions, and data dissemination (see Figure 6). Most members of the BIS rate in the “good” to “excellent” range when it comes to providing routine information regarding their monetary and financial/supervisory policies as well as accessible economic data.⁷

[FIGURE 6 ABOUT HERE]

The main point is that quality information in a standard format is increasingly available so that more and more central bankers are in a better position to compare and discuss economic and financial conditions. Moreover, this relatively new emphasis on transparency may have helped to alter normative expectations about information generation and disclosure more generally. Along with the information the BIS has helped collect and interpret from reporting private banks ever since the early 1960s, these transparency exercises have done a good deal to raise expectations about the quality and availability of information.

⁵ These principles can be found at: <http://www.imf.org/external/np/exr/facts/mtransp.htm>

⁶ These reports are located at <http://www.imf.org/external/np/rosc/rosc.asp>.

⁷ For a study that argues that cooperative with these standards varies according to the extent of cooperation of private agents, see (Mosley 2003).

Information sharing is not just about data, of course. After all, if all the information central banks ever needed could be posted on a website, there would be much less reason to spend time in Basel. At least two other kinds of information are crucial to cooperation: theoretical information and information about policy plans and preferences. The former involves a discussion about the theories that underlie concepts that are not directly observable in the hard numbers. “Potential output,” the “natural rate of unemployment,” and the “equilibrium interest rate” are not directly measured; they are theoretical constructs that respond to new theoretical developments (Kozicki 2004). One of the most influential papers on policy coordination in the past twenty years has shown that where various national monetary policy authorities are not working from the same models – the same basic understandings of how the economic world works – they are less likely to be able to improve joint welfare (Frankel and Rockett 1988). Information sharing of this theoretical nature is an opportunity to learn and to persuade, to take a collective look at a situation and draw on broader wisdom to better understand economic reality.

Finally, information sharing is about “showing one’s hand.” It is about communicating policy preferences and the intensity with which they are held. As such, it is part of the natural bargaining process precedent to policy coordination. Information sharing of this kind is an exercise in giving notice, sometimes subtly, concerning policy choices that are being, or will soon be, implemented. It is important to note that in the absence of efforts to coordinate policies mere notification can reduce rather than enhance joint welfare. After all, an uncoordinated reaction to being informed of an undesired policy choice in another country could be to redouble the efforts to counter its effects – a

classic case of working at cross purposes. In the absence of international coordination, it is possible for information to induce governments to pursue their own inefficient policies even more vigorously (Ghosh and Masson 1994: 172).

Generally, *information sharing is the easiest possible form of “cooperation.”* Indeed, it is difficult to think of an instance over the course of the past century in which a lack of shared information *alone* led to a breakdown in more profound forms of central bank cooperation on policy.⁸ This is not to say there have been no instances of “policy regret” as new information comes to light, but this is a problem in virtually all areas of monetary policy making where knowledge is uncertain, projected data undergoes significant revision, (Kozicki 2004; Orphanides and Williams 2003) or where information of a proprietary nature may be difficult to share. Finally, effective cooperation in today’s (and even more so, tomorrow’s) global economy will require the efficient and effective use of *real time* information. These are important difficulties, no doubt. Yet I believe that information sharing is likely to continue to be one area in which central bank cooperation will become increasingly routinized. Of course, information alone does not settle difficult issues such as *what constitutes wise policy, who bears the risks and who adjusts*. These issues will continue to complicate central bank policy cooperation in the future.

III. Global Financial Stability: Information and Regulatory Coordination

⁸ There have been cases of hostile policy actions, plans of which presumably central banks did not share with one another before their implementation. Richard Cooper (2005) cites the example of concerted French withdrawal of gold from Germany in 1929 during Young Plan negotiations. One might also include French conversion of dollars into gold in the 1960s. These are cases of hostile intent, rather than informational failure.

One of the prime innovations in central bank cooperation in the past two decades has been the collective attention given to the problem of the systemic stability of the inter-bank financial system. The forces that gave rise to this attention are likely to accelerate in the future. Institutional consolidations and the globalization of financial markets are likely to continue to increase the interdependencies among major organizations, extending and intensifying systemic linkages. It will become increasingly difficult to think in terms of “national banking systems,” as the complex web of connections across institutions, markets and countries intensify. With these changes we are likely to witness new sources of systemic risk and financial instability that private firms simply do not have the incentive to internalize (Hoenig 2004). As many analysts have noted, central banks – acting in their regulatory and supervisory capacity – can provide a real public service by devising and disseminating standards and practices that minimize the systemic risks associated with highly leveraged and highly interdependent banking institutions.

Critiques of the Basel Accord are easy to come by, but beginning in the 1980s central banks successfully agreed to standards that address systemic risks.⁹ Some say the original Accord was foisted upon a reluctant G-10 by the Anglo-Americans (Kapstein 1989; Kapstein 1992; Oatley and Nabors 1998); others note the Accord was hardly appropriate for banks in emerging markets, where much of the instability was likely to originate. Practically everyone has acknowledged the crude bluntness of the original Accord, with its undifferentiated 8% prudential capital requirement (Ferguson 2003).

⁹ For a good review of the theoretical literature see (Santos 2001). For a discussion of the domestic politics that underlies harmonization of regulatory approaches, see (Singer 2004).

What is interesting, however, is that the combination of external standard setting and internal enforcement has “caught on” in a rather convincing way. In my view, a surprising number of countries – many of which did not participate in fashioning the original Basel Accord (nor its successor) and are not formally obligated to adopt it – indeed have done so (Ho 2002; Simmons 2001). It is widely viewed as having broadly achieved its primary purpose: the promotion of stability in world financial markets (Ferguson 2003).

Cooperation among central banks in the supervision and regulation of internationally active banks is not as “easy” as information sharing, though we shall continue to see a lot of progressive and, for the most part, successful activity (despite the varying roles central banks have in bank supervision and regulation). The key to this issue area is that standards of this nature are a *coordination problem*. The initial regulatory decision involves important distributive issues, but once these are resolved and a standard is accepted by an important core set of regulators, peripheral regulators have no interest in eschewing the core’s standard. Admittedly, market power and expertise play a huge role in the initial decision of *which* standard ought to become global, but once that is decided by a group as influential as the Basel Committee on Banking Supervision (which in turn is influenced by the preferences of a powerful subset), the incentives to strike out in another regulatory direction are relatively weak.

As for why, the central reason is the perceived nature of market pressures that encourage the adoption of “global standards.” International banking is characterized by information asymmetries that provide an opening for opportunistic behavior. The adoption of a stringent regulatory and supervisory regime conveys information on the

quality of a firm as a counter-party to an agreement. In this environment, an appropriate prudential and supervisory regime is a competitive advantage that other jurisdictions have an incentive to copy. In describing why they chose to adopt the original 1988 Accord on capital adequacy standards, for example, Bernard W. Fraser, governor of the Federal Reserve Bank of Australia, remarked that, “there is considerable [market] pressure on others to follow – otherwise their banks risk being perceived as somewhat inferior institutions in competitive situations” (Fraser 1995). The same perceptions seem to surround adoption of the revised Basel II Accord. Standard and Poor’s website claims that, “firms can use the regulatory imperatives of Basel II as an opportunity to push ahead of the competition... By using Basel II and other mandates as the catalyst for an enterprise-wide examination and refinement of its infrastructure and processes, a firm can achieve significant operational efficiencies and improvements.”¹⁰ Similarly, Canadian consulting firms urge Canadian banks to adopt Basel II to “give themselves a competitive, high-performance advantage.”¹¹

This is not the place (and I am not the person) to debate the technical merits of various approaches to the supervision and regulation of internationally active banks.¹² Rather it is the place to make the point that the *politics* of coordinated approaches to systemic risks are reinforced to some extent by competitive market forces. Still, two kinds of problems remain. The first is that claiming to have adopted “international standards” and “best practices” may very well be a pooling equilibrium, a cheap signal

¹⁰ See <http://www.gtnews.com/article/5891.cfm> (accessed 30 May 2005);

¹¹ http://www.accenture.com/xd/xd.asp?it=caweb&xd=locations%5Ccanada%5Cinsights%5Cpov%5Cbasel2_rewards.xml (accessed 30 May 2005).

¹² The literature is immense. For a discussion of precommitment approaches versus “formulas” see (Estrella 1998). On the macroeconomic effects of Basel II see (Tanaka 2003) and (Griffith-Jones and Spratt 2001).

that officials in both well-regulated and not-so-well-regulated jurisdictions may have an incentive to try to send. Thus, the reinforcing competitive mechanism I describe cannot work without a high degree of transparency regarding the extent of domestic implementation of these standards. While enforcement is generally recognized to be domestic, cooperative institutions such as the Basel Committee should continue to stand ready to verify (and publicize) compliance.

The second issue that may plague cooperation in this area is the nature and legitimacy of the standards themselves. Essentially, a small core of powerful and technically sophisticated regulators with input from the largest internationally active banks have defined what “international standards” and “best practices” mean.¹³ I have no doubt the Basel Committee on Banking Supervision has the regulatory and financial expertise to develop such standards. I have somewhat less confidence that their standards are viewed universally as legitimate, or even appropriate, for banks the world over.¹⁴ Canadian and Australian bank regulators may readily succumb to “competitive pressures” to adopt the recommendations of the Basel Committee, but will Indonesia (banking crises, 1992-1999), Malaysia (banking crises 1985-1988, 1997-1998), or India (banking crises 1991-1998)? Will Chinese¹⁵ or Islamic regulators¹⁶ adopt Basel recommendations?

¹³ The Committee's members come from Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, the Netherlands, Spain, Sweden, Switzerland, United Kingdom and United States.

¹⁴ It is important to note that the actual standards adopted have serious distributed implications. The original Basel Accords, some have maintained, were politically biased in granting OECD members a 0 weight for their country credit risk, while non-OECD countries had a 100% weight. This led to the financially difficult-to-justify situation in which Turkish Debt would get a 0% weight and Singaporean debt a 100% weight. See (Fратиanni and Pattison 2001), p. 208.

¹⁵ In China, for example, the China Banking Regulatory Commission (CBRC) has said that it will wait until China's banks are fully compliant with Basel I before making the second stage a requirement. The lack of regulatory take-up in the region is one reason that, overall, the region's banks are behind other parts of the world in implementation. KPMG, the accounting firm, surveyed banking clients around the world last year on the status of their Basel II implementations. It found that 16 percent of Asian financial institutions surveyed had no Basel II implementation plans, the highest for any region. Another roadblock for the Asian financial institutions is that, even if many desire to opt for the more sophisticated, IRB

Commentators have noted that developing countries lack not only the technical capacity to implement the new round of accords (Basel II) but the “political will” as well (Chami, Khan, and Sharma 2003). “Political will” may well remain weak as long as standards are propagated without the serious participation of regulators from developing country jurisdictions.

These questions will come to the fore in the future because the further integration of financial markets will push them there. One of the key findings of the research on banking crises is that these crises are typically preceded by capital account liberalization (Kaminsky and Reinhart 1999).¹⁷ Economists now have a pretty good idea of the factors that lead countries into banking crises: problems ensue following a period of expansion built on credit fueled by strong capital inflows, overvalued currency, followed by a recession. Capital account liberalization – on the agenda in the (distant?) future in China, for example – will create conditions that will challenge developing country banks. In the future, systemic consequences stemming from consolidation, which some predict as the result of more stringent reporting requirements, and intensification of these banks’ international activities will be potentially important.

Of course, financial stability requires concerted efforts that go beyond central bank cooperation. It will involve central banks, other bank and securities regulators – hence the creation of the Financial Stability Forum (FSF) in 1999. The FSF’s purpose is to promote international financial stability through information exchange and

approach, they lack the information required to build the databases for the credit risk models. According to Peter Poon, EDS sales director for Hong Kong: “Credit assessment, particularly among small- to medium-sized enterprises, is still based on the relationship between the loan officer and the client – not a very systematic tool.” See article by Niles Lo, “Late for the Basel,” *CFO Asia*, May 2005; at <http://www.cfoasia.com/archives/200505-05.htm>.

¹⁶ On the appropriateness of Basel type approaches to Islamic banking systems see (Muljawan, Dar, and Hall 2004).

¹⁷ For a review of the literature on currency and banking crises see (Breuer 2004)

international co-operation in financial supervision and surveillance. To this end, it primarily involves authorities from the “significant international financial centers”¹⁸ as well as international financial institutions, sector-specific international groupings of regulators and supervisors, committees of central bank experts, and well-organized “special interest groups”.¹⁹ Creating a permanent meeting forum for major regulators is an important achievement (Crockett 2001), but in the future there is likely to be a growing tension between the need for efficiency, which calls for an intimate gathering of the major players (Crockett 2001);²⁰ and global authority, which calls for much wider participation, especially on the part of Asian and Latin American representatives (Fратиanni and Pattison 2001).

Financial stability will also require monitoring much more information than seems to be currently available, which is not principally a problem of central bank cooperation as much as it is the ability of central banks and other regulators to get useful information from private financial entities. The special Data Dissemination Standards examined above are a start, and the high frequency data these standards require may eventually be forthcoming from firms. As long as reporting remains voluntary, however, central banks’ ability to address global financial stability will depend on the kind of cooperation they are able to elicit from firms operating in their own jurisdictions.

¹⁸ Australia, Canada, France, Germany, Hong Kong SAR, Italy, Japan, Netherlands, Singapore, United Kingdom, United States.

¹⁹ International Monetary Fund, World Bank, Bank for International Settlements, Organisation for Economic Co-operation and Development, Basel Committee on Banking Supervision, International Accounting Standards Board, International Association of Insurance Supervisors, International Organisation of Securities Commissions, Committee on Payment and Settlement System, Committee on the Global Financial System, and the European Central Bank.

²⁰ On the issue of expanding membership, Andrew Crockett comes down clearly on the side of keeping the Forum small: “Expanding the membership would [be] at the cost of increasing the size of the Forum, and therefore reducing the informality and making it more difficult to discuss.”

IV. Urgent Action: Emergency Liquidity

Central banks have a long, if episodic, history of coming to one another's aid in a liquidity emergency. Nineteenth century examples include the Baring Crisis of 1890, the sterling crisis of 1906, and the American financial panic of 1907 (Eichengreen 1992). Within a year of its founding, the BIS extended short term credits to the central banks of Austria, Yugoslavia, Hungary, and Germany totaling some 750 million Swiss francs (\$US145 million), although such funds were recognized as paltry compared to the looming financial disasters that avalanched throughout Central Europe in 1931 (Fraser 1936). In addition, the BIS organized informal consortia of central banks to extend emergency credits and, by the late 1930s, the BIS had developed facilities for reciprocal credits among central banks (BIS 1938). As well as a range of liquidity schemes arranged during the Bretton Woods Period (Cooper 2005), the BIS arranged special support credits for the Italian lira (1964) and the French franc (1968), two so-called Group Arrangements (1966 and 1968), and a third back-stop agreement in (1976) to support sterling. In the 1980s and 1990s, the BIS extended short term liquidity to central banks in Eastern Europe, Latin America, and Africa – whether or not they were members of the organization at the time (Howell 1995) – in anticipation of longer term loans under negotiation with the International Monetary Fund.

Short-term credits to central banks in immediate need of liquidity is one of the things central banks are advantageously positioned to do (Fратиanni and Pattison 2001). Decisions on these kinds of arrangements can be made quickly, and without the political scrutiny that government loans might receive. These loans, in contrast to those made by

the IMF, do not include any explicit policy conditionality, making them easier to negotiate. Central banks hardly have a monopoly in this area, however. In Asia, for example, the Chang Mai Initiative – an agreement to provide reserve swaps to increase liquidity in case of currency attacks – is primarily a product of cooperation between the ministries of finance, merely to be executed by their central banks.²¹

Meanwhile, in the West, central banks are increasingly recognizing the need to reach understandings on access to liquidity in non-financial crises. After the terrorist attacks on 9/11, the Federal Reserve established thirty-day reciprocal swap arrangements with the European Central Bank, which drew on the swap facility on September 12, 13, and 14th, 2001, and the Bank of England, and temporarily augmented its existing swap facility with the Bank of Canada (Board 2001). Because global capital markets are tightly integrated and because these markets respond negatively to major attacks and terrorist events, central banks in the future will have to develop disaster recovery plans – including but not limited to the appropriate provision of liquidity – in case of surprise cataclysmic events of a political nature (Chen and Siems 2004).

As a result, it may very well fall to central bankers to act as financial “first responders” well into the future. Rapid financial and capital account liberalization may mean more currency crises in the future, reinforced by the unpredictable self-fulfilling behavior of market actors (Wyplosz 1998: 71). In the event of political attacks, which are even more difficult to forecast, central banks may increasingly play the role of lender of *first* resort.

²¹ For the series of bilateral arrangements negotiated by Japan’s Ministry of Finance see <http://www.mof.go.jp/jouhou/kokkin/pcmie.htm>. As of late 2003, thirteen bilateral swap arrangements had been concluded worth a combined US\$32.5 billion – a relatively small amount given the magnitude of borrowing during the Asian crisis.

V. “Macro-Management:” Exchange Rates and Monetary Policy

Coordination

The future of central bank cooperation is the least certain in the broad area of “macro-policy”, by which I mean both exchange rate policy and, more ambitiously, monetary policy. Cooperation in these areas raises a number of issues that are difficult to resolve. Varying theoretical perspectives lead to different policy prescriptions. Evidence that coordination in these areas have “worked” as expected is mixed. Most importantly, since cooperation implies taking policies with serious economic consequences that might not have been chosen on domestic grounds alone, the issues tend to be much more politically charged than any of the issues discussed so far. Now we are wading into issues of truly “deep” coordination, and the prospects for central bank cooperation are concomitantly less likely.

The actual coordination of macro policies has always been difficult for central banks to engineer. The Federal Reserve cooperated to facilitate Britain’s return to gold in 1924-1925 by reducing interest rates, but was not willing to do so in 1928-1929 when speculative profits were drawing money to New York (Clarke 1967: 151). Exchange rate commitments went by the wayside in the early 1970s because they were inconsistent with the basic orientation of United States monetary and fiscal policies. Anna Schwartz bluntly opines, “Coordination is a fair-weather instrument because countries have independent interests that they will not sacrifice for the sake of the collectivity” (Schwartz 2000: 23). Many would agree with Kenneth Rogoff’s assessment, that “Currency volatility is the price we pay for having independent monetary policies”

(Rogoff 2005). The recent trajectory of economic theory, policy experience, and the reassertion of national priorities suggest central bank cooperation in these areas will be difficult to pull off.

Coordinated intervention – Managing Exchange Rates and their Volatility

Monetary authorities may consider foreign exchange intervention to influence exchange rates for a number of reasons: when markets are perceived to be disorderly, when the medium-term level of the exchange rate is perceived to be too high or too low, and sometimes at the behest of foreign authorities who want to coordinate policies (Neely 2000; Schwartz 2000). Of course, relative to the size of foreign exchange markets, any single authority's intervention resources are likely to be small, and in some cases unilateral intervention may be too difficult for market actors to interpret. Coordinating intervention with foreign central banks is supposed to improve the impact of the intervention, not only by increasing the resources used, but more importantly by sending a clearer signal to the market that the central banks have credible "inside information" about the economy and that they want to convey it as clearly and truthfully to the market as is possible to do.²² They may also want to coordinate intervention in order to avoid working at cross-purposes: that is, to preclude the possibility that their own signals will be offset or overpowered by signals from other, more credible central banks (Dominguez 1990: 7).

For starters, it is important to note that central banks are not institutionally at liberty to design and execute exchange rate policies in an unconstrained way. Policies

²² Some have even argued that central banks may "agree to coordinate intervention operations in order to free-ride off other central banks' reputations for providing informative signals (Dominguez 1990), p. 7.

are typically designed in Treasury Departments or Finance Ministries; central banks may be thought of as the “junior agency” in the management of exchange rate regimes (Schwartz 2000).²³ In fact, managing the exchange rate is not an explicit part of the mandate of the major central banks; rather their primary charge is price stability. According to its statutes, “The primary objective of the ESCB shall be to maintain price stability.” And: “without prejudice to the objective of price stability, the ESCB shall support the general economic policies in the Community with a view to contributing to the achievement of the objectives of the Community as laid down in Article 2 [of the Treaty on European Union]” (Treaty Article 105.1).²⁴ The Bank of Japan’s statutes stipulate that “The Bank of Japan’s missions are to maintain price stability and to ensure the stability of the financial system, thereby laying the foundations for sound economic development.”²⁵ And as for the Federal Reserve: “The Board of Governors of the Federal Reserve System and the Federal Open Market Committee shall maintain long run growth of the monetary and credit aggregates commensurate with the economy’s long run potential to increase production, so as to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates.”²⁶ Since none of these banks are specifically tasked to defend or stabilize a currency, exchange rate policy coordination is likely to take a back seat to these banks’ primary mission.

²³ For a good comparison of the relative responsibilities in the United States, Japan, and Germany (now irrelevant with the creation of the ECB), see (Henning 1994).

²⁴ The objectives of the Union (Article 2 of the Treaty on European Union) are a high level of employment and sustainable and non-inflationary growth. See ECB website, <http://www.ecb.int/ecb/orga/tasks/html/index.en.html>

²⁵ Bank of Japan website, http://www.boj.or.jp/en/about/about_f.htm

²⁶ 12 USC 225a. As added by act of November 16, 1977 (91 Stat. 1387) and amended by acts of October 27, 1978 (92 Stat. 1897); Aug. 23, 1988 (102 Stat. 1375); and Dec. 27, 2000 (114 Stat. 3028); as found at the Federal Reserve website, <http://www.federalreserve.gov/generalinfo/fract/sect02a.htm>.

Consensus regarding the usefulness of coordinated exchange rate intervention seems to have withered over the past decade. First, there is often no clear consensus on what constitutes an “appropriate” exchange rate, largely due to a lack of robust models of exchange rate determination that inspires coordinated action (Truman 2005a). Second, the empirical research has turned up quite mixed results concerning the “success” of intervention,²⁷ though coordinated intervention seems to have somewhat larger effects than unilateral intervention.²⁸ The effects of intervention (US, Europe, and Japan) do not seem to be as significant post-1989 as they were in the 1980s and the ability of intervention to reduce volatility has even been questioned recently.²⁹ Some research suggests that market players have been skeptical of the effects of intervention: the stability following the Louvre Accord was largely attributed by market actors to fundamentals, not exchange rate management (Rosenberg 1993). Third, theoretical developments in macroeconomics over the past decade (Obstfeld and Rogoff 1995) have thrown the assumption of gains from cooperation into question (Clarida, Gali, and Gertler 2001). Meanwhile, the debate over exchange rate price “pass-through” has led many to wonder if volatile exchange rates are really such a problem. Empirical research has revealed that exchange rate volatility greatly exceeds consumer price volatility and, to a lesser degree, import price volatility (Bacchetta and van Wincoop 2002; Betts and

²⁷ For a general review of the effects of central bank intervention on exchange rates, see (Sarno and Taylor 2001). Recent research on effectiveness of CB intervention on exchange rates includes (Evans and Lyons 2001; Kearns and Rigobon 2002)

²⁸ Coordinated interventions have been shown to have larger and longer-lasting effects, at least for the 1985-1987 period (Dominguez 1990). Recent research in the dollar yen market also suggests that small unilateral interventions are not likely to be an effective policy tool, though coordinated interventions sometimes deliver significant effects on the exchange rate in the short run (less than a month) (Fatum and Hutchison 2003).

²⁹ Dominguez’s results suggest that reported Fed intervention reduced volatility in the period 1985 through 1988 and *increased* volatility over the period 1989 through 1991 (Dominguez 1998). Since 1989, she finds there is little to no evidence that central bank intervention in the foreign exchange markets deliver noticeable reductions in market uncertainty, at least when measured as volatility in rates (Dominguez 2003).

Devereux 2000). If exchange rate volatility does not have much effect on price stability,³⁰ why should it be a high priority of central banks?

Precisely which of these considerations is influencing decisions to intervene is not clear, but what is clear is that both the Federal Reserve and the ECB have drastically cut back on the practice. The last major coordinated intervention by the Fed, the ECB, and the Japanese MOF – to support the Euro – was in September 2000. Prior to that, no coordinated intervention had occurred since August 1995,³¹ when the United States Treasury coordinated intervention with the central banks in Japan, Germany, and Switzerland to keep pushing the dollar higher by buying the currency on the exchange markets. Proposals to stabilize “tripolar” exchange rates exist, but given current trends they are not likely to inform central bank cooperation in the foreseeable future.³²

The Problem of China: A Coordinated Move to Flexibility?

“Quadra-polar” exchange rates (among the Dollar, Euro, Yen and Chinese Yuan) are a distinct and serious issue. In essence, it is a problem of extreme global imbalance among the major economies, not just an exchange rate issue. The ingredients in this imbalance include the burgeoning US fiscal and current account deficits, Europe’s relatively slow growth, and Asia’s (especially China’s) relatively high savings rates. Imbalance has accumulated at least partially because the Yuan remains linked to the

³⁰ While many doubt the relevance of the “direct” effect of exchange rate volatility for the achievement of price stability, the indirect effects – sometimes referred to as “second round” effects – and aggregate demand effects might be more important. This is an unresolved empirical issue.

³¹ The United States also bought yen in 1998.

³² Among the best known are the target zone schemes of Williamson (1986, 1994, 1998) McKinnon (1998) and Bergsten (1999; <http://financialservices.house.gov/banking/52199ber.htm>). Economic critiques of these kinds of goals are well-known (Schwartz 2000). Thinking futuristically, Richard Cooper has proposed a common currency for Europe, Japan, and the United States (Cooper 2000). The instability of a “tripolar” exchange rate system has long drawn proposals for some form of nominal anchor. See for example discussion in (Berner 1993).

dollar, at the cost of massive purchase of low-yielding U.S. debt by the Chinese central bank. At these exchange rates, a massive inflow of capital from abroad – totaling some \$2 billion every working day, and growing – finances American consumption. The dramatic shift over the past few decades in the proportion of reserves held by major central banks can be seen by comparing the reserves of Japan, China, and the Republic of Korea against those of the rest of the G-10 (see Figure 7).

[FIGURE 7 ABOUT HERE]

The basic facts of this imbalance are undisputed. Where policymakers and analysts disagree is over its seriousness, its sustainability, and how best to (and *who* should) adjust. Optimistic assessments view the imbalance as sustainable, even logical, given China's need to attract high quality capital in the form of foreign direct investment (Dooley, Folkerts-Landau, and Garber 2004a; Dooley, Folkerts-Landau, and Garber 2003). The central bargain is stable, some have argued, since many Asian central banks (especially China's) are willing to intervene on a massive scale to prevent currency revaluation and finance the US deficit (Dooley, Folkerts-Landau, and Garber 2004b). The only real alternative for the Asian countries is to hold dollars (and finance US deficits) since the basically unhedgeable exchange rate risk for dollar asset holders would be intolerable were Asian currencies to appreciate (McKinnon and Schnabl 2004a; McKinnon and Schnabl 2004b). Federal Reserve Chairman (select) Ben Bernanke believes the imbalance emanates from a "glut" of global savings, and the inherent attractiveness of the US market to foreign investors, citing "no reason why the whole

process [of reducing the imbalance] should not proceed smoothly” (Bernanke 2005; Cooper 2004). Moreover, Michael Bordo points out in his commentary that while today’s imbalance is large compared to earlier periods that ended in serious recessions (the interwar gold standard and the twilight years of the Bretton Woods system, for example), the fundamentals of the international monetary regime today are stronger, and the major monetary authorities are better equipped to deal with the process of readjustment.

That said, many others believe the imbalances are unsustainable and have begun to propose various exit strategies. Paul Volcker has called the imbalances “...as dangerous and intractable as any I can remember...” and calls for US fiscal discipline (Volcker 2005). The IMF, citing “reasons to be concerned that this [imbalance] cannot last,” calls for a cooperative strategy to achieve fiscal consolidation and greater exchange rate flexibility, while expressing concern about the effects of rising US interest rates on emerging markets (IMF 2004). The consensus view among economists (to the extent there is one) is that some combination of deficit reduction in the US, structural adjustment to improve growth in Europe, and currency appreciation in China are needed to avoid a disruptive correction (Eichengreen 2004; Roubini and Setser 2005; Summers 2004).

My purpose here is not to recite the economics of these various policy options, but rather to place the future of central bank cooperation in this awkward context. What cooperative dilemmas will central bankers face in dealing with the imbalances in the global economy? First, there may be some difficulty in working out these issues in a G-7 context. China is not, after all, a regular member of this group and the governor of the

People's Bank of China does not regularly attend the meeting of G-7 finance ministers and central bankers. A key player is outside a major institutional loop, sometimes invited (October 2004, February 2005), occasionally spurning invitations to take part (April 2005). The People's Bank of China was also a late-comer to the BIS, only joining in 1996.

The key point is that the People's Bank of China is not very well integrated – some would say, not well “socialized” – into institutional channels where the exchange rate issue might be cooperatively handled. This is an important point, especially since recent social science research shows that when China *does* become systematically involved in international or regional institutions, there is a significant change in the nature of the discourse among Chinese leaders and bureaucrats that evinces much more sensitivity to multilateral issues and China's interests in cooperative solutions to problems (Johnston 2002).

For its part, the G-7 meeting of finance ministers and central bankers does not appear to have made noticeable progress in handling the problem of these imbalances. The first communiqué to deal with exchange rate flexibility resulted from the Dubai meeting (September 2003), but all the US contributed to the “growth agenda” at that meeting was tax cuts and the hope of tort reform! The same statement on exchange rates was recycled for the communiqués of the next three meetings, though with language conveying greater urgency with respect to fiscal debts and restructuring to enhance growth.³³

³³ “We reaffirm that exchange rates should reflect economic fundamentals. Excess volatility and disorderly movements in exchange rates are undesirable for economic growth. We continue to monitor exchange markets closely and cooperate as appropriate. In this context, we emphasize that more flexibility in exchange rates is desirable for major countries or economic areas that lack such flexibility to promote

Meanwhile, the dollar-yuan exchange rate is beginning to raise political pressures in the United States for more unilateral action and Congress is beginning to pressure the Administration to act. Figure 8 displays the number of bills introduced in the Congress (House and Senate) that are substantially about the value of the dollar. The spike beginning in 2003 through 2005 (note these are bills introduced in the first quarter of 2005 alone) are almost completely accounted for by the problem of “currency manipulation” by China.

On the 21st of July 2005, China surprised financial markets by unpegging the Yuan from its long-standing rate of 8.28 Yuan to the dollar, responding in part to repeated calls for flexibility. The unpegging had two components – an immediate 2% revaluation, which lowered the exchange rate to 8.11 Yuan to the dollar, and the introduction of a “managed float”, which would de-link the Yuan from the dollar, and peg it instead to a basket of currencies whose composition is undisclosed. The Bank of China has stated that the Yuan will be allowed to trade in a tight daily band of 0.3% against the dollar, giving room perhaps, for a continued adjustment of the Yuan’s value. Yet hopes for a larger readjustment have remained unfulfilled, as the current value of the Yuan hovers around a rate of 8.09 to the dollar, barely 0.24% from its value at the time of the revaluation³⁴.

[FIGURE 8 ABOUT HERE]

smooth and widespread adjustments in the international financial system, based on market mechanisms.” See <http://www.g8.utoronto.ca/summit/index.htm> for all G-7/8 communiqués. This point is also made by (Truman 2005a).

³⁴ Rate of RMB to USD on 5th of November 2005, <http://www.oanda.com/convert/classic>

China's recent policy may or may not assuage political pressures in the United States from agitating for more meaningful (some might say, precipitous) change. In the spring of 2005, Senators Charles Schumer (Democrat, New York) and Lindsey Graham (Republican, South Carolina) introduced a bill that would impose a tariff on Chinese exports to the United States if Beijing continues to keep the value of the Yuan "artificially low" compared with the dollar. The minimal movement in the Yuan may mean that such domestic pressures will persist. In an interesting rhetorical turn, "free trade" is being identified with and defined as a "free float."³⁵ Even if there is little eminent danger of its passage into law, the presence, persistence and rhetoric of this bill and others like it raise risks of ill-advised unilateralism.

Imbalances of this scale also complicate the Federal Reserve's primary task – the conduct of monetary policy. Some evidence suggests that Asia's massive purchases of Treasury bills are weakening the Fed's ability to modulate US monetary policy. Recently, Treasury yields have weakened, even as official rates have increased. Demand from Asia, according to some studies, has kept US interest rates anywhere from 40 to 100 basis points below where they would otherwise be in the absence of central bank demand (Bernanke, Reinhart, and Sack 2004). "Monetary policy is most effective when it is clearly targeted, and it can't be used to fix *everything*" (Rogoff 2003) but if official sources of demand for securities continues unabated, the Fed will soon have to worry whether monetary policy can do *anything*.

The economic imbalances between the US and Asia raises some cooperative issues not directly confronted in the past. Asia's apparent willingness to hold huge

³⁵ In a June 8, 2005 Op-Ed piece in the New York Times, Schumer and Graham wrote, "Remember, a major tenet of free trade is that currencies need to be free to float in value against other currencies." (p. A-25).

quantities of US securities (with a very low yield) raises a potential collective action problem among several Asian central banks. As Barry Eichengreen has noted in an important working paper, the large reserve holders are much less cohesive as a group than were the group of European holders of dollar assets toward the end the Bretton Woods period (Eichengreen 2004) . India, China, Korea, Taiwan, and Japan have very different interests, but they do have one thing in common: they do not want to be the last holder of significant quantities of depreciated dollars. Some of the smaller holders may defect early in anticipation of depreciation to come, triggering a general sell-off in no country's interest. As a group, they face a collective action problem: how to avoid disorderly flight from the dollar that would involve huge capital losses. Part of the problem Asian central banks face is their weak record of regional cooperation and thin network of cooperative institutions (ASEAN, APEC, and the Asian Bellagio Group come to mind) needed to support collaboration. Central bank cooperation in Asia is in its infancy and observers seem in agreement that "the political and technical issues involved in a collective currency policy means that [cooperation] may be a long way off."³⁶

As Asia transforms, as China and India grow and create regional centers of demand, and as democratizing Asian polities become less satisfied with financing western (especially American) consumption, the special position of the dollar is bound to change. The difficulties of cooperative monetary and exchange rate management are rife: Asian central banks tend to be far less independent of government control, the level of mutual trust is far lower, communications and cultural differences persist, and the security environment is much more tense than has been the case between the Western

³⁶ William Pesek Jr., Commentary: The Buck, One Day, May Stop at Asian Central Banks." International Herald Tribune Online, Bloomberg News, 3 March 2005.

countries in the postwar years. Nonetheless, central bankers from Asia will increasingly have to be dealt with as full-fledged partners, not some-time visitors summoned to western dominated institutions.

IV. Conclusions

“Futurology” is a notably precarious exercise; no one has an accurate model of economic, political or other developments into the future. But central bank cooperation has adapted remarkably well to the demands of the times. From the efforts of individual bankers such as Montague Norman and Benjamin Strong in the 1920s to achieve and help maintain a general return to the gold standard, to the efforts of central bankers in the 1960s to “lubricate” the Bretton Woods system of fixed but adjustable exchange rates, to the work of central bankers to develop and propagate supervisory standards for internationally active banks since the late 1980s, central bankers have been problem oriented. Cooperation among central bankers has been shaped by the economic conditions they have encountered, the theoretical lenses through which they view the world, and even the political context in which they operate. Nothing better illustrates this proposition than the history of the Bank for International Settlements itself (Fратиanni and Pattison 2001).

Central banks have successfully cooperated where it has been possible for them to do so. The informational landscape has largely been transformed and policies better informed by intensified standards of information provision. These efforts will continue to pay important dividends into the future, especially when banks, without a long history

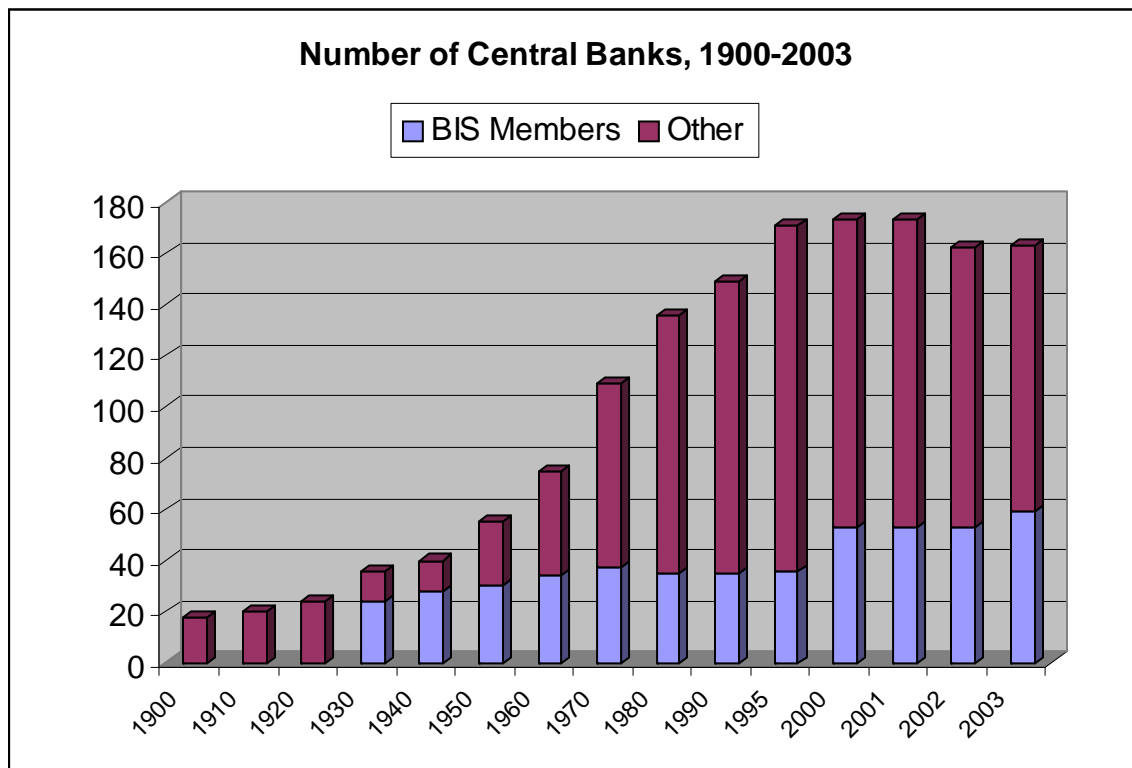
of mutual trust, need to work increasingly closely.³⁷ If there is one thing that can damage cooperative efforts it is mistrust, which flourishes in an environment of policy opacity. As central banks intensify their cooperation, there will be a growing demand to be able to verify good faith efforts to comply with agreements. Fostering a norm of transparency will make possible – though not necessarily easy – future cooperative efforts.

The most significant challenge for central bankers in the future will be to adjust to the changed economic realities vis-à-vis Asia. Asian countries are late-comers to the core institutions of central bank cooperation. For example, a consortium of banks represented Japan when it first joined the BIS in 1930. Japan then relinquished membership in the context of the San Francisco Peace Treaty of 1951, but regained representation when the Bank of Japan joined the BIS shortly before fixed rates collapsed – in 1970. China and India only joined the BIS in 1996; Korea in 1997. Despite the fact that Taiwan holds more foreign exchange reserves than all of Latin America, it is not a member of the BIS, though this is more an issue of politics than economics. In the future, Europeans and Americans might reconsider much more actively supporting regional cooperative arrangements in Asia, even if they operate independently from their western counterparts. Last year, retiring Federal Reserve Chairman Alan Greenspan told a European Banking Conference in Frankfurt that he sees no need for more cooperation between the US, European and Japanese central banks. The banks are already doing “as much as is necessary” in terms of cooperation, he said.³⁸ In the very near future, it will be important to be able to say the same for trans-pacific central bank cooperation.

³⁷ As an aside I note that the IMF has posted only one Report on Observance of Standards and Codes for the United States and none for China.

³⁸ "Greenspan says no need for closer US, EU, Japan central bank cooperation." *AFX News Limited*. 19 November 2004.

Figure 1:



Source: Morgan Stanley, Central Bank Directory (2004); Bank for International Settlements.

Table 1:
Central Bank Governors' Terms of Office
Number of Banks, World Wide

Term in Years	Not Available	Indefinite	8 Years	7 Years	6 Years	5 Years	4 Years	3 Years or Less
G-20 Members	1	2	1	2	3	6	4	0
BIS Members, not including G-20	1	2	1	6	15	9	0	1
Non BIS Members	24	17	0	4	8	46	9	14
Total	26	21	2	12	26	61	13	15

Data current as of 2004.

Source: Morgan Stanley, Central Bank Directory (2004); Bank for International Settlements.

Table 2:
How Central Bank Governors' Terms End

	1997	1998	1999	2000	2001	2002	2003	2004	Average
At end of Term	8	11	12	6	7	12	5	11	9
Before End of Term	11	5	15	7	6	7	17	14	10.25
Indefinite Term	2	5	5	2	3	2	3	3	3.125
Unknown Term	4	8	5	8	9	4	1	2	5.125
New Governor	3	2	2.5
Total	25	29	37	23	25	25	29	32	28.125

Source: Morgan Stanley, Central Bank Directory (2004)

Figure 2:

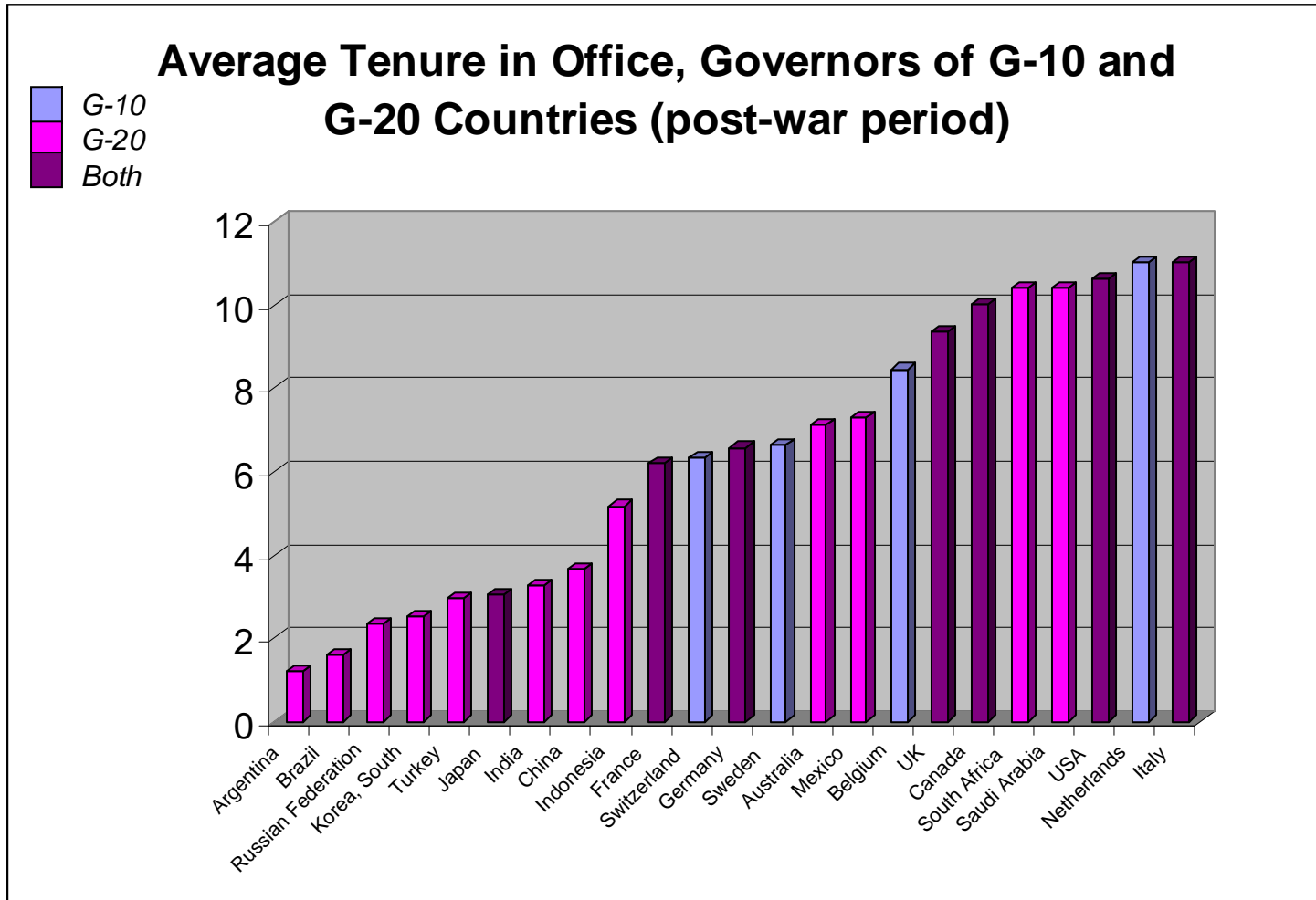


Figure 3:

**Democratization in BIS Member Countries
(excluding: Bosnia & Herzegovina, Hong Kong, Iceland, and
Serbia & Montenegro)**

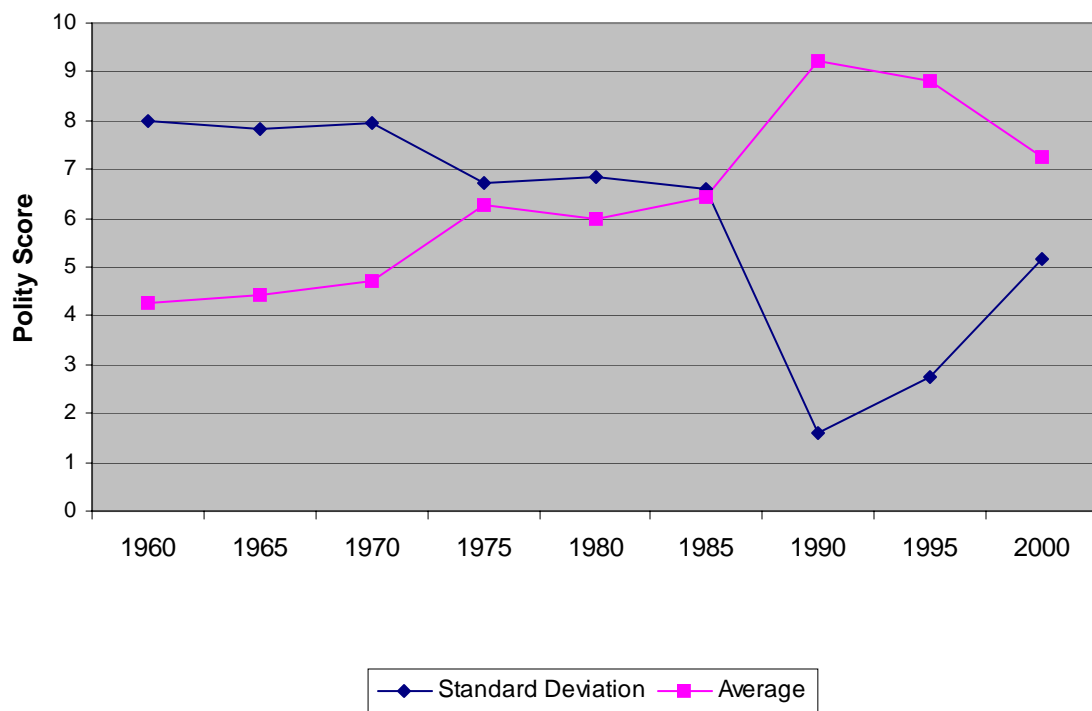


Figure 4:

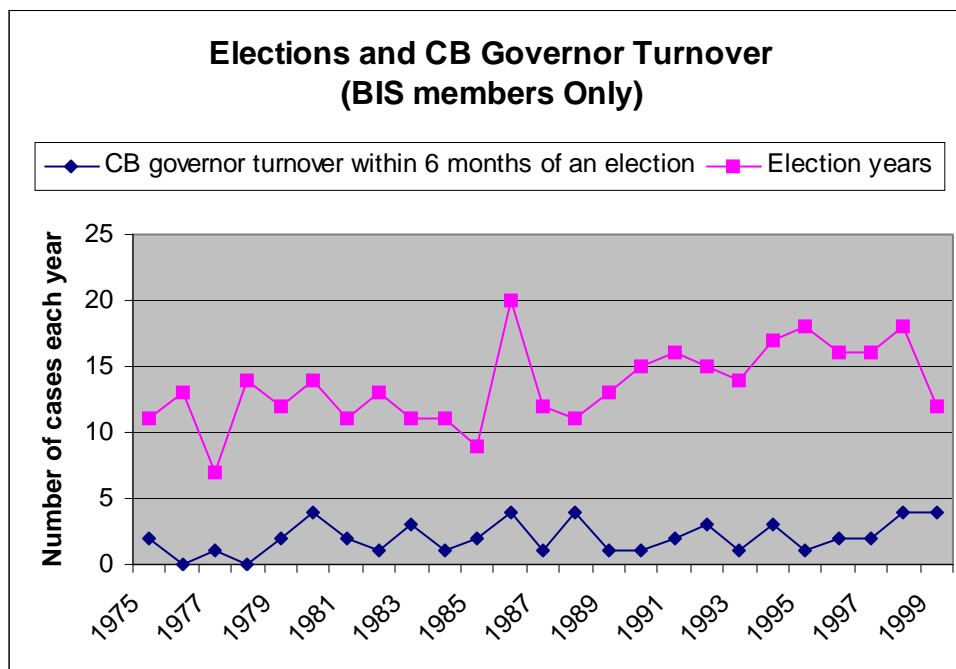
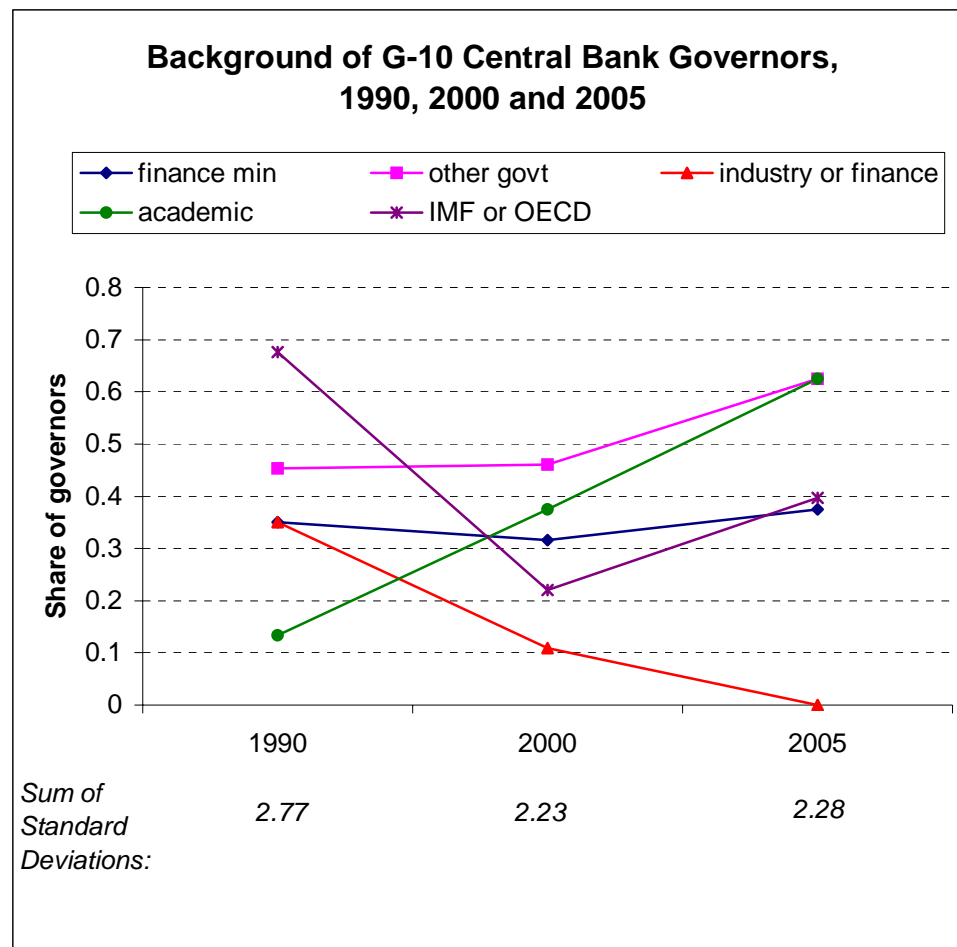


Figure 5:



Source: Author's classifications based on various biographical encyclopedias and central bank websites.

Figure 6: Central Bank Transparency
 1=poor, 2=many shortcomings, 3=some shortcomings, 4=good, 5=excellent

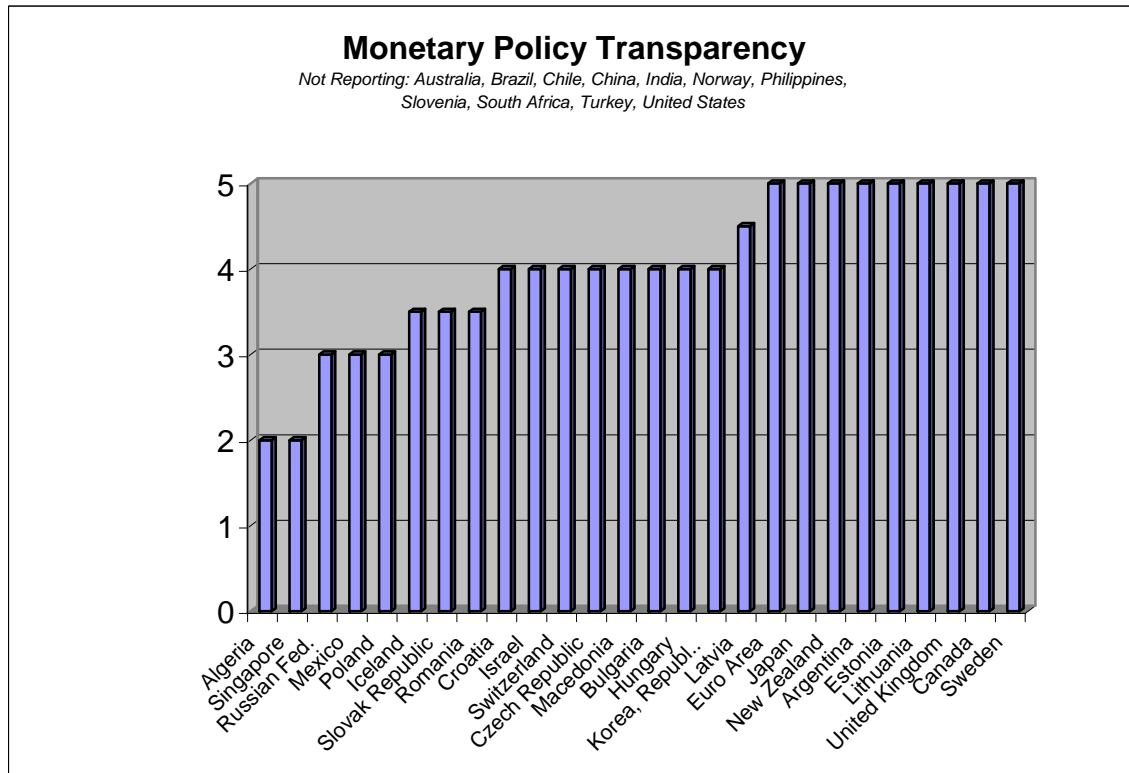
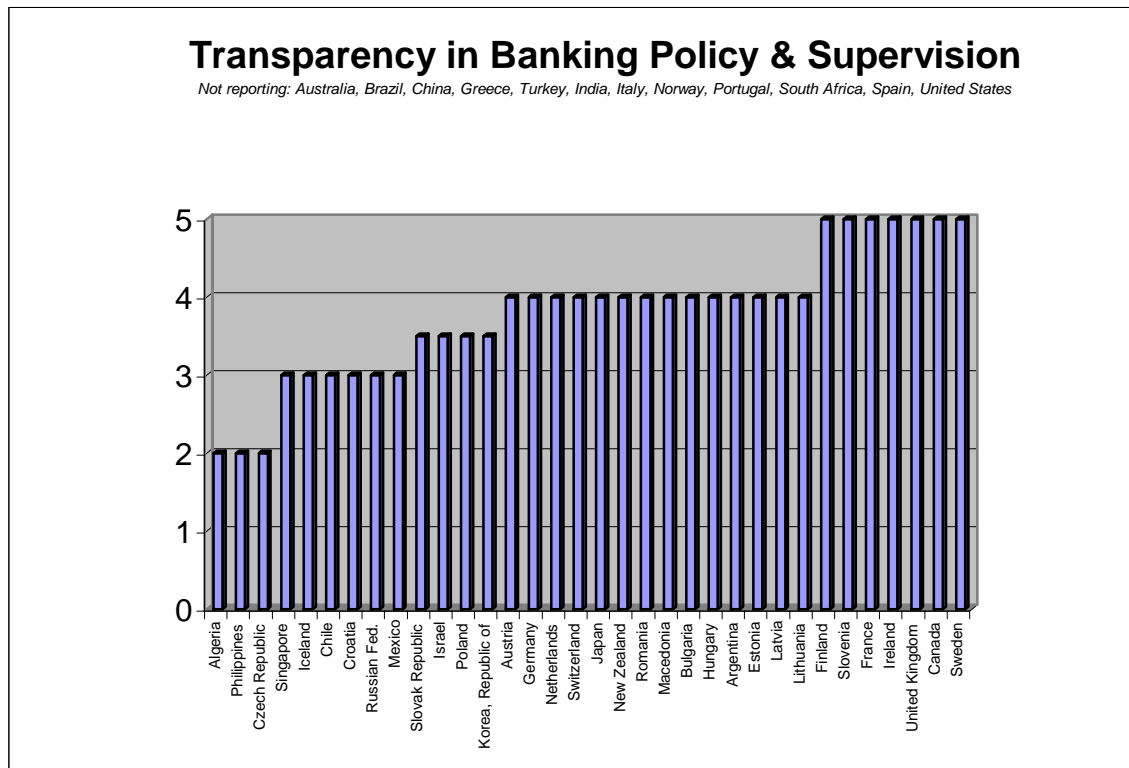
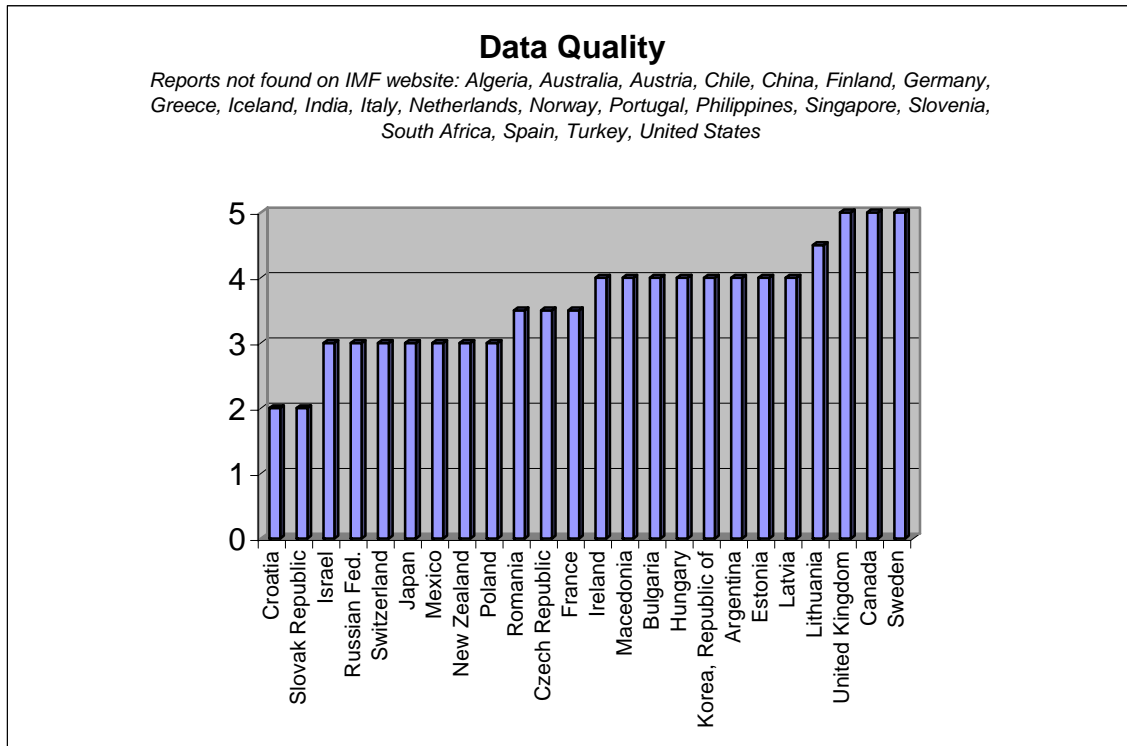


Figure 6 (continued):
 1=poor, 2=many shortcomings, 3=some shortcomings, 4=good, 5=excellent



Source: Author's ratings based on information provided in reports rendered by the International Monetary Fund staff. Reports can be found at: <http://www.imf.org/external/np/rosc/rosc.asp>.

Figure 6 (continued):

Countries that subscribe to IMF Special Data Dissemination Standard (SDDS)			
Argentina	Egypt, Arab Republic of	Kazakhstan	Slovak Republic
Armenia	El Salvador	Korea	Slovenia
Australia	Estonia	Kyrgyz Republic	South Africa
Austria	Finland	Latvia	Spain
Belarus, Republic of	France	Lithuania	Sweden
Belgium	Germany	Malaysia	Switzerland
Brazil	Greece	Mexico	Thailand
Bulgaria	Hong Kong, SAR, PRC	Netherlands	Tunisia
Canada	Hungary	Norway	Turkey
Chile	Iceland	Peru	Ukraine
Colombia	India	Philippines	United Kingdom
Costa Rica	Indonesia	Poland	United States
Croatia	Ireland	Portugal	Uruguay
Czech Republic	Israel	Romania	
Denmark	Italy	Russian Federation	
Ecuador	Japan	Singapore	

The SDDS is a standard for the level of coverage, integrity, accessibility, and quality of economic and financial data. Countries that subscribe to the SDDS promise to make public accurate and timely information on across 18 categories of economic data, listed on <http://dsbb.imf.org/Applications/web/sddsdatadimensions/>. The list of member countries is available at <http://dsbb.imf.org/Applications/web/sddscountrylist/>.

Figure 7:

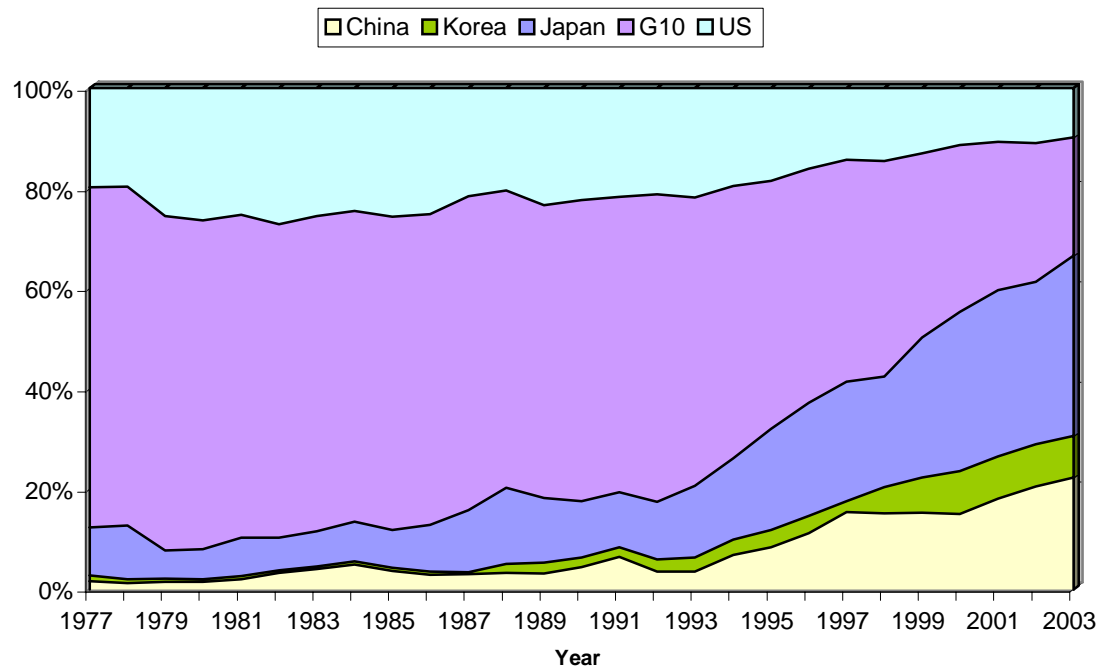
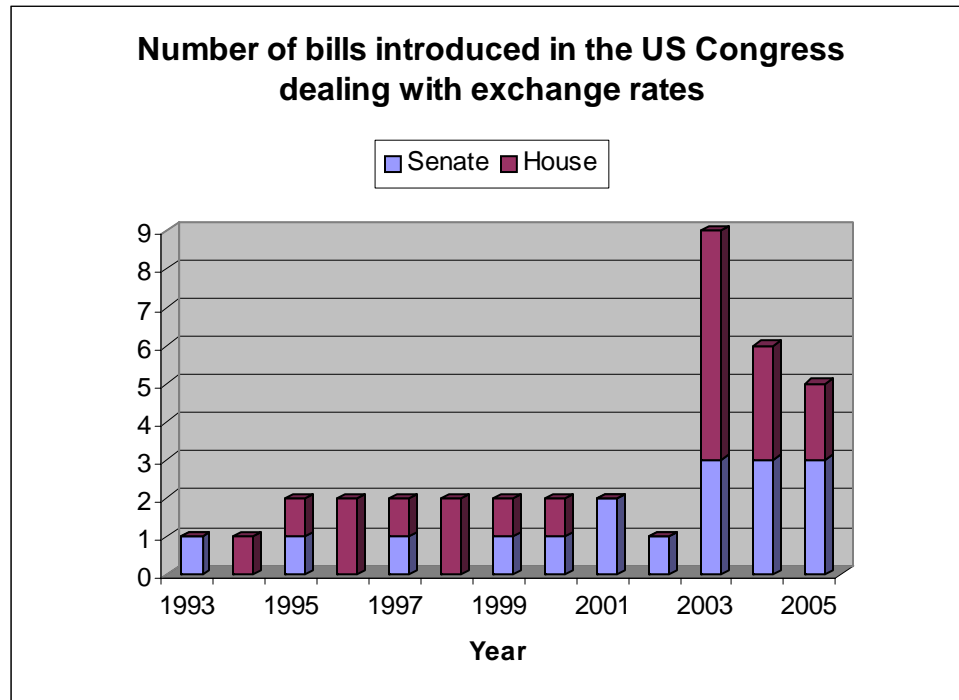
Share of Total Reserves Held by the Major Economies

Figure 8:



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