DIIS REPORT

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PROSPECTS FOR A MULTIPOLAR INTERNATIONAL MONETARY SYSTEM

Mansoor Dailami and Paul Masson

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This DIIS Report is the fruit of ongoing collaboration between the World Bank and DIIS on issues related to the international monetary system, resulting from our invitation to Dr. Dailami to present the key findings of Global Development Horizons 2011. Dr. Dailami visited Copenhagen in June 2011 to give a series of talks at DIIS on the new multipolar world economy.

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Foreword

In May 2011 the World Bank launched its new flagship report, *Global Development Horizons*. As most Western economies stumbled along in recession, as the Arab street rose up against decades of authoritarian rulers, as China continued to surge and most of Latin America hummed along at a 5 pct. rate of growth, the theme of the report – multipolarity in the global economy – could hardly have been more topical.

It is widely acknowledged that reform of the international monetary system is one of the most important challenges in global economic governance today. It was a key priority of the French G20 presidency, but as 2011 ended it became clear that the G20 as presently constituted is unlikely to make much progress in the near future. When the need is so great but the obstacles so big, the issues will remain high on the agendas of global governance organizations for years to come, including not least the G20, the IMF and the BIS.

There are big issues on the table, ranging from capital account convertibility and exchange rate regimes in major emerging market economies, to the mechanisms for global liquidity creation and balance of payments adjustment. At the core of these issues is the question of whether the current international monetary system will remain intact, with periodic adjustments, or whether it will require a fundamental overhaul to accommodate the emerging new realities.

In this volume, Dr. Mansoor Dailami and Professor Paul Masson envisage a more fundamental change in play, one that is likely to recognize the growing economic and financial clout of emerging market economies, particularly China. The study draws on the recent *Global Development Horizons* report, launched by the World Bank in 2011, but takes the analysis a few steps further. Dr. Dailami is the Manager and principal author of *Global Development Horizons* and Professor Masson is a co-author of the chapter dealing with the international monetary system and a specialist in international monetary relations.

The publication of this volume, *Prospects for a Multipolar International Monetary System,* as a DIIS Report, is the fruit of ongoing collaboration between our two institutions on issues related to the international monetary system. The project resulted from our invitation to Dr. Dailami to present the key findings of *Global Development Horizons* 2011. Dr. Dailami visited Copenhagen in June 2011 to give a series

of talks on the new multipolar world economy. These talks generated much interest and highlighted the need for closer collaboration and exchange of ideas. It is, thus, hoped that the publication of this volume can serve to enhance our understanding and cooperation in this area.

As the debate goes on, Mansoor Dailami and co-author Paul Masson's *Prospects for a Multipolar International Monetary System* will be seen as a seminal contribution – not least because it is a pleasure to read, including for those faint of interest in abstruse technicalities who just want to know the main lines of argument.

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Introduction

As the second decade of the 21st century unfolds, the growing clout of emerging markets is paving the way for a world economy with an increasingly multipolar character. The distribution of global growth will become more diffuse, with no single country dominating the global economic scene or even the global security agenda.

The seeds of this change were planted some time ago. Over the past two decades, developing countries have become a powerful force by a variety of economic measures. Developing countries' share of international trade flows has risen steadily, from 30 percent in 1995 to an estimated 45 percent in 2010. Much of this rise has been due to an expansion of trade not between developed countries and developing countries, but among developing countries. Similarly, more than one-third of foreign direct investment in developing countries now originates in other developing countries. Emerging and developing economies have also increased their financial holdings and wealth—they held two-thirds of all official foreign exchange reserves as of 2009 (a reversal in the pattern of the previous decade, when advanced economies held two-thirds of all reserves), while their sovereign wealth funds have become key sources of international investment. At the same time, the risk of investing in emerging economies has declined dramatically. Brazil, Chile, and Turkey now pay lower interest rates on their sovereign debt than do several European countries.

Despite the growing prominence of emerging economies, the manner in which the international monetary system will evolve in response to an increasingly multipolar international economy is far from settled. At present, emerging economies play a much smaller role in the international monetary system than their economic size implies: international currencies remain the preserve of developed economies, with the dollar, and to a lesser extent the euro, holding the most influence. This situation is likely to change, but it is not clear how and when. A number of policy choices will affect the outcome, namely capital account convertibility and the choice of exchange rate regime by major emerging-market economies and methods of governance of the international monetary system. At the core of these issues is the question of whether the current international monetary system will remain intact with periodic tweaking, or whether it will be fundamentally overhauled to accommodate the new realities of multiple growth centers, the growing role of transnational actors, and increasing assertiveness by major emerging-market economies.

Several fundamental considerations are now central to the debate on the future shape of the international monetary system: first, the system's capacity to accommodate the growing economic power and active participation of leading emerging-market economies, including a possible global role for their currencies; second, the system's embodiment of the necessary institutional mechanisms to advance international cooperation, while reducing the risks of protectionism, currency wars, and political conflict; and third, distributional equity in promoting the particular developmental needs and objectives of low-income developing countries. Though all of these elements have long been intrinsic to international monetary policy making and discourse, their significance has increased in recent years as globalization of markets and industries has deepened policy linkages among countries.

This study maps the implications of ongoing changes in the dynamics of global growth and wealth for the course of international monetary and financial arrangements.[1] The analysis that follows contains three main messages:

- *Looking ahead, the most likely scenario for the international monetary system is a multicurrency system centered around the U.S. dollar, the euro, and the renminbi.* Under that scenario, the dollar would lose its position as the principal international currency sometime before 2025, making way for an expanded status for the euro and a burgeoning international role for the renminbi. This scenario is contingent upon China and the euro area successfully implementing financial and structural reforms and managing their fiscal and monetary policies in a way consistent with the international status of their currencies.

  An international monetary regime anchored to three national currencies would offer the benefits of more even distribution of lender-of-last-resort responsibility and better provision of liquidity during times of distressed market conditions, provided central bank cooperation can be expanded. In addition, diversifying the sources of foreign exchange reserve supply may permit developing countries to meet their reserve accumulation objectives more easily, making their stocks of reserves less exposed to the risk of depreciation by any one of the reserve currencies. A multicurrency regime also has the potential to command great legitimacy in the eyes of the international financial system.

[1] This study updates and draws on chapter 3 of *Global Development Horizons 2011*, augmented by background materials prepared for that report. We would like to thank Yueqing Jia and Sergio Kurlat for expert research assistance and Rosalie Singson for formatting support. The views expressed in this paper are the authors' alone, and in no way reflect those of the World Bank, its Executive Directors, or the countries they represent.

- *Two opposing forces are impacting international monetary cooperation: on one hand, the contemporary international political system has broadened the scope for monetary cooperation across borders; on the other hand, the increasingly diffuse global distribution of economic power associated with multipolarity will render monetary cooperation more difficult.* In contemporary international politics, the deep connection between politics and currency arrangements that existed during the Cold War era has been replaced by an international monetary system ruled by economic interests. The prospect of successful international policy coordination in a multipolar world economic order, then, will rest on governments' ability to overcome the collective action problems of burden sharing and system maintenance in economic policymaking. Moving forward, countries with globally influential economies must be willing to accept the fact that their monetary and fiscal policy actions have important spillover effects on other countries. Monetary policy initiatives that emphasize increased collaboration among central banks to achieve financial stability and sustainable growth in global liquidity, for example, would help anchor market expectations, reduce speculative capital movements, and bring about greater stability of exchange rates.
- *The majority of developing countries, particularly the poorest countries, will continue to use foreign currencies to carry out transactions with the rest of the world, and thus will remain exposed to exchange rate fluctuations in a multicurrency international monetary system.* In fact, in the absence of coordinated efforts on behalf of the leading-currency economies, exchange rate movements may intensify, potentially leaving developing countries no better off than they are at present and prolonging the great disparity between developing countries' growing strength in international trade and finance and their lack of influence in international monetary affairs. In a best-case scenario, the evolving multicurrency regime would put into place mechanisms for limiting currency volatility through increased central bank coordination and the creation of instruments that facilitate hedging. It is also important that the gains from international currency use be shared across countries of all income levels, and that the adjustment of payments imbalances not fall mainly on the poorest countries.

International currency use

For a national currency to serve an international role, the currency must garner demand beyond its own borders. The demand for an international currency, in turn, is related to its ability to satisfy the role of international money with low transaction costs, while maintaining the confidence of private and official users in its value. A key property of financial markets is that the more the currency is used, the lower the transaction costs and the greater the liquidity associated with that currency become. Thus, there is a positive externality that tends to produce equilibria with only one or a few currencies in widespread international use (Hartmann 1998). Moreover, this externality can produce multiple equilibria, in which the circumstances of history lead to one currency being dominant for a number of years or decades (as the pound sterling was from 1860 to 1914), after which a triggering event may lead to a shift to another currency playing a dominant role (as the dollar has done from 1920 to the present). The property that currency use is reinforcing is more generally the property of networks in which there are economies of scale, and this property has been termed "network externalities" (Kiyotaki and Wright 1989). This property also helps to explain the continuing international use of the British pound even after the relative decline of the United Kingdom in the world economy: once a currency is widely used, it retains incumbency advantages that make it hard to displace.

International currency use parallels the domestic functions of money as the numéraire for establishing prices, serving as means of payment, and providing a store of value (Cohen 1970; Kenen 1983). An international currency serves to invoice imports and exports, to anchor the exchange rate of currencies pegged to it, to effectuate cross-border payments, and to denominate international assets and liabilities (official foreign exchange reserves, private claims, and sovereign debt). In addition, just as domestic money serves as an alternative to bartering, an international currency can serve as a "vehicle currency" for trading between pairs of currencies for which the liquidity of the bilateral market is limited. Such uses are reinforcing, because currencies used for pricing are also likely to serve as means of payment.

The supply of international currencies is influenced by the actions of governments to allow international use and to provide the institutional and policy underpinnings that encourage the development of financial markets and produce macroeconomic stability (Tavlas 1991). Without the existence of markets in various financial instru-

ments and a reasonable amount of investor confidence in accessing them, the currency's usefulness in the international realm is limited. But if those underpinnings exist, the supply of international currencies can be considered to be close to perfectly elastic: demand can be satisfied through facilities offered by banks and by issuance of domestic and foreign securities denominated in the currency. Conversely, attempts to stimulate international use of a particular currency will be unsuccessful in the absence of demand.

Several factors are correlated with the likelihood that a currency will become an international currency. In general, international currencies are issued by countries that have (1) low and stable inflation; (2) open, deep, and broad financial markets; and (3) a large share of world trade (and by implication, of world output).[2] The first and third factors are easy to measure, but the second factor is not, although market status is potentially no less important in determining whether a currency becomes an international currency.[3] Furthermore, the fact that inflation and trade tend to influence international currency use is by no means a new phenomenon.

From the perspective of an individual or entity holding an international asset, the attractiveness of a currency depends on both its ability to retain its value in terms of other currencies and its purchasing power. In addition, an international currency must be usable in the sense that official or privately-held balances are easily convertible into other currencies through a variety of financial instruments with low transaction costs. Economic size is also linked to the development of international currencies, for at least two reasons. First, having a large economy gives a country market power and allows that country to denominate its trade in its own currency, forcing foreigners to absorb the impact of currency fluctuations; second, a large economy typically enhances the breadth and depth of domestic financial markets. Thus, the various economic factors are interdependent and reinforcing. By some accounts, wider political considerations (including military alliances and security) also play a role in determining international demand for a currency.

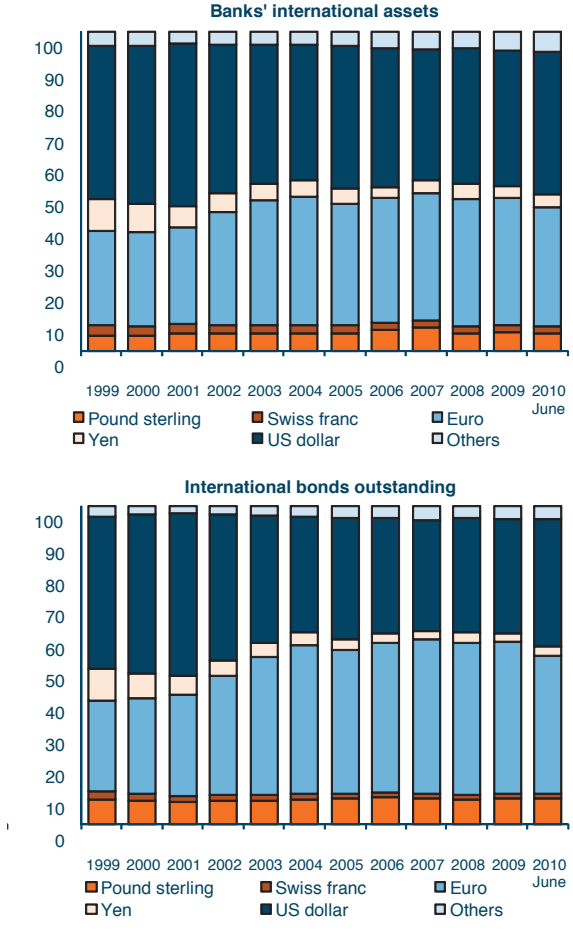
[2] This issue has been much researched (see Cohen 2000; Tavlas 1991; and references therein to earlier literature).

[3] Empirical work by Chinn and Frankel (2005) shows that a currency's share in world foreign exchange reserves is linked to two main explanatory variables: the GDP share of the economy (positive correlation) and the economy's inflation rate relative to the world average (negative correlation). Chinn and Frankel (2005) also find a high degree of inertia in currency use, reflected in the slow effect of changes in the explanatory variables on currency use.

Measuring the importance of international currencies

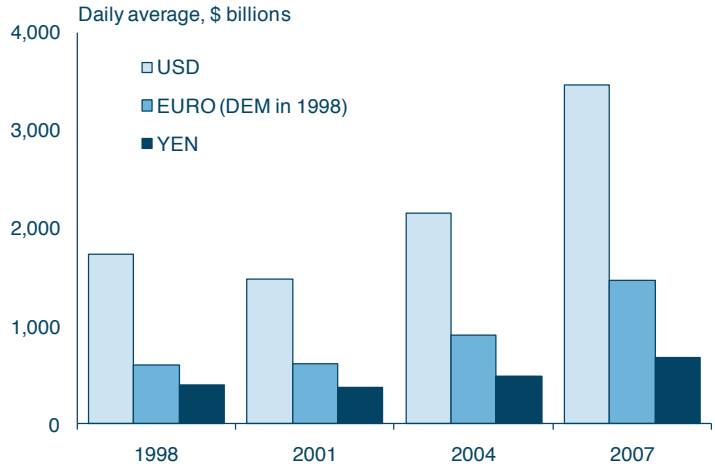
At the present, the U.S. dollar remains the world's dominant currency. But since 2000, the euro has taken on a growing role in various international finance settings, most prominently as an issuing currency in global credit and debt markets (figure 1). The euro also represents an increasing proportion of the world's foreign exchange reserves (table 1), and more frequently serves as a vehicle currency for foreign exchange transactions than in the past (figure 2) [*Global Development Finance 2006* (World Bank 2006) offers a detailed discussion of this issue].

Figure 1. Currency denominations of banks' international assets and international bonds outstanding, by percentage, 1999–2010



Sources: Based on BIS Banking Statistics and BIS Securities Statistics.

Figure 2. Global foreign exchange market turnover, by currency (net of local, cross-border, and double counting), 1998–2007



Sources: Based on data from BIS 2010.
Note: Turnover includes spot, forward, and swaps transactions.

Despite the increasing importance of the euro as a currency in which foreign exchange reserves are held, the share of reserves held in dollars remains well more than double the share held in euros.[4] But it is also clear that the proportion of reserves held in dollars has declined over the past decade, from 71 percent of reserves in 2000 to 67 percent in 2005 and to 62 percent in 2010 (table 1). Tellingly, the majority of the decline between 2005 and 2010 is reflected in the rise in share of reserves held in euros, which increased from 24 percent of reserves in 2005 to 26 percent in 2010. Although many countries now maintain floating exchange rate regimes, there is still strong global demand for reserve currencies for intervention and precautionary purposes. Since the breakdown of the Bretton Woods' fixed exchange rate regime in the early 1970s, global international reserve holdings as a share of global GDP have grown fourfold, from 3.5 percent of global GDP in 1974–78 to 14.5 percent in 2010.

Data on foreign exchange trading show a similar dominance, and a recent small decline, of the U.S. dollar. The amount of foreign exchange market turnover in dollars, at approximately $3.5 trillion per day, is still more than double the amount of turnover

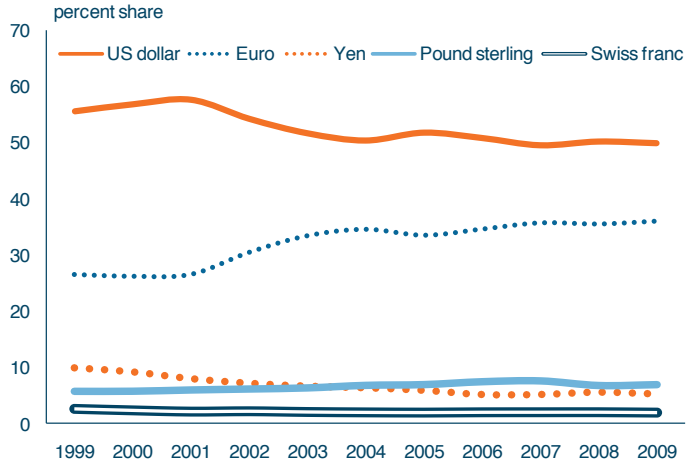
[4] The proportions relate to allocated reserves only and exclude those countries (China, in particular) that do not report the currency composition of their reserves.

Table 1. Currency shares of foreign exchange reserve holdings, by percentage, 1995–2010

	1995	2000	2005	2010
		All countries		
U.S dollar	59.0	71.1	66.9	61.8
Euro*	18.5	18.3	24.1	25.9
U.K. pound	2.1	2.8	3.6	4.0
Japanese yen	6.8	6.1	3.6	3.8
Other	13.7	1.8	1.9	4.6
		Advanced countries		
U.S. dollar	53.9	69.8	69.3	65.0
Euro*	19.5	18.4	21.2	23.8
U.K. pound	2.1	2.8	2.7	2.6
Japanese yen	7.1	7.3	4.7	4.6
Other	17.5	1.8	2.1	4.1
		Emerging and developing countries **		
U.S. dollar	73.7	74.8	62.7	58.3
Euro*	15.4	18.1	29.2	28.2
U.K. pound	2.2	2.6	5.1	5.5
Japanese yen	6.0	2.8	1.5	2.8
Other	2.8	1.7	1.5	5.1

Source: IMF COFER database, June 2010.
Note: Figures represent only the shares of reserves that have been allocated to individual currencies. The euro figure for 1995 equals the sum of shares of the Deutsche mark, French franc, and Dutch guilder.

Figure 3. Composite indicator of international currency shares, 1999–2009



Sources: Based on data from BIS security statistics and IMF *IFS* database.

in euros in absolute terms. But the share of the market in dollars has declined, from 45 percent of the market in 2001 to 42 percent in 2010.

Other than the U.S. dollar and the euro, only three currencies have a truly international role at the present: the yen, the pound sterling, and the Swiss franc. In all three cases, their shares of international currency use are small. Moreover, usage of the yen as an international currency has undergone a steady decline in recent years—reflecting, in part, the slow growth of the Japanese economy.

Figure 3 offers a broad overview of the relative importance of international currencies: a composite indicator calculated according to shares of official foreign exchange reserves, turnover in foreign exchange markets, international bank credit, and outstanding international bonds.[5] (Annex 1 provides details related to the calculation, which is based on principal components analysis)[6]. The composite indicator shows an increase in the euro's importance by about 10 percent since its creation, the counterpart to a 6 percent decline for the dollar and a 5 percent decline for the yen. The pound sterling rose slightly over the same time period. The composite indicator also confirms the minor roles of the pound sterling, yen, and Swiss franc.

Another approach to gauging trends in global currency use is based on the idea that the various international uses of individual currencies contribute to global currency demand, where currency demand includes both domestic and international use.[7] Conventional money demand equations (for real money balances) capture domestic money demand by including explanatory variables such as domestic real GDP and interest rates. International transactions taking the form of exports and capital flows, however, may add to that demand for money. By including measures that drive global international transactions, one should be able to gauge demand for international currency use, regardless of whether the increased money balances are held by domestic or foreign residents. This is further discussed in annex 2, which applies such an approach to demand for M2 in G-20 countries. Results of the analysis confirm that trend growth of global trade and capital flows in excess of global GDP growth

[5] The components were first converted to shares of the total for the five currencies, and the first principal component was normalized so that shares summed to unity across the five.

[6] A similar approach is reported in ECB (2010, 55–58).

[7] An alternative methodology suggested by Thimann (2008) is to broaden the definition of international use beyond bonds issued to international investors to include foreigners' purchases of domestic instruments, as well as measures of the size and stage of development of financial markets. The latter elements, however, raise measurement problems and require one to weight together very different qualitative variables.

has a different effect on the four major international currencies (the same currencies included in the SDR basket). In particular, demand for M2 in the euro area appears to be positively affected by trade and capital flows, whereas demand for M2 in Japan appears to be negatively affected by trade.

The global currency role of emerging-market economies lags behind their shares of trade and economic activity

Considerable inertia exists in international currency use. It is thus not surprising that changes in the shares of reserve currencies lag behind changes in countries' shares of international trade and world output. Nevertheless, the disparity between currency use and countries' importance in trade and output is substantial. Figure 4, which shows the percentages of global foreign exchange reserves and turnover accounted for by the currencies of eight major industrial and developing countries, demonstrates this proposition powerfully. Despite the fact that the global share of U.S. exports is currently less than the global share of exports from China, whose currency essentially has no international role, the U.S. dollar scores much higher in measures of both reserves and turnover.

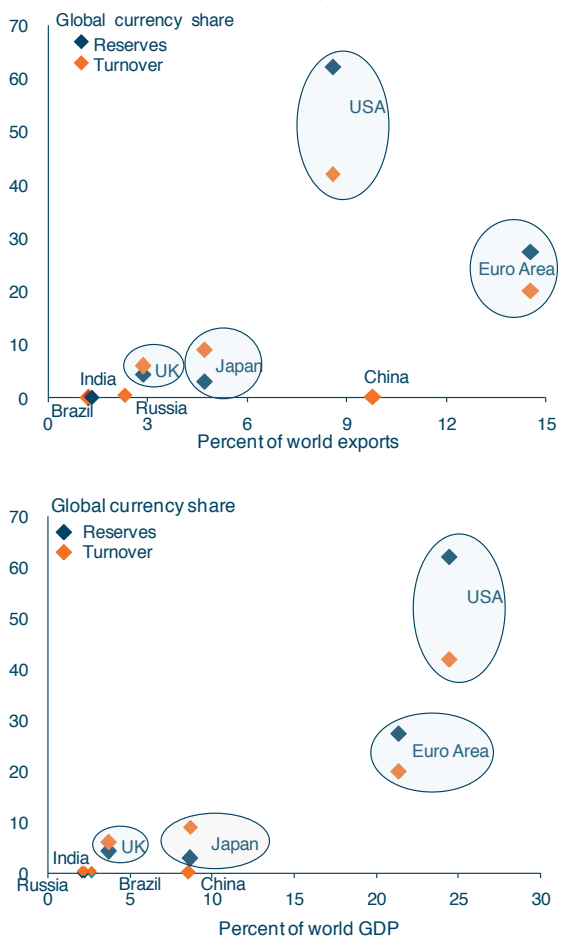
Even though the shares of turnover accounted for by several emerging-market currencies—the Brazilian real, the Indian rupee, the Korean won, and the Russian ruble—have grown in recent years, their roles in global currency markets remain extremely limited. In assessing the prospects for internationalization of leading emerging-market currencies, in addition to the general factors explaining international currency use discussed above, one also needs to consider each government's own policy stance and strategy in promoting the international use of its currency.

With a few exceptions, such as Japan in 1999 under its "Internationalization of the Yen for the 21st Century" plan, governments have not traditionally pursued deliberate policies to foster a global role for their currencies.[8] The Japanese experience is illuminating. Despite growing capital transactions between Japan and other East Asian countries and the yen's influence on the exchange rate policies in the region, the yen has become less internationalized over the past decade. In fact, the dollar remains the most used currency in East Asia. Part of the explanation for why the international use of the yen remains muted in relation to Japan's economic size resides with the

[8] In some periods, however, the status of an international currency has been maintained by negotiation, in particular within the sterling zone following World War II and during the 1960s, when the United States introduced various controls to discourage exchanging dollars for gold (see Helleiner 2009).

behavior of Japanese manufacturing firms, which have been reluctant to make full use of the yen so that they can avoid currency risks, preferring in many cases to use the same currency as their competitors for transactions—the U.S. dollar. Ito et al. (2010) find that Japan's production networks in East Asia have reinforced U.S. dol-

Figure 4. Global currency shares relative to trade share and economic size



Sources: Based on data from IMF *Direction of Trade Statistics*, IMF Currency Composition of Official Foreign Exchange Reserves, Bank for International Settlements, and World Bank *World Development Indicators*.
Note: The figure shows the recorded turnover of foreign exchange involving the worldwide daily average use of the specified currencies in relation to other currencies (including the currencies of the country or region in question) as a share of the total turnover of all currencies, all denoted in U.S. dollar terms.

lar invoicing of Japanese exports to other East Asian countries in large part because of country-specific foreign exchange regulations in those countries. The experience of Japan suggests that governments acting alone face great obstacles in promoting international use of their currencies, and that expanding the international role of a currency is likely to require enhanced regional cooperation, such as agreements concerning invoicing and settlement.

Moving to a multicurrency international monetary system

The U.S. dollar remains the preeminent international currency, as the British pound was before the U.S. dollar, for several main reasons: the size of the U.S. economy, the global influence of U.S. monetary policy, the breadth and depth of U.S. financial markets (table 2), and the fact that oil and other major commodities are priced in dollars on international markets. U.S. monetary policy has set the tone for global monetary conditions for most of the postwar era—at times, driving large, rapid flows of capital

Table 2. Importance of selected national financial markets

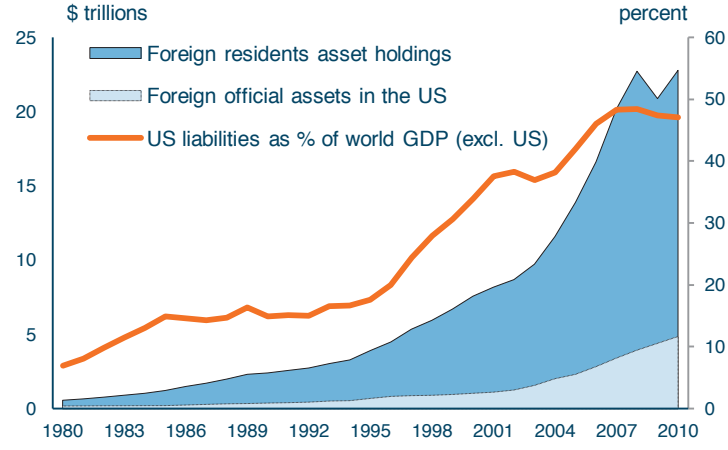
Growth pole country/region	Stock markets							Capital markets	
	Market capitalization (2009)			*Capital market turnover* [a]		*Value traded (12-month cumulative)*		*Domestic debt securities, amount outstanding* [b]	*International bonds, amounts outstanding* [c]
	US$ billion	Rank	Capitalization as % of GDP	%	Rank	US$ billion	Rank	US$ billion	US$ billion
Euro Area	—	—	—	—	—	—	—	—	—
United States	15,077	1	106.8	348.6	1	46,736	1	24,978	6,675
China	5,008	2	107.9	229.6	3	8,956	2	1,478	52
Russian Federation	861	14	69.8	108.5	18	683	15	51	136
United Kingdom	2,796	4	128.4	146.4	6	3,403	4	1,194	2,853
Japan	3,378	3	66.6	128.8	11	4,193	3	9,764	364
Brazil	1,167	12	73	73.9	32	649	16	787	151
Canada	1,681	7	125.1	92.4	22	1,240	10	952	590
Australia	1,258	10	126.5	78.8	30	762	14	901	523
India	1,179	11	91.4	119.3	12	1,089	11	652	44
Korea, Republic of	836	15	99.5	237.6	2	1,582	6	1,141	125
Turkey	226	27	36.6	141.7	8	244	24	225	52
Mexico	341	20	38.8	26.9	53	77	31	394	103
Poland	135	33	31.1	49.5	41	56	35	190	55
Saudi Arabia	319	21	81.3	119.3	13	337	21	—	13
Argentina	49	>40	16	5.4	72	3	>40	57	50
Indonesia	178	31	32.7	83.3	23	115	28	105	35
Norway	227	26	59.2	140.3	9	248	23	—	180
Switzerland	1,071	13	216.8	82.3	25	796	13	255	428
Malaysia	256	25	132.4	32.9	49	73	32	203	37

Sources: Based on data from Bank for International Settlements, and Global Stock Markets Fact book, Standard & Poor's.
Note: (—) not available. (a) Ratios for each market are calculated by dividing total 2009 US$ value traded by average US$ market capitalization for 2008 and 2009. (b) Bonds, medium-term notes, commercial paper, treasury bills and other short-term notes issued by residents in local currency on local market as of March 2010. (c) Issues of international bonds and notes in foreign markets and foreign currency based on nationality of issuer as of June 2010.

into or out of the United States. U.S. markets are also extremely liquid, meaning that assets can be sold with low transaction costs and liquidated in emergencies with little penalty. For such reasons, assets denominated in dollars, particularly U.S. Treasury securities, have for decades been viewed as safe by international investors.

The ability to issue a currency that is used internationally confers obvious benefits to the issuing country. In particular, since the dollar is a pure fiat currency—that is, its nominal value results from the fiat of the government rather than from being backed by a particular amount of gold or other assets—the acquisition of dollar currency is, in effect, an interest-free loan to the U.S. government. In addition, because foreign governments acquire interest-earning U.S. dollar assets in the form of reserves, they lower the interest rate faced by U.S. borrowers. A careful analysis of these two advantages to the issuers of an international currency (the U.S. dollar and the euro) suggests that the advantages are non-negligible, but not enormous. In recent years, the seigniorage revenue of the United States from having an international currency has totaled roughly $90 billion per year (since 2007), and approximately $20 billion for the euro area. An additional potential advantage, though much more difficult to quantify, is the ability of issuers of international currencies to avoid the painful adjustment of macroeconomic policies in response to balance of payments deficits. But this advantage also carries costs, since allowing financial imbalances to build up may also sow the seeds of a more serious crisis down the road.

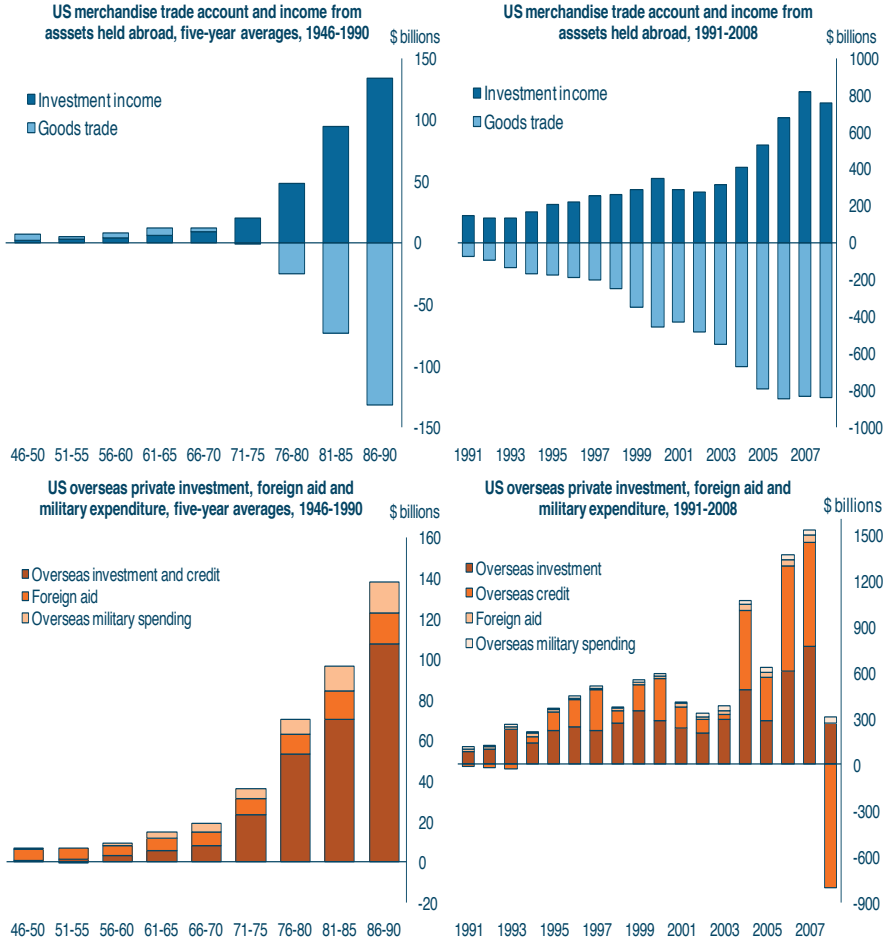
Figure 5. Foreign residents' U.S. asset holdings, 1980–2010



Sources: Based on data from U.S. Bureau of Economic Analysis and World Bank GDF-WDI.

Over time, the ease and security involved with investing in U.S. markets has led the rest of the world to take on massive levels of financial exposure to the United States: the value of foreign residents' investments in U.S. companies, real estate, capital markets, and government debt was nearly half of non–U.S. global GDP as of end-2010 (figure 5). Changes in U.S. monetary policy thus have a direct wealth impact on foreign residents, influencing their expenditures. In addition, the vast

Figure 6. U.S. balance of payments, 1946–2008



Sources: Based on data from U.S. Department of Commerce (Bureau of Economic Analysis), USAID *Greenbook*, and Cambridge University (*Historical Statistics of the United States*).
Note: Overseas military spending data before 1960 represent net military transactions. Foreign aid data represent the years 1991–2007.

majority—95 percent—of foreign holdings of U.S. assets are denominated in dollars, posing a difficult dilemma for foreign investors. Individually, foreign investors have an incentive to diversify their portfolios as a matter of prudent risk management; collectively, however, foreign investors have a strong incentive to maintain their holdings of dollar assets to avoid the risk of dollar depreciation that could undermine their investments.

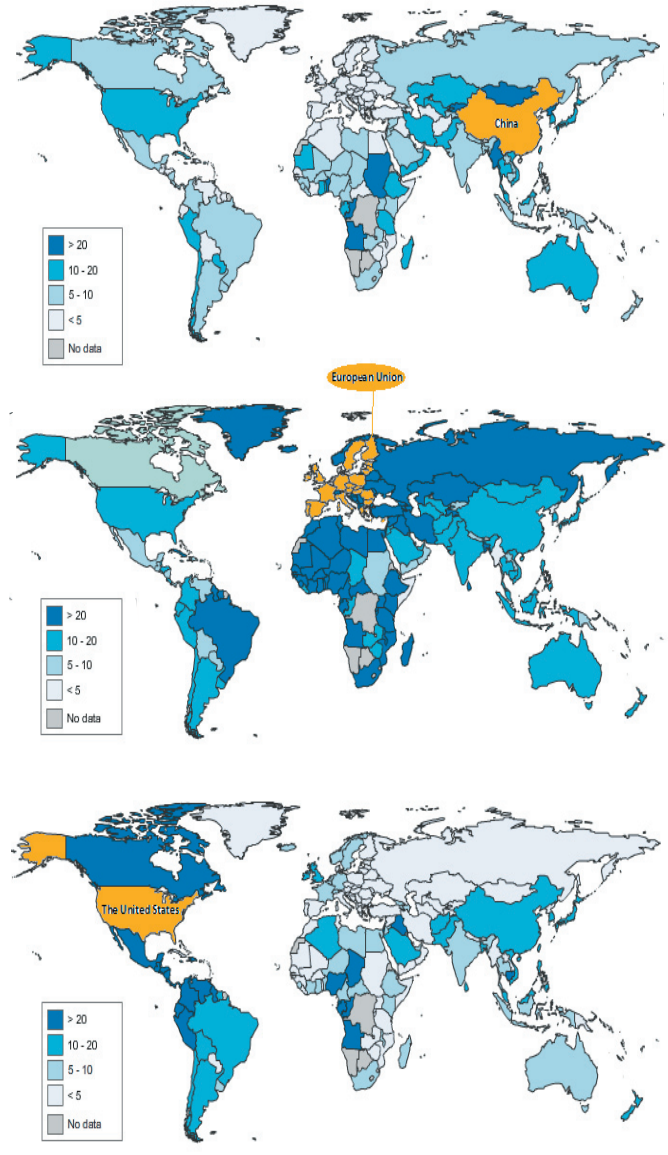
Net U.S. liabilities to the rest of the world are the counterpart to past U.S. current account deficits, plus any valuation changes. Despite keeping its current account broadly in balance from 1944, the year the Bretton Woods system was established, to the mid-1960s, the United States has run a current account deficit for more than half of the years between 1944 and 2010, and for every year since 1992. The balance between resource availability and commitments to foreign economies in the United States began to unravel in the mid-1970s, when the U.S. trade account turned negative and the deficit began to expand rapidly, reaching $840 billion in 2006 (figure 6). The financial crisis of 2008–09 and the deep economic recession that followed it narrowed the U.S. trade deficit to a still-substantial estimated $480 billion in 2010. But even the crisis, which originated in the United States, did not set off a flight from the dollar; to the contrary, the crisis resulted in extreme demand for dollar–denominated assets.

Demand for dollar-denominated assets notwithstanding, it is important to recognize that there are two potential challengers to the U.S. dollar as principal reserve currency, the euro and China's renminbi.[9] Both the euro area and China rival the United States in terms of output and trade flows. Figure 7 shows the concentration of trade of other countries with each of the three.

Trade concentration with the United States and European Union especially, but also with China, tends to be highest for neighboring countries. However, the United States, the European Union, and China each have global reach, and each is an important trading partner with countries in other regions as well—a number of countries in Africa trade a great deal with China, for instance. In the years ahead, rapid economic expansion in China, where the pace of growth has exceeded that of the United States and the euro area by an average of at least 5 percent annually since the early 1980s, increases the likelihood that the renminbi will compete

[9] To quote a recent paper discussed at the IMF's Executive Board (IMF 2010a, 18), "As the world becomes more multipolar in terms of GDP, the drive for a multicurrency system that mimics global economic weights is likely to increase—e.g., a dominant dollar zone, euro zone, and a formal or informal Asian currency zone."

Figure 7. The geographic distribution of trade concentration relative to China, the European Union, and the United States, 2005–09 period average



Sources: Based on data from IMF Direction of Trade and the World Bank WDI database.

Note: The trade concentration of country i relative to country or area j is calculated as $TC_{ij} = \frac{(\text{exports of } i \text{ to } j + \text{imports of } i \text{ from } j)}{\text{Total trade}_i} \times 100$, where j = {China, European Union, U.S.}, and i = all other trade partner countries.

with the U.S. dollar as a reserve currency. It is predominantly in the remaining factor influencing international currency use—the stage of economic and financial development and depth of financial markets—that the U.S. dollar outshines its potential competitors.

Prospects for the increased internationalization of the euro

In the 11 years since its creation, the euro has become a legitimate rival to the dollar, gaining market acceptance as an important issuing currency in global debt markets. The elimination of intra-euro-area exchange rate risk has created a large single market for euro-denominated debt securities, attracting sovereign and private borrowers not only from euro area entities and neighboring countries but also from major emerging-market economies such as Brazil, China, Colombia, Mexico, and Turkey. Such has been the growth of the euro-denominated bond market that it now rivals dollar-denominated fixed income markets in size, depth, and product range. And the euro's investor base is still expanding.

As of end-June 2011, outstanding international bonds and notes issued in euros amounted to $13.4 trillion, or 45 percent of the global total (table 3), compared to $11.3 trillion for the U.S. dollar market. But although the governments of individual countries within the euro area collectively issue a large volume of debt, no single issuer is nearly as large as the U.S. Treasury—an obstacle to the increased internationalization of the euro that has been exacerbated by the global financial crisis of 2008–09.

In a number of euro area countries, high levels of debt issuance intended to combat the financial crisis and ensuing global economic slowdown, combined with rising health-care and pension outlays in the face of aging populations, have fundamentally changed the dynamics of public debt profiles in recent months, giving rise to mounting concerns about sovereign risk and questions about the sustainability of the euro. Virtually all advanced economies, though, have seen their public finances become more tenuous since 2007. Central government debt of OECD countries as a group rose from 50.6 percent of GDP in 2007 to 71.7 percent in 2011 and gross borrowing requirements are expected to reach a record $19 trillion in 2011, almost twice that of 2007.

Despite bold fiscal austerity measures and concerted efforts to restore confidence in euro area countries perceived to be in the worst condition, investors have yet to be

Table 3. International debt securities outstanding, by currency (US$ trillions), 1999–2010

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011 June
US dollar	2.6	3.2	3.9	4.3	4.7	5.1	5.6	6.7	7.9	8.6	9.7	10.8	11.3
Euro	1.6	1.9	2.4	3.5	5.1	6.5	6.6	8.7	11.0	11.4	12.8	12.2	13.4
Yen	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.8	0.7	0.8	0.8
Pound sterling	0.4	0.5	0.5	0.7	0.9	1.1	1.2	1.6	1.9	1.8	2.2	2.2	2.3
Swiss franc	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.5
Others	0.2	0.2	0.2	0.2	0.3	0.4	0.6	0.7	1.0	0.9	1.1	1.2	1.4
Total	5.5	6.5	7.6	9.3	11.7	13.9	14.6	18.4	22.7	23.8	27.0	27.7	29.6
US$ as % of total	48.0%	50.0%	50.9%	46.1%	40.2%	36.6%	38.2%	36.2%	34.9%	36.0%	36.1%	39.2%	38.1%
Euro as % of total	28.8%	29.7%	31.8%	37.4%	43.6%	46.9%	45.2%	47.0%	48.5%	47.8%	47.5%	44.0%	45.2%

Source: Bank for International Settlements.

reassured that a credible solution is in sight. Capital markets have reacted by re-pricing sovereign debt in a tiered structure. Anxiety and fear governs the trading of debt from euro zone periphery countries, while core euro area sovereign debt continues to meet with positive investor sentiment.

Concerns about the health of troubled euro area economies previously had led the EU to take steps considered extraordinary, such as intervening in secondary markets through the ECB's Securities Market Program to purchase the government debt of the troubled countries and establishing the European Financial Stability Facility (EFSF), which provides country-level guarantee commitments intended to temporarily assist countries with budgetary needs and support the financial stability of the euro area as a whole. Such efforts are contrary to the spirit, if not the letter, of ECB statutes, which prohibit bailouts of governments. Subject to conditions to be negotiated with the European Commission, the EFSF was crafted with the capacity to issue bonds guaranteed by euro area members for up to €440 billion for on-lending to euro area member states in difficulty. The available amounts under the EFSF were intended to be complemented by those of the European Financial Stability Mechanism (EFSM) and of the IMF.

Together, the EFSF (which is to be wound down in 2013) and the EFSM could create a more liquid market for euro-denominated public debt across a range of maturities, which in turn may increase the attractiveness of the euro as an international currency. But the size of the EFSF is much smaller than the outstanding

amount of euro area government debt (about €5.4 trillion as of mid-2010). European governments have been reluctant to draw on the bailout fund at all (Reuters 2010),[10] instead treating the fund as a last resort, as Ireland did in November 2010. While a European summit in March 2011 boosted the effective lending capacity of the EFSF, the summit did not allow for the facility's purchase of government debt on secondary markets, as some had called for, leaving the ECB to continue in that role.

In July, 2011, a euro-zone summit agreed to the creation of a European Stability Mechanism (ESM), which is to take over from the EFSF in 2013 and to have an initial capital of € 500 billion. In concert with the IMF it will lend to countries in difficulty provided that doing so can bring about fiscal sustainability, and subject to strict conditionality. The July summit also approved a second loan EU and IMF loan to Greece of € 109 billion, on improved terms, with longer maturities and lower interest rates than the first one. Disbursement will be subject to meeting conditions agreed with the lenders. Finally, in July, euro-zone leaders approved the purchase by the EFSF of government debt in secondary markets, subject to ratification by national parliaments. Despite opposition in some countries, notably Finland and Germany, by early October this latter measure seemed on its way to being ratified, but the issue of whether the EFSF could leverage itself by borrowing in capital markets or from the ECB was still being debated.

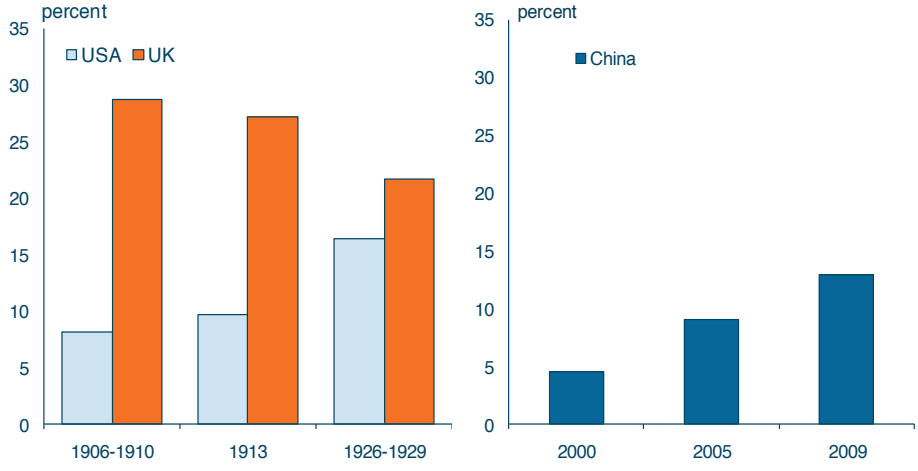
While these measures were welcomed by financial markets, concerns reappeared subsequently concerning the modest size of the ESM and the delay in its implementation. As of September 2011, the treaty establishing it still awaited approval by some member states. Doubts about the sustainability of Greece's public finances continued, despite protestations from officials in Greece and other euro zone countries that there would be no default, and despite a commitment to carry out a voluntary restructuring of Greek debt. In addition, the moral hazard created by bailouts of heavily indebted governments has not yet been addressed by European institutions, and concerns about moral hazard and the ultimate cost was generating resistance to further bailouts in several European capitals. Until the crisis is resolved, it may well offset or reverse the trend increase in the euro's international use. Assuming that these issues can be addressed, the ongoing process of overall European integration should eventually enhance the attractiveness of the euro with respect to the dollar.

[10] The euro area and IMF rescue package for Greece, agreed on in April 2010, is covered by a separate facility.

Prospects for the internationalization of the renminbi

Starting from a modest base, the renminbi's international role is poised to grow in the future, with prospects for internationalization dependent on how aggressively Chinese authorities pursue policy shifts promoting development of local capital markets and how quickly currency convertibility on the capital account is implemented. In some respects, China already satisfies the underlying trade and macroeconomic criteria required for its currency to take on an international role: a dominant role in the world trade, a diversified merchandise trade pattern, and a macroeconomic framework geared to low and stable inflation. From a historical perspective, China's current position in global manufacturing exports is similar to that of the United States in the interwar period[11], when the U.K. lead in manufacturing exports was steadily eroding (figure 8). On the remaining criterion—open, deep, and broad financial markets—the renminbi falls far short, however.

Figure 8. Selected shares of global manufacturing exports, 1906–1929 and 2000–2009



Source: Hilgerdt, Folke, "Industrialization and Foreign Trade," Geneva: League of Nations, 1945; World Bank WDI.

[11] In terms of total exports, China's share of world trade, despite its rapid growth, has not yet reached the corresponding figure for the United States a century ago. The United States already accounted for 12.2 percent of global merchandise exports in 1906–10, and 12.5 percent in 1913–20. During the second part of the 1920s, this U.S. share was already 15.5 percent (surpassing the United Kingdom's) and by 1950, the U.S. share was at an all-time high, at 20.6 percent.

Restrictions on currency convertibility in China are one avenue by which the attractiveness of the renminbi as an international currency is constrained. Although the renminbi is convertible for current account transactions (that is, for payments for goods and services), capital inflows and outflows are subject to a wide range of restrictions. Renminbi balances acquired by foreigners (for instance, through the operation of subsidiaries located in China) or held by Chinese residents may be freely changed into foreign currencies and moved out of the country. But non-Chinese entities are restricted from freely acquiring Chinese assets in exchange for their foreign currencies. Limitations in financial markets also curb use of the renminbi as an international currency. Domestic bond markets, except those for bonds issued by governments and state-owned enterprises (SOEs), are still underdeveloped. China's banking system remains under the control of the state, with deposit rates regulated administratively and banks required to set their lending rates within certain margins.

Although the capital market constraints affecting the renminbi's internationalization are undeniable, recent initiatives by Chinese authorities to actively promote the international use of the renminbi are beginning to have an effect. The envisaged strategy of "managed internationalization" (McCauley 2011) involves actions on two fronts: (i) development of an offshore renminbi market, and (ii) encouraging the use of renminbi in trade invoicing and settlement. Actions taken thus far seem to suggest that the authorities' initial focus is at the regional level, starting with promoting the renminbi's role in cross-border trade between China and its neighbors. To that end, China began a pilot arrangement of cross-border settlement of current account transactions in renminbi in July 2009, focusing on the Association of Southeast Asian Nations (ASEAN) countries plus Hong Kong SAR, China, and Macao SAR, China. This arrangement was extended in 2010 to include all countries and 20 provinces inside China (PBoC 2010a). Still, cross-border trade settlements in renminbi amounted to Y597.25 billion (about US$92 billion) in 2011 (Q2) (PBoC 2011), about 8 percent of China's total trade in goods and services (figure 9).

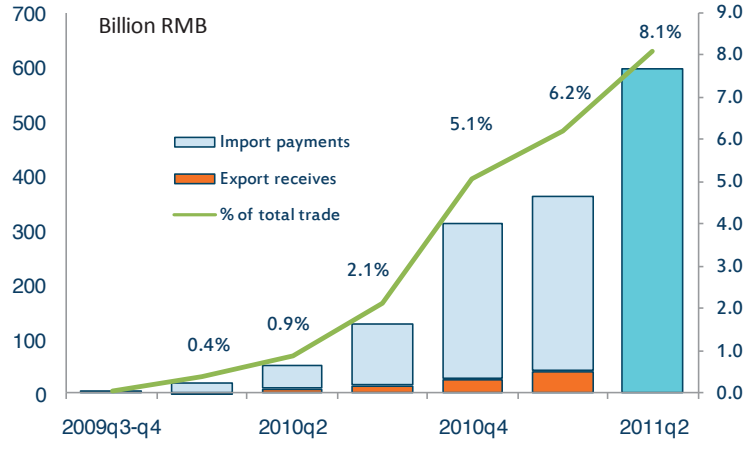
In simultaneously developing an offshore renminbi market and maintaining capital controls, Chinese authorities are using a novel approach, distinguished by China's pragmatism and gradual pace of reform. The approach is intended to meet the growing demand by nonresidents for renminbi-denominated financial assets in both the banking and securities sectors. As such, authorities are now allowing the issuance of offshore renminbi bonds (so-called panda bonds) in Hong Kong SAR, China. Several multinational companies with operations in China, as well as international financial institutions (Asian Development Bank, International Finance Corporation,

Table 4. Renminbi local currency swap arrangements (as of July 2010)

Date of Agreement	Counterparty	Size (RMB billions)
December 12, 2008	Republic of Korea	180
January 20, 2009	Hong Kong SAR, China	200
February 8, 2009	Malaysia	80
March 11, 2009	Belarus	20
March 23, 2009	Indonesia	100
April 2, 2009	Argentina	70
June 9, 2010	Iceland	3.5
July 23, 2010	Singapore	150
April 18, 2011	New zealand	25
April 19, 2011	Uzbekistan	0.7
May 6, 2011	Mongolia	5
June 13,2011	Kazakhstan	7

Source: The People's Bank of China (PBoC).

Figure 9. International trade settlement in Renminbi (2009q3-2011q2)



Source: The People's Bank of China

International Bank for Reconstruction and Development) have decided over the past year to issue renminbi-denominated bonds. As of January 2011, the Chinese government had issued Y34 billion (about US$5 billion), and Chinese corporations issued Y65 billion (about US$10 billion), in renminbi-denominated bonds (Dealogic DCM analysis).

With restrictions on bank deposits and currency exchange denominated in renminbi in Hong Kong SAR, China, being gradually lifted, the renminbi banking business has grown since 2008. In addition, the People's Bank of China (PBoC) has opened up swap arrangements with a number of other central banks (table 4). Several of those arrangements were made in the context of the Chiang Mai Initiative[12], which seeks to further East Asian monetary integration and eventually may lead to a common Asian currency.

From a policy perspective, the foreign currency exposure evident in China's external balance sheet provides a powerful incentive to the Chinese authorities to promote renminbi internationalization. In short, the strongest motivation for internationalization of the renminbi is not just related to the impact it would make in developing local capital markets in China, but also to mitigation of the tremendous currency mismatch in its asset/liability positions vis-à-vis the rest of the world, as evident in the currency denomination of China's external balance sheet (table 5). As of end 2010, China had borrowed less than one-fifth of its US$630 billion of outstanding foreign debt in renminbi; while the renminbi's share of China's international lending was negligible, at only 3 percent of the total. Part of the reason for the very low proportion of international lending that is denominated in renminbi is that foreign bonds could only be issued in foreign currency until mid-2007, at which point official and commercial borrowers were allowed to issue renminbi-denominated bonds in Hong Kong SAR.

In contrast to the situation in China, the United States borrows from and lends to the rest of the world predominantly in its own currency: 95 percent of total U.S. liabilities to foreigners (excluding derivatives) were denominated in dollars as of end-2010. While the U.S. Treasury issues debt solely in dollars, U.S. firms actively borrow abroad in foreign currency. Approximately $850 billion (30 percent) of the $2.8 trillion in U.S. corporate debt outstanding at the end of 2010 was denominated in foreign currency, mainly euros. On the asset side, 43 percent of the $20.3 trillion in U.S. claims on foreigners (excluding derivatives) was denominated in dollars at the end of 2010.

Thus, although the international use of the renminbi may undergo rapid growth, the task ahead remains challenging. Expansion of domestic debt markets, more complete convertibility of the renminbi, reinforced financial sector supervision, a

[12] See http://www.mof.go.jp/english/if/regional_financial_cooperation.htm#CMI for more information.

more transparent framework for monetary policy, and increased flexibility of the renminbi are needed to make the renminbi an attractive international (not just regional) currency. But such reforms are far-reaching, and are likely to take considerable time to complete. Furthermore, even if such conditions were satisfied, network externalities suggest that the renminbi would not assume the role of international currency quickly. Prospects for the renminbi also depend on the direction of East Asian monetary integration—namely, whether it leads to a regional currency that will begin to replace national currencies, including the renminbi.

Table 5. Currency denominations of the external balance sheets of the United States and China, end-2010, US$ trillions

United States			China		
	Liabilities	**Assets**		**Liabilities**	**Assets**
Debt & deposits	13.59	7.26	Debt & deposits	0.6306	0.7631
of which: in USD	12.71	6.27	*of which: in CNY*	0.12	0.13
FDI and Portfolio Equi	5.65	8.92	FDI and Portfolio Equi	1.6825	0.37****
of which: in USD	5.65	0.96	*of which: in CNY*	1.6825	--
International Reserves		0.49	International Reserves		2.9142
of which: in USD		--	*of which: in CNY*		--
Derivatives	3.54	3.65	Other	0.0222	0.1018
Total	**22.79**	**20.32**	**Total**	**2.3354**	**4.126**
*of which: in USD**	***18.36***	***7.23***	*of which: in CNY*	***1.8025***	***0.13***
Share in USD*	***95.40%***	***43.40%***	***Share in CNY***	***77.18%***	***3.15%***

Source: Based on data from the Board of Governors of the Federal Reserve System, U.S. Bureau of Economic Analysis, U.S. Department of the Treasury, and IMF IFS. China State Administration of Foreign Exchange; Government of Hong Kong SAR, China; BIS banking statistics; Dealogic DCM analysis.
* Excluding derivatives.
** An estimated US$90 billion of China's foreign debt was denominated in RMB at end-2009 (about 5% of total foreign liabilities).
*** RMB bank deposits outstanding in Hong Kong SAR, China, end-2009, which increased to about US$42 billion at end-2010.
**** Assuming that all of China's FDI and portfolio equity outflows are in foreign currencies.

The shape of things to come: some scenarios for a future international monetary system

Of the various aspects of contemporary international economic relations, it is in the monetary arena that the shift toward multipolarity is likely to have the strongest impact. In the unfolding multipolar order, in which several developing countries will attain global growth pole status in the decades ahead, and in which there will be an important shift in the distribution of global wealth, international monetary relations will need to accommodate an expanding role for major currencies other than the U.S. dollar.

The decade leading up to the global financial crisis of 2008–09 was associated with a major expansion in financial holdings and wealth in emerging markets. Following a downturn during the crisis, the upward trend in expected to continue through the forecast horizon of this report, bringing about changes in relative financial power. The expansion of financial holdings and wealth in emerging markets is most prominently reflected on the official side, in the accumulation of foreign exchange reserves by monetary authorities.[13] High levels of reserve holdings have, in turn, induced a buildup of assets held in sovereign wealth funds (SWFs)[14] and other state-controlled portfolios such as pension funds and the financial holdings of state-owned enterprises (SOEs).

Informed by the analytical work on changing growth poles and growth dynamics in World Bank (2011) and the previous discussion on international currency use and international policy coordination, this report envisions three possible international currency scenarios. In each of the three scenarios, it is assumed that the major currencies will continue to float against each other (while allowing for some degree of intervention) and that capital accounts will continue to gradually

[13] The extent of reserve accumulation has attracted much attention in recent years. Developing countries as a group (especially those that are commodity exporters) are now stockpiling reserves at a far greater rate and on a much larger scale than advanced economies. Some of this reflects the self-insurance motives of emerging countries in the aftermath of the East Asian financial crisis in the late 1990s, and some reflects their desire to limit the flexibility of their exchange rates (for further discussion of the demand for reserves, see Lin and Dailami (2010) and Obstfeld, Shambaugh, and Taylor (2010)).

[14] Despite the substantial debate that has raged over the motivations and investment behavior of SWFs, their mere existence does not in itself pose a threat to the international financial system. For example, SWFs likely played a valuable stabilizing role during the financial crisis, as SWFs acquired stakes in U.S. financial institutions that provided capital injections at a time of scarce global liquidity, and may have contributed to U.S. institutions' continued viability. Nevertheless, if emerging-market governments attempt to take large positions in sectors viewed as sensitive, these concerns may come to the fore once again; thus, agreement on a multilateral framework governing cross-border investment flows, as elaborated in chapter 2, becomes all the more important.

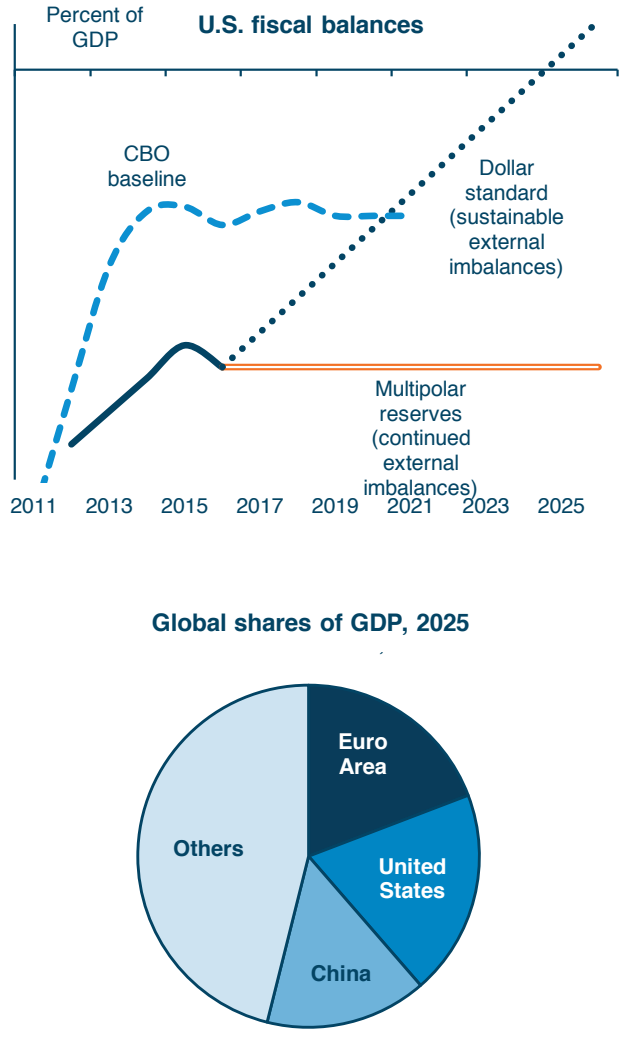
liberalize. The three scenarios are as follows:

- *Dollar standard status quo.* The U.S. dollar retains its position as the dominant international currency, at least until the end of the forecast horizon of 2025. This scenario is the result of a combination of factors, including success by the United States in curbing unsustainable fiscal deficits and a delay by China and the euro area in making the reforms necessary to expand the international use of their currencies.[15] This scenario is reinforced by the presence of considerable inertia with regard to reserve currency switching and continued broad political economy factors supportive of the use of the currency of the predominant geopolitical and military power—that is, the United States (Posen 2008; Drezner 2010; Eichengreen 2011).
  Under this scenario, the evolution of the U.S. economy is assumed to follow that outlined in the baseline scenario of World Bank (2011), where the United States is successful in gradually improving its fiscal position in the medium and long run (current projections by the U.S. Congressional Budget Office (CBO) place fiscal deficits at –9.8 percent in 2011, compared to the –8.2 percent in the baseline scenario considered here)[16] and achieving a sustainable current account balance (figure 10, left panel). In this case, even with the multipolar world of 2025, the output forecasts point to the world's largest economy remaining that of the United States (in real terms); this trend, along with inertia in currency use, would be major justifications behind the persistence of the dollar standard status quo.
- *Multipolar international currencies.* The dollar loses its position as the dominant international currency at some point between 2011 and 2025, to be replaced by a global system with three roughly equally important currencies: the dollar, the euro, and an Asian currency. If current efforts to internationalize it continue apace, that dominant Asian currency will be the renminbi. Financial markets in China would need to expand in a manner supportive of an international currency, and successful efforts made to broaden the convertibility of the renminbi and access to renminbi-denominated assets. Together, these efforts would allow China to

[15] Chinn and Frankel (2005) maintain that this scenario is consistent with the likely case where no exits from the EMU occur, while smaller Eastern European economies meet the Maastricht criteria and choose to join the EMU. However, they assume that the United Kingdom retains its currency independence, and dismiss the possibility of the RMB (renminbi) becoming an international currency. In a later paper (Chinn and Frankel 2008), they argue that since much of London's business is done in euros, the importance of that financial center would provide a further boost to the euro.

[16] It should also be noted that the scenarios here anticipate somewhat slower short and medium-term adjustment in U.S. fiscal balances, compared to projections by the Congressional Budget Office (CBO 2011). However, it is clear that the CBO baseline for fiscal adjustment falls neatly between the two international currency scenarios considered.

FIGURE 10. Implied U.S. fiscal balances and global economic sizes, dollar standard and multipolar currencies scenarios, 2011–25



Sources: World Bank (2011) and CBO (2011).
Note: U.S. fiscal balance paths assume that only fiscal balances adjust to bring about current account changes, so that other elements that affect the current account (official flows, net foreign assets, and net oil exports) do not deviate from their 2015 levels from 2016 onward. The chart for economic sizes in the dollar standard scenario is very similar to the multipolar currency scenario, and hence omitted.

elevate its international monetary status to be on a par with the country's weight in global trade and economic output. The multipolar international currency scenario assumes that the euro area successfully puts the sovereign debt crisis to rest by meaningful reforms that strengthen economic governance.

The likelihood of this second scenario playing out is buttressed by the probability that the United States, the euro area, and China remain the major three growth poles in 2025—thus diminishing the possibility that the Swiss franc and pound sterling expand beyond their currently small roles in the international currency environment. The expected GDP shares of the largest three economies over 2011–25 lend additional credence to this tripolar reserve scenario (figure 10, right panel). Slow progress in fiscal adjustment in the United States, which is consistent with the continued imbalances scenario outlined in chapter 1, also contributes to the likelihood of this scenario.

- *A single multilateral reserve currency.* Here, a single multilateral reserve currency, managed jointly rather than by a single national central bank, is at the center of the international currency system. Such an outcome would result from the recognition that the lower volatility afforded by a multilateral currency outweighs the potential costs of policy coordination necessary to manage the reserve currency, or the difficulty of achieving that coordination. While the current SDR would be the most likely candidate to fill the role of such a reserve currency (IMF 2011; Stiglitz and Greenwald 2010), a new monetary unit comprised of a smaller set of constituent currencies (or a redefinition of the SDR) is another possibility, as is a currency whose value is not defined in terms of a basket of national currencies but, rather, is issued by the equivalent of a global central bank.

  This scenario is consistent with the analysis of increased policy coordination discussed below; where it is argued that a marked strengthening of multilateralism is the necessary counterpart to increased economic globalization. The international monetary system thus would move away from the "nonsystem" that has characterized the global economy since 1973 and toward a new system involving the management of a multilateral, world currency.

Each of the three potential currency scenarios presents policy challenges, and the three are not equally likely. Under the *dollar standard status quo* scenario, the world would continue to exhibit some of the features that contributed to the nonsystem of the postwar era: inadequate incentives for the reserve currency country to adjust, leading to a skewed pattern of global demand, and incidence of acute dollar shortage, as was experienced during the recent crisis. The likelihood

of this scenario would derive as much from the drawbacks of other currencies as from success by the United States in addressing its policy challenges. But the fundamental causes of global imbalances would remain, meaning that the risks of financial crisis would persist.

Given current trends, the *multipolar international currencies* scenario is the most likely to play out, and could constitute a more stable and symmetric global economic environment than the first scenario. However, this scenario, too, would embody drawbacks. First, the danger exists that the existence of currency blocs might boost regional integration at the expense of multilateral liberalization, and that the development of relatively closed, equal-sized blocs might lead to greater currency instability.[17] In fact, during the postwar period, trade within major regional groupings has grown considerably faster than trade between blocs. This feature may undercut multilateralism by making cooperation to maintain a system of global free trade seem less essential for economic prosperity. Second, in the multipolar scenario, the vast majority of developing countries, including those with the lowest incomes, would continue to transact internationally in currencies other than their own, and thus would be exposed to the exchange rate risk. Only the largest emerging-market countries/regions would achieve the status of issuers of international currencies, because of the liquidity advantages of size.

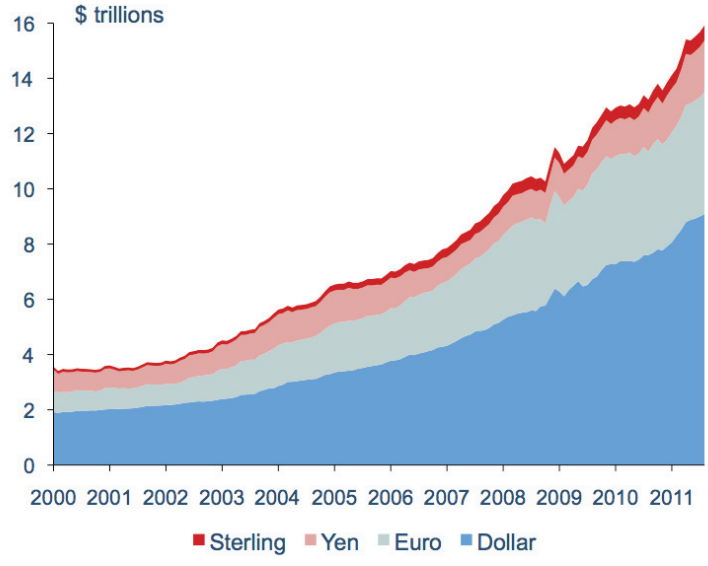
A third potential danger of a multipolar international currency system—one that also is present in the scenario of continued dollar hegemony—is that management of global liquidity is not centralized; rather, each central bank regulates liquidity with regard to what it considers appropriate for its own domestic monetary conditions. This lack of control contributed to the global asset bubble that preceded the financial crisis that began in August 2007. With the benefit of hindsight, however, it is clear that U.S. monetary policy was excessively expansionary in the years leading up to the financial crisis, and that the large accumulation of U.S. dollar reserves by emerging-market countries and oil exporters—some of it nonsterilized—and expansion of the euro money supply and foreign exchange reserves held in euros contributed to the

[17] The danger of greater currency instability is based on both historical experience and analytical models. Giavazzi and Giovannini (1989), for example, suggest that greater symmetry in the size of countries or economic blocs will produce greater global instability. This is consistent with political economy models of hegemonic stability, in which a single dominant country has the incentive and means to make the system work smoothly (Cohen 1998; Kindleberger 1973). Assuming, as does the second scenario, that the ability of the United States to guide the evolution of the international monetary system continues to decline, the resulting lack of a hegemon likely will lead to attempts by other major powers to assert their influence. From a historical perspective, the experience between the two world wars suggests that rivalry between financial centers can exacerbate exchange rate instability (Eichengreen 1987).

increase in global liquidity[18] (figure 11). With multiple reserve currencies, control over global liquidity likely would be weakened further, because it would result from the uncoordinated actions of a number of central banks.

At the same time, a multipolar currency system may present some systemic advantages. By diversifying the sources of foreign exchange reserve supply, it may permit developing countries to meet their reserve accumulation objectives more easily, making their stocks of reserves less exposed to the risk of depreciation of the dollar. Again, the recent financial crisis is a case in point. The extreme dollar liquidity shortage that developed during the crisis might have been alleviated if a viable substitute for the dollar could have provided international liquidity. And under more normal economic conditions, the presence of multiple reserve currencies in financing the U.S. current account deficit would create a more symmetrical and equitable international monetary system.

Figure 11. Composition of global liquidity by major currencies, U.S. dollar equivalent, trillions



Sources: Based on Bloomberg, IMF IFS database, IMF COFER database, U.S. Federal Reserve, and Bank of Japan.

[18] Defined as high-powered money issued by the central banks of the United States, the Euro Area, Japan, and the United Kingdom, plus reserves held by other countries in those four currencies.

The third, or *single multilateral reserve currency* scenario, is envisioned as a possible reaction to the perceived deficiencies of the other two scenarios, which provide few checks on national policies and may be associated with exchange rate instability. The *single multilateral reserve currency* scenario is far less likely than the other two scenarios to materialize over the next 15 years, as the *multilateral reserve* scenario would necessitate developing a set of rules for managing international liquidity and moderating exchange rate movements and require countries highly protective of their national monetary policy to relinquish full control.[19]

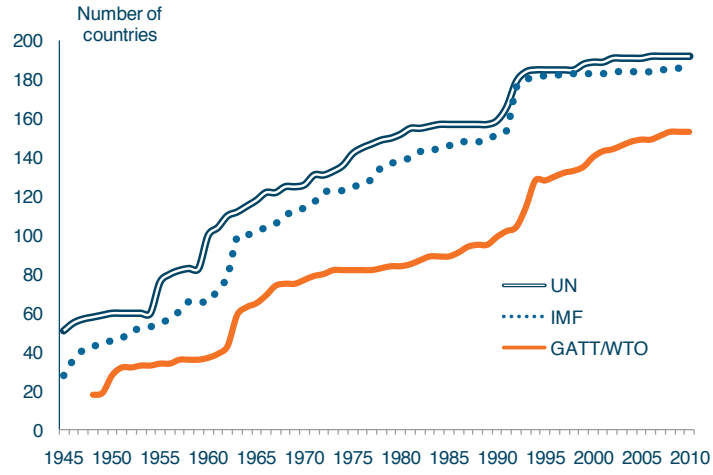
The need for enhanced policy coordination in an increasingly multipolar world

The three scenarios for the future of the international monetary system presented in this chapter can help focus the attention of policy makers on potential long-run outcomes and the type of international policy coordination responses that are desirable in order to prevent negative spillovers between countries that may result from major shocks to the global economy. At the current juncture of high uncertainty about medium-term global growth prospects and the emergence of competing power centers, coordination is essential. That coordination could take several forms, with varying degrees of difficulty and effectiveness.

Coordination may involve ad hoc meetings and occasional agreements to alter policy in the global interest (what has been called "episodic coordination"). On the other hand, coordination may lead to a formal revision of the workings of the international financial system to prevent destabilizing competitive behavior—what Artis and Ostry (1986) call "institutionalized coordination." Since the 1940s, there has been a steady rise in efforts at institutionalized coordination, as evidenced by a rise in the number of countries that participate in international organizations (figure 12). However, current disparities among countries in terms of economic conditions and policy objectives are likely to make reaching agreement difficult, and the emergence of a multipolar world with new power centers may even amplify impediments for achieving cooperation at the very time it is most necessary.

[19] Some of the same concerns facing the economic policy-making community today—namely, the potential instability of a multiple currency system, the unchecked expansion of global liquidity, the trade-offs between financing and adjustment, and the asymmetric position of reserve currency countries—also motivated extensive discussions of reform of the international monetary system in the late 1960s (see, for instance, Cohen 1970; Hawkins 1965; Machlup 1968; and Triffin 1964, among many proposals for reform) and led to the creation of the SDR. At the time of its creation, the SDR was intended to become the main reserve currency of the international monetary system—a role it never assumed (annex 3).

Figure 12. Membership in major international organizations, 1945–2010



Sources: Membership rolls of GATT/WTO, UN, and IMF, from their respective websites.

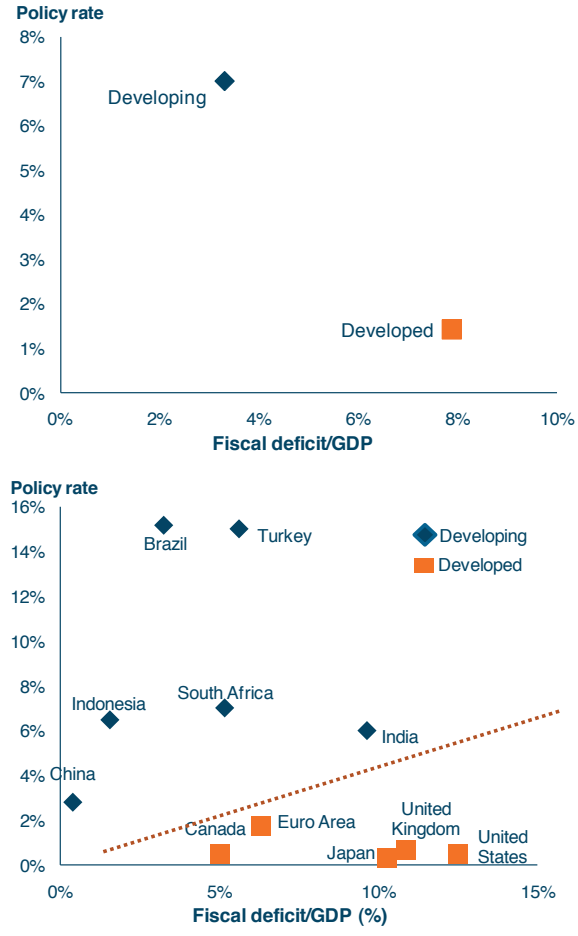
Disparities among countries in terms of economic conditions and policy objectives are likely to make reaching agreement particularly difficult

In the absence of incentives for collective action,[20] countries may choose to make decisions unilaterally, and the final outcome easily could be one in which all countries are worse off. Under the present circumstances, it would be desirable to strengthen the institutional basis for cooperation—for instance, by expanding the analytical component of G-20 discussions and monitoring and following up on policy agreements. International institutions, with their nearly universal membership, could help provide legitimacy and continuity to discussions in forums, such as the G-20.

Figure 13 illustrates the current large disparities in macroeconomic policy stance between developed and developing countries. Two key messages can be drawn from the figure. First, potential emerging-economy poles, except India, generally have lower fiscal deficits (with respect to their GDP) than do developed growth poles. Second,

[20] There is considerable scholarship on cooperation theory in international relations. The main insights emphasize the role of three factors affecting the willingness of governments to cooperate: mutuality of interest, the shadow of the future, and the number of actors involved in the cooperation (see Axelrod and Keohane 1985; Fearon 1998). The G-20, for example, as a vehicle of international coordination, needs to reconcile the tension between efficiency in its decision-making processes, which argues for a small number of members, and the legitimacy imparted by wider participation. Although the G-20 does not satisfy the universality principle of multilateralism entrenched in the postwar economic order, the G-20 comes much closer to meeting the universality principle than did its predecessor, the G-7, as the G-20 also includes emerging countries in Africa, Asia, Latin America, and the Middle East.

Figure 13. Macroeconomic policy disparities, selected actual and potential developing and developed growth poles



Sources: Based on data using IMF World Economic Outlook, OECD and DataStream.
Note: Fiscal and monetary policy for all countries included is for the latest available year. The dotted line on the right panel is merely indicative, intended mainly to highlight the disparities between developed and developing countries.

interest rates in emerging-market growth poles, including China, are much higher than interest rates in the developed-country growth poles. The two patterns reflect current global imbalances—namely, that deficits in developed countries, especially the United States, have been financed by developing countries in recent years. But the risk premium that developing countries pay for their own financing—the result

of credit market constraints and immature financial markets—keeps their interest rates high. Developed countries, meanwhile, have enjoyed low levels of inflation. Thanks in large part to low prices of imported goods from the developing world. In turn, those low-priced imports have helped developed countries keep their nominal interest rates low despite their high levels of consumption.

Even if countries are willing to discuss such disparities, their sheer magnitude has the potential to make economic policy negotiations quite difficult. Nonetheless, countries should recognize that the persistence of disparities can have negative consequences on the global economy, and the major economies need to recognize the urgency of trading off some elements of national interest for the common good.

A path toward improved institutional management of a multipolar world

In light of expanding multipolarity in the world economy, economic policy coordination can be strengthened and national policies improved to address a variety of issues. In what follows, we highlight a number of avenues that we think deserve attention. At a basic level, policymaking must take into account potential spillover effects among countries, as globalization makes these spillovers ever more potent. The G-20 is actively pursuing a framework of indicative guidelines for identifying imbalances that need to be addressed by policy measures, while at the same time recognizing that these guidelines are not themselves targets.[21] More generally, the G-20 is committed to the objective of achieving strong, sustainable, and balanced growth. In doing so, the G-20 needs to continue its focus on shared objectives rather than on instruments that lead to a zero-sum game. The G-20 also needs to institutionalize coordination, drawing on the in-house expertise and the institutional memory of official international economic institutions.

The form of policy coordination can be an important influence on its success in reaching and sustaining agreement. It seems clear that ad hoc coordination of policies, whether to intervene in exchange markets (such as those embodied in the 1985 Plaza Agreement) or occasional bargains to modify macroeconomic or structural policies (such as the 1978 Bonn Summit), have not been sufficient in preventing excesses such as uncontrolled global expansion of liquidity and global imbalances. Designing transparent, widely accepted triggers for economic policy coordination thus would be desirable. Establishing such triggers also would represent an important step toward a more rules-based international monetary system, but designing appropriate rules presents challenges.

At least three types of policy rules with automatic triggers have been proposed or used in the past to lessen negative spillovers on other countries: rules on allowable exchange rate behavior; limits on balance of payments positions; and criteria for proscribing beggar-thy-neighbor macroeconomic policies (Masson 2011). Each rule type has limitations, however, due to the need to overcome conflict among countries in their efforts to cooperate. If countries are concerned with safeguarding their competitiveness, for instance, each country will make efforts to resist exchange

[21] Communiqué, meeting of Finance Ministers and Central Bank Governors, Paris, February 18–19, 2011.

rate appreciation, but the results are zero sum: depreciation for one country is appreciation for another. The challenge for policy coordination is therefore to find evenhanded criteria for choosing the appropriate values for the three variables listed above. A complementary approach is for policy coordination to emphasize targeting international public goods—that is, focusing on variables that reflect shared objectives. Low global inflation, sustained economic growth, exchange rate stability, and adequate global liquidity may draw the most support, as all four reflect objectives from which many countries can benefit. The initial successes of the G-20 emphasized such common objectives and resulted from the recognition by all countries that urgent action was needed—in the common interest—to avoid a global recession and to address structural problems in the financial sector.

Exchange rate rules

At present, there is no mechanism that limits the potential negative impacts of exchange rate policies on the rest of the world. The Bretton Woods system prevented countries from gaining competitive advantage by engineering depreciations of their currencies, unless a "fundamental disequilibrium" of their balance of payments was present. By contrast, in a world of generalized floating, the opposite problem arises: a country should not be able to achieve a position of competitive advantage by preventing the operation of market forces on its currency's value. This was the objective of the Guidelines to Floating, adopted by the IMF in 1977, which forbade "currency manipulation" identified by evidence of prolonged one-way intervention in exchange markets. In practice, however, the guidelines have not been applied. But the system could be reformed to make the guidelines more effective by prescribing penalties—for instance, countervailing duties authorized by the WTO—that take effect automatically.

The current nonsystem in which all exchange rate regimes are permitted would be considerably narrowed if currency manipulation were ruled out. The problem is that all fixed exchange rate systems face periods of sustained one-way intervention; this is true because shocks are serially correlated and their effects are persistent. In short, the existence of multiple types of exchange rate regimes also explains the widespread reluctance to apply the Guidelines to Floating. A stringent prohibition of one-way intervention would eliminate adjustable pegs and impose severe limits on "managed floats."

Another option would be to implement a managed float arrangement subject to specific rules that combine exchange rate flexibility with measures to prevent excessive

volatility and misalignment of currency values. This could take the form of a system of "target zones" for exchange rates (see, for instance, Williamson 1993). Two elements would be critical in the successful operation of such an arrangement: agreement on a consistent set of exchange rate targets, and effective tools for hitting those targets. It is doubtful that either element could be put into place. On one hand, countries (and experts) often have disagreed on the "fundamental equilibrium" exchange rates. On the other hand, intervention intended to defend depreciating currencies in the presence of freely mobile capital has proven ineffective. It is also difficult to imagine that countries would agree to impose the policy adjustments to correct appreciating currencies, an element that would also be needed under a target zone arrangement. All considered, it seems unlikely that a formal target zone system would be put into place, although a de facto grid that embodies what are judged to be equilibrium exchange rates may be capable of serving as an ad hoc international guide to currency intervention.

Balance of payments rules

Linkages between countries occur in the first instance through changes in countries' external payments positions. Hence, there is considerable interest at present in using some measure of external payments disequilibrium as a trigger for policy action by the country concerned (see, for instance, the proposal to the G-20 by U.S. Treasury Secretary Timothy Geithner[22]). Under such an arrangement, a country's current account surplus or deficit would be limited to some proportion of its GDP, say, to 4 percent. If a country exceeded that threshold, that country would be required to take policy measures to bring its current account surplus or deficit back within the allowable range.

Earlier consideration of such rules, inspired in part by U.S. current account deficits and Japanese surpluses in the early 1980s, highlighted the importance of understanding the source of the current account deficits and surpluses. In general, imbalances are the outcome of the complex interaction of government policies and private sector behavior, and hence more robust analysis is needed to make a judgment concerning the causes and whether there is reason for concern. But countries often disagree strongly on such a judgment—thus making formulation of a set of international set of balance of payments rules especially difficult. On the other hand, continued current account imbalances could well serve to encourage international scrutiny and further

[22] See http://graphics8.nytimes.com/packages/pdf/10222010geithnerletter.pdf.

analysis. Cross-border balance of payment rules would be consistent with the G-20's current work program to establish indicative guidelines—not targets—for identifying unsustainable imbalances.

Another type of balance of payments rule might be to impose a system of constraints on capital movements or on the stocks of foreign assets and liabilities. For instance, countries could be prevented from issuing foreign currency debt in excess of their foreign exchange reserves, a proposal (see Goldstein 2002) that has the potential to reduce the likelihood of emerging-market crises. While not formally adopted, nevertheless many emerging market countries have managed their affairs to fulfill its requirement—in particular, by accumulating large foreign exchange reserves. But such a rule would not prevent countries from achieving undervaluation of their currency and thus exporting unemployment to other countries.

Still another possibility—but one that has not so far received any attention-- would be to prevent accumulation of reserves beyond a certain percentage of GDP, imports, or some other broad measure. This option would address a concern that the current system (and the Bretton Woods before it) applies asymmetric pressures on surplus countries versus deficit countries to adjust: the latter are forced to adjust because of the floor on the reserves, whereas the former can, in principle, accumulate unlimited reserves and postpone adjustment indefinitely. Rather than forcing exchange rate flexibility on China, a ceiling on reserves would allow China to choose from an array of policy changes that would avoid the "prolonged one-way intervention" that led to the large accumulation of reserves apparent at the present. In the authors' view, such a rule should be considered and its potential effects analyzed by the G20.

Finally, one can imagine a change in the rules of the game to revert to a world in which certain types of capital flows are constrained through precisely targeted capital controls. Although it is possible in principle, and legitimate under certain circumstances, to contain speculative capital flows, implementing and enforcing such capital controls pose serious practical problems, especially given the recent trends toward capital market liberalization and the advances in information communication technology that have enhanced capital mobility across national borders.

Macroeconomic policy rules

International policy coordination in the post-1973 world has generally focused on symptoms—exchange rates and balance of payments values—rather than un-

derlying macroeconomic policies[23], though the latter policies are often cause for concern. This raises the question of whether it would be possible to formalize a set of macroeconomic policy rules that would prevent balance of payments imbalances. Countries that operate inflation-targeting monetary regimes, for example, could be evaluated on whether their inflation targets are appropriate (most developed countries aim for a level of around 2 percent; developing countries typically have higher targets) and how successful the inflation-targeting countries are at meeting their targets. Fiscal policy could be evaluated by using the overall fiscal deficit or surplus (corrected for the business cycle), after which an acceptable range for the fiscal position could then be established. Countries going outside that range would be required to make policy adjustments to bring their fiscal position back inside the range.

In our view, formalizing monetary and fiscal policy cooperation by formulating precise rules is subject to severe limitations. Monetary policy is not solely concerned with targeting inflation: financial stability and the economic growth are also of prime concern. Monetary policy coordination involves agreement on interest rate settings, and decisions about the latter are the result of a complicated tradeoff and judgment about future inflation, the speed with which output gaps should be closed, and financial stability issues. Cooperation is likely to be seen as most crucial when the latter financial stability issues take on a global character. As for fiscal policy, it is multifaceted and usually the outcome of a complicated domestic bargaining process that weighs various considerations and political interests. Under some circumstances, this process may be assisted by pressures for international cooperation—but this is likely to be the exception rather than the rule. Absent some form of fiscal federalism, nations retain their freedom of maneuver in this area—and indeed the input of the citizenry into fiscal policy decision-making is a pillar of democratic accountability. As a result, a ceiling on fiscal deficits or public debt ratios would be extremely challenging to enforce, as prominently evidenced by the experience of the euro area.

Commonly shared objectives

The G-20's attempt to exert peer pressure on its members' policies (the mutual assessment process, or MAP) defines the contemporary approach to international policy coordination. But the current dispute over exchange rate levels and current account imbalances illustrates the problems of reaching agreement on targets

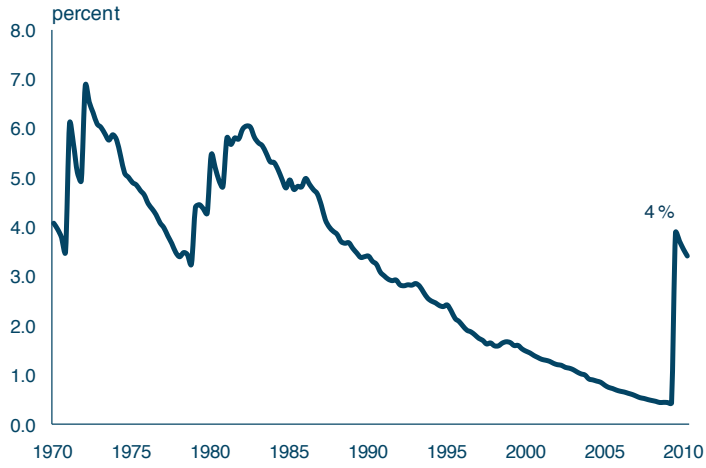
[23] The 1978 G-7 Bonn Summit is a notable exception.

for variables that are inherently zero-sum or the result of beggar-thy-neighbor policies (Masson 2011). When a global shock (inflationary or deflationary) occurs, large groups of countries often want to shift their exchange rates or current accounts in the same direction, either to stimulate demand or to dampen inflationary pressures. Policy coordination under such circumstances may be ineffective. The Bretton Woods regime ruled out such behavior, but no similar mechanism exists in the 21st century. Surveillance and ad hoc policy coordination are thus only a partial substitute for a rules-based international monetary system. Policy coordination is facilitated if the focus is on goals that have the potential to benefit many countries in the same way: sustainable growth, financial stability, low inflation, and exchange rate stability. The initial successes of the G-20 have resulted from widespread concerns about the first two of those goals, along with a shared recognition that only a coordinated response could prevent a global economic meltdown during the financial crisis. Sustaining the momentum of cooperation will require a long-term commitment to these goals. The G-20 should also seriously consider whether the most likely of forthcoming international currency arrangements—the multipolar currency regime—would require a strengthening of the rules of the game governing economic policy, so that ad hoc coordination is no longer required—or at least so that it is necessary to a lesser extent than at the present.

Enhancing the role of the SDR and expanding swap agreements

Over the years, numerous proposals to stimulate the attractiveness of the SDR (see Mussa, Boughton, and Isard 1996; von Furstenberg 1983) have been made by academics and officials, some of whom have argued for changes in the basket definition and the calculation of interest rates paid to holders of SDRs and charged to borrowers of SDRs. The proposal made by the BRICs in 2008, for example, revived the idea of making the SDR an important reserve currency by encouraging its use by the private sector. This process could involve linking private and official SDRs and allowing central banks to transact in SDRs with private holders—for instance, when performing currency intervention. Another option would be for governments to issue marketable debt in SDRs, which would enhance market liquidity for the SDRs in the process. So far, however, no concrete actions have increased the private use of the SDR, and the current (2010) stock of official SDRs is only about 4 percent of global foreign exchange reserves (figure 14).

Figure 14. SDRs as a percentage of the world's foreign exchange reserves, 1970–2010

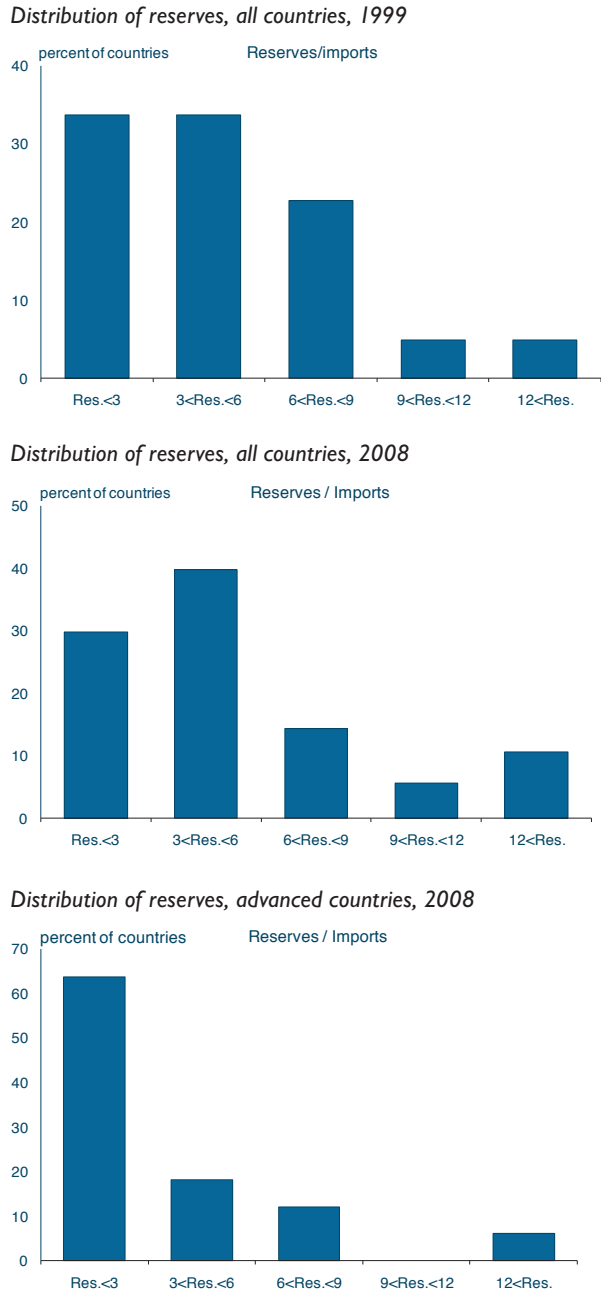


Source: From IMF *IFS* database.

The expansion of global liquidity in recent years has been accompanied by dramatic changes in the distribution of reserves, further undercutting the case for SDR allocations. Comparing the distribution of all countries' reserves-to-imports ratios at the end of 1999 (the year of the introduction of the euro) with comparable figures for 2008 (the last year at time of writing for which relevant data were available for an adequate number of countries), it is clear that the number of countries with reserves of less than three months' worth of import cover has declined substantially, while the number of countries with a more comfortable cushion of three to six months of import cover has increased (figure 15).[24] Moreover, many of the countries with the lowest reserve ratios are advanced countries, as these countries intervene little in foreign exchange markets and are able to borrow reserves when needed. The proportion of advanced countries with low reserve levels (less than three months of import cover) actually increased over the decade from 1999 to 2008, to 63 percent of the total. The countries with the highest reserve ratios are the emerging-market countries and Japan, where flexibility of exchange rates is limited to a greater or lesser extent.

[24] A traditional rule of thumb was that holding reserves equal to six months' imports gave an adequate cushion for trade-related shocks, but a more complete analysis of reserve adequacy needs to account for exposure to short-term debt (Jeanne and Rancière 2006). The Greenspan-Guidotti rule suggests that reserves should be at least equal to debt maturing within the coming year; see Greenspan (1999) and Guidotti (1999).

Figure 15. Distribution of foreign exchange reserves, 1999 and 2008



Source: From IMF *IFS* database.

Although the objective of making the SDR the primary reserve asset of the international monetary system does not seem to be within sight in the foreseeable future, greater focus on alternatives to national currencies gradually may create the preconditions for greater management of the monetary system, with advantages for systemic stability along the way. A liquid international asset could also supplement dollar liquidity, minimizing the problem of dollar liquidity shortage that occurred during the recent crisis. Even in the absence of major reforms, countries have the potential to collaborate to encourage use of the SDR in a number of ways:

- By issuing public debt linked to the value of the SDR
- By encouraging the creation of clearing mechanisms for private SDRs
- By changing the SDR basket, for instance, to include the renminbi or other major emerging- market currencies
- By expanding the set of prescribed holders of official SDRs
- By intervening directly in SDR-linked instruments to develop the liquidity of the private SDR market.

In addition, the provisions for approving SDR allocations could be modified to make them more flexible and subject to less stringent conditions, also conceivably allowing the IMF to hold SDRs in escrow and issuing or withdrawing them when needed (IMF 2010b). Such reforms, however, would require an amendment to the IMF's Articles of Agreement.

In the meantime, international liquidity can be supplemented through expanded IMF lending and swap facilities among central banks. The financial crisis has shown the importance of making available adequate amounts of international currencies, especially dollars, to financial institutions around the world at times when liquidity is being hoarded. As the world moves to several key international currencies, swap networks will need to be expanded, and cooperation among central banks will become even more crucial to lessen the frequency and severity of financial crises.

Conclusion

The world economy is going through a transformative change in its growth dynamics, industrial landscape, and management of international monetary and financial affairs. How the international monetary system evolves in the future matters crucially for development policy, agenda, and practice. In setting the context for global growth and financial stability, the international monetary system conditions not only developing countries' access to international sources of capital, but also the stability of their currencies. The 2008–09 financial crisis exposed some of the structural weaknesses of the existing international monetary system, and underscored the need for reform in line with the growing roles of developing countries on the global stage.

There remains a wide disparity, however, between developing countries' roles in international trade and finance and their importance in the international monetary system. On the latter, developing countries do not yet have much voice. International currency use has lagged the increasing importance of emerging-market economies. None of their currencies is used internationally to any significant extent. That situation may change in the coming decades, but the shift will be limited by the inertia in currency use explained by network externalities, which dictate that a currency is most attractive if it is already in widespread international use. Recent moves by the Chinese authorities, for example, to encourage international use of the renminbi can be expected to gradually increase use of that currency in East Asia. But to become a true international currency, the renminbi would have to be supported by capital account liberalization, exchange rate flexibility, and domestic reforms that would encourage liquid and deep financial markets and transparent and effective financial regulation and supervision. The future international role of the renminbi will depend importantly on whether the Chiang Mai Initiative Multilateralization leads to the development of a regional currency, and whether such a regional currency is a new one issued by a regional central bank or one of the existing currencies.

Emerging-market economies other than China will need to evaluate whether internationalization of their currencies is in their best interest. Internationalization of currencies would impose constraints on monetary policies, while at the same time opening up new sources of financing and reducing their exposure to exchange rate risk. The very different situations of the potential emerging-market growth pole countries—in terms of institutions, regional linkages, and macroeconomic conditions—suggest that answers to this question vary substantially according to the country and region

being considered. In any case, few, if any, other emerging market currencies will have the opportunity to become important international currencies.

In the meantime, it is the euro, rather than any emerging-market currency, that has the potential to rival the U.S. dollar as a true international currency—provided that the euro area can strengthen its institutions and overcome the severe fiscal crisis afflicting several EU countries that is weakening the credibility of the euro system as a whole. It seems likely that, to survive, the euro area will have to move to greater fiscal integration to parallel the monetary integration that has already taken place. This will mean more effective constraints on national fiscal deficits and perhaps a degree of consolidation of government borrowing—for instance, through issuance of a common euro-area bond.

It is also the case that large U.S. fiscal and current account deficits, and concerns about further dollar depreciation, have dented the dominance of the dollar as the main international currency. Views are sharply contrasting, however, as to the seriousness of the challenge posed by other currencies. Some believe that the euro will overtake the dollar in importance quite soon and that the renminbi will do the same at a more distant horizon. But others believe that the dynamism of the U.S. economy, the depth of U.S. financial markets, and the position of the United States as the world's only superpower—as well as inertia in currency use—make the dollar's position at the top of the currency pyramid unshakable in the foreseeable future. Again, decisions needed to put U.S. fiscal policy on a sustainable basis, and to re-establish US international competitiveness, will have an important impact on the future attractiveness of the dollar.

With such factors in mind, three possible international currency scenarios for the period 2011–25 emerge. In the first of those scenarios, the U.S. dollar's dominance remains without a serious challenger. In the second, a more multipolar international monetary system emerges, most likely with the dollar, euro, and renminbi at the center of the system. In the third, dissatisfaction with an international currency system based on national currencies leads to reforms that make supply of the world's currency the result of multilateral decisions—a role intended for the SDR when it was created. These three scenarios have different costs and benefits and are not equally likely to occur. The second, or multipolar scenario, is the most likely given current trends, but to work well, it would need to overcome tendencies for rivalry among key currencies and trading blocs—and also involve key reforms mentioned above that make the three key currencies attractive in a variety of international roles. In the first, or status quo

scenario, there would likely be periods in which concerns about the status of the dollar would lead to bouts of dollar weakness, especially if the issue of global imbalances were not resolved. The third, or multilateral scenario, would require overcoming the resistance of many countries to subordinate their monetary sovereignty to an international authority. This might occur if there were widespread problems with the major international currencies and instability due to lack of management of the international monetary system. In each scenario, policy coordination should in any case be strengthened to reduce the risks of instability, and more generally to address fundamental problems and improve the performance of the global economy in the context of increasing globalization and substantial structural changes.

The creation of the G-20, and its development into the primary forum for economic cooperation among the world's major economies, recognize the importance of the challenges facing the global economy, and G-20 successes have been the result of the shared objectives of limiting the scope of the financial crisis, reviving global growth, and improving financial regulation. The G-20 needs not only to replace the G-8, but also to improve on the G-8 when it comes to effective policy coordination. After its initial show of consensus on the need for action, more recent G-20 policy initiatives have been limited. In particular, regulation of financial institutions has not proceeded far enough to rule out the risk-taking that led to the 2008-09 crisis, nor has agreement been reached on cross-border resolution of financial institutions in trouble, which is done on a case-by-case basis. The perceived risks to national banking systems created by the ongoing euro zone fiscal crisis highlight the need to proceed with more thorough-going financial reforms.

As for central bank cooperation, this has improved markedly as a result of the financial crisis, but the gains need to be consolidated. Financial stability, it is now widely recognized, is a primary responsibility of central banks. Central banks are wrestling with the difficult conceptual and operational issues of how to maintain financial stability. It is evident that to do so, they will have to cooperate to an even greater extent. Because of a high degree of financial interdependence, central bank cooperation must be enhanced through greater exchange of information and closer coordination when international banks get into trouble, or when banking systems experience liquidity crises, as has happened several times since 2007.

The G20 aims to coordinate macroeconomic policies more generally, and is searching for ways both of understanding the nature of spillovers and of bringing that knowledge to bear on domestic policy choices. Several decades of experience, however,

have shown the limitations of attempting to coordinate policies around zero-sum variables, such as exchange rates and balance of payments, because of disagreements over appropriate levels: one country's depreciation corresponds to other countries' appreciation, and balance of payments deficits need to be matched by surpluses. Given important uncertainties related to equilibrium levels of exchange rates and current account positions, countries can resist agreement on target levels for these variables if they perceive them not to be in their interests. It would be more promising to emphasize coordination around global public goods, such as sustained growth, financial stability, low inflation, and exchange rate stability. To the extent that countries value those objectives and can each work to achieve them, agreement on policy coordination will be made easier.

In sum, the coming decades are likely to see a major trend to greater multi-polarity, which means both opportunities for a wider set of countries, and challenges for the smooth functioning of the international monetary, financial, and trading system. It seems likely that the increased economic importance of emerging market countries will in some way be reflected in their influence in international monetary relations. In our view, enhanced policy coordination will be essential to make a smooth transition to a multipolar system while avoiding the occurrence of major crises—or at the very least, mitigating their effects.

Annexes

Annex 1. A composite indicator of shares of international currency use

To aggregate the four indicators reported in the text—reserves, turnover, international bank credit, and international securities issues—principal factor analysis was used to generate the weights on each to create a single series that maximizes the common variance in the series. The first factor calculated in such a manner explains 93 percent of the variance (table A.1, top panel). The remaining factors (which were not retained) are orthogonal both to the first factor and among themselves. They explain little of the variance, and one of the criteria for retention of factors (only those with eigenvalue greater than unity) strongly suggests that only the first factor is needed. The resulting weights (or factor loadings) for the first factor are almost equal for the four series—slightly higher for reserves and credit, with international bonds having the lowest weight (table A.1, bottom panel). Using these weights, the principal factor was calculated and then renormalized to give proportions that sum to unity for each of the years in the sample. The series for the composite indicator based on the principal factor are plotted in figure 3.

Table A.1 Estimates of long-run global money demand for U.S. dollar, euro, pound sterling, and yen

Factor	Eigenvalue	Difference	Proportion	Cumulative
1	3.69331	3.42583	0.9349	0.9349
2	0.26748	0.27014	0.0677	1.0026
3	-0.00267	0.00508	–0.0007	1.002
4	-0.0077	–0.0020		1
		Observations		55

Factor loadings (first factor)

Variable		Uniqueness
Reserves	0.96285	0.07291
Turnover	0.95806	0.08212
Credit	0.98433	0.0311
Bonds	0.93778	0.12056

Annex 2. Using global money demand to determine the extent of international currency use

A simple model framework

The international roles of a currency ultimately should lead to an increase in the global demand for money of the currency in question, where global demand is defined as encompassing both international and domestic demand. A conventional error-correction specification for money demand for transactions purposes would postulate that nominal money balances m (in logs) should depend positively on the price level p and real GDP y (both in logs) and negatively on the short-term interest rate i. Money holdings would adjust gradually to their long run level:

$$\Delta m = \alpha + \beta \Delta p + \sigma \Delta y + \varphi(a_1 y_{-1} + a_2 i_{-1} + a_3 p_{-1} - m_{-1}) + u.$$

If some transactions are international, however, then one should include variables that capture the demand for money balances to carry out those transactions, if that currency is in international use. Globalization increases the volume of international transactions relative to GDP, and hence the amount of money needed to carry them out, holding the transactions technology constant. Let *xs* be the share of global exports in global GDP, and *ks* be the corresponding share of (gross) capital flows in global GDP. Additionally, let country subscript j be used to distinguish countries. Consistent with the pooled mean group (PMG) estimator (Pesaran, Shin, and Smith 1999), the long-run money demand coefficients (a1, a2, a3) are constrained to be the same across countries, while allowing the short-run adjustment and the degree of internationalization (as well as the constant term) to vary. The above equation then can be augmented as follows:

$$\Delta m = \alpha_j + \beta_j \Delta p_j + \sigma_j \Delta y_j + \gamma_j xs + \delta_j ks + \varphi\left(a_1 y_{j,-1} + a_2 i_{j,-1} + a_3 p_{j,-1} - m_{j,-1}\right) + u_j,$$

where the coefficients α_j, β_j, σ_j, γ_j, δ_j, φ_j include a country subscript to indicate that they vary across countries. The variables xs and ks do not have country subscripts, as they are measures of global transactions. But their coefficients vary depending on the extent demand for the country's currency reflects global transactions.

Data issues

Annual data for G-20 countries from 1990–2009 are used in the analysis, with two major qualifications. First, the data begin in 1996 for Russia, 1992 for Argentina, and 1994 for Brazil in order to remove the effects of massive structural changes

and hyperinflation. Second, the M2 of G-20 euro area countries (France, Germany, and Italy) are included in the M2 of the euro area rather than analyzed individually (for years before 1999, the series is a composite M2 for the countries that joined the euro area in 1999). Money holdings are measured as M2, which includes notes and coins in circulation (M1) plus, typically, checking accounts, savings deposits, and time deposits. The interest rate is that of three-month Treasury bills or similar instruments.

The internationalization variables xs and ks are calculated as ratios of global exports to global GDP, and the first difference of BIS international claims, divided by global GDP, respectively.

Estimation results

Table A.2 summarizes the results of preliminary estimation using PMG, focusing on the long-run demand relationship, which is constrained to be the same for all countries, and effects of the globalization variables, which are allowed to differ. Results are reported only for the U.S. dollar, euro, pound sterling, and Japanese yen.

Table A.2 Estimates of long run global money demand for U.S. dollar, euro, pound sterling, and yen

Coefficient:	United States	Euro Area	Japan	United Kingdom
a_1	**1.761 (0.0668)**	**1.761 (0.0668)**	**1.761 (0.0668)**	**1.761 (0.0668)**
a_2	–0.0003 (0.0022)	–0.0003 (0.0022)	–0.0003 (0.0022)	–0.0003 (0.0022)
a_3	**0.7179 (0.0663)**	**0.7179 (0.0663)**	**0.7179 (0.0663)**	**0.7179 (0.0663)**
γ_j	**0.0034 (0.0013)**	**0.0043 (0.0010)**	**–0.0084 (0.0046)**	0.0021 (0.0011)
δ_j	0.0012 (0.0007)	**0.0012 (0.0005)**	0.0016 (0.0021)	–0.0000 (0.0007)

Note: Standard errors are shown in parentheses below the estimated coefficients. Coefficients significant at the 10 percent level or better are in bold.

Assuming that both international trade and asset flows continue to grow more strongly than GDP, the results are suggestive of future trends in currency use. International trade and capital flows would seem to favor the use of the euro strongly, and trade growth discourage use of the yen and encourage that of the dollar.[25] These trends are consistent with the reported decline in use of the yen for foreign exchange reserves and in currency turnover data (as discussed in the text). Indeed, research has found that Japanese exporters have a strong tendency to choose the importer's currency when exporting to other industrial countries and to use the dollar for invoicing when exporting to Asia (Ito et al. 2010).

Annex 3. A short history of the SDR

The SDR is an international reserve asset that was created by the IMF in the 1960s to palliate a perceived shortage of reserves and to address the so-called Triffin dilemma, a potential confidence problem associated with the use of the U.S. dollar as the predominant reserve currency. The dilemma resulted from the fact that the United States needed to run a balance of payments deficit to provide adequate global liquidity, but that the deficit, in turn, undermined the attractiveness of the dollar and the credibility of the U.S. commitment to maintain dollar convertibility into gold. By the time of approval of the first allocation of SDRs in 1969 (which occurred in three installments over 1970–72), the United States had in fact restricted convertibility to foreign central banks; rather than the perceived shortage of reserves, instead there was now a glut of foreign dollar holdings. President Nixon suspended gold convertibility completely on August 15, 1971, to bring about a readjustment of exchange rates. However, the new set of parities that resulted from the December 1971 Smithsonian Agreement lasted less than two years, and by March 1973 there was generalized floating of exchange rates.

The First Amendment to the IMF's Articles of Agreement creating the SDR envisioned that it would become "the principal reserve asset in the international monetary system" (Art. XXII). This has not occurred. Although the first allocation of SDRs was followed by a second general allocation over 1979–81, no further allocations were made until August/September 2009, when approval of the Fourth Amendment authorized a special allocation for countries that had joined the IMF after 1981 (as

[25] While international payments should only increase, not decrease, total currency use, the negative coefficient should be interpreted as being relative to the average behavior displayed by all international currencies and embodied in the common coefficients.

they had not benefited from previous allocations); a general allocation also was made to all members of SDR 161.2 billion. Between 1981 and 2009, however, SDRs fell from 7.3 percent of non-gold foreign exchange reserves to 0.4 percent. The new allocations raised the proportion to 3.9 percent.

As the name implies, the SDR is not really an asset, but rather the unconditional right to obtain usable currencies through the IMF. [26] The SDR's attractiveness is greatest for countries that have limited ability to borrow reserve currencies (or only at a high interest rate). For countries that have market access, the SDR has limited appeal either as an asset or as source of credit. The interest rate charged on the use of SDRs and its valuation are related to those of the component currencies of the basket that define it—currently, the dollar, the euro, the pound sterling, and the yen.[27] Until 2009, agreement on new SDR allocations has foundered on the need to prove "a long term global need [for reserves]" (Article XVIII), which has been difficult to provide given the tremendous expansion in holdings in reserve currencies, especially U.S. dollars.

According to the IMF's articles, the SDR is limited to official users, namely, governments and central banks, although for a time around 1980 there was considerable issuance of private SDR deposits and bonds (these use the same basket definition as the official SDR, but interest rates can differ from the latter). This private market was virtually nonexistent as of 2010. The SDR also has been used as an exchange rate peg, allowing countries to avoid some of the volatility associated with single currency pegs. By 2007, the use of basket pegs (including the SDR) virtually had disappeared. The SDR's current role is mainly to serve as a unit of account for international institutions.

[26] Thus differing from the conditional credit extended by the IMF through its various lending facilities.

[27] The composition of the SDR has evolved over time. Originally it was valued in terms of gold, and then it was defined as a basket of 16 currencies, which was reduced to five currencies in 1980 and to four in 1999, with the creation of the euro.

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