

INTERNATIONAL MONETARY FUND

**Reserve Accumulation and International Monetary Stability:
Supplementary Information**

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In collaboration with the Finance, Legal, Monetary and Capital Markets, Research and
Statistics Departments, and consultation with the Area Departments

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I. HOW DOES TODAY'S IMS COMPARE TO PREVIOUS ERAS AND SYSTEMS?¹

Overview

1. **Gold standard.** The modern history of the IMS starts with the shift from a bimetallic system to the Gold Standard in the 1870s and 1880s (Ghosh and others, 2002, McKinnon, 1996). Under the Gold Standard, the major national currencies were freely convertible to gold at a fixed exchange rate, with adjustment largely undertaken through flexible prices, wages and income. This system survived up to the outbreak of the First World War, and while it was subsequently re-established in a modified form following a painful period of post-war disinflation, the economic and political strains of the Great Depression led to the system's ultimate collapse in the 1930s.
2. **From fixed to floating.** Negotiations between the U.K. and U.S. in the 1940s led to the post war emergence of the Bretton Woods system of fixed and adjustable exchange rates tied to the dollar, with the dollar fixed to gold and the IMF established to oversee the system. However, this system too faced repeated strains, and with the dollar's link to gold broken and most major currencies floating in the early 1970s, the current arrangements centered on floating currencies were born. The U.S. dollar remained the key reserve currency in the new system, with U.S. Treasury Bills the major reserve asset.
3. **Influences.** The IMS has evolved in response to geopolitical, economic and intellectual developments. At the *geopolitical* level the rise of the classical Gold Standard was supported by the dominance of the U.K., and its messy collapse between 1914 and 1936 mirrored the U.K.'s decline as a global power. Similarly, the Bretton Woods system was ultimately supported by the dominance of the U.S. and resultant confidence in the dollar as a reserve asset. These events were mirrored by the evolving relative *economic* positions of the currency issuers. In addition, the rise in cross-border capital flows has also played an increasing role in constraining feasible options, particularly regarding exchange rate pegs and capital controls. Key *intellectual developments* helping shape the IMS over time include the reaction against the Gold Standard and nineteenth century laissez-faire economic thought of Keynes and others in the interwar period, and growing confidence in the ability of governments to manage the economy after the Second World War. Later, neoclassical critiques of fixed exchange rates supported by capital controls and interventionist government policies became increasingly influential.

Strains and Ruptures

4. **Gold versus growth.** Under the classical Gold Standard (and the interwar Gold Exchange Standard), obtaining an adequate supply of gold to support increases in trade and

¹ Prepared by A. Piris (SPR), based on inputs from C. Crowe (RES), T. Bayoumi and M. Pant (both SPR).

activity (key to avoiding deflationary pressures) was problematic. The gold supply relied on haphazard discoveries of new reserves and improvements in mining technology, and an often inadequate supply was further hampered by the tendency of surplus countries to hoard gold, contrary to the ‘rules’ of the textbook specie flow mechanism. On the other hand, greater downward wage and price flexibility, and more tolerance for economic fluctuations than is feasible today, helped to cushion the impact of these supply constraints. In fact, the weakness of competing (domestic) policy objectives may have supported the classical Gold Standard to a greater extent than the inherent credibility of the peg. The breakdown of the Gold Exchange Standard in the 1930s reflected the rise of economic nationalism and political pressure to achieve domestic policy objectives regardless of the implications for gold convertibility (Ghosh and others, 2002, Bayoumi and Eichengreen, 1995).

5. ***Domestic priorities.*** Problems in supplying reserve assets—gold and the U.S. dollar—resurfaced under Bretton Woods as the “Triffin dilemma,” highlighting the implications for sustainability of the need for the U.S. to run deficits if global demand for reserves was to be met, and dollar convertibility into gold maintained. In the end, the abandonment of the Bretton Woods system seems to have owed more to the rapid rise of Europe and Japan, with higher growth rates than the US, which made maintenance of fixed exchange rates increasingly difficult and undesirable. U.S. monetary and fiscal policies directed at domestic priorities proved inconsistent with the maintenance of the dollar’s real value and hence the long-run link to gold, and triggered the move to floating rates.

6. ***Evidence.*** Bayoumi and Eichengreen (1995) find support for the hypothesis that domestic concerns gradually gained priority in their finding that, in the key open economies, aggregate demand (AD) curves became progressively steeper and aggregate supply (AS) curves flatter over time. That is, the steepening AD curves suggest economic shocks were increasingly absorbed through prices rather than output, consistent with policy makers becoming relatively more concerned with domestic employment outcomes, while flattening AS curves are consistent with growing nominal inertia of domestic prices and wages. The implication was declining credibility of commitments to maintaining exchange parities even if this implied deflation would be necessary.

The Sterling-Dollar Transition

7. ***Managed decline.*** The decline of sterling from the dominant reserve currency began with the First World War, and was initially traumatic as a weakened U.K. economy tried to return to pre-war gold parities, and U.S. willingness to take a more decisive leadership role was not yet in place (Eichengreen and Sussman, 2000). The post Second World War experience, of careful management of decline by the U.K. authorities supported by bilateral and multilateral arrangements offers a more successful example of how transitions can be managed cooperatively (Schenk, 2009).

Capital Flows

8. **Gold flows.** International capital flow volatility has posed problems for domestic economic management in all incarnations of the IMS. Under the Gold Standard gold flows—at least in theory—played an important equilibrating role. Countries experiencing an inflow of gold would experience an increase in the domestic money stock, higher prices, declines in competitiveness and eventually an end to inflows. Sudden outflows of gold could be handled through temporary suspension of convertibility, lender-of-last-resort lending to domestic financial systems, and in the case of open speculative attacks on core currencies, loans of gold from other central banks (for example with sterling in the 1890 Baring’s crisis, when this systemically important bank was rescued by the Bank of England, supported by loans from Russia and France, after defaults in Argentina). The credibility of the commitment to the gold parities underpinned stability despite the growth in capital flows over the period. However, the real exchange rate changes or emergency measures posed then, as now, considerable challenges for domestic economic management.

9. **Hoarding.** In practice, surplus countries often hoarded gold, leading to failures to reduce the underlying imbalances. This was an important factor contributing to the turbulence of the interwar years, with France and the U.S. accumulating gold lost largely by the U.K., for example.

10. **Controls and their end.** As a consequence of the protectionism of the 1930s and restrictive measures taken during the Second World War, capital flows were overwhelmingly official in the immediate post-war period. Under Bretton Woods, capital controls were explicitly included to allow countries to peg their exchange rate while maintaining a degree of monetary autonomy, and thus private capital flows, though growing, remained small in relation to current and official transactions through to the 1970s. However, this solution to the classic monetary policy ‘trilemma’ was gradually abandoned in the economies at the core of the IMS as the microeconomic costs of capital controls became clearer and more sophisticated financial markets made comprehensive controls increasingly hard to maintain. Private capital flows have since grown to dwarf current and official transactions in advanced and many emerging economies.

II. RESERVES GROWTH: A TECHNICAL ANALYSIS²

Definition of International Reserves

1. **IMF definition.** The IMF's Balance of Payments Manual defines reserve assets as those external assets that are readily available to and controlled by monetary authorities for meeting balance of payments financing needs, for intervention in exchange markets to affect the currency exchange rate, and for other related purposes.

Extrapolation of Recent Demand for International Reserves

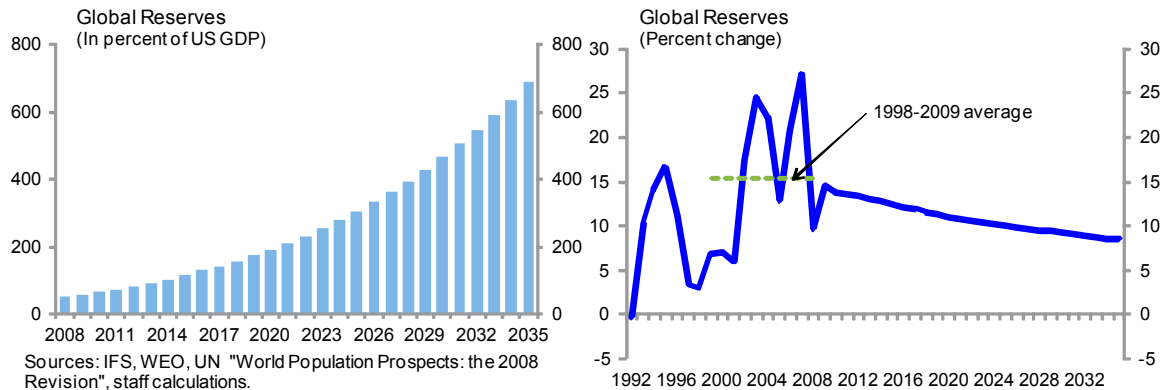
2. **Financial development and reserves.** An exercise was undertaken in which countries are motivated to accumulate reserves for reasons of financial development, with reserve growth converging on a low benchmark level as GDP per capita (a proxy for security of access to market financing) converges on advanced economy levels.

3. **Assumptions.** Taking countries accounting for 90 percent of global reserves at market exchange rates in 2008 (39 countries), the log of GDP per capita is assumed to converge on U.S. levels at a rate of five percent per year (implying half of the difference is eliminated in about 14 years).³ This rate of convergence rate may be optimistic (empirical evidence available suggests regional convergence within countries is between 2 and 3 percent, and the evidence for cross-country convergence is contested). Assuming a lower rate of convergence would lead to higher reserves growth in this exercise. Starting from each country's average growth in reserves for 1999-2008, reserves growth is a linear function of relative GDP per capita, with all countries at or reaching 70 percent of U.S. GDP per capita assumed to have secure access to foreign financing and henceforth accumulating at the rate of 5.5 percent—the WEO forecast for global nominal GDP growth 2010-14—or less (if this was the case from 1999-2008). An exception is made for reserves growth of oil economies, which converges to global nominal GDP growth by 2015, on the assumption that their capacity to accumulate depends on oil prices, which reach a steady state by that time (along with their savings-investment balances). U.S. GDP is assumed to grow at the nominal rate of 1999-2008 (5.2 percent, similar to the WEO forecast period), with the per capita growth rate adjusted for population forecasts taken from the UN.

4. **Results.** Under these assumptions, global reserves growth falls steadily to 8.5 percent per year by 2035 (from an average of 15.4 percent in 1999-2008). However, as a proportion of U.S. GDP, reserves are still rising at the end of the period (indeed, accelerating), reaching 690 percent.

² Prepared by A. Piris and N. Raman (SPR).

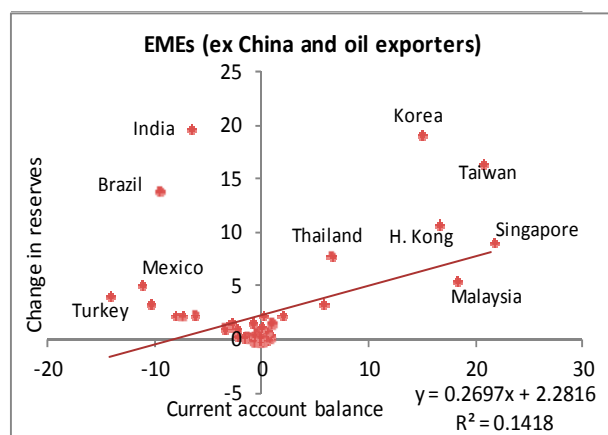
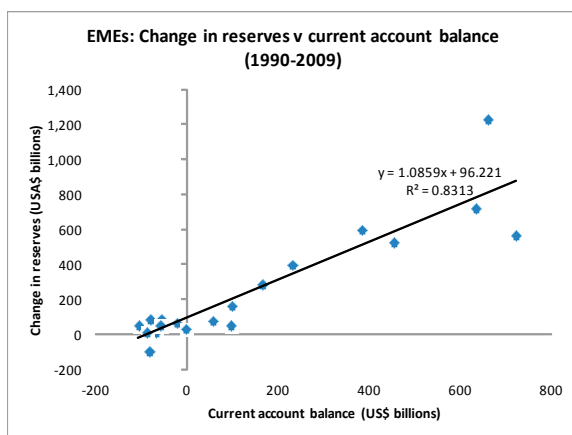
³ The exact equation derives from a Cobb-Douglas production function, as shown in Barro and Sala-i-Martin (1995), p. 37.



Current Accounts and Reserve Accumulation

Is the acceleration in reserve accumulation associated with rising EME current account surpluses?

5. **Correlation through time.** One lesson from the crises of the 1990s was that large current account deficits were associated with the sharp reversals in capital flows suffered by many EMEs, and many have subsequently recorded stronger current account balances. In fact, the aggregate change in reserves for all EMEs from 1990-2009 is matched virtually one-for-one by the aggregate current account balance (each data point in the figure is the total change in EME reserves against the aggregate EME current account balance in a given year). This correlation is maintained even excluding outliers, in particular China, although this weakens the relationship somewhat. Note that this exercise is insufficient to show that changes in the current account *cause* changes in reserves (other factors not considered are relevant—see for example Obstfeld, Shambaugh, and Taylor, 2008).



6. ***Correlation across countries.*** Looking at a cross-section of EMEs in each year since the late 1990s also shows a relationship between current accounts and reserves. In the period before the Asian crisis, there is very little correlation between reserve accumulation and current accounts, but after 1998, the one-for-one relationship again becomes evident. The relationship does weaken substantially—though remaining positive—if China and the oil exporters are excluded from the sample.

7. ***Regional patterns.*** In this approach, differing regional reserve accumulation strategies becomes evident. While there is a general tendency to greater reserve accumulation, East Asian countries have tended to run current account surpluses, in some cases swinging away from significant deficits in the pre-Asian crisis period (e.g., Indonesia, Korea, Malaysia, and Thailand)—possibly taking advantage of their very high domestic savings rates. In other regions, the accumulation is clearly coming from financial investments of non-residents.

III. POTENTIAL RESERVE CURRENCY CANDIDATES⁴

1. *National-currency contenders.* Overcoming the dollar's ascendancy would not be an easy task—neither the size of the U.S. economy nor the depth of its financial markets is matched by those in any of the currently available candidates (Section II of the main paper). Hence, drawing on what it takes to become a truly international reserve currency (see Supplement Box III.1), the status quo will likely be preserved in the foreseeable future. Nevertheless, while several challenges face the prospects for viable alternatives, they are not insurmountable:

- *Euro.* Since its inception in 1999, the euro has advanced to become a key global reserve currency, second only to the dollar, and accounting for more than a quarter of total international reserves (see ECB, 2009). However, the use of the euro is largely concentrated in the non-euro area EU member states that expect to eventually form part of the monetary union. . Also, while euro area government securities markets are fairly large, they are fragmented given the heterogeneity in government credit risks, or lack active secondary markets due to limited issuances of shorter-term securities. Furthermore, similar to the debate about the reserve currency status of the dollar induced by the recent crisis, fiscal and balance of payments problems in some euro area countries have raised concerns about the euro as well.

Authorities' views: The euro was always perceived as a necessary step to accomplish the European single market, rather than to be an international competitor for the dollar (Trichet, 2009). The ECB maintains a neutral stance with respect to the euro—neither specifically promoting nor hindering its use (see Bini Smaghi, 2008).

- *Yen.* Since the mid-1990s, the Japanese authorities have strived to improve their financial markets' infrastructure, and remove the various taxes that applied to foreign investors. However, a broader interest in the yen is challenged by Japan's protracted economic slowdown. Concerns regarding Japan's low long-term growth potential, high public debt burden and low yield, and limited room for macro policy (both monetary and fiscal) are likely to hamper its acceptance as a major reserve currency.

Authorities' views: While further internationalization of the yen is not an objective in itself, further deepening Japanese financial markets is a key part of the authorities' growth strategy (see Nakao, 2010), which would further boost the international role of the Yen.

- *Renminbi.* The Chinese economy has to undergo fundamental structural changes (including achieving full convertibility and financial sector reform) to become a viable reserve currency in the future. In terms of economic policies, China's adoption

⁴ Prepared by R. Duttagupta and P. Khandelwal (SPR), with inputs from MCM and RES.

of conservative fiscal and monetary policies in the context of a pegged exchange rate, administered interest rates and directed credit, partial currency convertibility, and capital controls has so far helped maintain a relatively low inflation environment and resilience to external shocks. However, a pegged exchange rate is likely to reduce the attractiveness of renminbi (RMB) assets for diversification purposes, discourage the development of foreign exchange markets, and complicate domestic economic adjustment to external shocks as the Chinese economy continues to globalize. Liberalization of capital controls and financial markets could pose challenges for maintaining macroeconomic stability.

Authorities' views: Greater international use of the Renminbi is currently being promoted to minimize exchange rate risks from the U.S. dollar, and to address dollar funding shortages for China's importers. Further internationalization of the currency to become a full-fledged reserve currency is currently a distant goal, in view of structural constraints outlined above.

2. ***Asian reserve currencies.*** A striking feature in the IMS is the absence of EM currencies in the global reserve system, despite a growing share of EMs in the global economy and financial markets (e.g., the ASEAN+3 are projected to outsize the U.S. and EU in economic size over the next decade). Innovative use of EM currencies as quasi reserve assets—apart from fully developing them into reserve currencies—would take the pressure off the traditional suppliers of reserves. Thus for instance, China has been increasing the regional use of the RMB in invoicing and settlement of cross-border trade including through several bilateral currency swap agreements (with a total value of recent arrangements at \$95 billion, see Murphy and Yuan, 2009). While this move may have been motivated by a need to lessen the dollar funding crunch during the crisis, further innovative use of RMB (e.g., the authorities have also taken steps to establish an offshore RMB market in Hong Kong starting with the issuance of \$879 million on RMB denominated sovereign bonds) may represent first steps towards developing the RMB as a key regional currency.

3. ***Common Asian currency.*** The prospect for a common Asian currency is currently very distant given very diverse economic and political backgrounds for these countries. At the same time, given the rise of China and the expected boost it would provide to intra-regional trade over the next decade (driven also in part by the expected relative decline in external demand in Western advanced economies), this could indeed provide the impetus for key regional currencies or pockets of “common currency areas” within Asia. Some commentators suggest that the Chiang Mai Initiative (CMI) can provide a basis for implementing a common Asian currency unit expressed as a weighted average of the currencies of the main creditor countries of the CMI (China, Japan, and Korea) with the weights determined by their relative contributions (see Kawai, 2009).

Supplement Box III.1. What are the Desirable Features of International Reserve Currencies?

Truly global reserve currencies have some important characteristics in common that establish their economic and financial dominance. Depending on how much of a country can achieve, the use of its currency can become truly international, or be limited to systemic importance in a regional rather than global context.

Deep and liquid financial and foreign exchange markets. Deep foreign exchange markets facilitate in conducting foreign exchange policies, managing foreign exchange reserves, and managing currency risks effectively. Prerequisites include currency convertibility and a credible commitment to an open capital account to facilitate financial flows with minimal transactions costs (see Galbis, 1996). The depth and liquidity of the market for underlying financial assets (especially government securities) is also important, which would further support financial asset transactions denominated in the reserve currency. In this context the financial assets should be liquid (narrow bid offer spreads in normal and stress times), establish a full yield curve (to be able to manage duration and curve positioning), and offer a range across different credit qualities (to achieve the desired level of credit risk).

U.S. financial markets are the most deep and liquid,^{1/} and remained resilient at the height of the recent crisis, unlike other markets around the world. Conversely, some of the Euro area (non-core as well as core) government debt faced severe illiquidity in the current crisis.

Wide use in private sector transactions. A currency with a large share in world GDP, trade, and finance, including FDI flows, attracts more users and establish network. This systemic importance generates the economies of scale in the use of its currency—e.g., by being a large exporter and importer, it could have a bargaining power to impose use of its currency while the more trading partners such a country has, the more familiar its currency becomes (see Iwami, 1994).

The U.S. is the largest economy in the world, with the euro area a [close] second; with prospects for the yen less sanguine given the weak outlook for its future potential growth. Going forward, as China continues to increase its share in the global economy, the renminbi could emerge as a viable alternative.² A number of convertible currencies (e.g., Swiss franc, or the Swedish krona) are eligible reserve assets, but are not used globally partly reflect the constraints for their governments to support transactions at a systemic scale (c.f., Eichengreen 2009b).

Macroeconomic and political stability. Policy-making institutions with credibility and a track record of maintaining price stability are a critical ingredient to sustain confidence in the currency's long-term purchasing power. To the extent that a flexible exchange rate regime can help maintain macroeconomic stability by facilitating domestic price adjustment, this may also be crucial.

While current reserve currency issuers (euro area, Japan, the United Kingdom, and the United States) have had track records of broadly comparable strength, the crisis has raised fiscal sustainability concerns, requiring credible exit strategies to avoid undermining their reserve issuer status.

1/ Note that the international reserve currency status for the U.S. dollar was not entirely a matter of chance. After the panic of 1907, the U.S. created a market of dollar “acceptances” to facilitate foreign holdings of the U.S. currency (See Flandreau and Jobst, 2006, and Eichengreen 2005). The market for dollar acceptances took off only after wartime deficits provided government securities that could be used as collateral.

2/ China's share in global GDP and trade flows over 1998-07 averaged 4.6 percent and 5.1 percent respectively compared with 28.5 percent and 13 percent for the United States and 11.2 percent and 4.8 percent for Japan (see Wu, Pan, and Wang, 2010). While the trend for the Chinese economy is clearly on the upside, China would also need to catch up with the existing reserve currency countries in terms of its income per capita.

IV. FURTHER CONSIDERATIONS FOR PROMOTING THE USE OF THE SDR BASKET⁵

Usage

1. **Official usage.** The SDR's global monetary role has thus far been limited—only SDR 21.4 billion were allocated until mid 2009—and their use restricted to the official sector (i.e., IMF members, the IMF, and a few prescribed holders), often in members' operations and transactions with the IMF. This limited usage reflects the generally stable store of value of the constituent currencies in recent decades and an instrument designed initially to solve the problems of a bygone era, namely, the dollar liquidity problems of the Bretton Woods I era of fixed exchange rates, limited convertibility, and closed capital accounts. The subsequent move to flexible exchange rates among major economies, suspension of convertibility to gold, and the opening of capital accounts meant that the Triffin Dilemma no longer applied. Nevertheless, the SDR has served the purpose of increasing reserve buffers and facilitating reallocation of global liquidity in times of stress, demonstrated by the SDR 183 billion allocations in mid-2009 and the subsequent transactions among members.

2. **Private usage.** The use of SDR-denominated instruments in the private sector has been even more limited. These instruments would have a value that follows the SDR basket, but with market-determined interest rates. As such, they are different from the (official) SDR. Private markets in SDR-denominated instruments appeared in the late 1970s and early 1980s, but have since virtually disappeared, in part due to the strength of the underlying currencies, particularly the U.S. dollar, but also because robust market making and clearance and payments settlement mechanisms were absent.⁶ Developing such infrastructure will be essential if private use is to take hold (see, for instance, Houguet and Tadesse, 2009).

SDR Allocations and Liquidity

3. **Allocation rules.** Allocating SDRs involves making the case for a “long-term global need” to supplement reserve assets, in a manner consistent with the Fund's purposes and avoiding economic stagnation and deflation as well as excess demand and inflation. These “analytic” safeguards are complemented by governance ones: allocation and cancellation decisions must be adopted by the Board of Governors with an 85 percent majority of the votes of SDR Department participants (currently, all IMF members); allocations are made for specified consecutive periods—by default annually within 5-year periods, unless specified

⁵ Prepared by R. Goyal and P. Khandelwal (SPR), with inputs from FIN, LEG, and MCM.

⁶ The first private SDRs appeared in 1975. By 1981, SDR-denominated bank deposits (excluding interbank deposits) were estimated at SDR 5-7 billion, and SDR-denominated bond or note issuances totaled SDR 563 million (see IMF, 1987). The narrowing of the SDR currency basket from 16 to 5 currencies and the increase of the SDR interest rate to 100 percent of the underlying market rates in 1981 briefly spurred the expansion of the private SDR market for syndicated loans, which amounted to SDR 1.2 billion in 1981-82.

otherwise; and the case for further allocations or cancellations must be reviewed periodically. SDRs are allocated to members in proportion to quota, and their use is unconditional.

- *Size.* International reserves increased annually on average by about \$600 billion over 2000-09, up to two-thirds of which are estimated by some measures to have been for precautionary purposes (e.g., Obstfeld, Taylor, and Shambaugh, 2009). Following the crisis, this number may well increase. To limit the pursuit of reserve accumulation policies that strain the system and increase the stock (and role) of SDRs, large and regular allocations may be needed, perhaps on the order of \$200 billion or more annually for some years. While such allocations would be consistent with meeting the “long-term global need”, they need not always be consistent with avoiding adding to inflation expectations (e.g., during periods of heightened inflation risk). Allocations that are not spent would not impact money supply, but allocations that are spent could impact money supply depending on the extent to which central banks, including of reserve currency countries, sterilize transactions and offset such inflation pressures.
- *Analytic safeguards.* One approach would be to view governance safeguards as adequate to balance macroeconomic considerations, thereby amending the Articles to eliminate the current analytic requirements. Another would be to opt for modest allocations (say, \$25 billion annually or up to 10 percent of quota as suggested by Clark and Polak, 2004, but slowing significantly the move to an SDR-based system) or adding conditions on use (though militating against SDR’s unconditional use and reducing their attractiveness vis-à-vis holding other reserves), which would require an amendment to the Articles of Agreement.
- *Targeting.* To address these tensions, an alternative would be to target smaller, periodic allocations to a subset of members that are accumulating reserves for precautionary purposes. Calibrating amounts to quota has the merits of simplicity, uniformity and transparency, but varying degrees of financial openness and development across countries makes it more challenging to relate their needs with allocation amounts. Such changes would require an amendment to the Articles. Targeting should also be accompanied by the quid pro quo discussed above.
- *Escrow and reconstitution.* Another option would be to have regular allocation of SDRs (as under the first bullet) but to require that they be held in escrow (with, for instance, the SDR Department), for use in the event of an observable, exogenous, and temporary shock. This would also require an amendment to the Articles. Any country availing itself of the escrowed amount would, after a defined period of time, be required to reconstitute the SDRs back to the escrow account. Allocated in this manner, SDRs could come fairly close to mimicking the desirable features of reserves—available for country’s use when needed. Though SDRs would not be a perfect substitute for own reserves, they would be relatively costless (relative to “borrowed” reserves, accumulated for instance in the face of volatile capital flows).

- *Conditional use.* A complementary approach would be to increase the role of SDRs in financing the IMF's lending instruments, which could increase the amount of SDRs in circulation depending on the means of repayment of Fund credit (whether in SDRs or members' currency).
- *IMF as broker.* Within the official sector, the Fund acts as a broker among members or between members and prescribed holders to facilitate exchanges of SDRs for freely usable currencies. For more than two decades, the SDR market has functioned through voluntary trading arrangements. The Fund, i.e., the GRA, can hold SDRs and sell them to members that need SDRs for meeting financial obligations to the Fund (e.g., for the payment of SDR Department or GRA charges). However, the Fund is not permitted to buy SDRs at present from a member against currencies of other members, which could be changed by adopting policies on currencies that would be provided in exchange (Article V, section 6c). This would enable the Fund to play a larger role in the market for official SDRs, but the implications of a greater acquisition of SDRs by the GRA on the adequacy of Fund resources for lending would need to be assessed.

SDR Usage

4. *Broadening prescribed holders.* The IMF could consider broadening the number of prescribed holders of SDRs. A far reaching reform would involve allowing the private sector to hold official SDRs (such as commercial banks) although, as any prescribed holder, they would not participate in allocations. They would also not be allowed to hold net short positions in the SDR to minimize counter-party risk in the (official) SDR market. If SDRs are taken up by the private sector, such a reform could promote a broader acceptance for the SDR as a reserve asset, as it could be used by central banks for direct intervention in markets.
5. *Private issuance.* Sovereign issuances of SDR-denominated bonds would generate a yield curve in and create a critical mass of SDR-denominated instruments, which in turn could spur private sector issuance of similar securities. Large financial institutions and multinational companies, for instance, would be expected to issue such bonds to diversify their funding sources and foreign exchange exposure.
6. *Settlement.* A clearing and settlement system would be needed for issuance and transactions of securities denominated in SDRs. With some modifications, the existing major clearing and settlement systems could handle SDR-denominated securities.
7. *Unit of account.* In a concerted move to an SDR-based system, the Fund could further promote the use of the SDR as a unit of account in official publications of international statistics. Currently, the SDR is used as a unit of account among only a handful of international organizations, but broader use could be expected with increases in market invoicing in SDRs.

V. A GLOBAL CURRENCY: INSTITUTIONAL CONSIDERATIONS⁷

1. ***Institutional underpinnings.*** Setting up a bancor-based system requires resolving technical and governance challenges related to the creation of a global central bank with a clear policy objectives and instruments, along with a financial and governance structure that ensure its credibility and legitimacy. These challenges are described below. A key hurdle is political, although that applies to all other solutions for systemic reform.
 - ***Global central bank.*** The global central bank that issues bancor would need to earn a very strong reputation and credibility. Appropriate rules and governance are essential, and the bank should have a strong balance sheet. Members would need to pledge to back up the liabilities of the bank and annually cover any losses incurred in its operations. Such credibility could be bolstered by capital subscriptions from member countries at a level that ensures the highest possible credit rating (“AAA”). Member subscriptions could be similar to IMF quotas and determined by a transparent formula that reflects relative weight in the global economy. Profits (and seigniorage) could be distributed to members according to the capital subscriptions.
 - ***Policy objective.*** Issuance of bancor, or more generally the implementation of monetary policy, could be targeted towards stabilizing the price of a representative basket of goods and services (and perhaps assets). An international standard basket could be defined, with weights on the baskets of different countries on the basis of their respective GDPs. The stable value of bancor would be defined in terms of this international basket.
 - ***Instruments.*** The central bank would conduct market operations, buying and selling bancor-denominated securities issued by member governments, in exchange for bancor issuances and bancor-denominated deposits at the central bank. These operations could be distributed across markets, perhaps in proportion to countries’ economic and financial weights. The amount of operations by market would be determined by the overall objectives and fine tuned with experience, with due consideration to balancing the trade-off between ensuring adequate liquidity provision, including in times of stress, and maintaining the store of value of bancor.
 - ***Governance.*** The governing body of the central bank would be made up of representatives of national governments or central banks, whose voting shares reflect the shares of their economies in global GDP, trade, and finance, as well as the domestic usage of bancors (since those with relatively more bancor usage would want to have a greater say). These shares would need to be adjusted periodically for differential growth. Representatives should have strong monetary policy credentials,

⁷ Prepared by R. Goyal and P. Khandelwal (SPR).

and the governance structure designed to protect the bank's operational decisions from political influence and maintain credibility. Accountability structures of the bank to its membership would also need to be put in place.

- *Transition to bancor-based system.* A fiat declaring sole use of bancor in member countries, particularly systemically important ones, would launch the bancor-based system once the above technical and governance matters are resolved. In its absence, however, sustained public sector support for enhancing bancor's use will be necessary akin to the proposals outlined in the SDR system above, until such time a critical mass of bancor and bancor-denominated securities is achieved. Alternatively, a transition from an SDR-based system could be envisaged, with eventual conversion of SDRs to bancor.