INTERNATIONAL MONETARY FUND

Criteria for Broadening the SDR Currency Basket

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(In consultation with other departments)

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Executive Summary

This paper discusses a number of reform options for the eligibility criteria for the SDR currency basket. It responds to a request by the Executive Board, and to calls by the IMFC and the G-20 Ministers for developing a criteria-based path to broaden the composition of the basket. The paper is guided by long-standing principles underlying SDR valuation and by considerations related to a stable evolution of the international monetary system.

The paper explores the pros and cons of maintaining the current "freely usable currency" criterion, and clarifies indicators for assessing it. The freely usable concept and its two key elements—currencies should be "widely used" and "widely traded"—are set out in the Articles and serve important operational purposes. A formal requirement for a currency to be freely usable was adopted for SDR valuation only in 2000, although considerations relating to this concept had been taken into account earlier. Indicators for assessing freely usable currencies were first discussed in 1977, and are updated to reflect subsequent developments in financial markets and data availability. The paper suggests as indicators for "wide use" the currency composition of foreign exchange reserves, international debt securities, and international bank liabilities; and for "wide trading" it proposes foreign exchange spot market turnover.

As an alternative to the freely usable criterion, the paper discusses a new criterion tailored explicitly to the reserve asset characteristics of the SDR. This reserve asset criterion would be based on three key characteristics: liquidity in foreign exchange markets; hedgeability; and availability of appropriate interest rate instruments. Four indicators are proposed to assess these characteristics: currency composition of foreign exchange reserves, spot and derivatives market turnover, and an appropriate market-based interest rate instrument.

Scenario analysis suggests that the possible new criterion, while safeguarding the reserve characteristics of the SDR, may provide scope to broaden the SDR basket within a shorter time frame. Reflecting to some extent inertia and network externalities that influence the "wide use" of currencies, meeting the possible new criterion, while challenging, may be achievable for some currencies within a shorter time period.

Issues related to a size-related criterion, and to the number of basket currencies are also examined. The paper concludes that, while it would be desirable in principle to augment exports with financial flows, current data limitations suggest that it may be appropriate to maintain exports as the size criterion at this stage. The paper also argues that there are merits in not pre-judging the number of currencies in the SDR basket. The issue of whether a new currency would replace or be added to existing SDR basket currencies could be assessed on a case-by-case basis.

I. INTRODUCTION[1]

1. **At their April 2011 meetings, the IMFC and the G-20 Ministers called for further work on a criteria-based path to broaden the composition of the SDR basket.** This followed earlier Board endorsement of a work program on issues relating to SDR valuation and the SDR interest rate basket.[2] Directors have also noted that expanding the SDR basket to major emerging market currencies under appropriate conditions, and based on transparent criteria, could further expand the role of the SDR in the international monetary system (IMS).[3]

2. **Against this background, this paper reviews the eligibility criteria for the SDR currency basket.** Since the 2000 decision on SDR basket composition, the basket consists of the four currencies that are: (i) issued by Fund members (or monetary unions that included Fund members) which are the largest exporters, and (ii) have been determined by the Fund to be "freely usable" (FU). While exports have played a role since the adoption of the SDR basket formula in 1974, the requirement for a currency to be freely usable—a concept that lies at the core of the Fund's operations since the Second Amendment of the Articles in 1978—was added as a formal criterion only in 2000.

3. **The paper discusses reform options for the eligibility criteria as well as indicators to assess them.** Building on the informal Board briefing in July and a note prepared for the G-20 last month, it discusses the existing FU criterion and a potential new alternative criterion—tailored to preserve the reserve asset status of the SDR and one that could help promote a smooth evolution of the IMS. The paper also explores indicators that could be considered to assess these two criteria. In addition, it reviews issues relating to the current export criterion, which provides a size-based condition for SDR basket inclusion, and to the number of currencies in the SDR basket. More operational issues, notably those related to currency weights in the SDR basket and the SDR interest rate, will be covered in a subsequent paper.

4. **The paper is organized as follows.** After providing background in Section II, Section III discusses the concept of a freely usable currency and potential indicators to assess this criterion. Section IV describes a possible alternative to the FU criterion for SDR basket selection, and Section V compares the indicators under the freely usable criterion and the possible new alternative criterion. Sections VI and VII discuss issues relating to the exports

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[1] This paper was prepared by Messrs. Kumar, De Broeck, Rossi, Kohler, Rodriguez, Perez, and Ms. Bacall (all FIN) and Ms. Mateos y Lago, Ms. Maziad, and Mr. Wang (all SPR).

[2] *The Acting Chair's Summing Up, Review of the Method of Valuation of the SDR* (11/17/2010) http://www.imf.org/external/np/sec/pn/2010/pn10149.htm.

[3] *The Chairman's Summing Up, Enhancing International Monetary Stability—A Role for the SDR?* (2/04/2011) http://www.imf.org/external/np/sec/pn/2011/pn1122.htm.

criterion and the number of currencies in the SDR basket, respectively. Section VIII provides concluding remarks and issues for discussion.

II. BACKGROUND

A. SDR Valuation Principles and Current Criteria

5. **SDR valuation has been guided by several long-standing principles.** These principles aim to enhance the attractiveness of the SDR as a reserve asset (Box 1). Based on these principles, regular 5-yearly reviews of the SDR basket have been conducted, covering the currencies to be included in the SDR basket and the weights of those currencies. The reviews have been based on criteria adopted by the Executive Board, which the Board has the authority to modify.[4]

6. **In practice, there has been a high degree of stability in the method of SDR valuation.** As the SDR valuation principles have remained broadly unchanged since the SDR basket's inception, revisions in the valuation method have been linked to major changes in the roles of currencies in the world economy. These included the current criteria for SDR valuation, which were adopted in 2000 following the introduction of the euro. The 2000 decision, in turn, modified criteria that had been in place since 1980, when the SDR valuation basket was streamlined from 16 to 5 currencies.[5] The high degree of stability also reflects concerns about the effect of changes in the SDR basket valuation framework and the SDR basket composition on official users of SDR. In particular, SDR users have stressed to staff that changes in the basket affect their risk exposure until portfolios or hedging activities can be rebalanced to reflect a new basket.

[4] Article XV, Section 2, provides: "The method of valuation of the special drawing right shall be determined by the Fund by a seventy percent majority of the total voting power, provided, however, that an eighty-five percent majority of the total voting power shall be required for a change in the principle of valuation or a fundamental change in the application of the principle in effect."

[5] *Decision No. 12281-(00/98) G/S October 11, 2000.*

Box 1. Principles Guiding SDR Valuation Decisions

While not stated in any decision of the Fund, a number of broad principles have guided Board decisions on the valuation of the SDR since the 1970s with the aim of enhancing the attractiveness of the SDR as a reserve asset. According to these principles, the SDR's value should be *stable in terms of the major currencies*, and the currencies included in the basket should be *representative of those used in international transactions*.

In addition:

- the relative weights of currencies included in the basket should reflect their *relative importance in the world's trading and financial system*;
- the *composition of the SDR currency basket should be stable* and change only as a result of significant developments from one review to the next; and
- there should be *continuity in the method of SDR valuation* such that revisions in the method of valuation occur only as a result of major changes in the roles of currencies in the world economy.

7. **Reflecting the SDR valuation principles, the 2000 decision set out the following criteria for SDR basket composition**.

- (i) ***Exports***: Countries or monetary unions are ranked based on export data. This "gateway" criterion has been in place since the adoption of the basket formula for SDR valuation in 1974;
- (ii) ***Freely usable currency***: The 2000 decision added the requirement that eligible currencies must be determined by the Fund to be freely usable (FU). Considerations underlying decisions on the SDR basket even before 2000 had in fact taken account of currency use and trading, and thus of aspects that are at the heart of the FU criterion. The 2000 decision change brought formal recognition to the notion that a country's share of world exports is not necessarily a reliable indicator of the use of its currency in international transactions, with the FU concept allowing for the consideration of several other indicators of the breadth and depth of financial markets.
- (iii) ***Number***: the decision provides for a specific number of basket currencies (4).

B. SDR and the International Monetary System

8. **In recent years, a new set of considerations for SDR basket selection relating to a stable evolution of the international monetary system (IMS) has received attention.**[6] Interest in the SDR has been boosted by the global debate over reform of the IMS and the SDR's role in it. While there continue to be divergences of views regarding the precise role the SDR can play in the IMS, there is a broad consensus that the composition of the SDR basket is an important parameter. Therefore, the adoption of clear rules regarding the valuation of the SDR could contribute to a smooth evolution of the IMS.

9. **Global economic developments suggest possible benefits of greater plurality in the IMS, with possible implications for the SDR basket.** The role of large emerging market countries in the global economy has increased dramatically in recent years, reflected most notably in their increasing trade integration and their large and growing contributions to global growth. However, real economic developments have proceeded much faster than developments in currency and financial markets. Although some emerging market currencies show potential for becoming international currencies, their role in the IMS lags far behind their real economic weight, partly reflecting inertia and network externalities, and partly also insufficient supply of relevant assets.[7] Nevertheless, growing interest in non-SDR currency assets is evident in financial flows and trading volumes, and has been accompanied by improvements in the quality and credibility of macroeconomic policy frameworks. The composition of the SDR basket could take into account these developments, provided the relevant currencies also possess the requisite characteristics that would preserve the role of the SDR as a reserve asset. In some cases, this will require issuers of candidate currencies to pursue further policy reforms that deepen their financial sectors and support the international use of their currencies.

10. **Setting a criteria–based path for broadening the composition of the SDR basket could play a useful role in the smooth evolution of the IMS.** It could provide the issuers of candidate currencies with an incentive to accelerate the prerequisite policy reforms. It could also facilitate acceptance and use of these currencies as reserve assets, with diversification benefits for users. From there on, a dynamic conducive to further financial deepening and

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[6]Bénassy-Quéré et al., *Global Currencies for Tomorrow: A European Perspective (2011);* Goldman Sachs Global Economics (2010), "Global Reserve Currencies and the SDR", *Global Economics Paper* No. 196; IMF, (2011), *Enhancing International Monetary Stability—A Role for the SDR?*, IMF Policy Paper, http://www.imf.org/external/np/pp/eng/2011/010711.pdf.

[7] A recent note by the staff surveyed the evolving landscape of international currencies; examined the potential for internationalizing a select number of emerging market (EM) currencies; and explored benefits/risks to individual countries and the IMS more broadly—both from policy and operational perspectives– from having additional international currencies. See "*Internalization of Emerging Market Currencies –A Balance between Risks and Rewards*" (10/19/2011) http://www.imf.org/external/pubs/ft/sdn/2011/sdn1117.pdf.

additional reforms that encourage a wider role of these currencies could emerge, which could contribute to a smooth evolution of the IMS.

III. FREELY USABLE CURRENCY

11. **This section reviews the concept of a freely usable currency and its role in SDR basket valuation.** It begins with a discussion of the FU concept, as set out under the Articles of Agreement, and of the principles that have guided past assessments of FU. The section also seeks to clarify the indicators that could be used to assess a freely usable currency, taking into account developments in market structures and data availability since the late 1970s, when the Board last discussed these issues in-depth. Clarifying the FU indicators would be an important step toward a criteria-based path to expand the SDR basket, if FU were to be maintained as an SDR-basket entry criterion.

A. Definition, Underlying Principles, and Past Application

12. **The concept of a freely usable currency is defined under the Fund's Articles and was established for the Fund's operations.** As set out in Article XXX (f), a freely usable currency is a member's currency that the Fund determines (i) is, in fact, widely used to make payments for international transactions, and (ii) is widely traded in the principal exchange markets.[8] The concept of freely usable currency, as noted, was not formally linked to the SDR basket until the 2000 SDR valuation decision, although it was considered at the time as a logical extension of previous decisions by the Executive Board.

13. **Freely usable currency lies at the core of the Fund's financial operations.** Developed in the context of the Second Amendment of the Articles, it was designed to ensure that a member purchasing another member's currency from the Fund would be able to use it to meet its balance of payments need. In this regard, the Second Amendment introduced the obligation of members to exchange balances of their currencies sold by the Fund that were not freely usable for a freely usable currency (Article V, Section 3(e) (i)).[9]

14. **From an operational perspective, it is desirable that freely usable currencies be close substitutes.** A purchasing member receiving a freely usable currency should expect to be able to use it, directly through members' reserves or indirectly via market exchange. If a market exchange is required, it could be executed readily in broad and deep markets without

[8] It should be noted that there are differences between the Fund's operational definition as set out in the Articles, and the statistical definition of "freely usable currency." The latter is a currency that is liquid, convertible, and used for settlement of international transactions (BPM6; paragraph 6.72, p.113). This paper focuses on the Fund's operational definition.

[9] For members that are determined to have a freely usable currency, there is no obligation under the Articles to exchange their currency for the freely usable currency of another member. Such members are only under the obligation "to collaborate with the Fund and other members" to enable their currency to be exchanged for the freely usable currencies of other members (see Article V, Section 3(e)(ii)).

adverse effects on the exchange rate so that no member is at a disadvantage by receiving one freely usable currency rather than another. In practice, Fund borrowers in the recent period have preferred to receive only two of the four existing freely usable currencies (the US dollar and the euro) in most transactions.

15. **The two characteristics of freely usable (FU) currencies, i.e., widely used and widely traded, are interrelated.** While these two characteristics encompass somewhat different aspects of freely usable currencies' attributes, they share common fundamentals and reflect the same basic objective that the Fund could use all currencies held in the General Resources Account (GRA) in its operations, especially in transactions to address members' balance of payments needs, at the lowest possible cost.[10] However, while a widely used currency is likely to be also widely traded, the reverse may not be the case because of inertia in currency use related, for example, to transaction costs of currency switching and to network externalities.[11]

16. **The currencies deemed to be "freely usable" are designated by the Board.** There is no Board-approved set of indicators for such an assessment, nor a formal limit on the number of currencies that can be deemed freely usable. However, when the issue was last discussed in depth in the late 1970s, the staff proposed, and the Executive Board based its assessment on, a set of indicators that took into account data availability and the state of development of international financial markets at that time (Box 2). While there has not been a substantive stand-alone discussion since then, the issue was considered indirectly in the context of the 2010 SDR Valuation Review which examined a range of indicators to assess whether the RMB could meet the freely usable criterion.

B. Potential Indicators Going Forward

17. **Staff has revisited the indicators used in the past for assessing whether a currency could be determined by the Fund as freely usable.** The considerations discussed by the Board in 1977 still appear valid but need to be judged in terms of subsequent improvements in data availability and developments in financial markets. In particular, there continues to be merit in assessing the *wide use* of a currency for international transactions by examining the degree to which trade and service payments as well as financial account transactions are undertaken in the currency. With regard to *currencies widely traded in the principal exchange markets,* importance would continue to be given to the "reasonable assurance*"* that the market for the currency in question has sufficient depth so that no appreciable change in the exchange rate would occur when a member country transacts a

[10] Report on Second Amendment, Part II, Chap. D, sec. 11. *Commentary on Comprehensive Draft Amendment of the Articles of Agreement* (DAA/75/3, 3/15/75).

[11] Examples of currencies that may be considered to be widely traded but are not widely used include the Swiss franc, the Canadian dollar, and the Australian dollar.

sizable amount of the currency. Minimal transaction costs in a freely usable currency transaction conducted in connection with a Fund operation would also be desirable.

18. **Since 1977, data availability has improved significantly, although there continue to be important limitations.** Staff in the 1977 review sought to measure the extent of currency use broadly, encompassing current and capital/financial account "transactions undertaken in the currency." However, data limitations narrowed the scope to the use of exports of goods and services and official reserve holdings. Exports remain an unreliable measure of currency use and data on currency invoicing are still not available on a systematic basis; there are also some significant shortcomings in measuring the currency composition of total external assets. However, additional measures of currency use by the private sector are now available from the BIS. To assess widely traded, staff relied in 1977 on foreign exchange turnover and bid-ask spreads, and on the existence of regular market quotations. Below, staff proposes using similar indicators, but data coverage in terms of markets and currencies has improved very substantially allowing for a more comprehensive reflection of market depth and transaction costs. The proposed indicators also reflect discussions held by staff with market participants, including FX traders and strategists, fund managers and selected SDR users.[12]

19. **Potential indicators of *wide use* going forward should seek to capture the relative importance of a currency for international transactions.** In light of the above considerations on data availability, staff proposes use of the following indicators:

- Currency composition of official reserve holdings (and, as a *secondary* indicator, the number of countries holding a currency in reserves);
- Currency denomination of international banking liabilities;
- Currency denomination of international debt securities.

[12] These market participants were generally supportive of the indicators, and made a number of suggestions that are incorporated in the proposals.

Box 2. Assessing Freely Usable Currencies

In 1977, staff proposed the following indicators to determine which currencies are freely usable:

- *the assessment of the use of a currency for international transactions should be based on the extent to which trade in goods and services is paid for in that currency, as well as on the relative volume of capital transactions denominated in that currency*. Given the limited data availability, however, the staff suggested to use the shares in members' exports of goods and services and the currency denomination of official reserve holdings as the relevant indicators of the degree to which a currency was widely used in international payments;

- *the assessment of whether a currency was widely traded in the principal foreign exchange markets should be based on the volume of transactions, the existence of forward markets, and the spread between buying and selling quotations for transactions denominated in that currency*. A sufficiently deep and broad foreign exchange market was considered as being necessary to ensure that a member country would be able to sell or buy a sizable amount of the currency at any time without occurrence of an appreciable change in the exchange rate in the transaction.

Following discussion of the staff paper, the Executive Board determined, in 1978, that the Deutsche mark, French franc, Japanese yen, pound sterling, and the U.S. dollar were freely usable currencies. In 1998, the euro was added to the list of freely usable currencies and the deutsche mark and French franc were removed from the list.

More recently, in the context of the 2010 SDR valuation review, the Chinese renminbi was considered to not yet meet the criteria to be a freely usable currency.

20. **The currency composition of official reserve holdings can provide a revealed preference indicator of usability.** It reflects reserve managers' preferences regarding reserve asset currencies. As a secondary or supplementary indicator, consideration could be given to the number of countries holding, say, more than 5 percent of their reserves in a currency. This information, among others, was used in 1977 to determine the distribution and magnitude of official reserve holdings and could provide a broader perspective of reserve holdings by central banks.

21. **While the currency composition of reserves is an important indicator of use, the available data have limitations.** The source of data for this indicator is the IMF's currency "composition of foreign exchange reserves" (COFER) survey (Box 3), but there are at least three limitations. First, an increasingly significant proportion of reserves is unallocated, representing about 45 percent of total reserves by the end of the first quarter of 2011. A related limitation is the definition of foreign exchange reserves reported for COFER purposes, which is based on the sixth edition of the IMF's *Balance of Payments and*

International Investment Position Manual (BPM6; paragraph 6.72) and entails requirements related to liquidity and convertibility of currencies designated as reserve assets. Thus, total foreign currency holdings of monetary authorities could include currencies that are not tallied in COFER but that members consider useful for meeting certain balance of payments needs.[13] Second, the 5-currency breakdown (the four SDR currencies and the Swiss franc) currently sought by COFER surveys limits the scope of currency assessment. Third, not all countries are currently reporting to COFER. The IMF Executive Board recently indicated broad support for renewed efforts to expand country participation and increase the currency breakdown.

22. **Available data on currency composition of reserves point towards a growing but still limited diversification.** The latest data suggest that at the end of 2011Q1, of the reported currency composition of reserves, 60.7 percent was denominated in US dollars, and 26.6 percent in euro. The rest of the allocated reserves were held in pound sterling (4.1 percent), Japanese yen (3.8 percent), Swiss franc (0.1 percent), and other currencies (4.7 percent) (Figure 1). In recent years, the relative importance of "other currencies" has been rising (it accounted for 3.1 percent of the allocated reserves at end-2009). Concerning the possible supplementary indicator (i.e., the number of countries holding a currency), 96 percent and 68 percent of Fund members held the US dollar and euro, respectively, as part of their reserves at the end of 2011Q1. At the same time, 45 percent of reporting members held at least 5 percent of their reserves in "other" than the five identified currencies (see Appendix Table 1).

[13] Analysis based on *International Financial Statistics* data suggests that central banks' foreign assets that did not qualify as official reserves (including FX swaps) averaged 3 percent of official foreign reserves over 2000 to 2007 (the extraordinary monetary measures adopted during the crisis introduce significant volatility in this measure for 2008-2010).

Box 3. Currency Composition of Official Foreign Exchange Reserves (COFER)

COFER is an IMF database containing data on the currency composition of official foreign exchange reserves. The currencies identified in the quarterly survey include: the U.S. dollar, the euro, pound sterling, the Japanese yen, the Swiss franc, and all other currencies combined as "Claims in other currencies." The definition of foreign exchange reserves utilized in COFER is that outlined in the sixth edition of the IMF's *Balance of Payments and International Investment Position Manual* (BPM6), and the same as that used for official foreign exchange reserves data published in the IMF's *International Financial Statistics (IFS)*: official reserves consist of the monetary authorities' claims on nonresidents in the form of foreign banknotes, bank deposits, treasury bills, short- and long-term government securities, and other claims that are readily available and controlled by monetary authorities for meeting balance of payments financing needs.

COFER data are reported to the IMF on a voluntary basis, with 138 member countries reporting the currency composition of their reserves for the 2011 Q1 survey. COFER country data are classified as strictly confidential, but aggregates for three country groupings are published. These aggregations follow the classification of countries currently used in the *IFS* world tables: world, advanced economies, and emerging and developing economies. Foreign exchange reserves for countries not participating in COFER are taken from the *IFS* and reflected in the aggregate "Unallocated Reserves."

In the context of the valuation of the SDR basket, the current degree of COFER participation and reporting present two difficulties and efforts have been initiated to address them. First, there is an increasingly significant proportion of Unallocated Reserves, which by the end of the first quarter of 2011 represented about 45 percent of total reserves. This is attributable to rapid reserves accumulation over the past few years by countries that do not participate in COFER. Second, the 5-currency breakdown currently sought by COFER surveys is viewed as somewhat limited. The IMF Executive Board recently indicated broad support for renewed efforts to expand country participation and increase the currency breakdown balanced against reporting costs. In addition to these difficulties, monetary authorities are instructed by the survey to report foreign currency reserves holdings consistent with the BPM6 statistical definition's liquidity requirement, among others (see paragraph 6.72),[1] excluding foreign currency holdings that do not meet the liquidity requirements of reserves.

The IMF is working to address these shortcomings (i.e., the large and increasing importance of *Unallocated Reserves*, and the limited currency break down) via a two-pronged Action Plan. First, the IMF plans to re-engage key countries that do not furnish COFER data and seek their participation in this voluntary exercise. Second, conscious of increasing the reporting burden on participants, the IMF will consult with current COFER reporters on the possible expansion of the currencies reported and seek their views on the increased reporting burden and possible time frames. Based on the outcome of these consultations, a decision would be made with respect to expanding the currency breakdown.

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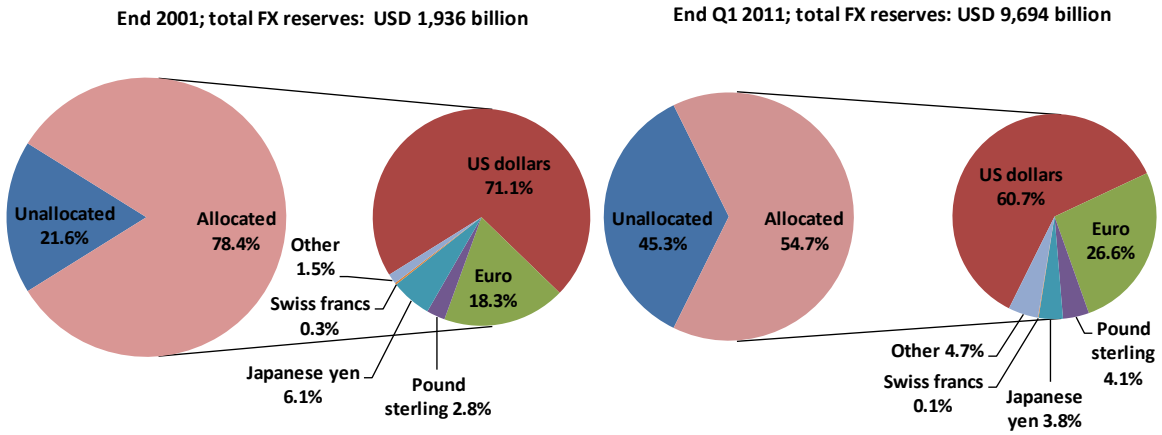
[1] "Furthermore to be liquid, reserve assets must be denominated and settled in *convertible* foreign currencies…"

Figure 1. Composition of Foreign Exchange Reserves: 2001 and 2011 /1



Source: IMF. Currency Composition of Official Foreign Exchange Reserves (COFER)
1/ Percent of total. Data for 2011 are for end-Q1.

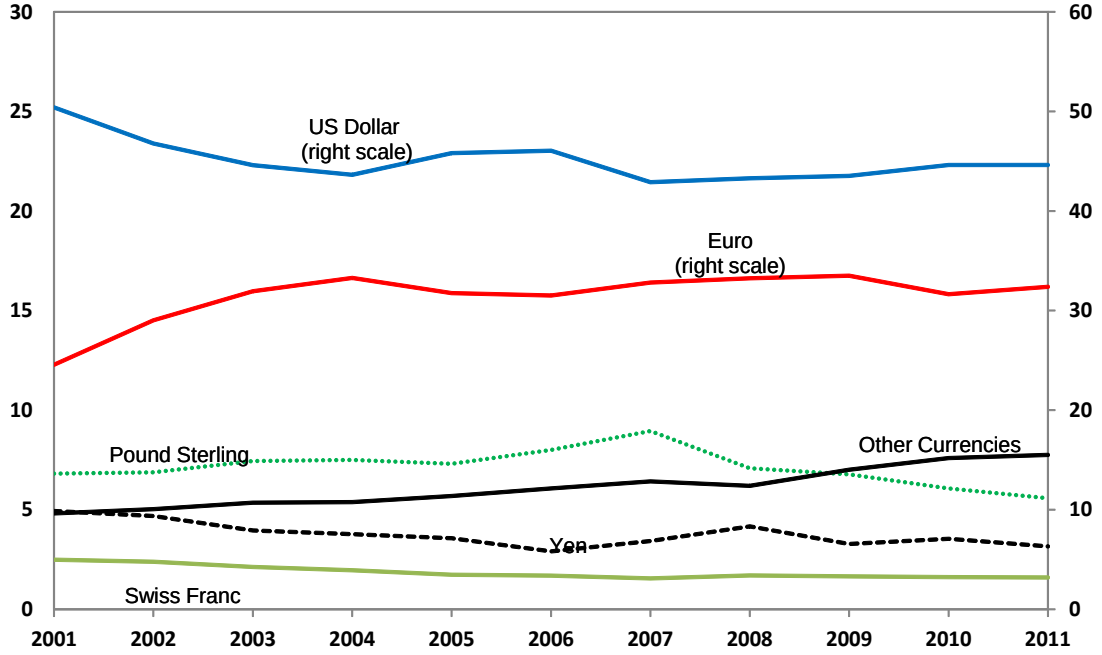
23. **Currency denomination of international banking liabilities and international debt securities provides an indicator of currency use in financial transactions.** These two indicators (which were not available in 1977) provide a broader view of currency choice compared to official reserves and cover both the private and the public sector. The data on international banking liabilities include resident claims denominated in any currency on non-residents and resident claims in foreign currency on other residents reported by BIS member banks in 42 jurisdictions.[14] The BIS international debt instruments statistics cover amounts outstanding of bonds, notes, and money market instruments that are issued by non-residents in local currency, issued by residents in a foreign currency, or issued by a resident in local currency *if* the issuance is targeted at non-resident holders.

24. **The data on amounts outstanding of international liabilities illustrate the continued dominant role of the US dollar and the euro.** The share of each of these two currencies has remained broadly stable since 2001 with a combined share in the 75 to 80 percent range (Figure 2 and Table 1). As is the case with the currency composition of foreign exchange reserves, the pound sterling and Japanese yen occupy the third and fourth places in the ranking respectively. The most recent data suggest that the share of other currencies in the denomination of international banking liabilities is on the rise, reaching nearly 8 percent of total liabilities (Figure 2). There are, however, also limitations on the scope of available data for this indicator, which currently identifies only the four SDR currencies and the Swiss franc, with the rest presented in the category "other currencies." Preliminary discussions with the BIS suggest that it may be possible to obtain greater disaggregation by currency over the medium-term (see Appendix II).

[14] See *Guide to the International Financial Statistics*, July 2009, Bank of International Settlements.

25. **There appears to be substantial inertia in the use of currencies in international transactions.** Indicators of "wide use" of currencies reveal very slow change in the pattern of currency use (Box 4). Over the past decade, the correlation of currency composition shares of debt securities for the top 20 currencies has been very high (around 0.96) pointing to a stable structure of currency denomination. Results are similar for the currency composition of foreign exchange reserves and international banking liabilities, although the sample size for these variables is smaller. These results are in contrast to the correlation of 0.86 displayed by foreign exchange market turnover, an indicator of "wide trading" of currencies (see below). Inertia in use of currencies may reflect the fact that the underlying factors in the use of currencies move slowly. But importantly, inertia may also be due to slow speed of adjustment to a variety of policy, structural, and institutional factors. Where the latter are important, policy and structural reforms could help reduce inertia and increase the international use of a currency.[15] Of course, flows, to the extent they can be measured, would register changes much faster than stocks and therefore may exhibit less inertia—although flow considerations play only a secondary role in assessing the wide use under the freely usable currency concept.

Figure 2. International Banking Liabilities—Currency Composition (2000–2011) /1
(percent of total)



Source: BIS International Locational Banking Statistics. Table 5A (Quarterly Survey)
1/ Data for 2011 as of first quarter

[15] See discussion on the determinants of international currencies in "*Internalization of Emerging Market Currencies –A Balance between Risks and Rewards*" (op. cit.).

Box 4. Inertia in the International Use of Currencies

Inertia in the use of currencies reflects demand, supply and institutional factors, as well as network externalities:

- Demand for reserve currencies is driven by a variety of factors, including transactional, store of value, and precautionary motives. Empirically, the volume of international transactions is closely associated with the importance of the issuer country in the world economy, and the store of value depends on policy credibility. While transactions could increase relatively quickly, policy credibility takes longer to establish, leading to inertia. The precautionary demand for reserves tends to place a high premium on the liquidity of a reserve asset in adverse economic circumstances, a consideration that can contribute to network externalities and inertia (see below).

- The supply of financial instruments denominated in reserve currencies, including liquidity and depth in financial markets, tends to be relatively stable over time since it is broadly determined by saving patterns as well as borrowing needs of reserve currency issuer countries.

- A further source of inertia comes from network externalities reflecting market structure and institutional organization, including regulatory aspects, which evolve slowly.[1]

Inertia in the *wide use* of currencies can be illustrated by examining changes over time in the share of currency composition of the amount outstanding of international debt securities. As the Table below indicates, the estimated correlation for the currency composition of debt securities is very high: between 2001 and 2004, it was almost 0.98, and between 2001 and 2010 it was 0.96, suggesting a very stable structure of currency denomination for debt securities over time. Results are similar for other possible indicators of wide use of currencies (such as the currency composition of foreign exchange reserves and international banking liabilities), although the sample size for these variables is smaller. (There is likely to be lower inertia on data on flows although from a market depth perspective, stocks provide the best indication). On the other hand, more rapid changes were observed for some indicators of "*wide trading*." In particular, the correlation displayed by foreign exchange turnover declined to 0.86 for the period 2001-10, suggesting a smaller degree of inertia than for wide currency use.

Correlation of Currency Composition Over Time

	International Debt Securities 2/	Foreign Exchange Turnover 3/
	2001 vs	
2004	0.981	0.962
2007	0.957	0.931
2010	0.957	0.862

1/ Rank correlation: top 20 currencies in 2010. 2/ End-March each year; 3/April

[1] See for instance, B. Eichengreen and D. Mathieson (2000) "The Currency Composition of Foreign Exchange Reserves: Retrospect and Prospect" IMF Working Paper. For a discussion on the effects of network externalities see *The Theory of Industrial Organization* by J. Tirole (1988), Section 10.6. Network externalities are also discussed in Information Rules, A Strategic Guide to the Network Economy by C. Shapiro and H. Varian (1999), Chapter 7.

Table 1. International Debt Securities—Currency Composition, 2001–2011 1/ 2/
Top 25 Currencies 3/

Currency	Average 2001 - 2005		Average 2006 - 2010		2009		2010		2011 Q1	
	Levels	Shares	Levels	Shares	Levels	Shares	Levels	Shares	Levels	Shares
Euro	4,818.9	42.2	11,210.0	46.9	12,820.8	47.5	12,173.6	44.0	13,119.9	45.2
US dollar	4,703.3	41.2	8,752.8	36.6	9,745.2	36.1	10,843.7	39.2	11,128.9	38.3
Pound sterling	866.2	7.6	1,950.3	8.2	2,241.4	8.3	2,214.9	8.0	2,275.7	7.8
Japanese yen	487.4	4.3	675.9	2.8	710.8	2.6	782.2	2.8	762.1	2.6
Swiss franc	198.9	1.7	352.1	1.5	386.4	1.4	416.2	1.5	430.3	1.5
Canadian dollar	89.4	0.8	271.0	1.1	307.7	1.1	354.1	1.3	369.2	1.3
Australian dollar	92.9	0.8	253.2	1.1	276.5	1.0	335.6	1.2	350.9	1.2
Hong Kong dollar	53.6	0.5	76.3	0.3	70.1	0.3	69.1	0.2	69.4	0.2
Swedish krona	17.1	0.1	60.8	0.3	70.9	0.3	94.6	0.3	104.9	0.4
New Zealand dollar	16.6	0.1	45.7	0.2	44.3	0.2	38.9	0.1	37.2	0.1
Norwegian krone	19.1	0.2	41.1	0.2	54.5	0.2	65.1	0.2	75.0	0.3
South African rand	10.7	0.1	32.3	0.1	37.9	0.1	35.8	0.1	35.5	0.1
Singapore dollar	11.0	0.1	29.8	0.1	31.1	0.1	35.7	0.1	37.3	0.1
Brazilian real	1.2	0.0	22.8	0.1	24.6	0.1	35.8	0.1	40.8	0.1
Mexican peso	1.1	0.0	17.5	0.1	16.7	0.1	19.7	0.1	20.3	0.1
Czech koruna	7.5	0.1	17.3	0.1	18.4	0.1	15.0	0.1	16.1	0.1
New Turkish lira	1.3	0.0	16.2	0.1	16.6	0.1	19.7	0.1	19.7	0.1
Polish zloty	5.6	0.0	13.3	0.1	14.5	0.1	14.9	0.1	14.6	0.1
UAE dirham	0.0	0.0	12.2	0.1	19.6	0.1	19.7	0.1	20.4	0.1
Russian rouble	0.4	0.0	11.7	0.0	14.4	0.1	16.1	0.1	19.9	0.1
Renminbi	0.3	0.0	10.4	0.0	14.3	0.1	19.3	0.1	25.4	0.1
Danish krone	7.3	0.1	6.9	0.0	5.4	0.0	4.5	0.0	3.8	0.0
Icelandic króna	1.4	0.0	6.2	0.0	3.1	0.0	2.8	0.0	2.8	0.0
Malaysian ringgit	0.2	0.0	3.9	0.0	4.9	0.0	6.8	0.0	7.1	0.0
Colombian peso	0.4	0.0	3.8	0.0	4.2	0.0	5.4	0.0	6.6	0.0
Other currencies	10.6	0.1	24.1	0.1	25.2	0.1	34.5	0.1	37.6	0.1
Total	11,422.3	100.0	23,917.6	100.0	26,979.3	100.0	27,673.7	100.0	29,031.1	100.0

Source: BIS International Debt Securities Statistics, Tables 13A and 13B

1/ It includes international bonds and notes plus international money market instruments.
2/ Levels in billions of US dollars; shares in percent of total.
3/ Currency ranking is based on average 2006 - 2010.

26. **Potential indicators of *widely traded* going forward should reflect the depth and sophistication of a currency's trading in the principal foreign exchange markets**. In this area, more comprehensive data are now available relative to the situation in 1977.[16] In particular, staff would propose use of the following indicators, for which relatively comprehensive and timely data are available:

- Volume of transactions in foreign exchange spot markets
- "Bid-offer" spreads (secondary indicator).

[16] Compared with 1977, information on foreign exchange markets has vastly expanded and is much more accessible. In view of these developments, two indicators used in 1977, the availability of daily spot exchange rate quotations and the availability of daily forward exchange rate quotations for a range of maturities, are now met by a very large number of currencies and would no longer distinguish widely traded from other currencies.

27. **The volume of spot foreign exchange transactions provides a comprehensive measure of trading in this market.** This measure was not available at the time of the FU currency discussions in 1977, when partial data for selected US banks was used. Based on the latest data, the US dollar and euro together account for around 60 percent of total foreign exchange (FX) turnover, a broadly unchanged share since 2001 (Table 2). The combined share of the Japanese yen and pound sterling also has been relatively stable, at around 15 percent. These data also illustrate the relative importance of the Swiss franc and of the Australian and Canadian dollars. The turnover of key emerging market currencies remains relatively small, although there has been a sharp increase in some cases, such as the Chinese renminbi where the daily turnover has increased by around 65 percent a year since 2004.

Table 2. Global Foreign Exchange Market Turnover—Currency Composition 1/2/

Currency	2001		2004		2007		2010	
	Levels	Shares	Levels	Shares	Levels	Shares	Levels	Shares
US dollar	556.7	44.9	851.0	44.0	1,493.5	44.9	1,689.0	42.4
Euro	234.9	19.0	361.8	18.7	630.1	19.0	777.6	19.5
Japanese yen	145.8	11.8	201.4	10.4	391.1	11.8	377.7	9.5
Pound sterling	80.8	6.5	159.5	8.2	216.8	6.5	256.3	6.4
Australian dollar	26.8	2.2	58.2	3.0	71.9	2.2	150.9	3.8
Swiss franc	37.0	3.0	58.3	3.0	99.4	3.0	126.7	3.2
Canadian dollar	27.8	2.2	40.6	2.1	74.6	2.2	105.1	2.6
Hong Kong dollar	13.9	1.1	17.0	0.9	37.2	1.1	47.0	1.2
Swedish krona	15.5	1.2	21.2	1.1	41.5	1.2	43.6	1.1
New Zealand dollar	3.4	0.3	10.3	0.5	9.2	0.3	31.7	0.8
Korean won	5.0	0.4	11.0	0.6	13.4	0.4	30.1	0.8
Singapore dollar	6.5	0.5	8.8	0.5	17.5	0.5	28.2	0.7
Norwegian krone	9.0	0.7	13.3	0.7	24.2	0.7	26.3	0.7
Mexican peso	5.1	0.4	10.7	0.6	13.8	0.4	25.0	0.6
Indian rupee	1.4	0.1	3.1	0.2	3.8	0.1	18.9	0.5
Russian rouble	2.1	0.2	6.1	0.3	5.7	0.2	17.9	0.5
Chinese renminbi	0.0	0.0	0.9	0.0	0.1	0.0	17.1	0.4
Polish zloty	2.8	0.2	3.6	0.2	7.5	0.2	16.0	0.4
Turkish new lira	0.2	0.0	1.0	0.1	0.6	0.0	14.6	0.4
South African rand	5.8	0.5	7.0	0.4	15.7	0.5	14.4	0.4
Brazilian real	2.9	0.2	2.6	0.1	7.9	0.2	13.6	0.3
Danish krone	7.4	0.6	8.4	0.4	19.8	0.6	11.3	0.3
Hungarian forint	0.1	0.0	1.9	0.1	0.3	0.0	8.6	0.2
Malaysian ringgit	0.5	0.0	0.5	0.0	1.2	0.0	5.5	0.1
Thai baht	0.9	0.1	1.9	0.1	2.5	0.1	3.8	0.1
Other Currencies	46.4	3.7	73.7	3.8	136.9	3.7	124.0	3.1
All currencies	1,239	100	1,934	100	3,324	100	3,981	100

Source: Bank of International Settlements, 2010 Triennial Central Bank Survey; Staff calculations.

1/ Levels in billions of US dollars; shares in percentage of average daily turnover in April of each year.
2/ Currency ranking based on average turnover for 2010.

28. **The size of the bid-offer spreads reflects the transaction costs of a currency purchase or sale, though these data need to be interpreted carefully.** Data on bid-offer spreads provide a direct measure of the cost of currency exchanges and are therefore relevant to one of the goals underlying a freely usable currency concept, namely that currency conversions can be conducted at minimal cost. This information can, therefore, usefully complement that available on FX trading volumes. In general, spreads have narrowed over time for most currencies and are relatively narrow for the current freely usable currencies (see Appendix Table 2). However, the spread measure needs to be interpreted with considerable caution to assess whether it accurately reflects the cost of large transactions, taking into account any limits on access (including by non-residents), and the available liquidity in the respective FX market.

29. **Overall, judgment will continue to be needed in evaluating the status of currencies in terms of the "freely usable" concept.** The heterogeneity of the indicators and data limitations preclude a mechanistic approach. Moreover, different indicators could imply different rankings of currencies requiring the Board to form a view on the relative weight to place on each indicator in the assessment. In addition, if a currency meets the freely usable criterion as discussed above, it would be expected that an appropriate market-based interest rate instrument exists that is broadly representative of the range of financial instruments that are actually available to investors in a particular currency. This aspect, although not part of the freely usable concept, has been emphasized in all the reviews of SDR valuation since 2000.[17]

IV. A Possible New Tailored Criterion

30. **A possible new alternative criterion for the SDR basket selection would be tailored explicitly to the reserve asset characteristics of the SDR.** The new criterion, which would replace the FU criterion, would seek to ensure the attractiveness of the SDR as a reserve asset and its potential for a broader role in the international monetary system. To this end, the "reserve asset criterion" (RAC) discussed below reflects the critical elements of a reserve asset, defined as a foreign currency-denominated external claim that is readily available and liquid.[18] It should be possible to buy and sell it at any time at minimal cost and without unduly affecting its value, and adequate risk management options should be available. Specific characteristics underpinning the RAC could include:

[17] See *Review of the Method of Valuation of the SDR* (10/26/2010) http://www.imf.org/external/np/pp/eng/2010/102610.pdf.

[18] This definition is consistent with BPM6, item 6.64.

- *Liquidity in foreign exchange markets*: this characteristic ensures that reserve managers can buy or sell a large amount of the currency in which the asset is denominated at any time at minimal transaction cost without causing exchange rates to move significantly.

- *Hedgeability*: this is to ensure that exchange rate and interest rate risks associated with the SDR and underlying currencies can be effectively and efficiently hedged, including through availability of derivative instruments. In the absence of deliverable forwards or options, it could be explored whether a sufficient degree of hedgeability could be provided through other facilities, including possibly those offered by the central bank issuing the currency.

- *Availability of appropriate high quality interest rate instrument:* this is to ensure that a domestic asset exists with a well-defined interest rate which reserve managers can access. This attribute has been considered important by the staff and the Board since the inception of the SDR basket to buttress the attractiveness of the SDR as a reserve asset. It informed the 1980 decision to reduce the size of the basket to five currencies, and has also received attention in subsequent reviews.

31. **Reflecting these considerations and discussions with market participants and official SDR holders, the following four indicators could be considered:**

- Volume of transactions in foreign exchange spot markets;

- Volume of transactions in foreign exchange derivatives markets and over the counter derivatives trade;

- Existence of an appropriate market-based interest rate instrument; and

- Currency composition of official reserve holdings (and, as *secondary* indicator, the number of countries holding a currency in reserves and where relevant broader measures of foreign currency holdings).

32. **The volume of transactions in foreign exchange spot markets provides a measure of the liquidity and depth of those markets.** This indicator is also used in the evaluation of the "widely traded" characteristic noted above, and the rationale is similar: to be the currency of denomination of a reserve asset or to be widely traded, it should be readily available for sale or purchase, at minimal transaction cost and without the transaction causing prices to move significantly.

33. **The volume of transactions in foreign exchange derivatives provides a possible indicator of the ability to hedge in a particular currency**. The main derivatives comprise exchange traded and over-the-counter forwards, swaps and options, with over the counter (OTC) accounting for the bulk of the transactions. This indicator would use BIS data on turnover of foreign exchange market derivatives and amounts outstanding of OTC

derivatives. The US dollar and the euro continue to account for a large share of foreign exchange derivatives transactions (see Table 3, on global foreign exchange derivative markets, and Appendix Table 3 on OTC transactions). As with some other indicators, the data will require a careful assessment of foreign exchange markets subject to restrictions, to ensure that the market is accessible to non-residents. Furthermore, the BIS data on derivatives include turnover of non-deliverable forwards that provide only partial hedging capabilities.

Table 3. Global Foreign Exchange Derivatives Market Turnover—Currency Composition, 2010 1/ 2/

Currency	Outright Forwards		Foreign Exchange Swaps		Currency Swaps		Options and Other instruments		Total	
	Levels	Shares	Levels	Shares	Levels	Shares	Levels	Shares	Levels	Shares
US dollar	195.9	41.4	800.6	45.4	18.6	42.4	79.4	38.3	1094.5	44.0
Euro	74.6	15.8	304.8	17.3	8.6	19.5	43.5	21.0	431.6	17.3
Japanese yen	57.4	12.1	139.4	7.9	3.4	7.8	27.2	13.1	227.4	9.1
Pound sterling	27.4	5.8	111.2	6.3	1.3	2.9	10.0	4.8	149.9	6.0
Australian dollar	14.5	3.1	70.5	4.0	2.9	6.5	7.7	3.7	95.5	3.8
Swiss franc	9.5	2.0	63.6	3.6	0.9	2.0	6.7	3.2	80.7	3.2
Canadian dollar	13.1	2.8	48.5	2.8	1.5	3.4	3.0	1.5	66.2	2.7
Hong Kong dollar	1.9	0.4	34.8	2.0	0.2	0.4	0.8	0.4	37.7	1.5
Swedish krona	4.3	0.9	28.1	1.6	0.3	0.8	1.5	0.7	34.2	1.4
New Zealand dollar	2.5	0.5	16.6	0.9	0.3	0.7	1.4	0.7	20.8	0.8
Korean won	9.0	1.9	8.3	0.5	0.5	1.1	1.8	0.9	19.6	0.8
Singapore dollar	2.2	0.5	16.8	1.0	0.0	0.1	1.4	0.7	20.4	0.8
Norwegian krone	3.1	0.6	15.8	0.9	0.3	0.7	0.9	0.5	20.1	0.8
Mexican peso	2.7	0.6	11.9	0.7	0.2	0.4	1.1	0.6	15.9	0.6
Indian rupee	6.8	1.4	3.4	0.2	0.0	0.0	1.9	0.9	12.1	0.5
Russian rouble	1.1	0.2	7.1	0.4	0.1	0.2	0.5	0.3	8.9	0.4
Chinese renminbi	7.1	1.5	3.4	0.2	0.0	0.1	2.5	1.2	13.1	0.5
Polish zloty	1.8	0.4	9.5	0.5	0.1	0.2	1.0	0.5	12.5	0.5
Turkish new lira	1.5	0.3	6.3	0.4	1.0	2.2	1.9	0.9	10.7	0.4
South African rand	1.4	0.3	7.8	0.4	0.1	0.2	0.5	0.3	9.8	0.4
Brazilian real	6.4	1.4	0.4	0.0	0.2	0.4	2.3	1.1	9.4	0.4
Danish krone	1.4	0.3	7.3	0.4	0.1	0.1	0.1	0.0	8.9	0.4
Hungarian forint	0.9	0.2	5.0	0.3	0.0	0.1	0.6	0.3	6.5	0.3
Malaysian ringgit	2.1	0.4	1.1	0.1	0.1	0.2	0.1	0.1	3.4	0.1
Thai baht	0.6	0.1	1.8	0.1	0.1	0.1	0.0	0.0	2.4	0.1
Other Currencies	24.4	5.1	39.7	2.2	3.2	7.4	8.9	4.3	76.2	3.1
All currencies	473.7	100	1,764	100	43.8	100	207.0	100	2,488	100

Source: Bank of International Settlements, 2010 Triennial Central Bank Survey; Staff calculations.

1/ Levels in billions of US dollars; shares in percentage of average daily turnover in April 2010.
2/ Currency ranking based on average daily global foreign exchange market turnover in April 2010.

34. **Indicators regarding the interest rate instrument would need to assess the availability of appropriate domestic assets.** Such an assessment would take into account risk characteristics and the ready availability of domestic market-based interest rates. The

selection of appropriate interest rate instruments for the SDR interest rate basket in 2000 and 2005 provides insight into the two key dimensions that would need to be assessed:[19]

Representativeness:

- be broadly representative of the range of financial instruments actually available to investors in a particular currency;

- carry an interest rate responsive to changes in underlying credit conditions in the corresponding money market;

Risk characteristics:

- have risk characteristics similar to the official standing of the SDR itself, i.e., have a credit risk profile of the highest quality;

- reflect the revealed reserve asset choice of reserve managers, for example, as regards the form of the financial instrument, its liquidity, and maturity.

35. **Indicators of foreign currency holdings reveal reserve managers' preferences.** Similar to the considerations under the FU criterion, the currency composition of official reserve holdings would be an important indicator of the reserve asset character of a currency. However, as noted above, steps are needed to address current limitations concerning the COFER database, the main source for currency composition of reserves. Depending on the timing for securing such improvements, other interim steps, such as sampling of selected reserve asset holders, may be considered to arrive at timely indicators for a broader set of currencies than is currently available.

36. **As for the case of the FU criterion, Board judgment would be needed in evaluating the reserve asset criterion.** This reflects remaining data limitations, and the need to form a view on the relative weight to place on the different indicators. In addition, quantitative indicators may need to be supplemented by qualitative elements to adequately reflect institutional and policy aspects important for reserve assets. For instance, Board assessment would be needed of the extent to which restrictions on financial account transactions could raise foreign exchange transaction costs, and limit hedging options. In this connection, explicitly adding financial account convertibility as an eligibility condition under the new criterion would not seem necessary or helpful—not least since the Fund does not have jurisdiction over financial account convertibility and, in any case, it would seem

[19] The *Review of the Method of Valuation of the SDR* paper issued in 2005 (10/28/2005) http://www.imf.org/external/np/pp/eng/2005/102805.pdf offers an example of how to assess the quality of the instruments in practice.

preferable to assess a currency's role through direct measures of market-based activity rather than indirectly through indicators of formal or informal restrictions. Board judgment may also be needed to assess whether the level of financial development is adequate, backed by sound and credible macroeconomic policies, and a robust institutional framework, as well as more recent developments regarding flows.[20] A third issue that may require Board judgment relates to the question whether the exchange rate regime could reduce the SDRs diversification benefits, because of a peg or high correlation with existing currencies. At the same time, however, it is worth noting that pegged currencies have been included in the SDR basket in the past.

V. Comparison of Indicators and Scenario Analysis

37. **There are considerable overlaps, but also some differences between the indicators proposed for the FU criterion and those for the possible new criterion** (Table 4). The former focus on indicators for the criteria set out in the Articles, namely that a currency is in fact widely used to make payments for international transactions and widely traded in the principal foreign exchange markets. The latter focus on indicators most relevant to the reserve asset characteristics of the SDR, including the availability of sufficiently liquid and deep markets in the currency, the ability to hedge currency exposures, and the availability of an appropriate domestic investment vehicle.

Table 4. Comparison of Possible Indicators for the Freely Usable Currency Criterion and the Reserve Asset Criterion

FU Indicators		RAC Indicators
Widely Used		
1. Currency composition of reserves (Possible supplementary indicator: number of countries holding a currency in reserves)	⇢	1. Currency composition of reserves (Possible supplementary indicators: (i) number of countries holding a currency in reserves; and (ii) other foreign currency holdings by monetary authorities)
2. Currency denomination of international banking liabilities		2. Volume of transactions in foreign exchange derivatives markets and over the counter derivatives trade
3. Currency denomination of international debt securities		3. Appropriate market based interest rate instrument
Widely Traded		
4. Volume of transactions in foreign exchange spot markets (Supplementary Indicator: Bid - Offer spreads)	↔	4. Volume of transactions in foreign exchange spot markets (Supplementary Indicator: Bid - Offer spreads)

[20] The need for sound and transparent policies and robust institutions was also underlined by market participants.

38. **Scenario analysis suggests that the possible new criterion may provide scope to broaden the SDR basket within a shorter time frame.** Past experience suggests that very few currencies can be expected to attain the status of a freely usable currency in the foreseeable future. Importantly, this reflects specific requirements needed for the Fund's operational purposes, as set out under its Articles. In particular, the "wide use" requirement has been very difficult to attain for additional currencies, as discussed earlier. To illustrate this distinction, scenario analysis was undertaken for selected currencies for three indicators: global FX turnover in spot markets (FU indicator of widely traded, and one of the possible RAC indicators), activity in derivatives market (possible RAC indicator) and currency composition of international debt securities (FU indicator of widely used). The results suggest that due in part to inertia, meeting the possible RAC criterion, while challenging, may be achievable for some currencies within a shorter time period (see Box 5 and Appendix I). Of course, it is recognized that the question of whether or not to replace the FU criterion with a new reserve asset criterion rests principally on broader considerations than the possible time period needed to expand the SDR basket.

VI. EXPORTS CRITERION

39. **Export shares have played a central role in SDR basket selection since the adoption of the basket formula for SDR valuation.** The concept of export shares as a criterion dates back to the 1973–74 Board discussions on the introduction of the first SDR basket, and to the 1974 Board decision that the SDR basket should be composed of the currencies of all Fund members with a share greater than 1 percent of total exports of goods and services.[21] The criterion was meant to capture a currency's role in global transactions, using as a proxy shares in world exports of goods and services, and to avoid computational complexities by excluding currencies which would have an insignificant impact on the SDR's value.

40. **The current role of the export criterion was formalized in 1980, and maintained in 2000 when the FU criterion for SDR basket selection was added.** The Board in 1980 decided that the SDR from 1981 onwards would include the currencies of the five member countries with the largest exports of goods and services. This decision was part of a broader SDR valuation basket revision, which included a major simplification of the basket's size (from sixteen to five currencies) and a harmonization of the SDR valuation basket with the SDR interest rate basket. The Board in 2000 retained the export criterion, but added the requirement that a currency be deemed "freely usable" as criterion for basket inclusion.[22] The

[21] *Decision No. 4233-(74/67) S June 13, 1974*, as amended by *Decision No. 4261-(74/78) S July 1, 1974*.

[22] *Decision No. 12281-(00/98) G/S October 11, 2000.* This Decision also reduced the number of basket currencies from five to four, reflecting the introduction of the euro.

continued key role of the export shares criterion demonstrated also a strong desire by the Board (and official SDR users) to preserve continuity and stability in SDR basket selection.

41. **Maintaining a size-related criterion for SDR basket selection appears appropriate.** The criterion would ensure that the issuers of basket currencies are those that play a central role in the global economy, a prerequisite for the SDR to be attractive as global reserve asset. Such criterion could also help ensure an adequate supply of the reserve asset, and limit the number of currencies in the basket.

42. **The question arises whether to maintain exports as the size-related criterion or to replace it with a new criterion.** There are a number of options for the "gateway" criterion, including: continuing to use exports of goods and services; combining exports with international financial inflows; and replacing exports by market GDP. As discussed below, each of these options has a number of drawbacks, with the availability of high-quality data an important consideration.

43. **Continued use of export shares for the purposes of this selection criterion offers several advantages, but has also limitations.** Exports can be seen as a broad measure of size and importance in the global economy. Maintaining the long-standing role of export shares as a criterion would also offer continuity in the valuation framework, and provide broad stability in the ranking of currencies.[23, 24] However, exports are not a comprehensive measure of a country's (or currency's) size in the global economy. By their nature, export data cannot capture autonomous cross-border financial flows, i.e., flows that are not the financial counterpart of cross-border trade transactions, and that are generally reckoned to have increased significantly faster than exports over time.

[23] There is a significant gap between the export shares of the five largest exporters and that of the sixth largest exporter (Canada). Moreover, the differences between the export shares of the lower ranked exporters are generally smaller than the 1 percent threshold to replace a currency in the basket stipulated in *Decision No. 12281-(00/98) G/S October 11, 2000.*

[24] Import data are the mirror image of cross-border trade transactions reported on the export side. Unless import data are a more reliable indicator of currency use in cross-border trade, which does not appear to be the case, there is little to be gained from considering import shares as an alternative to or in combination with export shares.

Box 5. Trends in the Use of Currencies: Scenario Analysis

The scenario analysis illustrates the possible evolution of the relative position of different currencies over the medium term, based on assumptions regarding the continuation of historical trends (see Appendix 1). Scenarios are undertaken for three indicators for which data are available for a broad range of currencies: (i) global foreign exchange turnover (indicator common to both FU and reserve asset criteria); (ii) activity in the derivatives markets (indicator for the reserve asset criterion); and, (iii) outstanding amounts of international debt securities (indicator for the FU criterion). Given the mechanistic nature of the exercise, the results should be regarded as purely illustrative.

Two different methodologies are employed: the first projects the 2015 value of the indicator using average growth rates over the 2004 –10 period; the second, applied to currencies of the top ten exporters, illustrates the growth in each of these indicators required to reach a particular share in terms of the projected global value of the indicator. For illustrative purposes, the required level is determined by reference to the currency which is currently ranked fifth or fourth (i.e., just outside the basket or just in the basket) in terms of the currency's share in the respective indicator.

The results of the first methodology suggest potential for considerable change in the relative ranking of currencies according to FX turnover and derivatives transactions. In particular, several emerging market currencies would enter into the top range of the distribution if historic growth rates in these indicators are maintained. On the other hand, changes in relative rankings are considerably smaller when using the international debt securities indicator.

The results of the second methodology are illustrative of the potential growth rates required: for foreign exchange turnover, if the target is provided by the fifth ranking currency, simulations suggest that several of the currencies of the top-ten exporters currently not in the basket would require rapid growth to meet this target in each of the three scenarios. For the second scenario, for instance, annual growth would have to exceed 50 percent for the two emerging market currencies considered. Although these are high growth rates, judging by recent developments, and the capacity for "catch-up growth", they are not outside the realm of possibility. This expectation is supported by the ratio of foreign exchange turnover to a country's own GDP, which are currently at low levels for emerging market currencies, compared to the existing SDR currencies' ratios. With regard to derivative transactions, the scenarios yield similar results in terms of the growth that is required in this indicator. In the case of the international debt securities, however, the required growth is markedly higherand with more variation across currencies: for the two emerging market currencies it would be significantly greater (around 100 percent) compared to the other two indicators, while for developed market currencies, it is appreciably smaller (less than 10 percent).

44. **A second option would seek to take into account the increasingly important role of global financial flows.** Adding financial inflows to exports could enhance the measurement of an economy's global financial importance. In addition to economic size with respect to tradable goods, it could capture an economy's capacity to generate internationally

traded assets. These inflows could include foreign direct investment, portfolio inflows, and other inflows, as measured in the balance of payments.[25, 26]

45. **There are, however, a number of data shortcomings that severely limit cross-country comparability of global financial inflows.** First and foremost, reporting is notoriously incomplete, with marked cross-country variations, and difficulties accounting for valuation effects. In addition, there are difficult conceptual issues: (i) data do not allow identification of the autonomous component of cross-border financial transactions, which best captures capacity to generate internationally traded assets, and they are likely to double count what is already measured by exports; (ii) data for financial centers reflect in significant part transactions that, from an economic perspective, originate elsewhere; and (iii) financial flows are very volatile, with considerable year-to-year variance also in the *ranking* of some of the largest economies. Furthermore, unlike exports, financial inflows are recorded on a net basis, and while the netting maybe appropriate for some balance of payments considerations, it results in measured inflows that are significantly smaller than trade flows.

46. **Overall, while the inclusion of financial inflows would be desirable in principle, there is merit in revisiting the issue later after key data issues have been addressed.** While some of the conceptual issues may be dealt with relatively easily—for instance, averaging of data could reduce volatility—others require deeper analysis, for example, whether netting practices vary markedly across counties. More broadly, to address the data quality, it would be desirable to explore initiatives that could help obtain the requisite information. This would allow staff to take into account such inflows in an appropriate manner. For the time being, however, it would seem prudent not to add available data on financial inflows to those for exports as the size criterion.

47. **GDP is an alternative widely-used size-related measure.** GDP provides a simple indicator of economic size, is readily available, and is not affected by some of the limitations regarding financial inflows. However, it is not a particularly close proxy of an issuer's role in the global trade and financial system, which is key for an international reserve asset. The use of such a measure would thus move away from the international aspects that the SDR-related size measure is meant to capture. On balance, it appears that little is to be gained from replacing export shares by GDP.

48. **Export shares and the combined shares of exports and financial inflows would point to the same set of top five currencies for inclusion in the SDR basket** (Table 5 lists

[25] The inflows are measured here as the sum of the *absolute values* of the transactions in direct investment in the reporting economy, portfolio liabilities flows and other investment liabilities flows.

[26] Financial derivatives, which account for a sizable proportion of international financial transactions, would not be included. It is not clear to what extent these derivatives signal capacity to generate a store of value, and the BoP data on them are incomplete.

the top twenty currencies ranked by 2006-2010 average of exports of goods and services). However, the relative position within the top five is affected: compared with the ranking using export shares, adding financial inflow shares would move the United Kingdom from fourth to third position, reflecting the country's role as an important international financial centre. (Comparisons based on market GDP result also in a different ranking compared with the export criterion, including among the top five issuers, where Japan moves to the third place, followed by China and the United Kingdom). Compared with the 2001–05 period, China's share among the top twenty currencies has increased using all measures, by an average 3 percentage points under the export shares measure and when financial inflows are combined with exports. Australia, Korea, India, Russia, and Singapore also are gaining share in the most recent five-year period.

VII. NUMBER OF CURRENCIES

49. **Under the 2000 decision, the SDR basket comprises the four currencies issued by the largest exporters (or currency unions) and which are deemed freely usable.** Thus, it presumes that if a new currency were to enter the SDR basket, it would replace an existing one rather than be added to the existing currency basket. In particular, the decision specifies that a new currency meeting the requirements for inclusion would be added to the basket in replacement of another currency only if at the time of determination its relevant exports exceeded those of the currency to be replaced by more than 1 percent.

50. **The move to a criteria-based path to broadening the basket suggests a need to revisit the four currency rule.** It is not clear a priori that there is an optimal number for the size of the basket, though past decisions (reduction in the number of currencies from 16 to 5 in 1980 and from 5 to 4 in 1999) point to the desirability of keeping the SDR basket relatively small to avoid adding undue costs and complexity for SDR users. The stability principle is also relevant as a basket with a large number of currencies would tend to be less stable over time (as the ranking of currencies will be more likely to change), and adding new currencies with small weights may offer little benefit in terms of the overall stability of the SDR.

51. **Going forward, one possible approach would be to decide in advance that the size of the basket should not be larger than, say, 5 or 6 currencies.** A basket of this size would remain relatively simple to replicate, limiting the complexity of hedging operations and the costs for SDR users, and would likely capture the major global currencies. It would also provide a clear ex-ante signal to SDR users on the number of currencies in the SDR basket—although at the expense of a case-by-case assessment, which could take into account changing circumstances.

Table 5. Exports and Financial Inflows: Top-20 Exporters
(Averages 2001 - 05 and 2006 - 10) 1/

	Exports of Goods and Services 2/				Exports of Goods and Services and Financial Inflows 3/			
	2001-2005		2006-2010		2001-2005		2006-2010	
Currency	Levels	Shares	Levels	Shares	Levels	Shares	Levels	Shares
Euro Area	1,345	24.1	2,167	23.6	2,006	25.3	3,226	24.6
United States	1,033	18.5	1,547	16.8	1,777	22.4	2,508	19.1
China 4/	491	8.8	1,100	12.0	598	7.5	1,365	10.4
United Kingdom	506	9.1	706	7.7	1,008	12.7	1,533	11.7
Japan	464	8.3	635	6.9	571	7.2	792	6.0
Canada	265	4.7	342	3.7	301	3.8	436	3.3
Korea	182	3.2	316	3.4	199	2.5	353	2.7
Singapore	164	2.9	292	3.2	182	2.3	339	2.6
Russia	128	2.3	291	3.2	149	1.9	365	2.8
Switzerland	159	2.8	252	2.7	192	2.4	362	2.8
Mexico	138	2.5	188	2.0	161	2.0	217	1.7
India	71	1.3	182	2.0	83	1.1	235	1.8
Sweden	113	2.0	181	2.0	133	1.7	245	1.9
Saudi Arabia	83	1.5	174	1.9	86	1.1	194	1.5
Australia	80	1.4	154	1.7	127	1.6	253	1.9
Malaysia 5/	92	1.6	141	1.5	97	1.2	155	1.2
United Arab Emirates	56	1.0	138	1.5	..	..	..	..
Norway	79	1.4	136	1.5	103	1.3	192	1.5
Brazil	67	1.2	133	1.4	86	1.1	194	1.5
Thailand	72	1.3	127	1.4	81	1.0	139	1.1
Total	5,588	100	9,204	100	7,940	100	13,102	100

Sources: Finance Department; IMF International Financial Statistics and World Economic Outlook.

1/ Levels are in SDR billions; shares are in percentage of the total. Countries ranked based on 2006-2010 average of Exports of Goods and Services.
2/ Includes income credit and debit. Data for the euro area adjusted to exclude intra euro area trade.
3/ Sum of trade of goods and services and the absolute values of direct investment in the reporting economy, portfolio investment liabilities, and other investment liabilities. Due to lack of data on financial inflows, UAE is not included in this measure.
4/ Includes Mainland China and Hong Kong SAR. For exports of goods and services, excludes intra-trade of goods.
5/ Financial inflow data are only available through 2009; respective average is based on 2006-2009 data.

52. **An alternative approach would be not to prejudge the future size of the basket.** Rather, the issue of whether a new currency should be added to the basket or replace an existing currency could be considered on a case-by-case basis in light of the circumstances at the time. Among others, consideration could be given to a minimum weight threshold before a currency is considered for inclusion in the basket.

53. **On balance, staff sees merit in the second approach of not prejudging the future size of the basket at this time.** This would leave open the possibility of adjusting the number of SDR basket currencies over time, depending on changing circumstances in the IMS. At the same time, the broad principles of SDR valuation—namely stability of the basket and representativeness of currencies used in international transactions—would continue to guide ultimate Board views on the number of currencies in the SDR basket. As noted above, these considerations would point to keeping the SDR basket relatively small, not least to avoid adding undue costs and complexity for SDR users.

VIII. Concluding Remarks and Issues for Discussion

54. **This paper responds to the request by the Executive Board to review several aspects of SDR valuation and the call by the IMFC and G-20 for further work on a criteria-based path to broaden the composition of the SDR basket.** The paper explores the issue of whether to maintain for SDR basket entry the current requirement that a currency be freely usable or to replace it with a new criterion tailored to the desirable reserve asset characteristics of the SDR; and the potential indicators that could be considered under both approaches. The paper also discusses the other SDR basket criterion, i.e., the export criterion, and the limit on the number of currencies in the SDR basket.

55. **The paper reviews the FU criterion and clarifies the indicators that could be used to assess it.** The concept of a freely usable currency, set out in the Articles of Agreement and central for the Fund's operations, was added as a formal SDR basket criterion only in 2000. The paper discusses indicators that could be used to assess a freely usable currency, taking into account developments in market structures and data availability since the late 1970s, when the Board last discussed these issues in depth.

56. **The paper also develops a possible alternative new tailored criterion for SDR basket selection.** The criterion would be tailored explicitly to the reserve asset characteristics of the SDR, and the paper discusses the advantages and limitations of replacing the FU criterion by such a reserve asset criterion. It also compares possible indicators for the reserve asset criterion with those for a freely usable currency.

57. **Scenario analysis suggests that the scope to broaden the SDR basket may vary somewhat across the two options.** Both options are expected to safeguard the reserve asset characteristics of the SDR. However, given the important role of inertia in the international use of currencies, meeting the possible RAC criterion, while challenging, may be achievable for some currencies within a shorter time-period. Identifying indicators, such as those

informing the scenario analysis, is an important step toward a criteria-based path to broaden the composition of the SDR basket. These clarifications could also contribute to a smooth evolution of the IMS.

58. **The paper also reviews issues related to the exports criterion and the number of currencies.** It suggests that, on balance, there are advantages to maintaining the exports criterion to ensure representativeness of currencies and continuity in the selection criterion. Concerning the number of currencies to be included in the SDR basket, there are merits of not pre-judging the number of at this time.

59. **Directors may want to focus their discussion on the following issues**:

- Do Directors agree that the broad principles that have guided SDR valuation in the past still remain valid?

- What are Directors' views regarding the two options of maintaining the existing freely usable currency criterion or adopting a new alternative criterion along the lines of the reserve asset criterion?

- How do Directors view the indicators proposed for assessing the freely usable currency criterion? Do they consider that these indicators capture the twin elements of "wide use" and "wide trading" adequately?

- What are Directors' views on the merits of a possible new alternative criterion for the SDR basket selection? Do they agree with the specific characteristics underpinning such a reserve asset criterion? What are the Directors' views regarding the proposed indicators for such a new criterion?

- Do Directors agree that there continues to be a role for a size related criterion? In light of ongoing weaknesses in financial accounts data, do Directors agree that the existing exports criterion should be maintained for the time being? Do they agree that the exports criterion should be augmented with data on financial inflows, once ongoing weaknesses in financial accounts data have been satisfactorily addressed? Do they agree that effort should be made towards addressing these data issues as expeditiously as practical?

- What are Directors views regarding the number of currencies in the basket? Do they agree that it may be desirable not to pre-judge the future number at this time?

Appendix Table 1. Countries Holding More than 5 percent of their Foreign Exchange Reserves in Each Currency

	Average 2001 - 2005		Average 2006 - 2010		2009		2010		2011 Q1	
	Member Countries	% of Reporting Countries	Member Countries	% of Reporting Countries	Member Countries	% of Reporting Countries	Member Countries	% of Reporting Countries	Member Countries	% of Reporting Countries
Currency										
U.S. dollars	114	97	120	95	120	94	118	94	120	96
Euro	86	73	90	71	90	71	87	70	85	68
Pound sterling	41	35	42	34	37	29	37	30	35	28
Japanese yen	19	16	17	14	16	13	20	16	21	17
Swiss francs	3	3	2	2	2	2	1	1	1	1
Other currencies	22	19	38	30	45	35	55	44	56	45
Memorandum	Number of Countries Reporting Reserves									
	118	100	126	100	127	100	125	100	125	100

Source: IMF. Currency Composition of Official Foreign Exchange Reserves (COFER)

Appendix Table 2. Average Daily Foreign Exchange Spreads between Spot Bid and Ask Quotations against the US Dollar in New York 1/ 2/
(Percent of ask price quotation)

Currency	2001-2005	2006-2010	2011 3/
Euro	0.0288	0.0161	0.0036
Japanese yen	0.0319	0.0130	0.0059
Danish krone	0.0396	0.0193	0.0062
Hong Kong dollar	0.0093	0.0115	0.0084
Canadian dollar	0.0386	0.0230	0.0119
Pound sterling	0.0254	0.0232	0.0141
Swiss franc	0.0302	0.0173	0.0156
Australian dollar	0.0574	0.0466	0.0159
Indian rupee	0.0759	0.0670	0.0230
Chinese renminbi	0.0206	0.0172	0.0276
Singapore dollar	0.0435	0.0671	0.0409
Mexican peso	0.0867	0.0716	0.0428
New Zealand dollar	0.0968	0.0800	0.0482
Norwegian krone	0.0519	0.0580	0.0492
Swedish krona	0.0521	0.0546	0.0501
Malaysian ringgit	0.0687	0.1105	0.0605
Turkish new lira	0.6232	0.2355	0.0975
Brazilian Real	0.0976	0.0859	0.0994
South African rand	0.3151	0.3195	0.1020
Polish zloty	0.1707	0.1977	0.1039
Hungarian forint	0.2318	0.2729	0.1089
Thai baht	0.1087	0.1938	0.1225
Korean won	0.1118	0.1164	0.1558
Russian rouble	0.1917	0.0790	0.2579

Source: Bloomberg and Staff Calculations.

1/ Quotes shown reflect closing prices computed by Bloomberg as a composite of providers in New York.
2/ Top 25 currencies based on average foreign exchange market turnover on April 2010. Currencies ranked based on average daily spreads for 2011.
3/ Data shown through July 28, 2011.

Appendix Table 3. Over-The-Counter (OTC) Derivatives: Currency Composition, 2001–10 1/ 2/

Currency 3/	Average 2001 - 2005		Average 2006 - 2010		2009		2010	
	Levels	Shares	Levels	Shares	Levels	Shares	Levels	Shares
US dollar	2,031.0	37.4	6,439.1	44.5	6,177.8	38.4	7,149.3	41.8
Euro	2,222.3	41.0	4,974.0	34.3	6,504.5	40.4	6,270.3	36.7
Japanese yen	460.4	8.5	986.3	6.8	1,112.9	6.9	1,366.2	8.0
Pound sterling	311.1	5.7	979.0	6.8	1,179.2	7.3	1,004.9	5.9
Swiss franc	79.2	1.5	167.6	1.2	177.1	1.1	292.2	1.7
Canadian dollar	59.0	1.1	140.2	1.0	140.7	0.9	140.2	0.8
Australian dollar	24.3	0.4	103.5	0.7	97.8	0.6	141.2	0.8
Swedish krona	47.5	0.9	99.0	0.7	118.7	0.7	95.6	0.6
Norwegian krone	7.2	0.1	19.3	0.1	13.6	0.1	13.9	0.1
Hong Kong dollar	6.5	0.1	13.7	0.1	12.5	0.1	10.4	0.1
Danish krone	6.6	0.1	12.5	0.1	14.0	0.1	14.9	0.1
New Zealand dollar	0.2	0.0	3.5	0.0	4.9	0.0	3.6	0.0
Thai baht	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Other currencies	169.1	3.1	547.5	3.8	535.8	3.3	588.0	3.4
Total	5,424.5	100.0	14,485.2	100.0	16,089.5	100.0	17,090.8	100.0

Source: BIS Semiannual OTC derivatives statistics at end-December 2010, Tables 20B and 21B

1/ Gross market values of OTC foreign exchange and single currency interest rate derivatives. For OTC foreign exchange derivatives values were divided by two because two currencies are involved in each transaction.
2/ Levels in billions of US dollars; shares in percentage of the total.
3/ Currency ranking is based on average 2006 - 2010 for total international debt securities.

Appendix I: Scenario Analysis

1. **This Appendix discusses illustrative scenarios for the medium-term evolution of selected indicators in the freely usable currency and RAC criteria.** The objective of the scenarios is to illustrate the possible evolution of the relative positions of different currencies over the medium-term, based on some simple assumptions using historical trends. Scenarios are undertaken for the three indicators for which data are available for a broader range of currencies than the existing SDR components: first, an indicator that is common to both FU and RAC criteria: that is, global foreign exchange turnover; second, an indicator for the RAC criterion: that is, activity in the derivatives markets; and third, an indicator for the freely usable criterion: that is, cross-border issuance of debt securities. Given the mechanistic nature of the exercise, the results should be regarded as purely illustrative.

2. **In constructing the scenarios for each of the indicators, two different methodologies are employed.** According to the first methodology, the 2015 value of the indicator is projected using average growth rates over the 2004–10 period. This measure essentially shows the outcome *if* trends were to continue over the medium-term. The second methodology, applied to the currencies of the top ten exporters, illustrates the growth in each of these indicators *required* to reach a target value in terms of the projected global value of the indicator.[1] The *required* level can be determined by reference to the currency which is currently just outside the basket (i.e., ranked fifth) or just in the basket (i.e., ranked fourth) in the currency's share in the respective indicator.[2] The methodology entails three steps:

i. The ***ratio*** of the global value of the indicator to global GDP is projected for 2015 (the ratio is assumed to be (i) the same as in 2010, (ii) higher than in 2010 or (iii) lower than in 2010—see Appendix Tables I4-I6);

ii. Given step (i) using WEO projections for GDP for 2015, the ***nominal value*** of the indicator in 2015 is computed;

iii. For a given currency, the growth in the indicator required to reach a target value by 2015 is computed.[3]

3. **The results for the first methodology suggest potential for considerable change in the relative ranking of currencies (Appendix Tables I1-I3).** Consider, for instance, foreign exchange turnover: predicating on historic growth rates in turnover, there is an appreciable increase in the shares of currencies currently not in the basket. In particular, there

[1] Using the currency of the top ten exporters does not prejudge the "gateway" criteria for selecting currencies.

[2] The choice between the fourth and fifth ranking can be instructive in terms of the required growth rate in the respective indicator: a target based on the fourth ranking currency would of course require higher growth rates than a fifth ranking currency.

[3] All individual currency shares are held constant at 2010 levels, except for (i) the "tested" currency, which increases to the target value (equal to the fifth or fourth ranking currency), and (ii) the 'tested' currency's share gain displaces the SDR currencies' shares, proportionally to their current weight in the basket.

are likely to be several emerging market currencies in the top of the distribution for these indicators. Similar results are obtained in the case of derivatives transactions and international debt securities.

4. **The results based on the second methodology vary according to the indicator and the target that are selected (Appendix Tables I4–I6).** In the case of the *first indicator*, foreign exchange turnover, if the target is provided by the fifth ranking currency, the simulations suggest that several of the currencies in the top-ten exporters currently not in the basket would require very rapid growth to meet this target in each of the three scenarios. For the 2nd scenario, for instance, for the two emerging market currencies in the top-ten, annual growth would have to exceed 50 percent (Appendix Table I4). If the target were provided by the fourth currency, growth rates would be of course be even higher (around 70 percent annually). Although these are high growth rates, judging by recent developments, and the capacity for "catch-up growth," they are not outside the realm of possibility. This expectation is also supported by the ratio of foreign exchange turnover to a country's own GDP, which are currently at low levels for emerging market currencies, compared to the existing SDR currencies' ratios.

5. **Other indicators yield diverging results.** With regard to the *second indicator*, the scenarios yield similar results in terms of the growth in the derivatives transactions that is required. In the case of the third indicator relating to debt securities, the required growth varies markedly more across indicators and currencies: for the two emerging market currencies it would be significantly greater (around 100 percent) compared to the other two indicators, while for developed market currencies, it is appreciably smaller (less than 10 percent). To some extent, these results appear to support the notions of inertia and network externalities in the use of currencies discussed in the note.

6. **There are several other caveats associated with these results.** As noted above, the exercises are mechanistic and reflect the specific assumptions. These assumptions may in turn not materialize to the extent that they are based on projecting backward looking growth rates in the case of the first methodology, and the ratios of indicators relative to global GDP in the second methodology. Also the second methodology does not take into account that the "required level" to enter the basket may change over time. In addition, the scenarios cannot account for second round effects such as changes in currency values, interest rates, and real transactions that would likely follow a rapid shift in the use of international currencies.

Appendix Table I1. Illustrative Scenarios: Global Foreign Exchange Market Turnover (Methodology 1)

Currency 1/	2004	2010	Annual growth of FX turn-over, 2004 - 2010	Projected FX turn-over in 2015	Currency shares in FX turn-over	
					2010	2015
	Billions of US dollars		Percent	Billions of US dollars	Percent	
US dollar	786.5	1,689.0	13.6	3,193.5	42.4	38.8
Euro	329.7	777.6	15.4	1,589.7	19.5	19.3
Japanese yen	179.6	377.7	13.2	701.6	9.5	8.5
Pound sterling	149.7	256.3	9.4	401.2	6.4	4.9
Australian dollar	48.6	150.9	20.8	388.0	3.8	4.7
Swiss franc	53.9	126.7	15.3	258.4	3.2	3.1
Canadian dollar	37.3	105.1	18.8	249.2	2.6	3.0
Hong Kong dollar	16.6	47.0	19.0	112.0	1.2	1.4
Swedish krona	20.3	43.6	13.6	82.4	1.1	1.0
New Zealand dollar	8.8	31.7	23.7	91.8	0.8	1.1
Korean won	10.6	30.1	19.1	72.1	0.8	0.9
Singapore dollar	8.5	28.2	22.1	76.5	0.7	0.9
Norwegian krone	12.9	26.3	12.7	47.8	0.7	0.6
Mexican peso	10.2	25.0	16.2	52.9	0.6	0.6
Indian rupee	3.0	18.9	35.6	86.6	0.5	1.1
Russian rouble	6.1	17.9	19.7	44.0	0.5	0.5
Chinese renminbi	0.9	17.1	64.3	205.1	0.4	2.5
Polish zloty	3.5	16.0	28.8	56.9	0.4	0.7
New Turkish lira	1.0	14.6	56.5	137.6	0.4	1.7
South African rand	6.8	14.4	13.2	26.8	0.4	0.3
Brazilian real	2.2	13.6	35.8	62.8	0.3	0.8
Danish krone	8.2	11.3	5.4	14.7	0.3	0.2
Hungarian forint	1.8	8.6	29.6	31.4	0.2	0.4
Thai baht	1.7	3.8	14.0	7.4	0.1	0.1
Other Currencies	65.0	129.5	12.2	230.2	3.3	2.8
All Currencies	1,773.3	3,981.0	14.4	8,220.5	100	100

Source: BIS Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity and Staff Calculations

1/ Currency ranking based on daily average of foreign exchange market turnover for 2010.

Appendix Table I2. Illustrative Scenarios: Derivative Transactions (Methodology 1)

Currency 1/	2004	2010	Annual growth of FX turn-over (Derivatives), 2004 -2010	Projected FX turn-over (Derivatives) in 2015	Currency shares in FX turn-over (Derivatives)	
					2010	2015
	Billions of US dollars		Percent	Billions of US dollars	Percent	
US dollar	522.2	1,094.5	13.1	2,027.7	44.0	38.9
Euro	193.2	431.6	14.3	843.0	17.3	16.2
Japanese yen	114.4	227.4	12.1	402.9	9.1	7.7
Pound sterling	108.3	149.9	5.6	196.6	6.0	3.8
Australian dollar	34.3	95.5	18.6	224.2	3.8	4.3
Swiss franc	33.3	80.7	15.9	168.5	3.2	3.2
Canadian dollar	25.4	66.2	17.3	146.9	2.7	2.8
Hong Kong dollar	13.2	37.7	19.1	90.5	1.5	1.7
Swedish krona	15.5	34.2	14.1	66.1	1.4	1.3
New Zealand dollar	6.8	20.8	20.4	52.7	0.8	1.0
Singapore dollar	5.9	20.4	22.9	57.1	0.8	1.1
Norwegian krone	10.5	20.1	11.5	34.7	0.8	0.7
Korean won	5.3	19.6	24.2	57.9	0.8	1.1
Mexican peso	4.4	15.9	23.7	45.9	0.6	0.9
Chinese renminbi	0.4	13.1	78.1	234.0	0.5	4.5
Polish zloty	2.7	12.5	28.8	44.1	0.5	0.8
Indian rupee	1.6	12.1	40.2	65.5	0.5	1.3
New Turkish lira	0.6	10.7	62.1	119.3	0.4	2.3
South African rand	5.6	9.8	9.7	15.6	0.4	0.3
Brazilian real	0.7	9.4	52.7	77.5	0.4	1.5
Danish krone	6.5	8.9	5.4	11.6	0.4	0.2
Russian rouble	0.9	8.9	45.6	57.9	0.4	1.1
Hungarian forint	1.4	6.5	28.7	23.0	0.3	0.4
Thai baht	1.1	2.4	14.3	4.7	0.1	0.1
Other Currencies	37.7	79.6	13.3	148.5	3.2	2.8
All Currencies	1,152	2,488	13.7	5,217	100	100

Source: BIS Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity and Staff Calculations

1/ Currency ranking based on daily average of foreign exchange market turnover (derivatives) for 2010.

Appendix Table I3. Illustrative Scenarios: International Debt Securities (Methodology 1)

Currency 1/ 2/	2004	2010	Annual growth of International Debt Securities, 2004 - 2010	Projected International Debt Securities in 2015	Currency shares in International Debt Securities	
					2010	2015
	Billions of US dollars		Percent	Billions of US dollars	Percent	
Euro	6,528.3	12,173.6	10.9	20,461.4	44.0	40.7
US dollar	5,095.3	10,843.7	13.4	20,347.9	39.2	40.5
Pound sterling	1,080.3	2,214.9	12.7	4,028.8	8.0	8.0
Japanese yen	541.8	782.2	6.3	1,062.2	2.8	2.1
Swiss franc	242.5	416.2	9.4	652.8	1.5	1.3
Canadian dollar	115.2	354.1	20.6	902.4	1.3	1.8
Australian dollar	129.5	335.6	17.2	741.9	1.2	1.5
Swedish krona	23.3	94.6	26.3	304.6	0.3	0.6
Hong Kong dollar	63.5	69.1	1.4	74.1	0.2	0.1
Norwegian krone	24.9	65.1	17.4	145.2	0.2	0.3
New Zealand dollar	19.0	38.9	12.7	70.7	0.1	0.1
Brazilian real	5.8	35.8	35.6	164.1	0.1	0.3
South African rand	14.2	35.8	16.6	77.2	0.1	0.2
Singapore dollar	14.5	35.7	16.2	75.7	0.1	0.2
New Turkish lira	6.3	19.7	21.0	51.2	0.1	0.1
Mexican peso	0.7	19.7	74.3	316.2	0.1	0.6
Chinese renminbi	1.5	19.3	53.0	161.6	0.1	0.3
Russian rouble	0.3	16.1	94.2	443.9	0.1	0.9
Polish zloty	7.0	14.9	13.6	28.2	0.1	0.1
Danish krone	7.0	4.5	-7.2	3.1	0.0	0.0
Thai baht	1.7	4.0	15.7	8.2	0.0	0.0
Hungarian forint	5.3	2.2	-13.8	1.0	0.0	0.0
Korean won	0.6	1.9	19.6	4.6	0.0	0.0
Indian rupee	0.1	1.5	52.6	12.0	0.0	0.0
Other Currencies	18.1	48.6	17.9	110.5	0.2	0.2
All Currencies	13,934	27,674	12.1	50,250	100	100

Source: BIS and Staff Calculations

1/ Currency ranking based on international debt securities for 2010.

2/ For the Brazilian real, the Chinese renminbi, and the New Turkish lira data for 2004 represent data from 2005.

Appendix Table I4. Illustrative Scenarios: Global Foreign Exchange Market Turnover (Methodology 2)

Currency	Annual growth in FX Turnover required to reach benchmark in 2015 1/		
	Scenario 1 *2/*	Scenario 2 *2/*	Scenario 3 *2/*
	Percent		
Canadian dollar	19.1	14.3	23.2
Chinese renminbi	71.2	64.3	77.1
Korean won	52.9	46.7	58.2
Russian rouble	69.6	62.8	75.5
Singapore dollar	54.9	48.7	60.3
Swiss franc	14.7	10.1	18.7

	Projected volume of FX turn-over (percent of GDP of issuing country)			
	2010	2015		
Canadian dollar	6.7	12.6	10.2	14.9
Chinese renminbi	0.3	2.5	2.0	3.0
Korean won	3.0	17.1	13.9	20.2
Russian rouble	1.2	8.6	7.0	10.2
Singapore dollar	12.7	82.5	67.2	97.8
Swiss franc	24.2	40.2	32.7	47.6
Memorandum				
US dollar	11.5	15.2	12.3	18.0
Euro	6.4	8.7	7.1	10.3
Japanese yen	6.9	9.6	7.8	11.3
Pound sterling	11.4	13.6	11.1	16.1
Australian dollar 3/	12.2	15.1	12.3	18.0

Source: Staff Calculations

1/ It is assumed that the benchmark is reached by displacing SDR basket currencies only; all other currencies maintain the share of FX turnover observed in 2010. The benchmark was defined as the fourth or fifth ranked currency's share in 2010. Scenario 1 assumes the 2004 - 2010 average annual change in the share of global FX turnover to global GDP; scenario 2 assumes the share of global foreign exchange turnover to global GDP observed in 2010; Scenario 3 assumes twice the annual change used in Scenario 1. Ratio of global foreign exchange turnover to global GDP in 2015 is 7.8 percent under Scenario 1; 6.3 percent under Scenario 2; and, 9.2 percent under Scenario 3. Data on World GDP are from WEO.

2/ The results reported here are based on the fifth ranking currency. When the benchmark is the fourth currency, growth rates are correspondingly higher: for instance, for Scenario 2, growth rates would be 82.6 percent and 81 percent for renminbi and rouble, respectively (compared to 64.3 and 62.8 percent as shown in the table).

3/ Fifth ranked currency.

Appendix Table I5. Illustrative Scenarios: Derivative Transactions (Methodology 2)

Currency	Annual growth of Foreign Exchange Derivatives required to reach benchmark in 2015 1/		
	Scenario 1 *2/*	Scenario 2 *2/*	Scenario 3 *2/*
	Percent		
Canadian dollar	19.7	14.4	24.3
Chinese renminbi	65.6	58.2	71.9
Korean won	52.8	46.0	58.6
Russian rouble	79.0	71.0	85.8
Singapore dollar	51.6	44.8	57.3
Swiss franc	15.1	10.0	19.5

	Projected volume of Foreign Exchange Derivatives (percent of GDP of issuing country)			
	2010	2015		
Canadian dollar	4.2	8.2	6.5	9.8
Chinese renminbi	0.2	1.6	1.3	2.0
Korean won	1.9	11.0	8.8	13.3
Russian rouble	0.6	5.6	4.4	6.7
Singapore dollar	9.2	53.4	42.5	64.4
Swiss franc	15.4	26.0	20.7	31.3
Memorandum				
US dollar	7.5	10.1	8.0	12.1
Euro	3.5	4.9	3.9	6.0
Japanese yen	4.2	5.9	4.7	7.1
Pound sterling	6.7	8.1	6.5	9.8
Australian dollar 3/	7.7	9.8	7.8	11.8

Source: Staff Calculations

1/ It is assumed that the benchmark is reached by displacing SDR basket currencies only; all other currencies maintain the shares of foreign exchange derivatives observed in 2010. The benchmark was defined as the fourth or fifth ranked currency's share in 2010. Scenario 1 assumes the 2004 - 2010 average annual change in the share of global foreign exchange derivatives to global GDP; Scenario 2 assumes the share of global foreign exchange derivatives to global GDP observed in 2010; Scenario 3 assumes twice the annual change used in Scenario 1. Ratio of global foreign exchange derivatives to global GDP in 2015 is 5 percent under Scenario 1; 4 percent under Scenario 2; and, 6 percent under Scenario 3. Data on World GDP are from WEO.

2/ The results reported here are based on the fifth ranking currency. When the benchmark is the fourth currency, growth rates are correspondingly higher: for instance, for Scenario 2, growth rates would be 73.2 percent and 87.2 percent for renminbi and rouble, respectively (compared to 58.2 and 71 percent as shown in the table).

3/ Fifth ranked currency.

Appendix Table I6. Illustrative Scenarios: International Debt Securities (Methodology 2)

Currency	Annual growth of International Debt Securities required to reach benchmark in 2015 1/		
	Scenario 1 *2/*	Scenario 2 *2/*	Scenario 3 *2/*
	Percent		
Canadian dollar	14.0	9.8	17.7
Chinese renminbi	104.0	96.5	110.6
Korean won	224.8	212.9	235.3
Russian rouble	111.6	103.8	118.4
Singapore dollar	80.4	73.7	86.1
Swiss franc	10.4	6.3	13.9

	Projected volume of International Debt Securities (percent of GDP of issuing country)			
	2010	2015		
Canadian dollar	22.5	34.1	28.3	39.9
Chinese renminbi	0.3	6.8	5.6	7.9
Korean won	0.2	46.2	38.3	54.1
Russian rouble	1.1	23.3	19.3	27.3
Singapore dollar	16.0	223.6	185.3	261.8
Memorandum				
US dollar	74.0	97.7	81.0	114.4
Euro	99.8	137.6	114.1	161.2
Japanese yen	14.3	20.0	16.6	23.4
Pound sterling	98.6	118.4	98.1	138.6
Swiss franc 3/	79.5	108.9	90.2	127.5

Source: Staff Calculations

1/ It is assumed that the benchmark is reached by displacing SDR basket currencies only; all other currencies maintain the shares of international debt securities observed in 2010. The benchmark was defined as the fourth or fifth ranked currency's share in 2010. Scenario 1 assumes the 2004 - 2010 average annual change in the share of global international debt securities to global GDP; Scenario 2 assumes the share of global international debt securities to global GDP observed in 2010; Scenario 3 assumes twice the annual change used in Scenario 1. The ratio of global international debt securities to global GDP in 2015 is 53.1 percent under Scenario 1; 44.0 percent under Scenario 2; and, 62.2 percent under Scenario 3. Data on World GDP are from WEO.

2/ The results reported here are based on the fifth ranking currency. When the benchmark is the fourth currency, growth rates are correspondingly higher: for instance, for Scenario 2, growth rates would be 123 percent and 131.3 percent for renminbi and rouble, respectively (compared to 96.5 and 103.8 percent as shown in the table).

3/ Fifth ranked currency.

Appendix II: Data Issues

Data availability continues to be key in determining the indicators used to assess the freely usable and the proposed reserve asset criteria. While data for many of the indicators suggested are available, in some cases there are issues related to their frequency and timeliness. The main gaps relate to the limited currency coverage of data on the currency composition of foreign exchange reserves (COFER) and Bank for International Settlements (BIS) data on international banking liabilities and over-the-counter (OTC) derivative amounts outstanding. The Board has already broadly supported efforts to expand the currency and country coverage of COFER taking reporting burdens into consideration.[1] The Board as part of the "interconnectedness" discussions has welcomed, and the G-20 in the context of the Data Gap Initiative has requested, enhancements in BIS financial data. It is unclear whether this includes greater currency data coverage.[2] In addition, the BIS' foreign exchange market turnover data are relatively low frequency, with publication every three years in the Triennial Reviews. Until these data limitations are rectified, reasonable, comparable proxies that reflect the underlying concept under assessment could be considered.

Assessment by indicator

Global foreign exchange market turnover: spot and derivative transactions

Foreign exchange market turnover, defined as the gross value of all deals concluded (during the month of April), is measured in terms of the nominal or notional amount of the contracts. The data, which are comprehensive, are provided by the BIS, which coordinates a global triennial central bank survey of foreign exchange and derivatives market activity. The BIS reports statistics on spot and derivative transactions—including turnover by currency pair, outright forwards, foreign exchange swaps, currency options and currency swaps.

The BIS conducted the last triennial survey in April and June 2010. The participating central banks collected and compiled data from about 4,000 reporting financial institutions. For the April 2010 Survey, 53 central banks and monetary authorities participated, collecting data from about 1,300 dealers on turnover in foreign exchange instruments and OTC interest rate derivatives. At end-June, data were collected in 42 countries on outstanding notional amounts and gross market values of foreign exchange, interest rate, equity, commodity, credit (including credit default swaps contracts) and other OTC derivatives instruments.[3]

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[1] *The Acting Chair's Summing Up, Review of the Method of Valuation of the SDR* November 17, 2010 http://www.imf.org/external/np/sec/pn/2010/pn10149.htm.

[2] http://www.imf.org/external/np/sec/pn/2010/pn10150.htm; Data Gap Initiative recommendation #10: http://www.imf.org/external/np/g20/pdf/053110.pdf

[3] For more information visit http://www.bis.org/publ/rpfxf10t.htm.

Assessment

Very comprehensive and reliable data. Main limitation relates to the availability of data at low frequency (every three years only).

Foreign exchange OTC derivatives

The BIS publishes semiannual statistics on OTC derivatives markets in the G-10 countries and Switzerland, including notional amounts outstanding and gross market values of foreign exchange OTC derivatives (forwards, swaps, and options).[4] Data are from the Semiannual OTC derivatives statistics, Tables 20B and 21B.

Assessment

Comprehensive data. But limited currency breakdown used to report the composition of foreign exchange OTC derivatives. Currently currency composition is identified for thirteen currencies, mostly currencies issued by developed economies.

International banking liabilities

The BIS publishes quarterly data on international banking liabilities, defined as liability positions denominated in any currency to non-residents plus liabilities in foreign currency to domestic residents. Data compiled by BIS is based on information reported by central banks and monetary authorities from 43 countries and international banking centers.[5] Data on international banking liabilities come from the BIS locational banking statistics, Table 5A.

Assessment

High quality data, with high frequency. From SDR valuation perspective, there are two limitations: (i) For the euro area, the data do not adjust for intra-euro transactions between member countries, i.e., it do not exclude banking liabilities denominated in euro that are issued in one member country of the euro area, and purchased by a resident of another member country of the euro area; (ii) Limited currency breakdown used to report the composition of reporting banks liabilities to official monetary authorities and other holders of foreign exchange reserves; currently currency composition is identified for only five currencies: the US dollar, the euro, the pound sterling, the Japanese yen, and the Swiss franc.

International debt securities

The BIS publishes quarterly data on international debt securities. They are defined as (i) bonds and notes and money market instruments issued internationally, which include all foreign currency issues in a given country, by both residents and non-residents; and (ii) all

[4] For more details see *Committee on the Global Financial System* (CGFS) at Committee on the Global Financial System and Semiannual OTC derivatives statistics at end-December 2010.

[5] For more details see *Guidelines to the international locational banking statistics*, BIS. December, 2008. http://www.bis.org/statistics/bankstats.htm.

domestic currency issues launched in the domestic market by non-residents. Additionally, domestic currency issues in the domestic market by residents are considered as international issues if they are specifically targeted at non-resident investors. Data on about 165,000 international bond issues and 870,000 international notes and money market instruments are compiled by the BIS from various national, market, and institutional data sources, such as Dealogic, Thomson Financial Securities Data, the market service division of the International Capital Market Association, the Bank of England, and Euroclear. Data on international debt securities can be found in the BIS' Securities Statistics, Tables 13A and 13B, reporting international money market instruments and bonds and notes, respectively.

Assessment

High quality data, with high frequency. However, for the euro area, the data do not exclude debt securities denominated in euro that are issued in one member country of the euro area, and purchased by a resident of another member country of the euro area.

Official Reserve Holdings

The IMF publishes aggregated country group COFER data on a quarterly basis. The currencies identified in COFER surveys include: the U.S. dollar, the euro, pound sterling, the Japanese yen, the Swiss franc, and all other currencies combined as "claims in other currencies." The definition of official foreign exchange reserves utilized in COFER is that outlined in the sixth edition of the IMF's Balance of Payments and International Investment Position Manual, and the same as that used for official foreign exchange reserves data published in the IMF's *International Financial Statistics (IFS)*. COFER country grouping aggregates are published for each of the three country groups of countries currently used in *IFS* world tables—world, advanced economies, and emerging and developing economies.

Assessment

The COFER database provides the best data on currency composition of reserves that are available. However, from the perspective of SDR Reviews, it suffers from two limitations. First, the large and increasing importance of *Unallocated Reserves* (the difference between allocated reserves in COFER and total reserves reported to IFS), which by the end of the first quarter of 2011 represented about 45 percent of total reserves. Second, the limited currency breakdown used to report the composition of official foreign exchange reserves. Initiatives are underway that will attempt to ameliorate these two limitations. In addition to these, monetary authorities are instructed by the survey to report foreign currency reserves holdings consistent with the BPM6 statistical definition (see paragraph 6.72 [6]), not total foreign exchange holdings. This means that the total foreign currency holdings of monetary authorities are not considered. In the context of the *currency composition of reserves* indicator in the Reserve Asset Criterion (RAC) option, other foreign currency holdings of the monetary authorities could therefore be considered as a supplementary indicator for RAC purposes.

[6] "Furthermore to be liquid, reserve assets must be denominated and settled in *convertible* foreign currencies…"