

INTERNATIONAL MONETARY FUND

Review of the Method of Valuation of the SDR

Prepared by the Finance Department

In consultation with the Legal and Other Departments

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EXECUTIVE SUMMARY

This paper provides the basis for the quinquennial review of the method of valuation of the SDR, and the financial instruments used to determine the SDR interest rate. Under the governing Board decisions, the new SDR valuation and interest rate baskets would come into effect on January 1, 2011.

The review examines developments during the 2005–09 period in the variables relevant to the SDR valuation. These variables include exchange rates, exports of goods, services and income, and reserve holdings. Data for exports of goods and services show China has become the third largest exporter among Fund members and monetary unions including Fund members. Nonetheless, indicators such as reserves and international banking and debt securities suggest that the currencies in the current SDR basket continue to predominate in international financial transactions, and these currencies also account for the bulk of global foreign exchange turnover. At this time, the Chinese renminbi would not appear to meet the criteria for being determined by the Fund to be a freely usable currency, which is also required for inclusion in the SDR basket.

Staff therefore recommends no changes in the composition of the SDR basket at this review. Also no changes are proposed in the method of calculating currency weights, or in the financial instruments used to determine the official SDR interest rate. To address the concerns that a number of Directors expressed in the context of the 2005 Review about the method of rounding used in determining the initial currency weights in the SDR basket, the paper proposes to move from rounding to the nearest whole percentage point to rounding to one decimal place.

While no changes are proposed for the current review, the paper proposes a follow-up work program on several issues relating to the valuation of the SDR and the SDR interest rate basket. These include the indicators used in selecting currencies to be included in the SDR valuation basket, the number of currencies in the basket, the methodology to determine the initial currency weights, and the potential alignment of the maturity of the financial instruments used to determine the SDR interest rate basket and the frequency of updates in the official SDR interest rate. This work program is distinct from the ongoing discussions on the reform of the international monetary system, but would take account of these discussions.

It is proposed that the next review take place by 2015, with any changes taking effect January 1, 2016. Nonetheless, the Board could decide on an earlier review if warranted by financial developments. In line with previous practice, it is also proposed that the decision by the Executive Board regarding this review be adopted well in advance of January 1, 2011 (when the proposed changes will become effective), in order to provide sufficient notice to interested parties and to complete any consultations that might be required.

I. INTRODUCTION¹

1. **This paper provides the basis for the quinquennial review of the method of valuation of the SDR currency basket.**² In accordance with past practice, the review of the financial instruments used to determine the SDR interest rate (the interest rate basket) is conducted at the same time. Broader issues related to the role of the SDR in the international monetary system are to be addressed by other papers. The current SDR currency basket review is due to be completed by December 31, 2010, and the new currency basket would come into effect on January 1, 2011. Traditionally, the Board has taken the decision on SDR valuation prior to the effective date in order to provide advance notice to interested parties and to complete any consultations that might be required.

2. **No changes in the composition of the SDR basket, the method of calculating currency weights, or in the financial instruments used to determine the official SDR interest rate are proposed at this review.** To address the concerns that a number of Directors expressed in the context of the 2005 Review about the method of rounding used in determining the currency weights in the SDR basket, staff proposes rounding the initial currency weights to one decimal place rather than to the nearest whole percentage point.³

3. **While no changes are proposed at this time, a number of areas are identified where follow-up work on the valuation of the SDR may be appropriate.** These include the scope for further developing the indicators used to guide future decisions on the inclusion of new currencies in the SDR basket, and the possible role for supplementary financial variables in the calculation of the currency weights in the SDR basket, including alternative weighting schemes. Possible issues regarding the difference between the frequency of adjustments in the official SDR interest rate and the maturity of the underlying financial instruments are also identified. The paper proposes that these issues be considered in more detail in 2011, following the completion of the current review. Such a timetable would allow these issues to be considered well in advance of the next review of the SDR valuation basket and to take account of the broader ongoing work program on the international monetary system and the role of the SDR.

4. **The paper is organized as follows.** Section II summarizes the method of SDR valuation and the broad principles that have guided previous reviews. Developments in valuation-related variables are reviewed in section III. Section IV covers the proposed selection and weighting of currencies in the SDR basket for 2011–15, as well as broader

¹ This paper was prepared by Messrs. Beaumont, Rossi, Rodriguez, Perez, Kohler, and Attie (all FIN). Ms. Rosenberg and Mr. Steinki (all LEG) prepared Annex I. Ms. Cheng (APD) and Ms. Kokenyne (MCM) contributed to Annex II.

² The quinquennial review of the list of currencies, and their amounts, that determine the value of the SDR is provided for under Decision No. 12281-(00/98) G/S adopted October 11, 2000, which is reproduced in Annex I.

³ See *IMF Executive Board Determines New Currency Amounts for SDR Valuation Basket*, Public Information Notice No. 05/171 (<http://www.imf.org/external/np/sec/pn/2005/pn05171.htm>).

issues for future work. Section V reviews the financial instruments in the SDR interest rate basket. Section VI discusses the transition to the new SDR basket, the timing of the next valuation review, and sets out some issues for discussion.

II. PRINCIPLES AND METHODOLOGY OF SDR VALUATION

5. **The Executive Board has reviewed the SDR valuation basket on a 5-yearly basis.** These reviews cover the currencies to be included in the SDR valuation basket and determine 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 Past reviews have been guided by long-standing principles that aim to enhance the attractiveness of the SDR as a reserve asset (Box 1).

Box 1. Broad 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.

6. **In practice, there has been a high degree of stability in the method of valuation of the SDR.** Revisions in the method have been linked to major changes in the roles of currencies in the world economy; for example, the current criteria for SDR valuation were adopted in 2000 following the introduction of the euro (Box 2). 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. At the last review in 2005, Directors agreed that the SDR valuation adopted in 2000 remained appropriate.

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."

Box 2. Decisions under the 2000 and 2005 Reviews

Following the introduction of the euro on January 1, 1999, the Board agreed to shift from a member-based to a currency-based method of SDR valuation in 2000, adopting a decision that superseded the 1980 Decision. Under the new method for SDR valuation, the SDR basket comprises the currencies of the four largest exporting Fund members or monetary unions—defined as areas with a single currency and common central bank—that have been determined by the Fund to be freely usable currencies in accordance with Article XXX (f).

The decision by the Board in 2000 to require that currencies in the SDR basket be freely usable principally reflected the role of the SDR as a supplementary official reserve asset.

This role suggested that the selection according to exports of goods and services is a necessary, but not sufficient condition to include a currency in the SDR basket, as a country's share of world exports is not necessarily a reliable indicator of the use of its currency in international transactions, nor an accurate gauge of the depth and breadth of its financial markets. In addition to encompassing official reserves, the requirement that a currency be freely usable allows for the consideration of several other indicators on the breadth and depth of financial markets (Box 4). This requirement was also consistent with previous Board decisions; for instance, one goal of the 1980 decision to reduce the number of currencies in the SDR basket from 16 to 5 was to ensure that the currencies included had broad and deep foreign exchange markets, which is a key element of the concept of a freely usable currency.

The method used to determine SDR currency weights was unchanged at the 2000 and 2005 reviews. Based on combining the value of exports and official reserves held by monetary authorities outside the country or monetary union that issues the respective currency, it was agreed that the currency weights of the SDR basket would be as shown in the table.

	Initial Weights of Currencies (In percent)	
	2000 Review	2005 Review
U.S. dollar	45	44
Euro	29	34
Japanese yen	15	11
Pound sterling	11	11

Source: Finance Department

At the 2005 review, the Board agreed to maintain the valuation method adopted in the 2000 Decision, but revised the representative interest rate for the euro.¹ Directors agreed to replace the three-month Euribor rate with the three-month Eurepo rate as the applicable rate for the euro, noting that Eurepo now conforms more closely with the criteria applied to the selection of instruments, particularly with respect to its risk characteristics.

¹ In the initial period following the introduction of the euro, the SDR basket had been modified to include the euro as the currency of both France and Germany.

² *IMF Executive Board Determines New Currency Amounts for SDR Valuation Basket*, Public Information Notice No. 05/171 (<http://www.imf.org/external/np/sec/pn/2005/pn05171.htm>).

7. **The SDR currently derives its value from a basket of four currencies: the U.S. dollar, the euro, the Japanese yen, and pound sterling.** The basket contains fixed amounts of each of these currency units, which are valued at prevailing market exchange rates and summed to obtain the SDR's value. This "standard basket" method, adopted in 1974, has been accepted as the method that best ensures the stability of the SDR in terms of the major currencies under floating exchange rates.⁵ Staff's discussions with regular users of the SDR basket in the financial markets also indicate that the standard basket method facilitates replication of the principal value of the SDR using financial instruments available in the component currencies.⁶

8. **Under the 2000 Decision (Annex I), the composition of the SDR basket reflects the following criteria:**

Currency Selection: the SDR basket comprises the four currencies that are issued by Fund members (or by monetary unions that include Fund members), whose exports of goods and services⁷ during the five-year period ending 12 months before the effective date of the revision had the largest value,⁸ and that have been determined by the Fund to be freely usable currencies in accordance with Article XXX (f), which reads:

A freely usable currency means 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.

It is notable that the concept of a freely usable currency concerns the actual international use and trading of currencies, and is distinct from whether a currency is either freely floating or fully convertible.

Currency Weighting: the percentage weight of each currency selected shall reflect:⁹

(a) *Reserves*; the value of the balances of that currency held by the monetary authorities of other members¹⁰ at the end of each year of the relevant five-year period ending 12 months before the effective date of the revision; and

⁵ Decision No. 4233-(74/67) S, adopted June 13, 1974, effective July 1, 1974.

⁶ Issues regarding replication of the official SDR interest rate are discussed in section V and Annex IV.

⁷ In this paper, exports, exports of goods and services, and exports of goods, services and income are used interchangeably. The latter corresponds to the definition of the variable used in SDR valuation.

⁸ In the case of a monetary union, trade between members of the union is excluded from the calculation.

⁹ For currency i , its weight ω_i is given by (X =exports, R =reserve holdings, in levels in SDRs):

$$\omega_i = \frac{X_i + R_i}{X + R}, \quad X = \sum_i X_i, \quad R = \sum_i R_i$$

(b) *Exports*; the value of exports of goods and services of the members or monetary unions as defined in the method for currency selection.

Review: The currencies and their weights in the valuation basket shall be reviewed every five years in order to keep the composition of the basket stable for at least that period of time, unless the Executive Board decides otherwise.¹¹

9. **The five-yearly Executive Board decisions specify the initial weights of the currencies in the basket, but the weights change over time with exchange rate developments.** Specific currency amounts consistent with the initial weights are fixed on the date on which the decision becomes effective (Box 3). Subsequent daily valuations of the SDR are based on these fixed currency amounts. Movements in exchange rates alter the relative weights of the component currencies, with appreciating currencies gaining a larger share in the basket.

Box 3. Determination of Currency Amounts and Actual Daily Weights

Currency amounts are calculated on the last business day before the date the new basket becomes effective. On that day, currency amounts are derived from the weights decided by the Executive Board using the average exchange rate for each currency over the preceding three months. Currency amounts are adjusted proportionally to ensure that the value of the SDR is the same before and after the revision. The currency amounts remain fixed for the subsequent five-year period. As a result, the actual weight of each currency in the value of the SDR changes on a daily basis as a function of changes in exchange rates. As an example, the calculation of the SDR in terms of the U.S. dollar on September 10, 2010 and the corresponding weights are shown below.

SDR Valuation on September 10, 2010

Currency	Initial weight decided in 2005	Currency amount under Rule 0-1	Exchange rate 1/ 9/10/10	U.S. dollar equivalent	Actual weight 9/10/10
U.S. dollar	44.0	0.6320	1.0000	0.63200	41.8
Euro	34.0	0.4100	1.2729	0.52189	34.5
Japanese yen	11.0	18.4000	83.99000	0.21907	14.5
Pound sterling	11.0	0.0903	1.54560	0.13957	9.2
SDR1 = US\$				1.51253	100.0

1/ U.S. dollar per currency unit except for the yen which is expressed as currency units per U.S. Dollar.

¹⁰ Or, in the case of the currency of a monetary union, by the monetary authorities of members other than those forming part of the monetary union.

¹¹ Quinquennial reviews of the SDR valuation were first provided for by Decision No. 6631-(80/145) G/S, adopted September 17, 1980, and continue to be required under Executive Board Decision No. 12281-(00/98) G/S, adopted October 11, 2000, see Annex I.

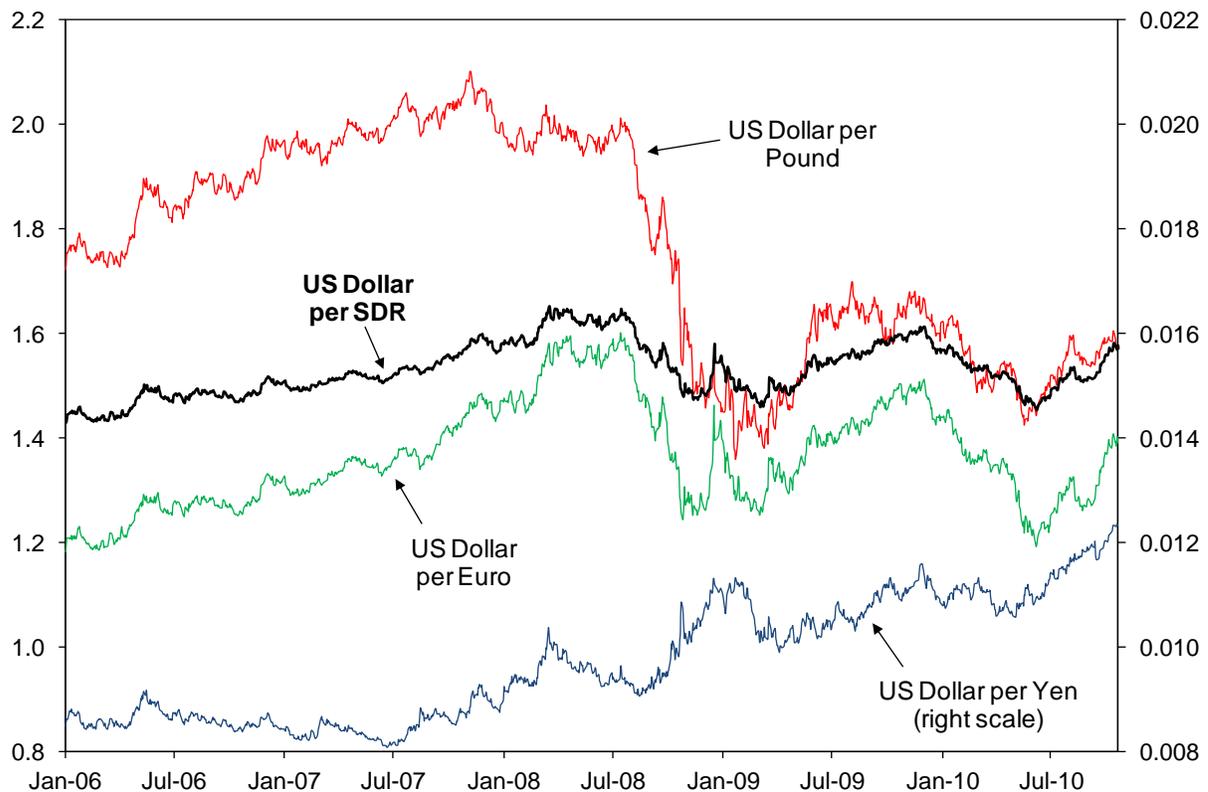
III. DEVELOPMENTS IN VALUATION-RELATED VARIABLES

10. This section reviews developments in the variables relevant to SDR valuation, both the selection and weighting of currencies in the basket, including exchange rates, exports, reserves, and indicators of international financial transactions.

A. Exchange Rate Developments

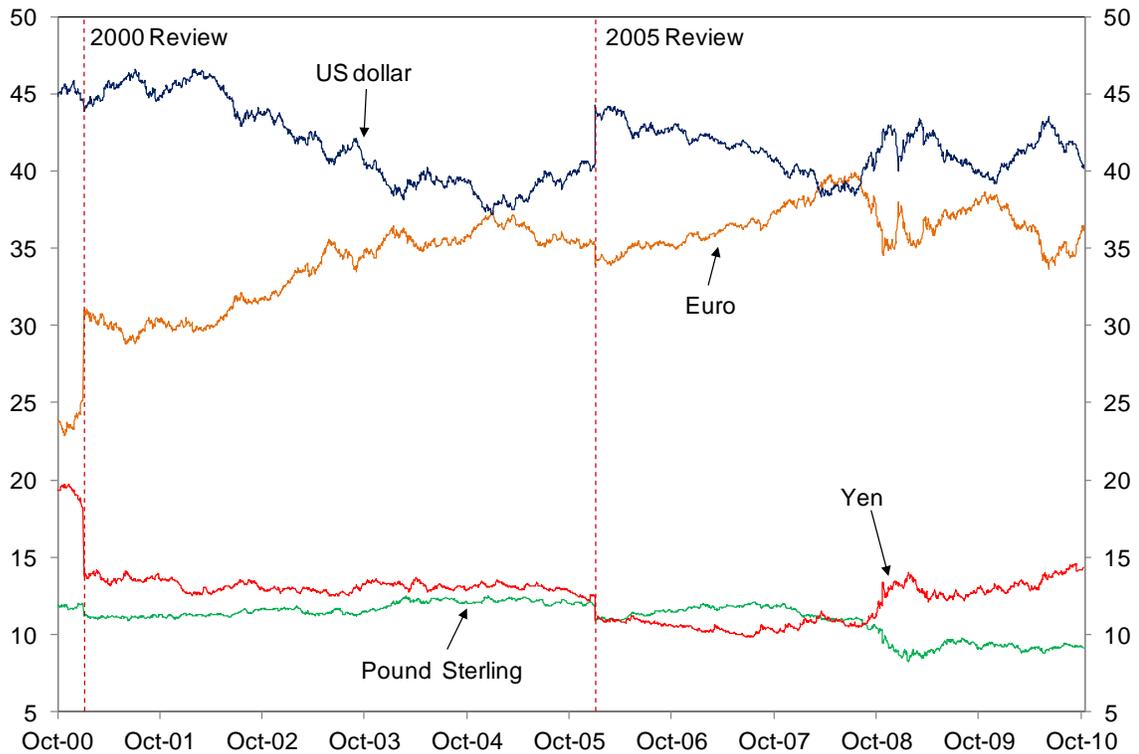
11. Since the date of effectiveness of the last SDR valuation decision on January 1, 2006, the SDR appreciated significantly vis-à-vis the U.S. dollar until mid-2008, and has since fluctuated during the global crisis. The depreciation of the U.S. dollar until mid-2008, especially against the euro (Figure 1), raised the weight of the euro above that of the U.S. dollar during March to August 2008 (Figure 2). Subsequently, the U.S. dollar appreciated against the euro and especially against the pound sterling, but depreciated against the Japanese yen. Overall, by October 22, 2010 there was a reduction in the actual weight of the U.S. dollar (from 44.0 to 40.2 percent) and the pound sterling (from 11.0 to 9.0 percent), balanced by increases in the weight of the euro (from 34.0 to 36.3 percent) and the Japanese yen (from 11.0 to 14.4 percent).

Figure 1. Exchange Rate Movements of the U.S. Dollar, 2006–2010 1/



Sources: International Financial Statistics.
1/ Daily data are through October 22, 2010.

Figure 2. Actual Currency Weights in the SDR Basket, 2000–2010 1/
(In percent)



Sources: Finance Department and International Financial Statistics.

1/ Daily data are through October 22, 2010.

12. **SDR movements against the major currencies have been less pronounced than those of the bilateral rates of exchange for these same currencies against each other.**¹² Further, the day-to-day volatility of the SDR/U.S. dollar exchange rate has been significantly less than the volatility of its component currencies measured in terms of the U.S. dollar (Table 1). Both factors reflect the working of the standard basket method of valuation.

Table 1. Exchange Rate Volatility, 2005-2010 1/

	2005	2006	2007	2008	2009	2010 2/
Euro	0.43	0.37	0.30	0.65	0.59	0.56
Japanese yen	0.40	0.44	0.44	0.75	0.66	0.47
Pound sterling	0.37	0.38	0.33	0.63	0.81	0.52
SDR	0.23	0.21	0.15	0.31	0.29	0.23

Sources: Finance Department and International Financial Statistics.

1/ Measured as the mean of absolute daily percentage change in spot exchange rates against the U.S. dollar, based on noon exchange rates in the London market.

2/ Based on data from January 1 to October 22, 2010.

¹² This would not necessarily hold if SDR basket currencies belonged to the same pegged exchange-rate system as was the case, for example, with the ERM currencies, or if one SDR basket currency served as a nominal anchor of another currency included in the basket.

B. Developments in Exports and Reserve Holdings

13. **Since the last review, China has joined the list of top exporters on a 5-year average basis.** At the time of the 2005 review, China's exports had surpassed those of Japan in 2003, but were below those of the four largest exporters for the 5-year review period (2000–04) as a whole. China's exports have continued to grow strongly, and China is now one of the four largest exporters for the 2005–09 review period (Table 2), indicating that, under the currency selection criterion in the 2000 Decision, the Chinese renminbi would be a candidate for inclusion in the SDR currency basket if it were also determined by the Fund to be a freely usable currency.

Table 2. Exports of Goods, Services, and Income, 2005-2009
(In SDR billions)

Largest Exporters	2005	2006	2007	2008	2009	Average 2005 - 09
Euro area	1,698.1	1,997.8	2,338.6	2,457.9	1,967.8	2,092.0
United States	1,229.6	1,451.2	1,619.1	1,668.0	1,400.1	1,473.6
China 1/	708.7	880.7	1,065.8	1,207.4	1,062.7	985.1
United Kingdom	630.0	762.7	860.5	792.0	559.3	720.9
Japan	554.3	611.0	657.7	700.8	550.5	614.8
Canada	317.4	353.0	372.1	379.1	281.6	340.6
Korea	233.2	269.4	301.9	337.5	290.4	286.5
Russia	193.8	247.7	288.1	369.9	245.7	269.0
Singapore	214.8	258.5	290.8	316.4	270.4	270.2
Switzerland	205.1	224.9	253.9	255.8	221.3	232.2
<i>Memorandum item</i>						
China, P.R. (Mainland China)	592.9	758.8	931.1	1,065.3	935.1	856.6

Source: Finance and Statistics Departments and International Financial Statistics

1/ Includes China, P.R., Hong Kong SAR, and Macao SAR. Intra-exports of goods between these three regions are excluded. Intra-exports of services and income are not excluded owing to a lack of a geographical breakdown of this data for these regions.

14. **This conclusion also applies if exports are measured at the level of mainland China.** Consistent with the 2000 Decision, China's exports are measured at the level of the member in Table 2, i.e., including Hong Kong SAR and Macau SAR, but excluding intra-exports of goods between these regions. Since mainland China, Hong Kong SAR, and Macau SAR do not use a common currency, it could be argued that they should be treated separately, as exports are intended to reflect the extent to which a currency is used in international payments. Such coverage would also be consistent with the currency-based approach to SDR valuation adopted in 2000, where monetary unions are defined as areas with a single currency and common central bank (Box 2). Even if exports of mainland China alone are considered, China would remain among the top four exporters.

15. **Available data indicate that the overall pattern of reserve holdings by currency has not changed substantially since the last review.** The share of total reserves for which the currency allocation is reported has declined to 56 percent, compared with 71 percent at the last review. Based on the reported data, there has been some further diversification of

foreign reserves, with the share held in U.S. dollars declining by 3.7 percentage points to 62.2 percent from end-2004 to end-2009 (Table 3). This was mostly balanced by an increase in the share of the euro by 2.6 percentage points to 27.4 percent. Together, the U.S. dollar and euro continue to account for about 90 percent of reserves for which a currency allocation is reported. An increase in the share of pound sterling was offset by a similar decline in the share of the Japanese yen, and the four SDR basket currencies accounted for 96.8 percent of allocated reserves at end-2009.

Table 3. Composition of Foreign Exchange Reserves, 2004-2010
(In percent)

	2004	2005	2006	2007	2008	2009	2010 Q2
Share of allocated FX reserves	100.0	100.0	100.0	100.0	100.0	100.0	100.0
U.S. dollars	65.9	66.9	65.5	64.1	64.1	62.2	62.1
Euro	24.8	24.1	25.1	26.3	26.4	27.4	26.5
Pound sterling	3.4	3.6	4.4	4.7	4.0	4.3	4.2
Japanese yen	3.8	3.6	3.1	2.9	3.1	2.9	3.3
Swiss francs	0.2	0.1	0.2	0.2	0.1	0.1	0.1
Other currencies	1.9	1.7	1.8	1.8	2.2	3.1	3.8
Share of unallocated FX reserves 1/	29.2	34.2	36.9	38.5	42.6	44.1	44.0

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

1/ Share of total foreign exchange reserves for which the currency is not identified in COFER.

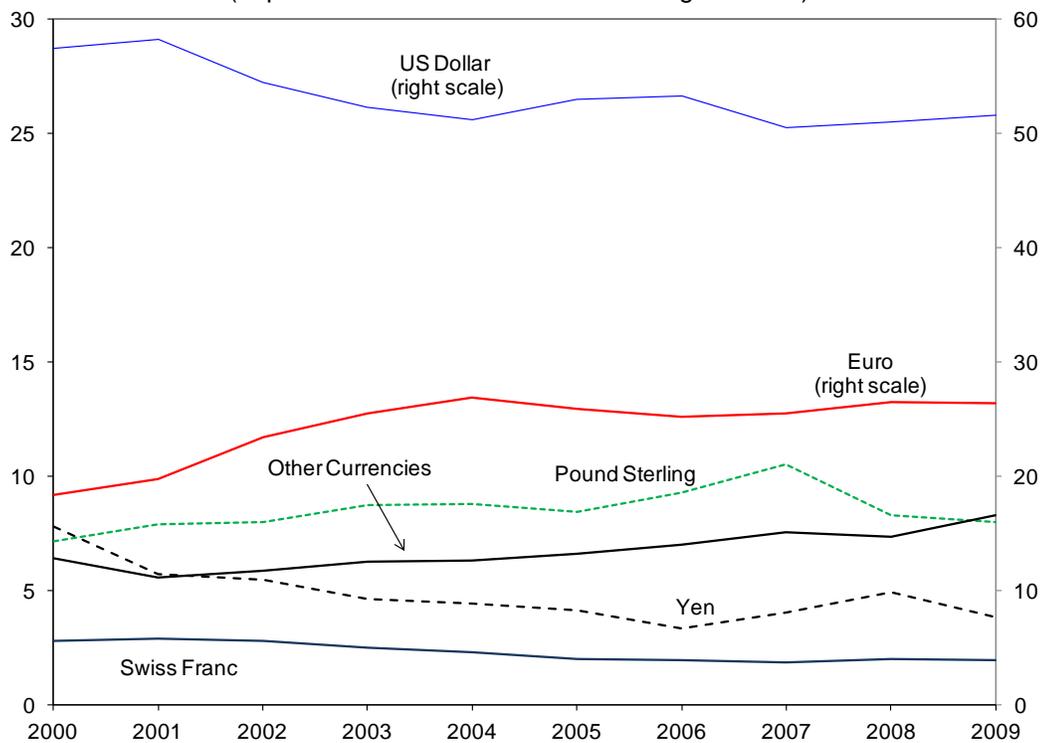
16. **The share of other currencies in international reserves rose during the most recent years, but the COFER database does not offer a further currency breakdown of these reserves.** Looking forward, it may be appropriate to consider expanding the currency coverage of COFER beyond the four SDR currencies plus the Swiss franc, while taking into account the additional reporting burden for members. The Statistics Department, which conducts the COFER survey, is prepared to lead potential further work in this area. Reporting to COFER is voluntary, nonetheless, a higher reporting rate relative to total foreign exchange reserves would help ensure the accuracy of reserve composition data used in the determination of SDR currency weights.

C. International Financial Developments

17. **A range of indicators suggest that the four SDR currencies continue to account for the majority of international financial transactions.** Such indicators are relevant to the freely usable currency requirement for currency selection, and include:

- International banking liabilities:** BIS data on cross border liabilities of banks, which are predominantly deposits, totaled SDR 17.9 trillion at end 2009.¹³ The four SDR currencies accounted for 91.7 percent of such liabilities allocated by currency during the 2005–09 period, little changed from 92.1 percent during 2000–04 (Figure 3).¹⁴ Within these four currencies, the shares were relatively stable during the review period, whereas there had been some rise in the share of the euro and decline in the U.S. dollar share during 2000–04. The share of the Swiss franc declined to just under 2 percent, while the share of other currencies including the Chinese renmimbi—for which a more detailed breakdown is not available—rose to 7.3 percent by end 2009, up by 1.7 percentage points from end-2004.

Figure 3. International Banking Liabilities—Currency Composition (2000-2009)
(In percent of total international banking liabilities)



Source: BIS International Local Banking Statistics, Table 5A.

- International debt securities:** BIS data on international debt securities totaled SDR 17.2 trillion at end-2009.¹⁵ Debt securities denominated in the four SDR currencies accounted for 94.6 percent of such securities during the 2005–09 period, a

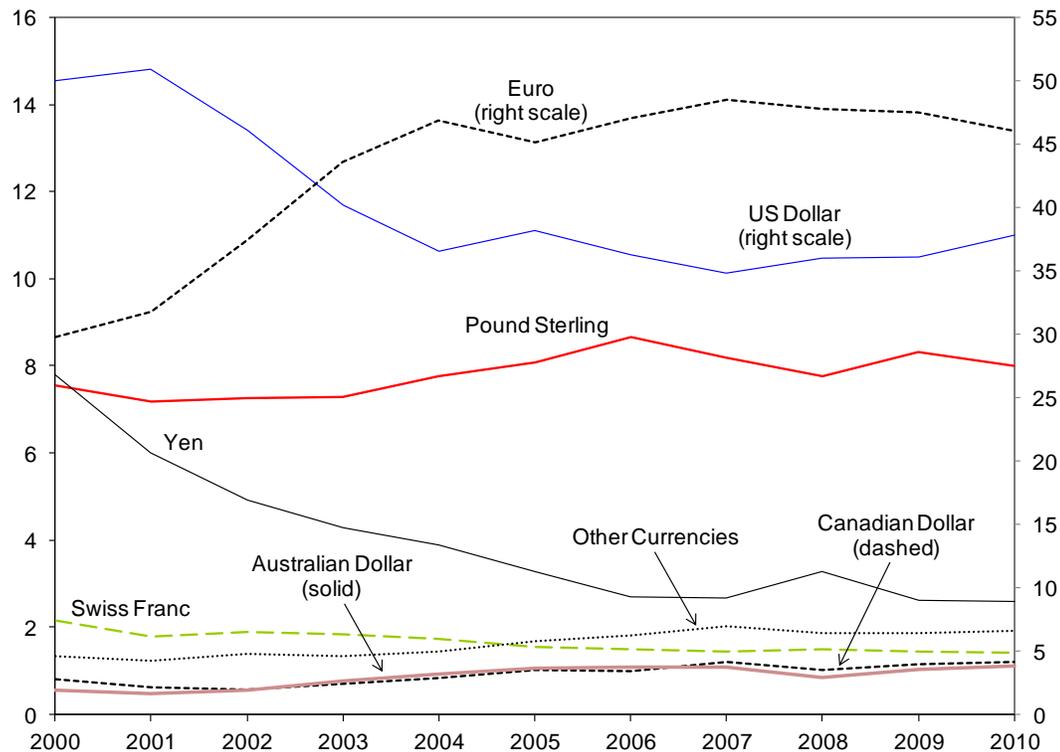
¹³ These data are collected by the BIS from 43 countries including key international banking centers. Annex V provides further details on these data.

¹⁴ Reporting of currency composition covered 95.7 percent of total cross-border liabilities at end-2009.

¹⁵ The BIS compiles data on international debt securities from various national, market, and institutional data sources. Annex V provides further details on these data.

slight decline from 95.4 percent during 2000-04 (Figure 5).¹⁶ Within these four currencies, the shares were relatively stable during the review period, with some further decline in the share of the Japanese yen. Among other currencies, only the Swiss franc and the Australian and Canadian dollars exceed 1 percent of international debt securities, with the remaining 43 currencies for which data are collected accounting for only about 2 percent of the total. Data for international debt securities denominated the Chinese renminbi have been reported from June 2005 for bonds and notes, and accounted for 0.06 percent of international bonds and notes at end- 2009.

Figure 4. International Debt Securities—Currency Composition (2000-2010) 1/
(In percent of total international debt securities)



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

1/ International bonds and notes plus international money market instruments. Data ends 2010Q1.

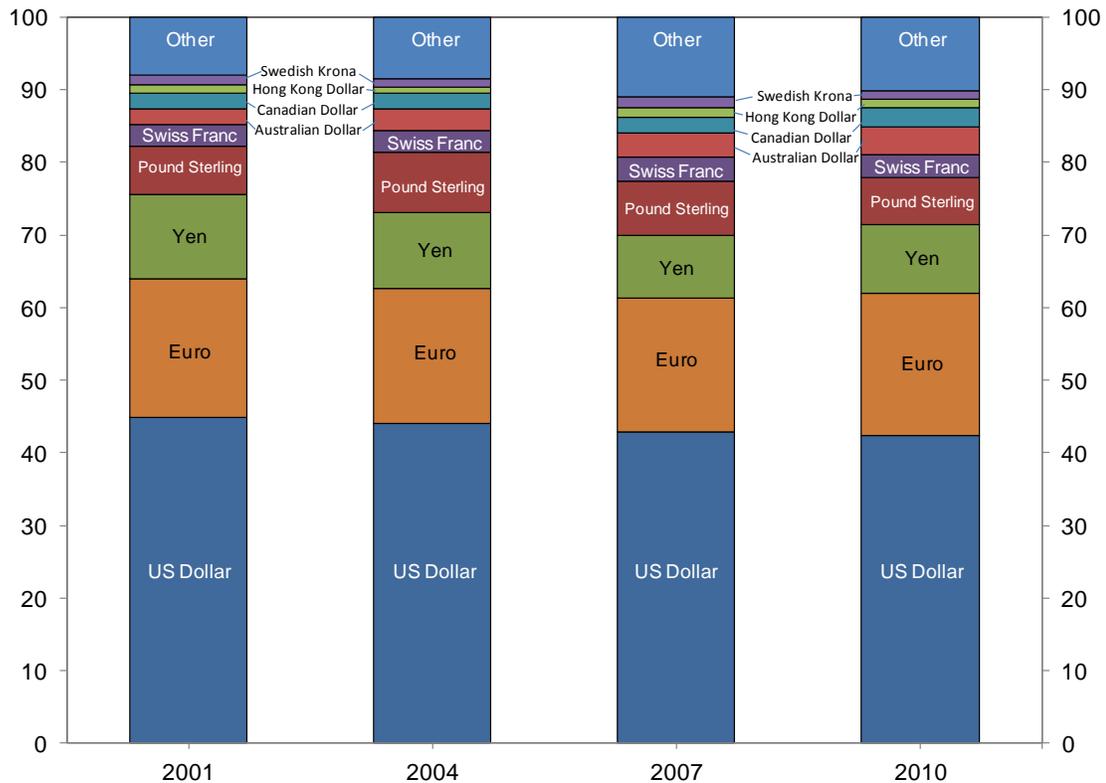
18. The four currencies in the SDR basket also dominate turnover in global foreign exchange markets (Figure 5). The share of the four SDR currencies in total global foreign exchange turnover has declined since the last review period, from 81.8 percent on average in 2001 and 2004, to 77.6 percent on average in 2007 and 2010.¹⁷ Most of this decline is accounted for by a reduction in the share of turnover of the U.S. dollar. Currencies outside

¹⁶ Reporting of currency composition covered 99.95 percent of international debt securities at end-2009.

¹⁷ The BIS surveys central banks on a triennial basis regarding foreign exchange and derivatives markets activity as described in Annex V. Data for 2010 are preliminary, and can be found at: <http://www.bis.org/publ/rpfx10.htm>. Final results are to be published in November 2010.

the SDR basket with turnover shares exceeding 1 percent are the Australian dollar, Swiss franc, Canadian dollar, Hong Kong dollar, and Swedish krona. The aggregate share of turnover in other currencies rose to 10.6 percent on average in 2007 and 2010, with turnover of the Chinese renminbi accounting for 0.1 percent of total turnover during this period.

Figure 5. Global Foreign Exchange Market Turnover—Currency Composition
(In percent of average daily turnover in April of each year) 1/



Source: BIS Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity
1/ While the BIS reported shares sum to 200 percent because two currencies are involved in each transaction, these shares sum to 100 percent for more direct interpretation.

IV. SELECTION AND WEIGHTING OF CURRENCIES IN THE SDR BASKET

A. Key Issues and Proposed Approach

19. **For the first time since the 1980 Decision, the potential inclusion of a new currency in the SDR basket is to be considered** (except for the replacement of the deutsche mark and the French franc by the euro in 1999). China has become one of the leading exporters such that the Chinese renminbi meets one element of the criterion for the inclusion of a currency in the SDR basket. Accordingly, it is necessary to consider whether the Chinese renminbi meets the full criterion for inclusion, in particular, the freely usable currency requirement. As discussed in more detail in Section IV.B, the available indicators suggest the Chinese renminbi is not yet widely used in international transactions or widely traded in the principal exchange markets, and would thus not appear to meet the criteria for being

determined by the Fund to be a freely usable currency at this time. Accordingly, no change in SDR basket composition is proposed at this review.

20. **Given the on-going changes in the international monetary system, however, it may be appropriate looking forward to review the indicators used to guide future decisions on the inclusion of new currencies in the SDR basket.** The freely usable currency requirement plays an important role, inter alia, in supporting the status of the SDR as a supplementary reserve asset (Box 2). The concept has not been examined in depth in recent periods, however, and was last subject to a detailed review in the late 1970s, with various indicators proposed by staff for use in that context (Box 4).¹⁸ These indicators could be reviewed in light of the substantial changes in financial markets, the investment practices of reserve managers, and in the availability of data over the past several years. In addition, with respect to the export element of the current SDR currency selection criterion, it has long been recognized that exports may not be a reliable indicator of the use of a currency in international transactions, so further consideration could be given to whether other indicators should also play a role. In the case of a member using more than one currency, such work could also consider whether the coverage of data on exports or other indicators should be at the level of the member or the economic area issuing and using a particular currency.¹⁹

21. **Further consideration could also be given to the number of currencies in the basket.** While four currencies are specified in the current SDR valuation decision, the potential future inclusion of a new currency raises the question of whether it would be added to the basket or would replace an existing currency.²⁰ Follow-up work could revisit the considerations underlying past decisions on the number of currencies. For example, the reduction in the number of currencies from 16 to 5 in 1980 aimed to align the composition of the SDR currency and interest rate baskets, which required that all currencies have a suitable interest rate instrument. It was also expected to make it easier for participants in the private market to cover exchange risks in terms of the SDR, thus improving its acceptability and encouraging further development of the SDR as a unit of account in the private markets. The shift from 5 to 4 currencies following the introduction of the euro in 1999 took into consideration the goal of stability in the currencies included in basket, which argues against including smaller exporters more likely to have less stable export rankings. The goal of stability in value of the SDR is another consideration that could be taken into account, which

¹⁸ There was no extensive discussion of the relevant indicators when the list of freely usable currencies was last updated in 1998, as the euro was treated as having the same characteristics as the currencies it replaced, i.e., the deutsche mark and French franc.

¹⁹ This choice would also have implications for the coverage of variables used in determining currency weights.

²⁰ Under the current decision, 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.

could argue against the inclusion of currencies with a high correlation with existing basket currencies, where such correlations may reflect the exchange rate regime of the member issuing that currency or other factors.

Box 4. Assessing Freely Usable Currencies

Article XXX(f) defines a freely usable currency as “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.” Rule O-3 provides that the Fund shall determine the currencies that are freely usable in accordance with Article XXX(f) and that it shall consult a member before placing its currency on, or removing it from, the list of freely usable currencies.

In 1977, staff proposed the following criteria for determining 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.

22. **In this context, it could also be beneficial to review some other aspects of SDR valuation and the SDR interest rate.** As discussed in Annex III, under the current method of determining currency weights, the respective role of trade and financial factors arise implicitly from data limited to exports and reserves, and alternative approaches could be considered. In addition, some SDR users have noted the difficulty of replicating or hedging the official SDR interest rate in financial markets—see section IV.D and Annex IV—and the

work program could also consider the desirability of aligning the frequency of adjustments in the official SDR interest rate and the maturity of the underlying financial instruments.

23. **Staff proposes that these issues be considered in 2011, following the completion of the current review.** This would allow time for a more in-depth analysis. While such a work program is distinct from the ongoing discussions on the reform of the international monetary system, it could also take account of these discussions.²¹ Any revisions in methodology coming out of this work could be agreed well in advance of the next SDR valuation review, with a view to enhancing the predictability of future decisions for SDR users and financial market participants.

B. SDR Currency Basket Composition

24. **This section proposes currencies to be included in the SDR basket based on the existing criterion for currency selection.** As set out in more detail in section II, under the 2000 Decision the value of the SDR is determined on the basis of the four currencies issued by members (or by monetary unions including Fund members) whose exports had the largest value during the five preceding years, and which have been determined by the Fund to be freely usable currencies in accordance with Article XXX(f). As the Chinese renminbi is issued by a member (monetary union) with the third largest exports in 2005–09 (Table 2), it is necessary to consider whether the Chinese renminbi is a freely usable currency, guided by the criteria in Box 4.

25. **Recent developments show no major changes in the international use and trading of currencies in the world economy.** Regarding the currencies used in payment for international trade in goods and services, timely and comprehensive data are not available, but based on cross-country data for 2003, the U.S. dollar and the euro account for most invoicing of exports (Box III.1). As discussed above, the four SDR basket currencies continue to predominate in relation to international financial transactions, based on data for international reserves, international bank liabilities, and international debt securities. With respect to the volume of transactions in the principal foreign exchange markets, the SDR currencies also account for the bulk of turnover in the global foreign exchange market.

26. **At this stage, the Chinese renminbi would not appear to meet the criteria under the Articles of Agreement for being determined by the Fund to be a freely usable currency.** The Chinese authorities have recently taken a number of steps to facilitate the international use of the renminbi, including allowing central banks to hold reserve assets in renminbi, and the volume of China's international trade settled in renminbi is rising (Annex II). However, the indicators discussed under section III above suggest that the Chinese renminbi is not yet widely used to make payments for international transactions, or widely traded in the principal exchange markets.

²¹ A forthcoming paper will discuss the potential role for the SDR in enhancing international monetary stability.

27. **Accordingly, staff proposes that the composition of the SDR currency basket remain unchanged.** The SDR basket would therefore continue to comprise the U.S. dollar, the euro, the pound sterling and the Japanese yen, as these currencies are issued by the members or monetary unions with the four largest export values in 2005–09 whose currencies have also been determined by the Fund to be freely usable currencies.²²

C. Currency Weights and Rounding of Relative Weights

28. **Under the current weighting method, trends in exports and reserve holdings point to an increase in the weight of the euro, and a lower weight for the Japanese yen, U.S. dollar, and pound sterling** (Table 4). Compared with the weights calculated at the 2005 review—before rounding—the increase in the weight on the euro would be 3.2 percentage points to 37.4 percent, while the reduction in the weight on the Japanese yen would be 2 percentage points to 9.5 percent, the U.S. dollar weight would decline by 1 percentage point to 41.9 percent, and the pound sterling weight would decline modestly to 11.3 percent. In terms of the relative importance of exports and reserve holdings in determining the currency weights, the data for the 2005–09 period give implicit weights of 67 percent on export shares and 33 percent on the currency composition of reserve holdings, compared with a 70 percent weight on exports at the 2005 review.

Table 4. Basis for Determining the Weights of Currencies in the SDR Basket

Currency	Exports of Goods and Services 1/	Official Holdings of Currencies 2/	Total of Cols. (1) and (2)	Weights in Percentage of Totals in Col. (3)	Difference in Calculated Weights: 2010 Review - 2005 Review
	(2005-09 average)	(2005-09 average)	(3)	(4)	(5)
	(1)	(2)	(3)	(4)	(5)
	(In billions of SDRs)			(Percent)	(Percentage points)
U.S. dollar	1,474	1,602	3,075	41.94	-0.98
Euro	2,092	647	2,739	37.36	3.22
Pound sterling	721	105	826	11.26	-0.20
Japanese yen	615	77	692	9.44	-2.04
Total	4,901	2,431	7,332	100.0	
Relative weight, in percent	66.8	33.2	100.0		

Source: Finance and Statistics departments, and International Financial Statistics

1/ Includes income credit.

2/ Official reserves held by monetary authorities outside the country or monetary union that issues the respective currency.

29. **Under the current criteria, the percentage weights on currencies to be decided by the Board are rounded to the nearest percentage point, or as may be convenient.**²³ At the 2005 review, these rounded weights summed to 99 percent, and in view of the

²² Decision No. 11857-(98/130), December 17, 1998.

²³ Paragraph 4(c) of the 2000 Decision (Annex I).

predominant importance of the U.S. dollar indicated by the supplementary financial variables, it was decided to allocate the remaining 1 percentage point to the U.S. dollar, bringing its weight to 44 percent from a calculated weight of 42.92 percent, noting that this approach had the smallest impact in relative terms on the resulting weights.²⁴ A number of Directors expressed concern about this method of rounding. If it were applied at this review, the weights would again sum to 99 percent, leaving 1 percentage point to be allocated.

30. **Staff proposes rounding the initial currency weights to one decimal place rather than to the nearest whole percentage point (Table 5).** On this basis, the initial currency weight on the U.S. dollar would be 41.9 percent, compared with 43 percent when rounded to the nearest percentage point (after adding 1 percentage point to the U.S. dollar weight as at previous reviews). There would be a correspondingly higher weight on each of the other currencies in the basket. In this case, the rounded weights would sum to 100, and more generally, the need for significant adjustments as in past reviews would be avoided. This constitutes a more convenient rounding approach, and as such, would remain within the permissible rounding authority under the current decision (which, as noted earlier, authorizes rounding to the nearest 1 percent or as may be convenient).

Table 5. Rounding of Initial Currency Weights 1/

Currency	Rounded to nearest percentage point	Rounded to first decimal place
U.S. dollar	43	41.9
Euro	37	37.4
Pound sterling	11	11.3
Japanese yen	9	9.4

1/ In the case of rounding to the nearest percentage point, the weights sum to 99 percent, and the U.S. dollar weight is increased by 1 percentage point as at the 2005, 1995, and 1990 reviews.

31. **Staff have further analyzed the inclusion of supplementary financial variables in determining the relative weights of currencies in the SDR.** At the 2005 review, many Directors noted that the current methodology does not reflect the large increase in private international financial flows, and that it would be useful to consider supplementary financial variables in the calculation of the currency weights that take these flows into account. Annex III provides a preliminary discussion of alternative weighting schemes, incorporating data on the international financial indicators discussed in section III.C. In contrast to the current weighting method, where the respective influence of export and reserve shares on currency weights arises implicitly from the relative level of exports and reserves, Annex III explores an equal weighting of trade and financial variables in determining currency weights, with the aim of gauging the relative importance of currencies in the world's trading and

²⁴ The same approach was used in the 1990 and 1995 Reviews.

financial system, while not giving rise to undue influence of an individual currency on the value of the SDR. The proposed follow-up work on this topic could address Directors' comments on the analysis presented in Annex III and some remaining data issues.²⁵ Such work could also consider whether additional indicators to exports of goods and services should be used to reflect the relative importance of currencies in the world's trading system.

D. Currency Amounts in the SDR Basket

32. **At the time of the revision of the basket at the end of 2010, new currency amounts will be set consistent with the agreed percentage weights for component currencies, in line with current procedures.**²⁶ The transition from the present to the new basket will ensure that the new currency amounts yield the same transactions value for the SDR in terms of the U.S. dollar on the basis of the old and new currency amounts in the basket on the last business day before January 1, 2011, which is December 30, 2010. Table 6 provides an illustrative calculation of the new currency amounts in the SDR basket that would come into effect on January 1, 2011. It provides currency amounts resulting from initial weights rounded to the nearest percentage point (with the U.S. dollar weight adjusted as at past reviews) and to the nearest decimal point as proposed. The proposed change in rounding would reduce the amount of U.S. dollars in the basket by 2 percent, offset by increases in the amounts of pound sterling and Japanese yen.

Table 6. Illustrative Currency Amounts 1/ 2/

Currency	Rounded to nearest percentage point	Rounded to first decimal place	Percentage Difference in Currency Amounts
U.S. dollar	0.656	0.643	-2.0
Euro	0.433	0.432	-0.2
Japanese yen	11.9	12.3	3.4
Pound sterling	0.105	0.111	5.7

Source: Finance Department

1/ For a given set of weights, the currency amounts shown are indicative amounts, which are likely to be different depending on (i) the average and end-period exchange rates of the base reference period (October-December, 2010) to be used for revising the SDR basket's currency components, and (ii) the rounding procedures to be applied to the currency amounts themselves.

2/ Based on July 14 – October 13, 2010 average exchange rate.

²⁵ For instance, in the case of international debt securities, the adjustment made to exclude transactions in euro between member countries of the euro area entails the use of data for the currency breakdown of the international investment position of the euro area. End-2009 data on this breakdown are not yet available.

²⁶ Current procedures are set out in Decision No. 8160-(85/186) G/S, adopted December 23, 1985, as amended by Decision No. 12283-(00/98) G/S, adopted October 11, 2000, see Annex I of this paper and Appendix II in *Review of the Method of Valuation of the SDR* (<http://www.imf.org/external/np/pp/eng/2005/102805.pdf>).

V. REVIEW OF FINANCIAL INSTRUMENTS IN THE SDR INTEREST RATE BASKET

33. **The Executive Board has agreed in previous reviews that the financial instruments in the SDR interest rate basket should:**

- be broadly representative of the range of financial instruments that are actually available to investors in a particular currency, and the interest rate on the instrument should be responsive to changes in underlying credit conditions in the corresponding money market; and
- have risk characteristics that are similar to the official standing of the SDR itself, i.e., have a credit risk profile of the highest quality, fully comparable to that of government paper available in the market or, in the absence of appropriate official paper, comparable to the credit risk on prime financial instruments. Instruments should also reflect the actual reserve asset choice of reserve managers, for example, as regards the form of the financial instrument, its liquidity, and maturity.

34. **The benchmark rates currently used as representative interest rates for the four currencies are as follows:**

- **U.S. dollar:** Three-month U.S. Treasury bills;
- **Euro:** Three-month Eurepo;
- **Japanese yen:** Three-month Japanese Treasury Discount Bill; and
- **Pound sterling:** Three-month U.K. Treasury bills.

The yields on these instruments are used to calculate the SDR interest rate for each week (Box 5). Developments in the SDR interest rate since the 2005 review are shown in Figure 6.

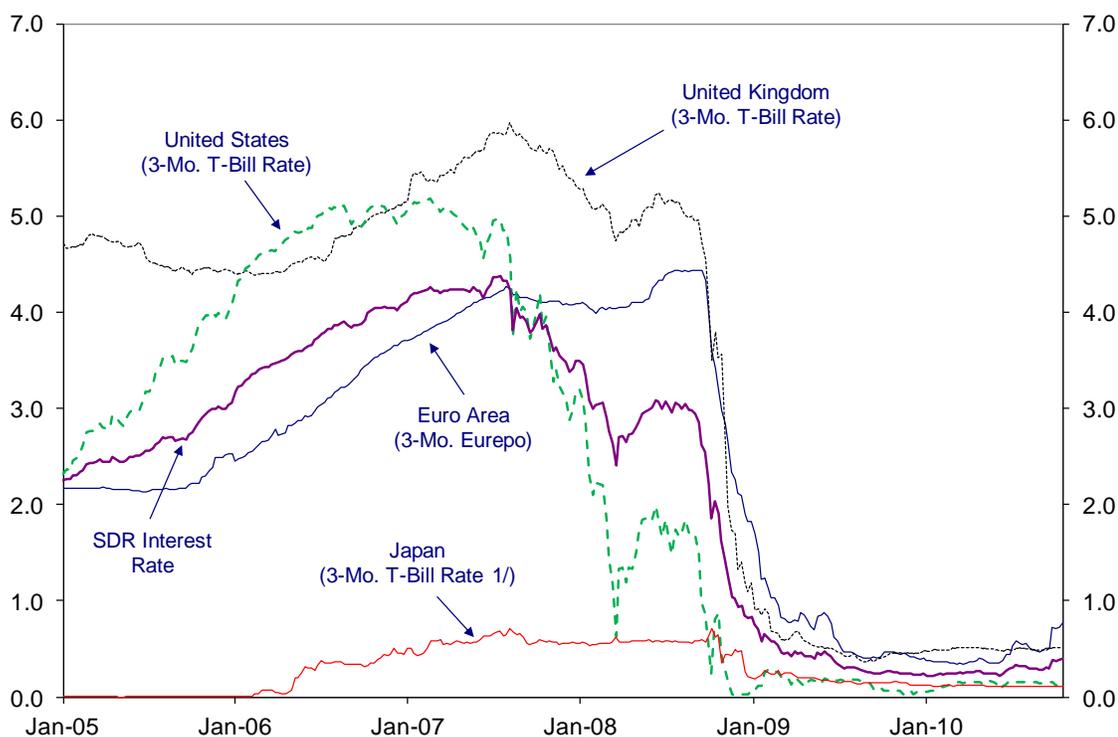
35. **No change in these benchmark interest rates is proposed.** Staff has consulted with the authorities issuing the currencies in the SDR basket to determine the appropriate benchmark rates to use in the calculation of the SDR interest rate. No change in instruments is deemed appropriate by the relevant authorities at this time; staff concur.

- The authorities of the United States consider that the three-month U.S. Treasury bill continues to meet the criteria applied by the Executive Board for the selection of financial instruments in the SDR interest rate basket, as it is broadly representative of the range of financial instruments that are actually available to investors in U.S. dollars, has risk characteristics similar to the SDR, and continues to reflect actual reserve asset choices by reserve managers.
- The European Central Bank (ECB) considers that the three-month Eurepo continues to meet the criteria applied by the Executive Board for the selection of financial instruments in the SDR basket. Although not reflecting the characteristics of an

Box 5. SDR Interest Rate Calculation				
For the week of September 13, 2010 to September 19, 2010 (Data as of Friday, September 10, 2010)				
Currency	Currency amount under Rule O-1 (A)	Exchange rate against the SDR 1/ (B)	Interest rate 2/ (C)	Product (A) x (B) x (C)
U.S. Dollar	0.6320	0.661143	0.1400	0.0585
Euro	0.4100	0.841304	0.4745	0.1637
Japanese yen	18.4000	0.00786139	0.1100	0.0159
Pound Sterling	0.0903	1.02186	0.4900	0.0452
			Total	0.2833
			SDR Interest Rate 3/	0.28

1/ SDR per currency rates are based on the representative exchange rates used in the SDR valuation basket.
2/ Interest rate expressed as an equivalent annual bond yield: three-month U.S. Treasury bills, three-month Euro; three-month Japanese Treasury Discount bills; and three-month UK Treasury bills.
3/ IMF Rule T-1(b) (Annex I(c)) specifies that the SDR interest rate for each weekly period commencing each Monday shall be equal to the combined market interest rate as determined by the Fund. Under IMF Rule T-1(c), the combined market interest rate is the sum, as of the Friday preceding each weekly period, rounded to the two nearest decimal places, of the products that result from multiplying each yield or rate listed above by the value in terms of SDRs of the amount of the corresponding currency specified in Rule O-1. If a yield or rate is not available for a particular Friday, the calculation shall be made on the basis of the latest available yield or rate.

Figure 6. Interest Rates on the SDR and its Financial Instrument Components, 2005–10
(In percent)



Source: Finance Department

1/ Prior to February 2009, this was designated as the thirteen-week Government Financing Bill.

underlying treasury instrument, the ECB considers that Eurepo rates remain the benchmark of choice for secured money market transactions in the euro area and represent funding conditions for the euro area as a whole. Moreover, the European Repo Council has updated the definition of the Eurepo rates in order to improve the clarity and precision of the Eurepo benchmark rates, which, while leaving the structure of the rates unchanged, has made Eurepo rates largely immune to the volatility experienced in some segments of the euro area government bond markets.²⁷ Accordingly, the ECB deems that the Eurepo rate remains the most appropriate benchmark rate for the secured money market in the euro area, and remains the most appropriate euro interest rate for inclusion in the SDR basket.

- The authorities of the United Kingdom assess that the three-month UK Treasury bill satisfies the selection criteria for financial instruments in the SDR interest rate basket. The UK Treasury bill market remains liquid and the associated interest rate representative of changes in credit conditions. The instrument has a credit risk profile of the highest quality, and reflects the actual reserve asset choice of reserve managers.
- The Japanese authorities consider that the three-month Japanese Treasury Discount Bill continues to meet the existing criteria for inclusion in the SDR interest rate basket.²⁸ They view this instrument as the appropriate benchmark interest rate to be used for the Japanese yen in calculating the SDR interest rate.

36. **As noted earlier, some SDR users have pointed out that the official SDR interest rate cannot be precisely replicated in financial markets.** This is because the maturity of the underlying instruments (3 months) differs from the frequency of rate adjustments (weekly). Although all instruments used in the construction of the SDR interest rate are readily available in the market, this difference makes it difficult to precisely mirror the income stream of the official SDR interest rate (for those wishing to be “long” the SDR) or to offset charges due to the Fund (for borrowing members or those wishing to hedge SDR exposures). Annex IV provides a preliminary discussion of possible alternative approaches to aligning the maturity of the instruments underpinning the SDR interest rate with the adjustment frequency. Follow-up work on this issue could take into account Directors’ views, with the goal of improving the attractiveness of the SDR as a reserve asset.

²⁷ The Eurepo Code of Conduct was revised in December 2008, to redefine the benchmark as: “Eurepo is the rate at which one prime bank offers funds in Euro to another prime bank if in exchange the former receives from the latter the best collateral in terms of rating and liquidity within the Euro GC basket.” This clarified that the Eurepo rate is secured on the best quality collateral, principally German and French government paper. See <http://www.euribor-ebf.eu/assets/files/D0196%20%20Eurepo%20Revision.pdf>.

²⁸ The three-month Japanese Treasury Discount Bill replaced the thirteen-week Japanese Government financing bill in February 2009, reflecting a change in official designation.

VI. TRANSITION TO A NEW BASKET, THE NEXT REVIEW, AND ISSUES FOR DISCUSSION

37. **From an operational perspective, it is desirable to provide adequate notice to SDR users, as well as members with outstanding loans to the Fund, of the new weights and features of the new SDR valuation and interest rate baskets.** Accordingly, the Executive Board has typically taken its decision well in advance of the date when the revised SDR valuation and interest baskets become effective. As is customary, the Board will receive further illustrative currency amounts during December. The decision on weights, and the further illustrative currency amounts in December, will also be published.

38. **It is proposed that the next review of the SDR valuation basket take place by 2015.** Thus, there would be no change in the 2000 Decision with respect to the five-year frequency for reviewing the SDR valuation basket and adjusting weights as necessary. The regular frequency, with a significant period of stability between reviews, has provided certainty and predictability to the benefit of users of the SDR and SDR-denominated assets. Nonetheless, as Directors agreed at the 2005 Review, the Board could decide to complete the review at an earlier date if warranted by financial developments in the interim. Such a decision could also take account of the results of any follow-up work on SDR valuation.

39. **Directors may wish to address the following issues in their comments:**

- Do Directors support keeping the currencies included in the SDR basket unchanged?
- Do Directors support the proposed initial currency weights, including the proposal for rounding the initial currency weights to one decimal place rather than to the nearest whole percentage point?
- Do Directors agree with the benchmark interest rates in the SDR interest rate basket?
- Do Directors support the proposal for a work program on the SDR valuation and interest rate baskets to be initiated in 2011 following this review?
 - Regarding the determination of SDR currency weights, do Directors have comments on the possibility for an equal weighting of trade and financial indicators, or on the financial indicators constructed in Annex III?
 - Would Directors support consideration of expanding the currency coverage of the COFER database, while taking into account the reporting burden on members?
 - Do Directors have views on the desirability of further work on aligning the maturity of the instruments underpinning the official SDR interest rate with the frequency of adjustments in that rate?

PROPOSED DECISION

The following draft decision, which may be adopted by a majority of the votes cast, is proposed for adoption by the Executive Board:

“The Executive Board, having reviewed the list and the weights of the currencies that determine the value of the special drawing right (SDR) in accordance with Decision No. 12281-(00/98) G/S, adopted October 11, 2000, decides that, with effect from January 1, 2011, the list of the currencies in the SDR valuation basket shall remain the same, and the weight of each of these currencies to be used to calculate the amount of each of these currencies in the basket will be as follows:

Currency	Weight (in percent)
U.S. dollar	41.9
Euro	37.4
Japanese yen	9.4
Pound sterling	11.3

ANNEX I. BASIC DECISIONS ON SDR VALUATION

A. 2005 SDR Valuation Basket

The Executive Board, having reviewed the list and the weights of the currencies that determine the value of the special drawing right (SDR) in accordance with Decision No. 12281-(00/98) G/S, adopted October 11, 2000, decides that, with effect from January 1, 2006, the list of the currencies in the SDR valuation basket shall remain the same, and the weight of each of these currencies to be used to calculate the amount of each of these currencies in the basket will be as follows:

<u>Currency</u>	<u>Weight (in percent)</u>
U.S. dollar	44
Euro	34
Japanese yen	11
Pound sterling	11

*Decision No. 13595-(05/99) G/S, adopted
November 23, 2005*

B. SDR Valuation Basket—Revised Guidelines for the Calculation of Currency Amounts

1. The value of the special drawing right shall be determined on the basis of the four currencies issued by Fund members, or by monetary unions that include Fund members (monetary unions), whose exports of goods and services during the five-year period ending 12 months before the effective date of this decision or any subsequent revision had the largest value, and which have been determined by the Fund to be freely usable currencies in accordance with Article XXX(f) of the Fund's Articles of Agreement. In the case of a monetary union, the determination of the values of exports of goods and services of the union shall exclude the trade of goods and services among members that are part of the union.
2. The percentage weights of each of the currencies selected in accordance with paragraph 1 above shall reflect (i) the value of the balances of that currency held at the end of 1999, and thereafter at the end of each year of the relevant five-year period referred to in paragraph 1 above, by the monetary authorities of other members or, in the case of the currency of a monetary union, by the monetary authorities of members other than those forming part of the monetary union; and (ii) the value of exports of goods and services, as defined in paragraph 1 above, of the members or monetary unions issuing the currencies over the relevant five-year period referred to in paragraph 1 above.
3. In accordance with the principles set forth in paragraphs 1 and 2 above, effective January 1, 2001, the value of one special drawing right shall be the sum of the values of

specified amounts of the four currencies listed below. These amounts shall be determined on December 29, 2000 in a manner that will ensure that, at the average exchange rates for the three-month period ending on that date, the shares of each of the four currencies in the value of the special drawing right correspond to the weights specified below.

Currency	Weight (in percent)
U.S. dollar	45
Euro	29
Japanese yen	15
Pound sterling	11

4. The list of the currencies that determine the value of the special drawing right, and the amounts of these currencies, shall be revised with effect on January 1, 2006 and on the first day of each subsequent period of five years in accordance with the following principles, unless the Fund decides otherwise in connection with a revision:

a. The currencies determining the value of the special drawing right shall be determined in accordance with paragraph 1 above, provided that a currency shall not replace another currency included in the list at the time of the determination unless the value of the exports of goods and services of the member or of members of a monetary union, whose currency is not included in the list, during the relevant period exceeds that of the member or the monetary union issuing the currency included in the list by at least 1 percent.

b. The amount of the four currencies referred to in (a) above shall be determined on the last working day preceding the effective date of the relevant revision in a manner that will ensure that, at the average exchange rates for the three-month period ending on that date, the shares of these currencies in the value of the special drawing right correspond to percentage weights for these currencies, which shall be established for each currency in accordance with (c) below.

c. The percentage weights shall be established in accordance with the principles set forth in paragraph 2 above, in a manner that would maintain broadly the relative significance of the factors that underlie the percentage weights in paragraph 3 above. The percentage weights shall be rounded to the nearest 1 percent or as may be convenient.

5. The determination of the amounts of the currencies in accordance with 3 and 4 above shall be made in a manner that will ensure that the value of the special drawing right in terms of currencies on the last working day preceding the five year period for which the determination is made will be the same under the valuation in effect before and after revision.

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

C. SDR Valuation Basket—Guidelines for the Calculation of Currency Amounts

1. Under all circumstances, the currency units will be determined in a manner which would ensure that the value of the SDR calculated on December 31 on the basis of the new basket will be the same as that actually prevailing on that day.
2. The currency amounts calculated for the new basket will be expressed in two significant digits provided that the deviation of the percentage share of each currency in the value of the SDR, resulting from the application of the average exchange rates for October–December, from the percentage weight as determined under paragraph 4(c) of Executive Board Decision No. 12281-(00/98) G/S, adopted October 11, 2000 is the minimum on average and will not exceed one half percentage point for any currency.
3. If a solution cannot be obtained by the application of the principles set forth in (2) above, the calculation shall be made applying the same principles but expressing the amount of each currency in three significant digits, and if no solution is found with three significant digits then the calculation shall be made applying the same principles but expressing the amount of each currency in four significant digits.
4. If more than one solution is found in the calculation at the level of two, three, or four significant digits, the solution that has the smallest average deviation will be employed.

*Decision No. 8160-(85/186) G/S,
adopted December 23, 1985, as amended by Decision No. 12283-(00/98) G/S, adopted
October 11, 2000*

C. T—Interest, Charges, and Assessments in Respect of SDRs

T.1

- (a) Interest and charges in respect of SDRs shall accrue daily at the rate referred to in (b) below. The amount that has accrued during each quarter of the financial year of the Fund shall be paid promptly as of the beginning of the following quarter. The accounts of participants shall be credited with the excess of interest due over charges or debited with the excess of charges over the interest due. The accounts of holders that are not participants shall be credited with the interest due.
- (b) The rate of interest on holdings of SDRs for each weekly period commencing each Monday shall be equal to the combined market interest rate as determined by the Fund at the beginning of the period in the manner described in (c) below.
- (c) The combined market interest rate shall be the sum, rounded to the two nearest decimal places, of the products that result from multiplying each yield or rate listed below, expressed as an equivalent annual bond yield, for the preceding Friday by the value in terms of the

SDR on that Friday of the amount of the corresponding currency specified in Rule O-1, as determined pursuant to Rule O-2(b). If a yield or rate is not available for a particular Friday, the calculation shall be made on the basis of the latest available yield or rate.

U.S. dollar: Market yield for three-month U.S. Treasury bills
Euro: Three-month Eurepo Rate
Japanese yen: Three-Month Japanese Treasury Discount Bills
Pound sterling: Market yield for three-month U.K. Treasury bills

Adopted September 18, 1969, amended June 13, 1974, June 30, 1976, April 1, 1978, June 15, 1978, effective July 1, 1978, September 17, 1980, effective January 1, 1981, and July 26, 1983, effective August 1, 1983; paragraph (b) amended October 25, 1978, effective January 1, 1979, and April 22, 1981, effective May 1, 1981; paragraph (c) amended April 22, 1981, effective May 1, 1981; October 5, 1990, effective January 1, 1991; September 21, 1998, effective January 1, 1999; October 11, 2000, effective January 1, 2001, November 23, 2005, effective January 1, 2006 and February 5, 2009; paragraph (d) deleted January 7, 1994.

ANNEX II. THE RENMINBI—EXCHANGE CONTROLS AND RECENT DEVELOPMENTS

China maintains exchange controls on most capital transactions as summarized in section A. In recent years the Chinese authorities have taken a range of steps to facilitate the international use of the renminbi (RMB), as discussed in section B.

A. Exchange Controls

China imposes repatriation requirements on proceeds from exports, invisible transactions, and current transfers; the previous surrender requirement has been mostly lifted. Since 2007, all enterprises (domestic institutions) may keep their foreign exchange revenue from current account operations, according to their operational needs, in their foreign exchange current accounts with local banks. With State Administration of Foreign Exchange (SAFE) approval, domestic institutions may open capital account foreign exchange accounts with local banks and retain capital account foreign exchange revenues.

Exchange controls continue to apply to most capital transactions, although, in recent years, controls on selected transactions have been eased. The main area where controls are maintained with very limited exceptions is inward portfolio investments in money market instruments and financial derivatives:

- **Direct investment outflows:** Since 2006, the rules on foreign exchange purchases for outward foreign direct investment (FDI) were relaxed by dropping the quotas and allowing purchases to finance pre-FDI activities. In 2009, the mandatory examination of the source of foreign exchange funds for outward direct investment has been changed to ex post registration, and the review and approval requirement for outward remittances of funds was canceled. The profits from such investments are exempt from the repatriation requirement.
- **Portfolio outflows:** A qualified domestic institutional investor (QDII) scheme was expanded in April 2006 to allow qualified insurance companies to invest their own foreign exchange externally; and to allow qualified banks (May 2007) and qualified securities and fund-management companies (July 2007) to invest retail funds in foreign equities within their individual foreign exchange quotas and limits as set by the respective regulatory bodies.
- **Portfolio inflows:** Since 2002, the domestic stock market has been opened by allowing nonresidents to purchase B shares (denominated in U.S. dollars or Hong Kong dollars) and qualified foreign institutional investors (QFIIs) to invest in A shares (denominated in renminbi) subject to certain restrictions including a mandatory lock-up period, of between three months and one year, before the investment can be remitted abroad. The overall QFII quota was increased from US\$10 billion to US\$30 billion in December 2007 and the principal lock-up period for medium- and long-term investments by

pension funds, insurance funds, and open-ended funds has been decreased to three months from six months to a year; the principal lock-up period for other institutions was decreased from three years to one year in September 2009. There were 91 QFIIs in 2010 with a total investment limit of \$18.2 billion. QFIIs may also purchase bonds and debentures, within an overall limit in 2009 of US\$1 billion, and the same lock-up periods apply as in the case of A shares.

- **Renminbi debt securities:** In 2004, international financial institutions were approved to raise funds domestically in renminbi for use offshore, and foreign-funded enterprises (FFE) were also allowed to issue renminbi bonds (announced in December 2007). Other nonresidents are still not permitted to issue capital or money market securities in the domestic market.
- **Foreign borrowing:** An annual foreign borrowing plan sets mandatory ceilings for all medium- and long-term borrowing by government departments and enterprises (except FFEs which are subject to individual limits negotiated in the investment approval process).
- **Foreign exchange deposits:** Since early-2007, residents are allowed to purchase up to US\$50,000 in foreign exchange for depositing in banks or for current account transactions and documents are only needed for amounts in excess of this.

B. Recent Developments in the International Use of the Renminbi

Renminbi Trade Settlement

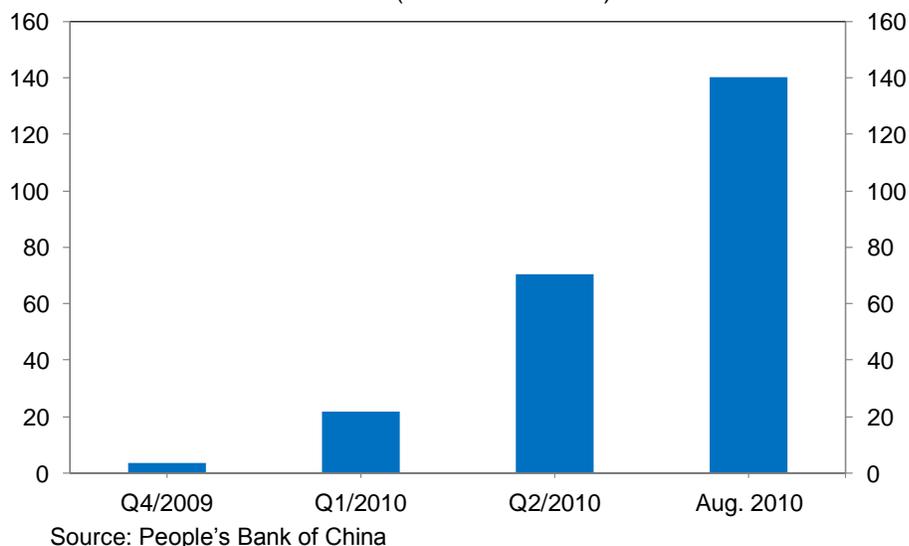
Cross border settlement in RMB began in China's border regions in 2003. To address demand from exporters and to facilitate the development of trading ties between China and regional economies, the renminbi settlement pilot scheme was introduced in July 2009. At that time, the scheme included Shanghai and four cities in the Guangdong province as well as counterparts in ASEAN, Hong Kong SAR and Macao SAR.

The cumulative value of renminbi settlement grew from RMB 3.6 billion renminbi at end-2009 to RMB 70.6 billion by mid-2010 (Figure II.1). The bulk of the transactions (over three-quarters) have involved imports into China with a smaller amount linked to exports. In the second quarter of 2010, the overall use of renminbi in trade was about 1 percent of mainland China's total exports and imports in that period.

In view of the good response to the scheme, the People's Bank of China announced an expansion of the scheme in June 2010, to allow trade transactions between 20 provinces and

cities in the Mainland with anywhere in the world to be settled in renminbi.²⁹ The scheme is also expanded to cover any current account items, not only goods and services, and resident enterprises can use also renminbi for outward FDI in those countries which accept such settlement. Trade settlement in renminbi accelerated in response, with the cumulative value rising to about RMB 140 billion by end August 2010, expanding at roughly double the pace recorded in second quarter.

Figure II.1. Cumulative Trade Settlement in Renminbi
(Renminbi billions)



Related Financial Liberalization Measures: Hong Kong SAR

To facilitate the renminbi settlement business, the People's Bank of China and the Hong Kong Monetary Authority signed a supplementary agreement in July 2010. Under the agreement, financial institutions in Hong Kong SAR—including banks, securities brokerages, and insurance companies—may now open renminbi accounts. In addition, individuals and corporations may undertake payments and transfers of renminbi between these banks and interbank settlement in renminbi will now be permitted. Financial institutions can also sell renminbi funds, renminbi insurance products, and other financial products.

Also, in July 2010, the renminbi clearing platform in Hong Kong SAR will also provide renminbi cashnote exchange and related services to eligible banks from Taiwan, Province of China. As of September 2010, Euroclear Bank, the international securities depository, has provided transactions settlements and deposit taking of Eurobonds and Hong Kong SAR domestic securities denominated in renminbi.

²⁹ Beijing, Tianjin, Inner Mongolia, Liaoning, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Hubei, Guangdong, Guangxi, Hainan, Chongqing, Sichuan, Yunnan, Jilin, Heilongjiang, Xizang and Xinjiang.

Related Financial Liberalization Measures: Mainland China

To facilitate the use of renminbi in trade transactions, foreign banks engaged in such settlements are allowed to open RMB correspondent accounts with Chinese banks from July 2009. Since August 2010, nonresident nonbank institutions accepting payments for exports to China in renminbi can deposit the proceeds from such transactions on accounts with Chinese mainland banks. Limited trade financing is also possible through the correspondent accounts.

A pilot scheme has been activated in August 2010 for eligible institutions outside of Mainland China to invest in the Mainland's interbank bond market, the first opening of this market to non-resident investors. The eligible institutions include foreign banks engaged in cross-border trade settlements in renminbi, the Hong Kong SAR branch of the Bank of China, and foreign central banks seeking to hold renminbi as part of their international reserves. These investments are subject to limits, but there is no minimum holding period.

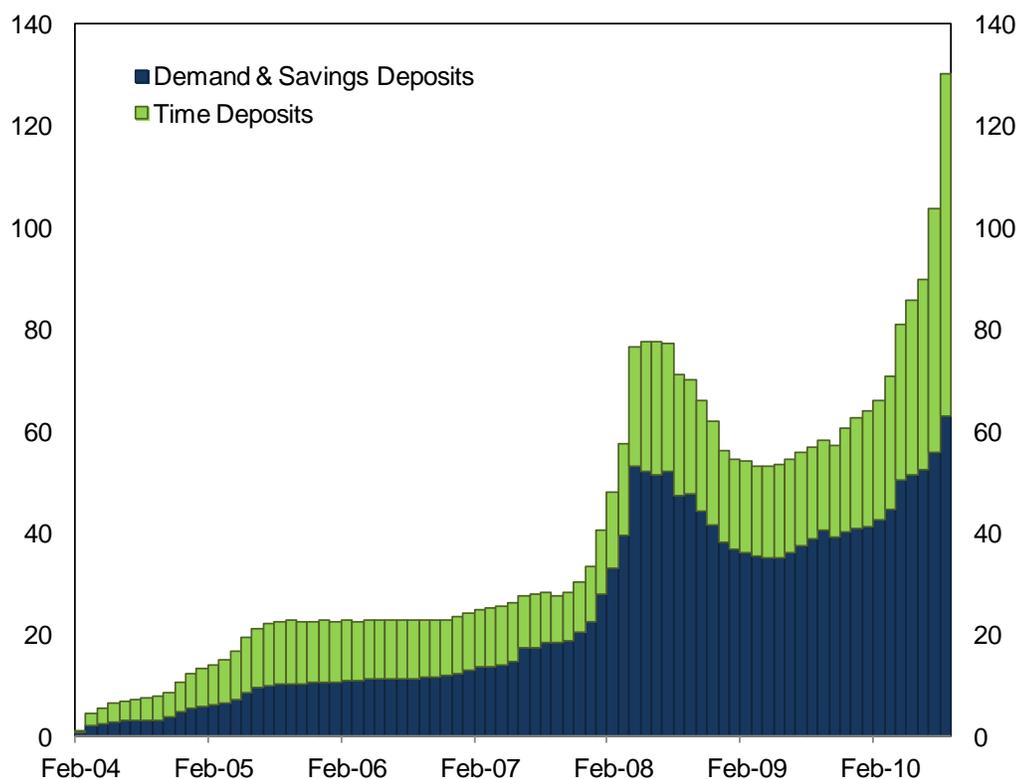
Renminbi Bond Issuance

In July 2007, the first renminbi-denominated bond was issued in Hong Kong SAR. A total of RMB 40 billion in bonds have been issued so far in 15 issues. While banks were initially the principal issuers, in July the first corporate bond was issued by a nonfinancial enterprise (a Mainland infrastructure company). Also, in October 2009, the Chinese Ministry of Finance issued RMB 6 billion in sovereign bonds. This was the first of such issuance outside the Mainland and will contribute to establishing a renminbi benchmark yield curve that will facilitate the pricing of other renminbi financial products.

Renminbi Deposits in Hong Kong SAR Banks

Since 2004 Hong Kong SAR residents have been able to open renminbi accounts in Hong Kong SAR banks. The size of renminbi deposits has grown rapidly (Figure II.2) and now stands at RMB 130.4 billion at end-August 2010, an increase of 130 percent in the past year. A jump in RMB deposits in August is associated with the pilot scheme allowing investment in China's interbank bond market. Nevertheless, renminbi deposits are still a small part of the Hong Kong SAR deposit base, amounting to only 2 percent of total deposits.

Figure II.2. Renminbi Deposits in Hong Kong SAR
(Renminbi billions)



Source: CIEC

Renminbi Swaps

At the G-20 Summit in Washington D.C. in November 2008, President Hu Jintao highlighted China's commitment to regional financial cooperation, to improving regional financial infrastructure, and making the best use of regional liquidity assistance mechanisms. In the subsequent months, the People's Bank of China signed currency swap agreements with other central banks totaling RMB 650 billion (Table II.1).

Table II.1: Renminbi Swap Agreements

Counterpart	RMB billion	Date
Bank of Korea	180	December 12, 2008
Hong Kong Monetary Authority	200	January 20, 2009
Bank Negara Malaysia	80	February 8, 2009
National Bank of the Republic of Belarus	20	March 11, 2009
Bank Indonesia	100	March 23, 2009
Central Bank of Argentina	70	April 2, 2009

ANNEX III. SDR CURRENCY WEIGHTING—CURRENT AND ALTERNATIVE METHODS

A. Introduction

The current method for determining currency weights was adopted in 1978.³⁰ At the 2005 review, many Directors noted that the current methodology does not reflect the large increase in private international financial flows, and that it would be useful to consider supplementary financial variables in determining the currency weights. Staff examined the potential for the inclusion of financial indicators at the 2005 review, but found that, given their scale, these indicators would dominate the determination of the currency weights in the SDR basket, and would tend to lead to larger weights for the U.S. dollar. It was noted that ensuring continuity in currency weights would require further work on a weighting scheme that could reflect the contributions of exports, reserves, and financial indicators based on agreed criteria.

Accordingly, this annex discusses some possible alternative methods for determining the weights of SDR currencies, which aim to be consistent with the principles that: (i) the relative weights of currencies included in the basket should reflect their relative importance in the world's trading and financial system; and (ii) the determination of weights should not give rise to undue influence of an individual currency on the value of the SDR, reducing the stability of the SDR in terms of the other major currencies. Sections B and C discuss the relative roles of exports, reserves, and financial indicators in determining currency weights, section D considers alternative weighting methods incorporating supplementary financial variables, and section E presents some back-testing of these methods on earlier data.

B. Current Method for SDR Currency Weights

Under the current method for determining currency weights, the weight of currency i (w_i) reflects the exports of goods and services (X_i) of the member (or monetary union) issuing that currency, and reserves held in that currency (R_i):

$$w_i = \frac{X_i + R_i}{X + R} \quad \text{where: } X = \sum_i X_i \quad R = \sum_i R_i$$

A different formulation clarifies the respective influence of export shares (X_i/X) and reserve shares (R_i/R) on currency weights:

$$w_i = \left(\frac{X}{X + R} \right) \left(\frac{X_i}{X} \right) + \left(\frac{R}{X + R} \right) \left(\frac{R_i}{R} \right)$$

³⁰ Executive Board Decision No. 5718-(78/46) G/S, adopted March 31, 1978. See in particular paragraph 3(b).

The larger total export flows are relative to total reserve stocks, the greater the influence of export shares on currency weights, and the smaller the role of reserve shares. Historically, exports have had a large implicit weight in determining SDR weights (Table III.1).

Table III.1. Relative Weights of Exports and Official Holdings of Currency
(In percent)

Review	Base Period	Exports of goods and services	Official holdings of currency 1/	Total	Source:
1980	1975-79	77.2	22.8	100	SM/85/163 - Supplement I - Table 3.
1985	1980-84	79.5	20.5	100	SM/85/163 - Supplement I - Table 3.
1990	1985-89	78.3	21.7	100	SM/90/141 - Table 3
1995	1990-94	76.7	23.3	100	SM/95/201 - Supplement I - Table 2
1998	1993-97	74.0	26.0	100	SM/98/221 - Table 2
2000	1995-99 1/	70.2	29.8	100	SM/00/180 - Supplement I
2005	2000-04	70.2	29.8	100	SM/05/391 - Table 4
2010	2005-09	66.8	33.2	100	Finance Department (staff calculations).
Historical Average		74.1	25.9		

Source: IMF Finance Department.

1/ For the 2000 Review, the relative weights are based on end-1999 reserves data vis-à-vis 1995-99 average exports data, owing to the introduction of the euro on January 1, 1999.

The influence of export shares has gradually declined, but a larger fall would have been observed if not for the rising share of reserves for which no currency allocation is reported (Table 3), as only the allocated portion of reserves is used in calculating SDR currency weights. For example, if the current method is applied to total reserves instead, the implicit weight on exports would be 55 percent for 2005-09 data (Table III.2).³¹ However, given the high share of reserves in U.S. dollars, such a method would imply a significantly higher weight for the U.S. dollar of 46 percent, exceeding the highest weight previously assigned to any currency in the SDR basket (Table III.3).

Overall, the relative weights of exports and reserves arising endogenously under the current weighting method have a number of arbitrary elements: for instance, the calculation involves comparing a flow with a stock, and exports may not reflect the use of a currency in international trade transactions as exports can be invoiced in other currencies (Box III.1). Moreover, international financial transactions are proxied by official reserves which does not take into account the large increase in private international financial flows, and which also depends on the extent of reporting of the currency composition of reserves. Consideration could be given to an approach where the Executive Board would determine the relative weight on trade and financial indicators considering a broader set of information than data on exports and reserves alone, as discussed in the next section.

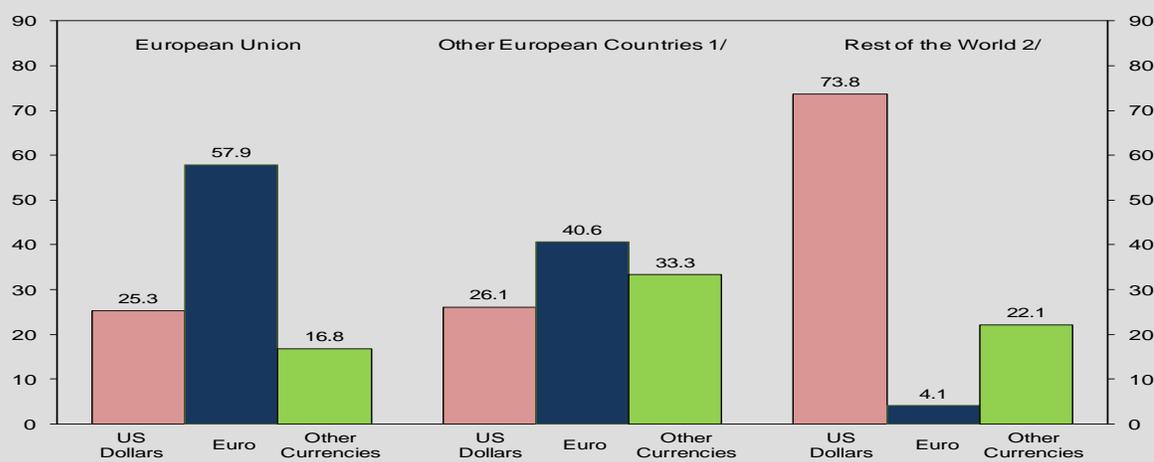
³¹ This requires an estimate of the amount of total reserves which are denominated in the four currencies in the SDR basket. To make this estimate, it is assumed that the share of currencies in the SDR in total reserves is the same as this share in reserves allocated by currency, i.e., 97.7 percent in 2005-09 (Table 3).

Box III.1. International Trade Invoicing

Exporters can invoice their sales in their own currency, in the currency of the destination country, or in a third “vehicle” currency. The theoretical literature implies that this choice depends on the size of the destination market, currency volatility, and more generally, transaction costs in the foreign exchange markets.¹ The limited publicly available data has, however, hindered the empirical literature on the choice of currency in international trade.

Some early empirical studies showed the existence of some regularities: (i) trade of goods between industrialized countries is predominantly invoiced in the exporter’s currency; (ii) trade of goods between industrialized and developing countries is primarily invoiced in either the currency of an industrialized country or in a third currency; and (iii) trade in homogeneous commodities is mainly invoiced in U.S. dollars or other vehicle currencies, while differentiated goods are generally invoiced in the exporter’s currency.² More recent empirical work shows a preference for invoicing in the currency of the importer and on the basis of the size of the market of destination.³ For instance, some large Asian exporters, who trade extensively with the United States, invoice the majority of their exports in U.S. dollars,⁴ whereas the euro replaced the U.S. dollar in EU and accession countries, although this did not reflect a wider increase in the role of the euro as a vehicle currency.

Based on a cross-country database,⁵ the U.S. dollar is clearly the main invoicing currency chosen by exporters outside Europe. Among European countries, the euro plays a relatively larger role in export invoicing though other currencies are also used. The figure reports invoicing as share of exports, which are calculated as weighted average across countries in 2003, except for India, Israel, Malaysia, Netherlands, Tunisia, and United Kingdom for which data closest to 2003 are included.



Sources: Finance Department, IMF International Financial Statistics, IMF Direction of Trade Statistics and ECB.

1/ Includes EU candidate countries. 2/ Includes United States and Japan.

¹ See Friberg and Wilander (2008) among others and literature quoted therein.

² See Grassman (1973), Page (1981) and McKinnon (1979) among others.

³ Friberg and Wilander (2008), Goldberg (2005 and 2009) and Ito et al. (2010), among others.

⁴ At 85 and 52 percent for Korea and Japan in 2001, and 66 and 84 percent for Malaysia and Thailand in 1996.

⁵ Kamps (2008) database includes 39 countries: Algeria, Australia, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, France, Germany, Greece, Hungary, Indonesia, India, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Macedonia, Malaysia, Netherlands, Pakistan, Poland, Portugal, Romania, Serbia and Montenegro, Slovak Republic, Slovenia, South Africa, Spain, Thailand, Tunisia, Turkey, Ukraine, and United Kingdom. Data for invoicing by U.S. exporters is from Goldberg and Tille (2008).

Table III.2. SDR Currency Weights Based on Actual Reserve Levels

Currency	Weights Under Current Method	Exports of Goods and Services 1/ (2005-09 average)	Official Holdings of Currencies 2/ (2005-09 average)	Weighted Average of Cols. (2) and (3)	Difference, Percentage Points, (4) - (1)
	(1)	(2)	(3)	(4)	(5)
	(In percent)				
U.S. dollar	41.9	30.1	65.9	46.3	4.4
Euro	37.4	42.7	26.6	35.4	-2.0
Pound sterling	11.3	14.7	4.3	10.0	-1.3
Japanese yen	9.4	12.5	3.2	8.3	-1.2
Total	100	100	100	100	
Relative weight		55	45		
In SDR Billions		4,901	4,049		

Source: Finance and Statistics Department, and International Financial Statistics

1/ Includes income credit

2/ Official reserves held by monetary authorities outside the country or monetary union that issues the respective currency. COFER, IMF Statistics Department.

Table III.3. SDR Weights

Currency	SDR Valuation Basket: Percentage Weights at Inception of Period					
	1981-85	1986-90	1991-95	1996- 2000	2001-05	2006 - 10
U.S. dollar	42	42	40	39	45	44
Euro	...	...	...	...	29	34
Deutsche mark	19	19	21	21	...	...
French franc	13	12	11	11	...	...
Pound sterling	13	12	11	11	11	11
Japanese yen	13	15	17	18	15	11

C. Weighting Formula—Respective Role of Trade and Financial Factors

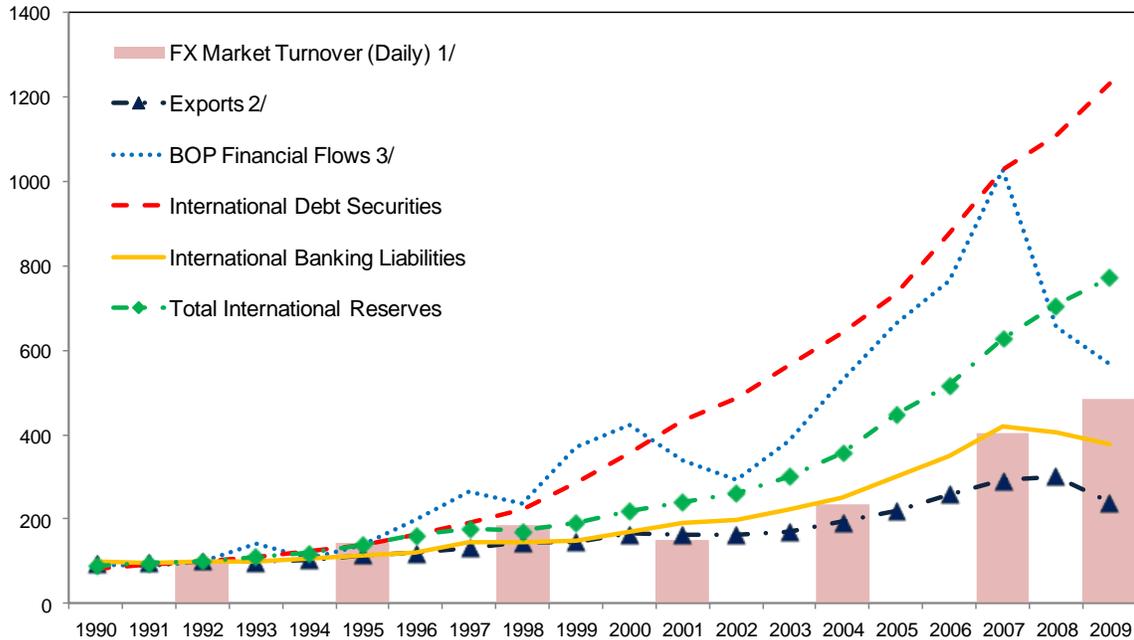
Considering the principle that the relative weights of currencies included in the basket should reflect their relative importance in the world's trading and financial system, the weight of a currency could be expressed as a combination of trade and financial indicators (TI and FI, respectively, in proportions):

$$\omega_i = \alpha * TI_i + (1 - \alpha) * FI_i$$

Under the current weighting method, TI is measured by the share of exports of goods and services and FI by the composition of reserves; while as discussed in section IV.B, for the 2010 review the weight on trade (α) would be about 67 percent.

A range of indicators for international financial activity could be considered, including financial flows as measured by the balance of payments (covering direct, portfolio, and other investment), turnover of foreign exchange markets, as well as stocks of international banking liabilities and outstanding international debt securities, as banking and securities transactions can be expected to rise over time with these stocks. Growth in all of these financial indicators outpaced export growth in the past two decades (Figure III.1).

Figure III.1. World Trade and Financial Indicators
(1992 = 100)



Source: International Financial Statistics and Bank for International Settlements.

1/ FX Market Turnover in 2009 is figure reported for April 2010 by BIS.

2/ Exports of goods and services including income credits.

3/ BOP financial flows include direct investment abroad, portfolio investment (assets), financial derivatives (assets), and other investments (assets).

While the growing importance of international financial flows is evident, there is no clearly superior measure of international financial flows or method to aggregate them into a single financial indicator. Comparing these variables with exports gives a range of potential relative weights (from 38 percent on trade using international banking liabilities to 68 percent using BOP financial flows), but such calculations are subject to similar problems as the existing method. An equal weighting of trade and financial indicators could be considered consistent with the main principle guiding the relative weights of currencies included in the basket—the relative importance of currencies in the world’s trading and financial system—and the associated reduction in the weight on exports it would recognize the increasing importance of private international flows, while maintaining a degree of continuity in the weighting method. The following analysis of the inclusion of supplementary financial variables therefore uses an equal weighting of trade and financial indicators as a starting point.

D. Alternative Weighting Methods Including Supplementary Financial Variables

The use of supplementary financial variables to determine currency weights has been discussed in the previous two reviews.³² Building on this earlier work, two supplementary financial variables are used: foreign exchange market turnover and a measure of international financial activity calculated as the sum of international banking liabilities and international debt securities (Table III.4).³³ In the case of the euro, the data for international banking liabilities and debt securities are adjusted to exclude euro-denominated transactions among member countries of the euro area, in parallel with the exports data for the euro area.

Table III.4. Supplementary Financial Variables—Currency Breakdown
(Average 2005 - 2009) 1/

	Foreign Exchange Market Turnover 2/		International Banking Liabilities 3/		International Debt Securities 4/		International Financial Activity 5/	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Currency	Levels	Shares	Levels	Shares	Levels	Shares	Levels	Shares
U.S. dollar	1,032	54.9	7,690	57.1	4,728	48.3	12,419	53.4
Euro	462	24.6	3,845	28.5	3,607	36.8	7,452	32.0
Pound sterling	167	8.9	1,330	9.9	1,066	10.9	2,395	10.3
Japanese yen	220	11.7	605	4.5	390	4.0	994	4.3
Total	1,881	100	13,469	100	9,791	100	23,260	100

Source: Bank for International Settlements.

1/ Levels are in SDR billions; shares are in percentages of the total.

2/ Average of daily averages in April 2007 and April 2010.

3/ Data for the euro are adjusted to exclude intra-euro area cross-border positions denominated in euro.

4/ For all currencies the average is calculated over 4 years, 2005-2008, as ECB data on international investment position by currency, which are used to exclude cross-border issues of euro-denominated securities within the euro area, end in 2008.

5/ International financial activity (4) is the sum of international banking liabilities (2) and international debt securities (3).

Data for foreign exchange turnover and international financial activity both show a majority share in U.S. dollars, although these shares are somewhat below the U.S. dollar share of international reserves (Table III.2).

Two alternative financial indicators are presented, which combine these supplementary financial variables with international reserves, to reflect both official and private international financial transactions.

³² *Review of the Method of Valuation of the SDR*, Appendix III (<http://www.imf.org/external/np/pp/eng/2005/102805.pdf>).

³³ These data are described in Annex V.

Financial Indicator A (*Reserves 50%, FX turnover and financial activity 25% each*)

For continuity with the current method, financial indicator A assigns a 50 percent weight to international reserve shares and 25 percent weights to the shares of foreign exchange turnover and international financial activity, respectively. Compared with international reserves (Table III.2), the share of the U.S. dollar in financial indicator A is lower at 60 percent, the share of the euro is little changed at 27 percent, while the shares of pound sterling and Japanese yen exceed their share in reserves (Table III.5).

Table III.5 also presents an alternative weighting method assuming equal weights on exports and financial indicator A, showing that this would imply a 3.1 percentage point higher weight on the U.S. dollar than the current method, and lower weights for all other currencies in the basket. Nonetheless, at 45 percent the U.S. dollar weight would be similar to that adopted at the 2000 review.

Table III.5. SDR Currency Weights: Financial Indicator A

Currency	Weights Under Current Method	Exports of Goods and Services 1/ (2005-09 average)	Financial Indicator A (2005-09 average)	Estimated Currency Weights	Difference, Percentage Points. (4) - (1)
	(1)	(2)	(3)	(4)	(5)
	(In percent)				
U.S. dollar	41.9	30.1	60.0	45.0	3.1
Euro	37.4	42.7	27.5	35.1	-2.3
Pound sterling	11.3	14.7	6.9	10.8	-0.4
Japanese yen	9.4	12.5	5.6	9.1	-0.4
Total	100	100	100	100	
Relative weight, in percent		50	50		

Sources: Finance Department. International Financial Statistics and BIS.

1/ Including income credits.

Financial Indicator B (*Equal weighting of reserves, FX turnover, and financial activity*)

For simplicity, this indicator gives equal weights of one-third to the currency shares of international reserves, foreign exchange turnover, and the international financial activity measure. Compared with financial indicator A, the share of the U.S. dollar is lower at 58.2 percent, mostly offset by higher shares for the pound sterling and the Japanese yen.

Table III.6 illustrates that the implied weights are somewhat closer to those given by the current method, with a 2.1 percentage point higher U.S. dollar weight balanced by an equal reduction in the weight of the euro, while the weights on the other currencies are in line with those under the current method. At 44.1 percent, the calculated weight on the U.S. dollar is close to that adopted by the Board at the 2005 Review.

Table III.6. SDR Currency Weights: Financial Indicator B

Currency	Weights Under Current Method	Exports of Goods and Services 1/ (2005-09 average)	Financial Indicator B (2005-09 average)	Estimated Currency Weights	Difference, Percentage Points. (4) - (1)
	(1)	(2)	(3)	(4)	(5)
	(In percent)				
U.S. dollar	41.9	30.1	58.0	44.1	2.1
Euro	37.4	42.7	27.7	35.2	-2.1
Pound sterling	11.3	14.7	7.8	11.3	0.0
Japanese yen	9.4	12.5	6.4	9.5	0.0
Total	100	100	100	100	
Relative weight, in percent		50	50		

Sources: Finance Department. International Financial Statistics and BIS.

1/ Including income credits.

E. Back-testing the Alternatives using 2005 SDR Review Data

To explore the robustness of these two alternative weighting methods, they were applied to the dataset for the 2005 SDR Review (2000-2004).³⁴ The differences between the weights calculated using financial indicators A and B and those from the current method (Table III.7) show a similar pattern to that for the 2005-09 data, giving no sign that these supplementary financial variables could become a source of instability in the composition of the basket.

Table III.7. Currency Weights under Alternative Weighting Schemes for 2005 Review Data
(In percent)

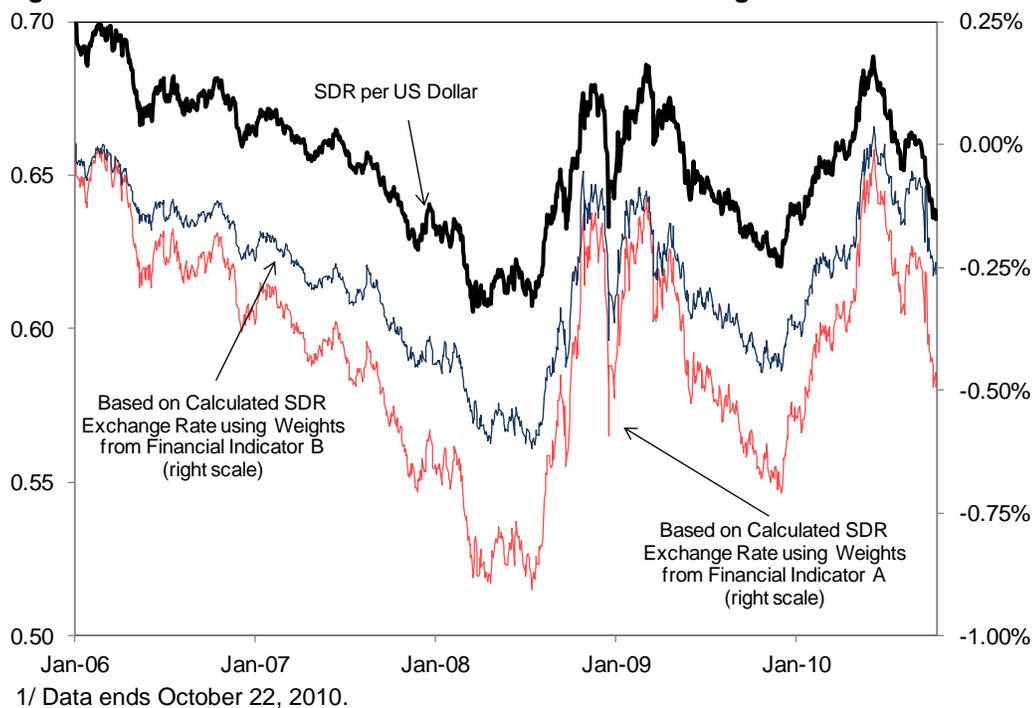
Currency	Current Method	Equal trade and financial weights			
		Financial Indicator A		Financial Indicator B	
		Weights	Deviation from Current Method, (Percentage points)	Weights	Deviation from Current Method, (Percentage points)
U.S. dollar	43.0	47.2	4.2	46.1	3.1
Euro	34.2	31.5	-2.7	31.7	-2.5
Pound sterling	11.4	10.6	-0.9	11.1	-0.4
Japanese yen	11.4	10.7	-0.7	11.2	-0.2

Source: Finance and Statistics Departments, and IMF International Financial Statistics

³⁴ The data for international bank liabilities again excludes positions in euro between member countries of the euro area; for international debt securities, it was necessary to approximate this adjustment based on data for more recent years.

Given the relatively modest differences in the currency weights between the current method and those calculated using financial indicators A and B, the associated currency amounts are also similar, such that the implied SDR exchange rates move similarly to the actual SDR exchange rate during 2006-10 (Figure III.2). Differences between the actual SDR/U.S. dollar exchange rate and the rate calculated under the alternative methods are largest when the U.S. dollar troughed in mid-2008, reaching almost 1 percent for financial indicator A and 0.65 percent for financial indicator B.

Figure III.2. Deviation of Calculated SDR/US dollar Exchange Rates from Actual 1/



E. Preliminary Conclusions and Remaining Issues

As requested by many Directors at the 2005 review, the alternative weighting methods outlined would give supplementary financial variables a significant role in determining SDR currency weights: 25 percent using financial indicator A, and one-third using financial indicator B. Inclusion of these supplementary variables increases the U.S. dollar weight, but to a smaller extent than in most of the scenarios presented in the 2005 review, avoiding a significant discontinuity in currency weights or weights outside of those adopted historically.

Progress has been made in relation to improving the data used in the financial indicators, by excluding financial transactions in euro between member countries in the euro area. Nonetheless, some data issues remain. For example, data on international debt securities denominated in euro, adjusted for transactions within the euro area, are not yet available for end 2009, such that only 4 years of data are available, which is not fully consistent with the 5 year averages used for the other variables.

ANNEX IV. OFFICIAL SDR INTEREST RATE—MATURITY AND FREQUENCY

This annex discusses issues related to the difficulties of replicating and hedging the official SDR interest rate owing to the difference between the adjustment frequency of the official SDR interest rate and the maturity of the instruments used to construct the rate.

Current methodology and issues

The official SDR interest rate is currently set weekly, based on instruments with a three-month maturity. Component instruments are the three-month rates for U.S. and U.K. Treasury bills, Japanese Treasury Discount bills, and the three-month Euro rate. The SDR interest rate is published each Monday based on the annual yields on these instruments on the preceding Friday and weighted according to the respective currency weight in the SDR basket (Box 6 and Annex I.C). This rate is the basis for interest payments on SDR holdings and interest due on SDR allocations, the rate of remuneration on members' reserve tranche positions and interest payable on outstanding borrowing (including bilateral loans, notes, and the NAB), and this floating rate is also the basis for the rate of charge on GRA credit.

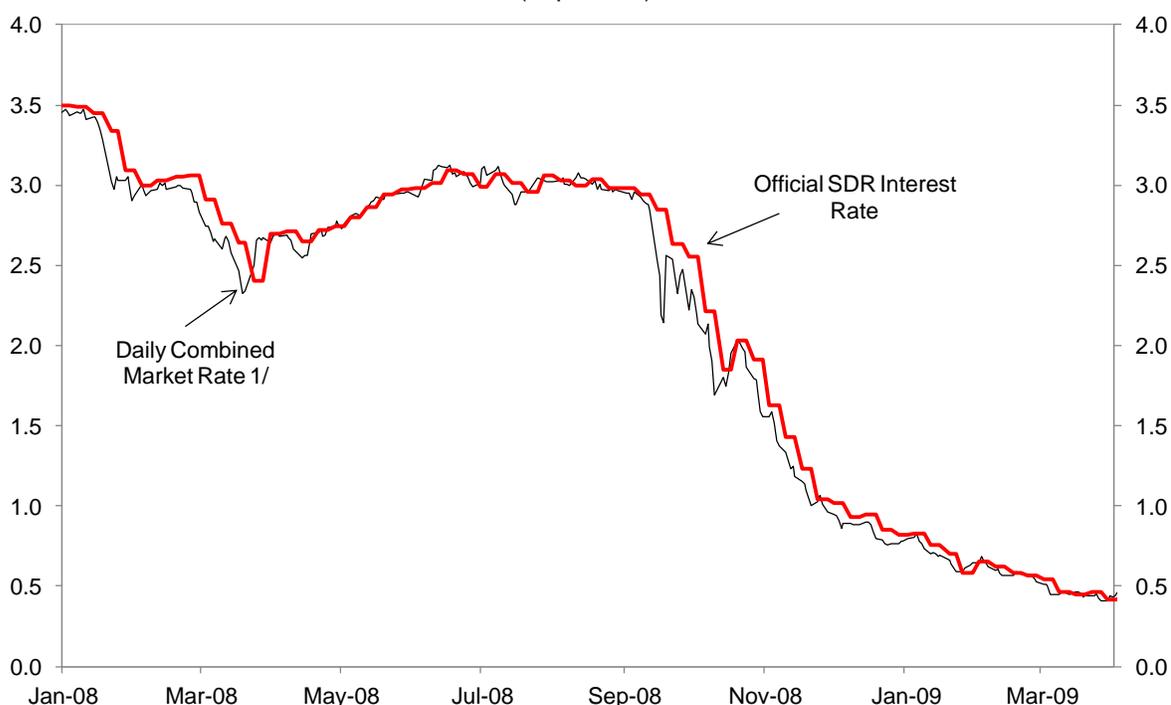
This approach to adjusting the official SDR interest rate evolved during the 1970s and 1980s with a view to fostering the SDR's attractiveness as a reserve asset. When the SDR was redefined as a basket of currencies in 1974, the interest rate on the SDR was set every six months. In 1976, quarterly interest rate adjustments were introduced based on market rates during six-week reference periods, shortened to 15-days in 1981. To keep the SDR interest rate more closely aligned with yields on comparable reserve assets, in July 1983 the Executive Board decided to reset the official SDR interest rate on a weekly basis.

The three-month maturity of the financial instruments was selected in the early 1970s to reflect the reserve asset character of the SDR and also took into account market liquidity and data availability. It was generally agreed that short-term interest rates would be most appropriate for inclusion in the SDR interest rate basket, as they reflect the reserve asset character of the SDR and its prompt usability in case of balance of payments needs. Although some portion of official reserves are frequently invested in longer-term assets, it was considered that short-term assets more accurately reflect the bulk of official holdings of member countries. The three-month interest rates were regarded as preferable to other short-term rates as their markets were generally the broadest and best established.

The current method of establishing the official SDR interest rate tracks market rates with only temporary deviations (Figure IV.1). When the official SDR interest rate was

reset only semiannually or quarterly, the return on the SDR could deviate significantly from returns available in the market during the same period. While at times the SDR would offer a return above market rates, at other times the interest rate would lag increases in market rates, undermining the attractiveness of the SDR. Shifting to a weekly adjustment of the official SDR interest rate has much reduced the potential for such deviations, and although yields can still deviate during the subsequent week if short-term rates change, SDR holders can expect the official SDR interest rate to adjust reasonably soon to reflect this development.³⁵

Figure IV.1. Official SDR Interest Rate and Daily Combined Market Rate
(In percent)



Sources: Bloomberg, staff calculations

1/ Daily combined market rate is an SDR weighted average of the component instruments.

Nonetheless, the lack of alignment between the maturity of the component instruments (3 months) and the frequency of the SDR rate reset (weekly) hinders the capacity of members and other parties to replicate the SDR interest rate in the market. Although all instruments used in the construction of the SDR interest rate are readily available in the market, this misalignment makes it difficult to precisely mirror the income stream of the SDR interest rate (for those wishing to be “long” the SDR) or to offset charges due to the Fund (for borrowing members or those wishing to hedge SDR exposures). This reflects the fact that, although the SDR interest rate is a weighted average of three-month instruments, its

³⁵ Since the last reweighting of the basket at end-2005, the difference between the official SDR interest rate and the daily value of the weighted component interest rates averaged less than 1 basis point. The largest deviations arose during the financial crisis, particularly in the period July 2007–March 2009 when central banks accelerated the pace of their monetary policy easing, peaking at 26 basis points in the fall of 2008.

return behaves as if it was a bank deposit, i.e., the return of the SDR interest rate does not include capital gains or losses due to variations in the price of the underlying instruments. As a result, the interest return of the SDR is unlikely to equate the weighted return of the local currency instruments bought at the start and sold at the end of the weekly reference period, and such return differences may cumulate over time depending on interest rate developments. These issues have been a recurrent concern expressed by some Fund members and could also reduce the attractiveness of the SDR to the private sector.

Alternative approaches

There are a range of alternative approaches to aligning the maturity of the official SDR interest rate and the frequency of adjustments in this rate. The following provides a preliminary discussion of the pros and cons of some alternatives, also considering whether they fulfill the broader criteria for the official SDR interest rate, i.e., representativeness of the range of available instruments, responsiveness to credit conditions, appropriate risk characteristics, and reflecting actual reserve assets choices of reserve managers (section V):

(a) Quarterly: keep the current maturity of the underlying instruments and reduce the frequency of adjustments to every 90 days. This would improve replication, as it would be possible to buy and hold to maturity the relevant 90-day Treasury bills and initiate a three-month collateralized deposit in euro. In addition, these instruments are consistent with the criteria for the financial instruments in the SDR interest rate basket. However, the potential duration and scale of divergences between the SDR interest rate and prevailing market rates during the period between adjustments would rise substantially beyond what might occur in the current framework. For example, one month after a reset, the SDR-weighted yield on 2-month instruments may significantly exceed the interest rate on SDR for the 2-months remaining until the next reset, reducing the attractiveness of the SDR relative to other reserve assets.

(b) Weekly: keep the current adjustment frequency and shorten the maturity of the underlying instruments to one week. As very short dated Treasury bill rates are not always available in the secondary market, one-week Overnight Indexed Swap (OIS) rates could be used as benchmarks for the SDR interest rate.³⁶ OIS rates are widely used as indicators of short-term risk-free rates, suggesting that they are representative and responsive to credit conditions. Nonetheless, OIS swaps are not a perfect substitute for Treasury bills of equivalent maturity, as they are swap agreements which entail a counterparty risk on the cash flow difference between the fixed and the floating leg, but this is typically small relative to the principal amount swapped. The Bank for International Settlements uses OIS swaps as a

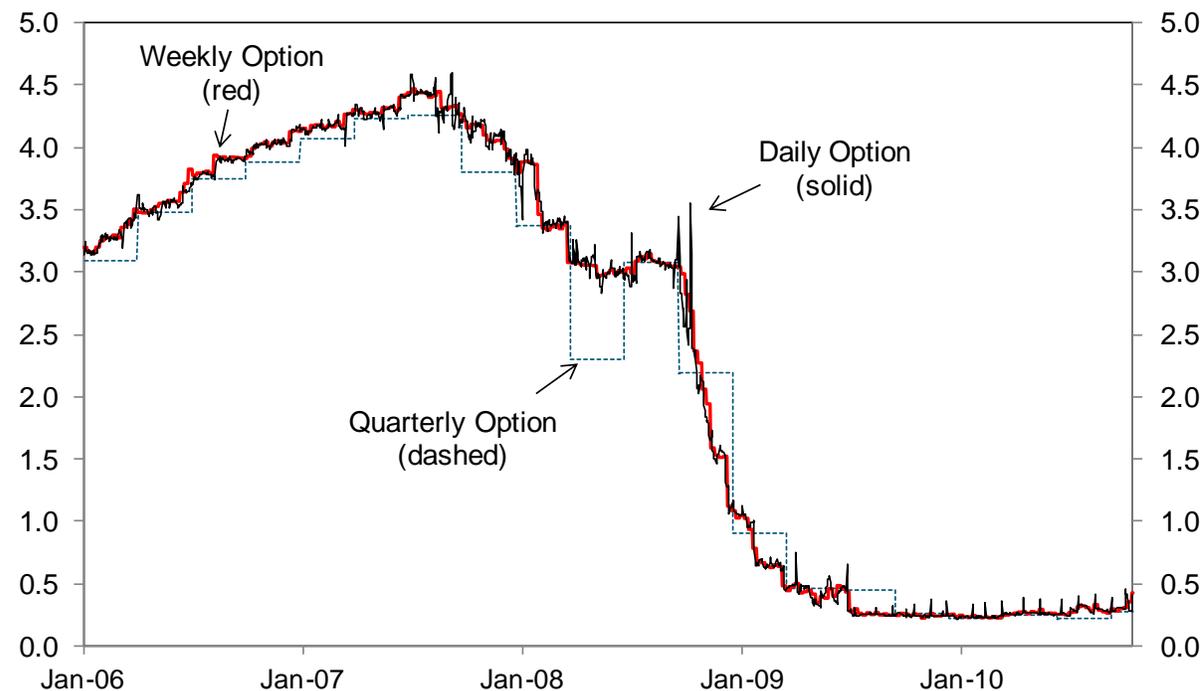
³⁶ An Overnight Indexed Swap (OIS) is a fixed/floating interest rate swap with the floating leg tied to a published index of a daily overnight rate reference. The term usually ranges from one week to two years (sometimes more). The two parties agree to exchange at maturity, on the agreed notional amount, the difference between interest accrued at the agreed fixed rate and interest accrued through geometric averaging of the floating index rate.

basis for all short maturity operations with central banks. Replication and hedging of the official SDR interest rate would be facilitated, although in some cases OIS swaps may not be eligible instruments for Fund members, which would require use of an alternative such as a bank deposits, in which case replication would be less exact.

(c) Daily: reduce the maturity and adjustment frequency to one day. To ensure replicability, the official SDR interest rate could be set daily and be based on available overnight rates, such as the effective Fed Funds rate for the U.S. dollar, EONIA (Euro OverNight Index Average) for the euro, the Bank of Japan Estimate Unsecured Overnight Call Rate for the Japanese yen, and the British Bankers' Association overnight repo rate for the pound sterling. While these rates are publicly available, these instruments are unsecured bank liabilities, except for the pound sterling, so it is unclear whether they have appropriate risk characteristics for inclusion in the SDR basket.

As would be expected, the SDR interest rate that would result from the daily approach is relatively volatile, while the quarterly option is subject to sustained deviations from market trends (Figure IV.2). This suggests to focus further analysis on approach (b), with weekly adjustments based on one-week OIS rates.

Figure IV.2. Quarterly, Weekly, and Daily Approaches to the SDR Interest Rate (In percent)

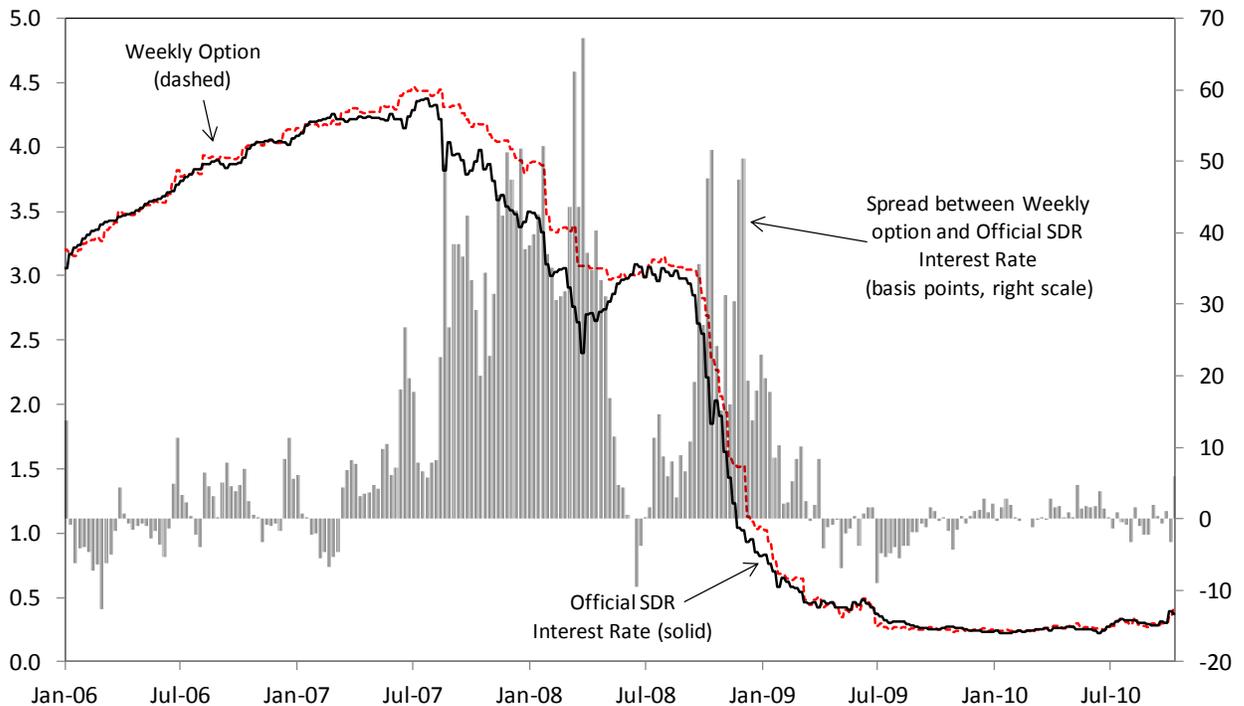


Sources: Bloomberg levels, IMF data, staff calculations

The weekly option and the official SDR interest rate have similar trends (Figure IV.3). Nonetheless, in periods where central banks are expected to reduce interest rates, this will be reflected to a larger extent in the three-month interest rate which has a more forward-looking

element. Sharp falls in three-month instruments during the global financial crisis lead to spreads between the weekly option and the official SDR interest rate widening to 40-70 basis points in some weeks in late 2008 and early 2009. This behavior can also be expected to occur during periods when central banks are expected to raise interest rates, in which case the three-month rates would exceed one-week OIS rates. It is notable that since early 2009, the spreads have narrowed to no more than +/- 10 basis points.

Figure IV.3. One-Week OIS rate and Official SDR Interest Rate
(In percent)



Sources: Bloomberg levels, IMF data, staff calculations

Overall, this preliminary analysis suggests that moving to including instruments with a one week maturity in the official SDR interest rate basket could address the current mismatch between the maturity of the underlying instruments and the reset frequency. Based on staff work to date, OIS swaps would appear to be a possible candidate in the event that such a shift was considered desirable. However, this conclusion is highly tentative, and further work is needed on the pros and cons of such a move, including the liquidity and risk characteristics of the OIS swaps in each currency, the likely effectiveness of such a change in facilitating replication and hedging of the official SDR interest rate, and the broader implications of such a move given the role of the SDR. Further work could also include an assessment of whether more suitable instruments for the daily option are available.

ANNEX V. DATA FOR CALCULATING SDR CURRENCY WEIGHTS

This annex presents the sources of the data required to calculate the currency weights in the SDR basket. It also describes the data on supplementary financial variables used to calculate weights under alternative weighting methods.

The quantification of the currency weights in the SDR valuation basket requires the following data (converted into SDRs as the common denominator) published by the IMF:

- **Current receipts** (goods, services, and income) for five years (2005–09). Current receipts are defined as the credit component of all current economic transactions between resident and nonresident entities other than those relating to financial transactions and reserves. Following the SDR valuation methodology, current transfers are subtracted from total current receipts. The current receipts data series in U.S. dollars were converted to SDRs using period-average exchange rates. The source for this data is the *International Financial Statistics (IFS)*.
- **Direction of trade between China, P.R., Hong Kong SAR, and Macao SAR** for five years (2005–09) to compute current receipts excluding intra-exports of goods between the three. The direction of trade data series in U.S. dollars were converted to SDRs using period-average exchange rates. Data is from the *Direction of Trade Statistics (DOTS)*.
- **Currency composition of official reserve holdings** for five years (2005–09). The *IFS* defines foreign exchange reserves as monetary authorities' claims on nonresidents usable in the event of balance of payment needs. The reserve holdings data series in U.S. dollars were converted to SDRs using end-of-period exchange rates. Data is reported in *Currency Composition of Official Foreign Exchange Reserves (COFER)*.

The supplementary financial variables used to illustrate alternative approaches to determine currency weights are:

- **Foreign exchange market turnover**, defined as the gross value of all deals concluded during the month, and is measured in terms of the nominal or notional amount of the contracts. It includes spot transactions, outright forwards, foreign exchange swaps, currency options and currency swaps. The data is provided by the Bank for International Settlements (BIS), which coordinates a global central bank survey of foreign exchange and derivatives market activity.³⁷ 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.

³⁷ Triennial Central Bank Survey, Bank for International Settlements; several issues. See for instance *Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity in April 2010 - Preliminary Results*. Monetary and Economic Department, BIS. September, 2010. <http://www.bis.org/publ/rpfx10.htm>.

- **International banking liabilities**, defined as liability positions denominated in any currency to non-residents (Locational Banking Statistics, Table 5A, reporting banks' cross - border positions vis-à-vis all sectors). For the purpose of constructing a financial indicator to reflect the international use of the euro in Annex III, these data were adjusted by the BIS to exclude transactions in euro between member countries of the euro area. Data compiled by BIS is based on information reported by central banks and monetary authorities from 43 countries and international banking centers.³⁸
- **International debt securities**, defined as bonds and notes and money market instruments issued internationally; these include all foreign currency issues in a given country, by both residents and non-residents, and all 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 (Securities Statistics, Tables 13A and 13B, reporting international money market instruments and bonds and notes, respectively). Data on about 165,000 international bond issues and 870,000 international notes and money market instruments is 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.³⁹

Adjustment of international debt securities: For the purpose of constructing a financial indicator to reflect the international use of the euro in Annex III, an adjustment of the BIS data on international debt securities is made.⁴⁰ In particular, to 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, the BIS data are adjusted by:

- (i) excluding domestic currency issues in the domestic market by residents specifically targeted at non-resident investors, leaving only euro-denominated issuances by non-residents;
- (ii) adding data on portfolio liabilities in debt securities of the euro area that are denominated in euro provided by the European Central Bank. Latest data available are for end-2008.

³⁸ For more details see *Guidelines to the international locational banking statistics*, BIS. December, 2008. <http://www.bis.org/statistics/bankstats.htm>

³⁹ For further details see *Guide to the international financial statistics*, Monetary and Economic Department, BIS. July, 2009. <http://www.bis.org/publ/bppdf/bispap14.htm>

⁴⁰ See discussion of the adjustment in *The International Role of the Euro*, European Central Bank. July 2010. <http://www.ecb.int/pub/pdf/other/euro-international-role201007en.pdf>