

**FOR
AGENDA**

SM/00/180
Supplement 1

September 28, 2000

To: Members of the Executive Board

From: The Acting Secretary

Subject: **Review of the Method of Valuation of the SDR—Supplementary
Information**

Attached for consideration by the Executive Directors is a paper on review of the method of valuation of the SDR—supplementary information, which reflects the main issues raised at the August 24 informal technical question and answer session of the Executive Board with the staff, and which updates information contained in SM/00/180 (7/24/00). This document, together with SM/00/180 (7/24/00), is proposed to be brought to the agenda for discussion on Friday, October 6, 2000.

Mr. Wattleworth (ext. 38765) and Mr. Elizalde (ext. 37796) are available to answer technical or factual questions relating to this paper.

Att: (1)

Other Distribution:
Department Heads

INTERNATIONAL MONETARY FUND

Review of the Method of Valuation of the SDR: Supplement

Prepared by the Treasurer's and Legal Departments

(In consultation with other departments)

Approved by Eduard Brau and François Gianviti

September 28, 2000

Contents	Page
I. Introduction	2
II. Updated Information.....	2
III. What Are the Effective Weights in the SDR Interest Rate Basket?	6
IV. Are There Any Alternatives to the Euribor?	6
A. Weighted Average of Three-Month Treasury Bill Rates.....	8
B. Repo Rates.....	12
C. Bid Rates in the Unsecured Money Market	13
D. ECB Three-Month Refinancing Facility Rate.....	13
E. Conclusions.....	14
V. Nature of Proposed Changes—Required Voting Majorities	16
Text Tables	
1. Official Reserve Holdings of Currencies Included in the SDR Valuation Basket.....	4
2. Basis for Determining the Weights of Currencies in the SDR Valuation Basket.....	5
3. Calculation of Illustrative Currency Amounts: Revised SDR Valuation Basket.....	5
Figures	
1. Euribor Alternatives.....	10
2. SDR Interest Rates—Official versus Simulated: New Basket with Alternative Euro Rates Using Euribor, French and Italian Treasury Bills, and ECB Longer-Term Refinancing Operations	11
Boxes	
1. SDR Valuation: Determination of Currency Amounts and Actual Daily Weights	3
2. SDR Interest Rate: Calculation and Actual Weekly Weights	7

I. INTRODUCTION

1. **This paper responds to the main issues raised by Directors in the informal technical question and answer session of the Executive Board with the staff on August 24, 2000 on the *Review of the Method of Valuation of the SDR* (SM/00/180, July 24, 2000).** The questions raised dealt mainly with: (i) the calculation of the interest rate on the SDR and the relative weights of the financial instruments of the component currencies in the SDR basket; (ii) the possible alternatives to the three-month Euribor (Euro Interbank Offered Rate) as the representative rate for the euro area in the SDR interest rate basket; and (iii) the nature of the changes in the SDR valuation methodology currently being proposed and, in particular, whether these are “fundamental” and would require an 85 percent majority of the total voting power for their adoption rather than 70 percent.
2. **The paper also updates the information contained in SM/00/180 for recent exchange rate and interest rate developments and for revisions in the data on international reserve holdings.**

II. UPDATED INFORMATION

3. **Since SM/00/180 was issued, the exchange rates for the U.S. dollar and Japanese yen have risen strongly against the euro, while the pound sterling has strengthened moderately.** As a result, the weights of the U.S. dollar and Japanese yen in the *current* SDR valuation basket have increased slightly, while that of the euro has declined and the pound sterling has remained unchanged (see Box 1, which corresponds to Box 2 in SM/00/180).
4. **Revisions in the data on the currency composition of international reserve holdings at end-1999 resulted in a slight shift in the *weights* of the component currencies in the proposed *new* valuation basket (see Tables 1 and 2, which correspond to Tables 2 and 4 in SM/00/180).** In the proposed new basket, the weights (in percent) would be as follows: U.S. dollar, 45; euro, 29; Japanese yen, 15; and pound sterling, 11. Compared to the weights in the July Board paper, this represents an increase of 1 percentage point in the rounded share of the U.S. dollar, a reduction of 1 percentage point in the rounded share of the pound sterling, and no change in the rounded shares of the euro and Japanese yen.
5. **Finally, the shift in exchange rates has resulted in slightly different *currency amounts* in the proposed *new* SDR valuation basket (see Table 3, which corresponds to Table 6 in SM/00/180).** Since the currency amounts in the proposed new basket are calculated on the basis of average exchange rates over the past three months, the final currency composition of the new basket to take effect on January 1, 2001 will not be known until December 29, 2000, the last business day of this year. Once the Executive Board has decided upon the currencies and their relative weights in the new basket, the staff would propose to project the currency amounts in the new basket based on average exchange rates over the previous three months, and to update these projections every two weeks for the remainder of the year and post them on the Fund’s external web site. As the

currency amounts will be based on a moving average of exchange rates, they will tend to iterate toward the final effective amounts, thereby keeping users of the SDR fully informed of the likely currency amounts in the new basket that takes effect on January 1, 2001. **The Executive Board will need to decide on the final *currency amounts* in the new basket on December 29, 2000, on the basis of a staff paper that would be issued that day for a lapse-of-time decision.**

**Box 1. SDR Valuation: Determination of Currency Amounts
and Actual Daily Weights**

- Currency amounts are calculated on the last business day preceding 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 result of changes in exchange rates. As an example, the calculation of the SDR in terms of the U.S. dollar on September 22, 2000, and the corresponding weights, are shown below.

SDR Valuation on September 22, 2000

Currency	Initial weight decided in 1995	Currency amount under Rule 0-1	Exchange rate 1/ 9/22/00	U.S. dollar equivalent	Actual weight 9/22/00
Euro (Germany)	21	0.2280	0.8709	0.198565	15
Euro (France)	11	0.1239	0.8709	0.107905	8
Japanese yen	18	27.2000	106.81	0.254658	20
Pounds sterling	11	0.1050	1.4592	0.153216	12
U. S. dollars	39	0.5821	1.0000	0.582100	45
SDR1 = US\$				1.29644	100

1/ The exchange rate for the Japanese yen is expressed in terms of currency units per U.S. dollar; other rates are expressed as U.S. dollars per currency unit.

Table 1. Official Reserve Holdings of Currencies Included in the SDR Valuation Basket

	Average	Average	Average	Average	End of Year				
	1980-84	1985-89	1990-94	1995-98	1995	1996	1997	1998	1999
<u>(In billions of SDRs)</u>									
U.S. dollar	185.0	232.4	336.8	635.6	496.8	618.1	705.1	722.3	825.9
Deutsche mark	34.5	58.7	92.3	133.4	119.7	133.7	145.6	134.7	...
Japanese yen	12.6	28.4	49.8	60.4	59.1	61.8	60.0	60.9	67.3
French franc	3.5	3.7	15.5	17.5	20.0	19.1	15.7	15.2	...
Pound sterling	7.1	10.0	19.3	36.8	27.8	35.3	41.3	42.7	48.1
Euro	...	...	...	...	...	...	...	...	152.1
Total of SDR basket currencies	242.7	333.2	513.6	883.7	723.4	867.9	967.7	975.9	1093.4
<u>(Percent shares of total foreign exchange holdings)</u>									
U.S. dollar	65.7	62.1	48.2	58.1	53.3	56.9	59.1	62.2	64.2
Deutsche mark	12.2	15.7	13.2	12.2	12.8	12.3	12.2	11.6	...
Japanese yen	4.5	7.6	7.1	5.5	6.3	5.7	5.0	5.2	5.2
French franc	1.2	1.0	2.2	1.6	2.2	1.8	1.3	1.3	...
Pound sterling	2.5	2.7	2.8	3.4	3.0	3.2	3.5	3.7	3.7
Euro	...	...	...	...	...	...	...	...	11.8
All currencies (including unidentified currencies; in billions of SDRs)	281.7	374.1	698.4	1,093.3	931.9	1,085.8	1,193.9	1,161.8	1,287.0
<u>(Percent shares of total SDR basket currencies)</u>									
U.S. dollar	76.2	69.7	65.6	71.9	68.7	71.2	72.9	74.0	75.5
Deutsche mark	14.2	17.6	18.0	15.1	16.5	15.4	15.0	13.8	...
Japanese yen	5.2	8.5	9.7	6.8	8.2	7.1	6.2	6.2	6.2
French franc	1.4	1.1	3.0	2.0	2.8	2.2	1.6	1.6	...
Pound sterling	2.9	3.0	3.7	4.2	3.8	4.1	4.3	4.4	4.4
Euro	...	...	...	...	...	...	...	...	13.9

Sources: IMF Annual Report, 1999, and Statistics Department.

Table 2. Basis for Determining the Weights of Currencies in the SDR Valuation Basket
(Currency Based Approach)

Currency	Exports of Goods and Services 1/ (1995-99 average) (1)	Official Holdings of Currency 2/ (End December 1999) (2)	Total of Cols. (1) and (2) (3)	Weights as Percentage of Totals in Col. (3) (4)	Rounded Percentage Weight 3/ (5)
(In billions of SDRs)					
U.S. dollar	810.9	825.9	1,636.8	44.54	45
Euro	918.8	152.1	1,070.8	29.14	29
Japanese yen	478.6	67.3	545.9	14.85	15
Pound sterling	373.4	48.1	421.5	11.47	11
Total	2,581.6	1,093.4	3,675.0	100.00	100
Relative weight, in percent	70.2	29.8	100.0		

1/ Including income credits.

2/ Official reserves held by monetary authorities outside the country or monetary union that issues the respective currency. Official reserve data pertains only to 1999.

3/ To nearest percentage point.

Table 3. Calculation of Illustrative Currency Amounts: Revised SDR Valuation Basket
(Based on Rounded Percentage Weights and on June 23 to September 22, 2000 Average Exchange Rates)

Current Basket				Illustrative Basket Based on 1995-1999 Data			
Currency	Initial percentage weight	Actual percentage share, as of September 22, 2000	Currency amount	Currency	Rounded percentage weight 1/	Currency amounts 2/	Percentage Change, in Currency Amount
U.S. dollar	39	45	0.5821	U.S. dollar	45	0.592	1.7
Euro (Germany)	21	15	0.2280	Euro	29	0.422	19.9
Japanese yen	18	20	27.2000	Japanese yen	15	20.900	-23.2
Euro (France)	11	8	0.1239	Pound sterling	11	0.097	-7.6
Pound sterling	11	12	0.1050				

1/ See Table 2, column (5).

2/ 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, 2000) to be used for revising the SDR basket's currency components, and (ii) the rounding procedures to be applied to the currency amounts themselves. Annex III reproduces the procedure and formulas used for rounding the currency amounts when the new basket is determined.

III. WHAT ARE THE EFFECTIVE WEIGHTS IN THE SDR INTEREST RATE BASKET?

6. In the SDR interest rate basket, the *effective* weights of the financial instruments representing each component currency reflect the level of interest rates in each currency area as well as the level of exchange rates and the currency amounts in the basket (see Box 2). Thus, these weights *differ* from the effective weights of the same currencies in the SDR valuation basket which reflect only the level of exchange rates and the currency amounts in the basket. For example, the weight of the Japanese yen in the interest rate basket is much lower than in the valuation basket, reflecting Japan's currently low interest rates. Correspondingly, the weight of the U.S. dollar is substantially higher, while those of the euro and pound sterling are slightly higher.

7. As discussed in SM/00/180, the procedures followed in the changeover to the proposed new valuation basket ensure that the value of the SDR in terms of the U.S. dollar is maintained between the old and new baskets on the last business day of 2000, the final day the old basket will be in effect. This is done by adjusting proportionately the currency amounts in the new basket until these amounts generate the same value of the SDR in terms of the U.S. dollar as does the old basket on that day.

8. The continuity in the valuation of the SDR, however, is *not* accompanied by a similar continuity in the level of the interest rate on the SDR at the time of the transition. The break in continuity arises because of differences in the level of interest rates across countries, which are then combined with the altered currency amounts in the new valuation basket. For example, the effect on the SDR interest rate of an increase in the share of a relatively high interest rate currency at the time of the transition would be to raise the SDR interest rate, and vice versa for a low interest rate currency.

9. Consequently, it may be expected, as on previous occasions, that a discrete change will occur in the level of the interest rate on the SDR with the shift to the new valuation basket on January 1, 2001. The magnitude of the shift is not predictable *ex ante*, because the levels of exchange rates and interest rates that will prevail in January 2001 are not yet known. In the past three revisions to the basket since 1980, the change in the interest rate on the SDR in the first full week in January was an increase of 12 basis points in 1986, a decrease of 34 basis points in 1991, and no change in 1996.

IV. ARE THERE ANY ALTERNATIVES TO THE EURIBOR?

10. In the informal question and answer session on August 24, many Directors supported the proposal to use the three-month Euribor as the representative interest rate for the euro area in the SDR basket. A few Directors, however, expressed concern that the Euribor reflected the credit risk associated with interbank deposits and, therefore, incorporated a higher risk premium than the public sector instruments used for the other currencies in the basket. At the request

**Box 2. SDR Interest Rate: Calculation and
Actual Weekly Weights**

- The interest rate on the SDR is defined as the sum of the multiplicative products in SDR terms of the **currency amounts** in the SDR valuation basket, the level of the **interest rate** on the financial instrument of each component currency in the basket, and the **exchange rate** of each currency against the SDR.
- As in the valuation of the SDR, the currency amounts remain fixed for the five-year period following a revision in valuation basket. As a result, the **actual weight** of each financial instrument in the SDR interest rate changes on a weekly basis as a result of changes in **both** interest rates and exchange rates.
- As an example, the calculation of the SDR interest rate on September 22, 2000, and the corresponding weights are shown below. Note that these weights can **differ** from those in the valuation basket on the same date (see Box 1) because the weights in the interest rate basket reflect changes in the levels of interest rates in each currency as well as change in exchange rates.

SDR Rate on September 22, 2000

Currency	Currency amount	Interest Rate	Exchange rate against the SDR	1/ Product	Actual weight 9/15/00
Euro (Germany)	0.2280	4.8565	0.68572200	0.7593	16
Euro (France)	0.1239	4.8000	0.68572200	0.4078	9
Japanese yen	27.2000	0.3000	0.00721891	0.0589	1
Pounds sterling	0.1050	5.7693	1.12554000	0.6818	15
U. S. dollars	0.5821	6.1600	0.77134100	2.7658	59
Total				4.67	100

1/ Exchange rate are expressed in terms of SDRs per currency unit.

of these Directors, the staff has explored several alternatives to the Euribor as the representative interest rate for the euro area, but has not found an acceptable substitute. The alternative interest rates explored by the staff were: (i) a weighted average of three-month treasury bill rates; (ii) a representative rate from the repo market; (iii) a bid rate in the unsecured money market; and (iv) the rate on the ECB three-month refinancing facility. These alternatives need to be evaluated against the guidelines established by the Executive Board for the inclusion of interest rate instruments in the SDR interest rate basket (see SM/00/180, pp. 31–32).

11. While the introduction of the euro and the new monetary policy framework have advanced unification and standardization in the euro area money market, the degree of market integration remains uneven in various segments of the money market. The interbank, unsecured deposit market has achieved the highest degree of integration, contributing to the smooth redistribution of liquidity among financial institutions in the euro area.¹ However, the repo market and the market for short-term securities, including for treasury bills, have not yet achieved a comparable degree of euro-area wide integration and standardization. This continuing market segmentation complicates the identification of an appropriate representative rate for the euro area in the SDR interest rate basket.

A. Weighted Average of Three-Month Treasury Bill Rates

12. In contrast with the rapid integration of the unsecured money market, the securitized money market in the euro area, including the market for treasury bills, is still highly segmented and to a large extent domestically oriented. The fragmentation of the market for treasury bills partially stems from the fact that policies toward issuance of short-term paper in the euro area countries are heterogeneous and have not converged substantially since the introduction of the euro. The fragmentation of the euro area treasury bill market along national borders, together with small outstanding amounts of a significant number of treasury bills, results in secondary markets for short-term securities that are often relatively illiquid, implying that in a number of euro area countries reliable rates cannot be obtained on a regular basis.² Moreover, money market paper is often held until maturity by the investor, which further reduces liquidity in the secondary markets.³ Since the demand for cross-border investment in short-term

¹ The high speed of integration in the unsecured and swap segments of the money market was partly due to the success of the euro area interest rate indices EONIA and Euribor, and the efficient functioning of the real-time gross settlement payment system TARGET. The lack of a similar trans-European securities infrastructure is a crucial factor in explaining the lack of integration in the repo market.

² In several euro area countries, fiscal consolidation is further reducing the outstanding amounts of treasury bills and liquidity in the secondary markets.

³ The total amount outstanding of treasury bills issued by euro area countries declined by 17 percent between the end of 1998 and the end of 1999. During the first half of 1999, securities issued by Italy accounted for 44 percent of the amount outstanding of all treasury bills issued by euro area countries. French and Spanish securities together represented approximately 32 percent and Belgian securities another 12 percent. Thus, these four countries together accounted for 88 percent of the total outstanding amount in this market (see Javier Santillan, Marc Bayle and Christian Thygesen, *The Impact of the Euro on Money*

(continued...)

securities is significantly smaller than in the euro area bond market, the short end of the market is further segmented, while legal, technical and tax barriers impede broader and further integration in the treasury bill market as well as in the markets for longer-term securities.

13. **Given the absence of an integrated market for three-month treasury bills in the euro area, the staff examined the possible use of a weighted average of the yields of three-month treasury bills issued by euro area countries and concluded that the resulting rate, reflecting only two countries, would not be representative of the entire euro area.** Currently, eight euro area countries (Austria, Belgium, Finland, France, Germany, Italy, the Netherlands and Spain) issue treasury bills, but only France and Italy regularly issue straight three-month treasury bills with sufficiently liquid secondary markets.⁴ The other countries issue treasury bills of different maturities, some of which are not issued on a regular basis. Thus, the main problem with this approach is that a weighted average can be calculated only on the basis of two countries, France and Italy, which account for only 40 percent of euro area GDP.⁵ During January 1, 1999 through September 8, 2000, the weighted average of these two three-month treasury bill rates was 27 basis points lower than the Euribor (see Figures 1 and 2).⁶

and Bond Markets, European Central Bank, *Occasional Paper Series*, No. 1, July 2000). Belgium and Spain do not issue treasury bills with a maturity of three months. Currently, Belgium issues 6- and 12-month treasury bills, while Spain issues 6- and 18-month "Letras." The liquidity in the secondary market for "Letras" is relatively low.

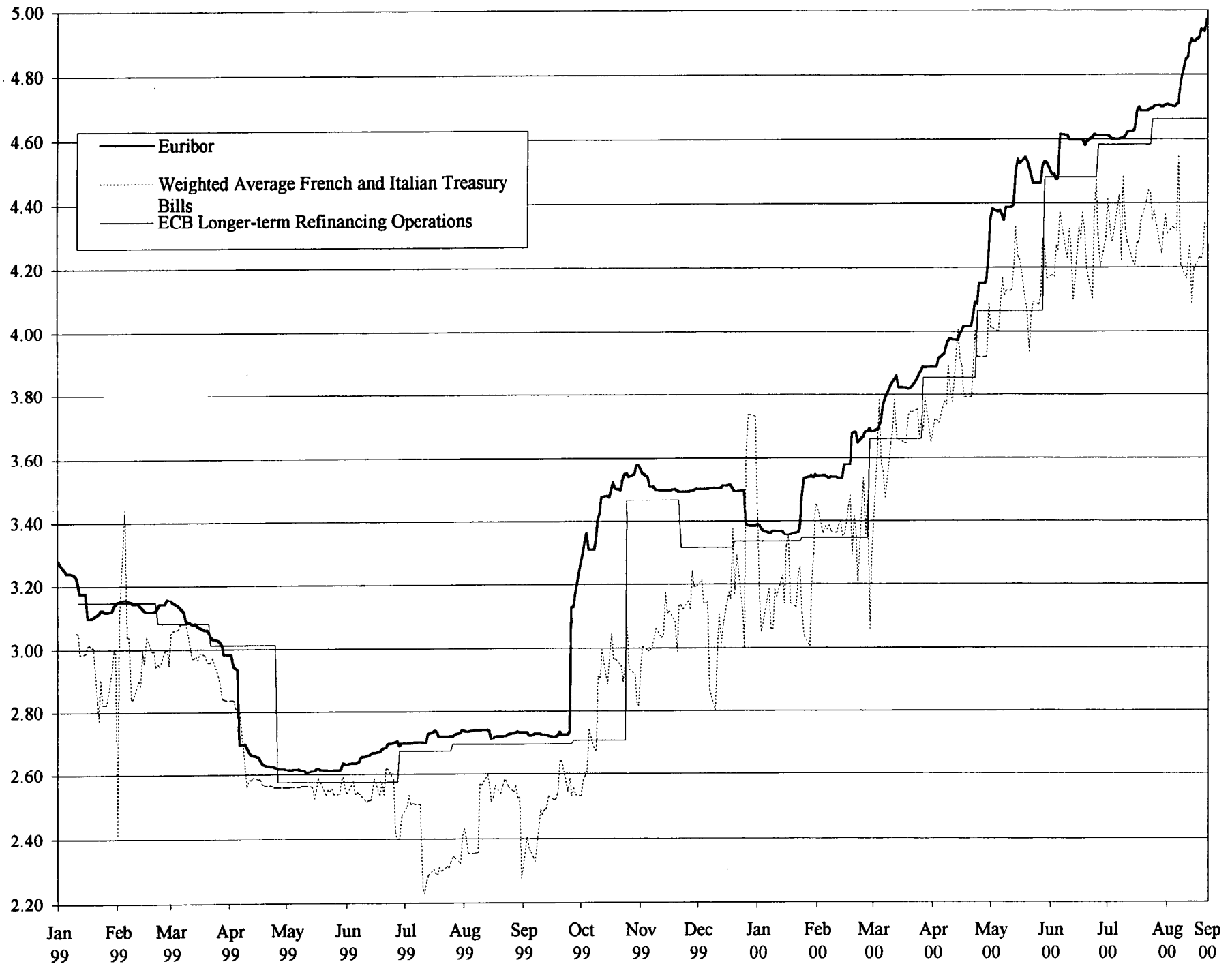
⁴ The outstanding amounts of three-month treasury certificates in the Netherlands and three-month treasury bills in Finland are relatively small, and the secondary markets are not sufficiently liquid to allow for the inclusion of these yields in a weighted average of the euro area. The same holds for Austria, where the treasury bill market is highly fragmented, as these bills are not only issued with many different maturities, but also with four different currency denominations (euro, U.S. dollar, Swiss franc and pound sterling). There are no three-month treasury bills issued in Germany, the largest euro area economy. Germany does issue Bubills, which have a maturity of six months and are the only regularly issued short-term government paper in Germany. In Portugal, the issuance of treasury bills has been discontinued, and there are no treasury bills in Ireland.

⁵ The calculation of a weighted average is complicated by the fact that treasury bills issued by different countries do not necessarily imply the same credit risk. With respect to foreign currency long-term debt, for example, France has a Standard & Poor's rating of AAA, while Italy's rating is two notches lower at AA. Moody's rating for these two countries is even more divergent: while France has a rating of Aaa, Italy's rating is Aa3, three notches below the rating for France. Since the respective treasury bill rates incorporate different risk premia, these bills cannot be regarded as a homogenous good and, in principle, should therefore not be consolidated. Furthermore, as the pricing of treasury bills also reflects the depth of the respective market segment, the SDR interest rate might be influenced by volatile and potentially high liquidity premia in one or more segments of the euro area treasury bill markets.

⁶ The weighted average is calculated based on the average outstanding amount of French and Italian three-month treasury bills during the period January 1999 through August 2000. Over this period, the average daily spread of the yield on the Italian treasury bill over the French treasury bill was only two basis points. Reflecting periodically diverging liquidity conditions in both markets, however, the spread widened significantly in either direction on occasion. The weights would differ significantly if the most recent outstanding amounts were used. While the outstanding amount of Italian treasury bills at the end of August 2000 was only 44 percent of the respective amount at the end of January 1999, the outstanding amount of

(continued...)

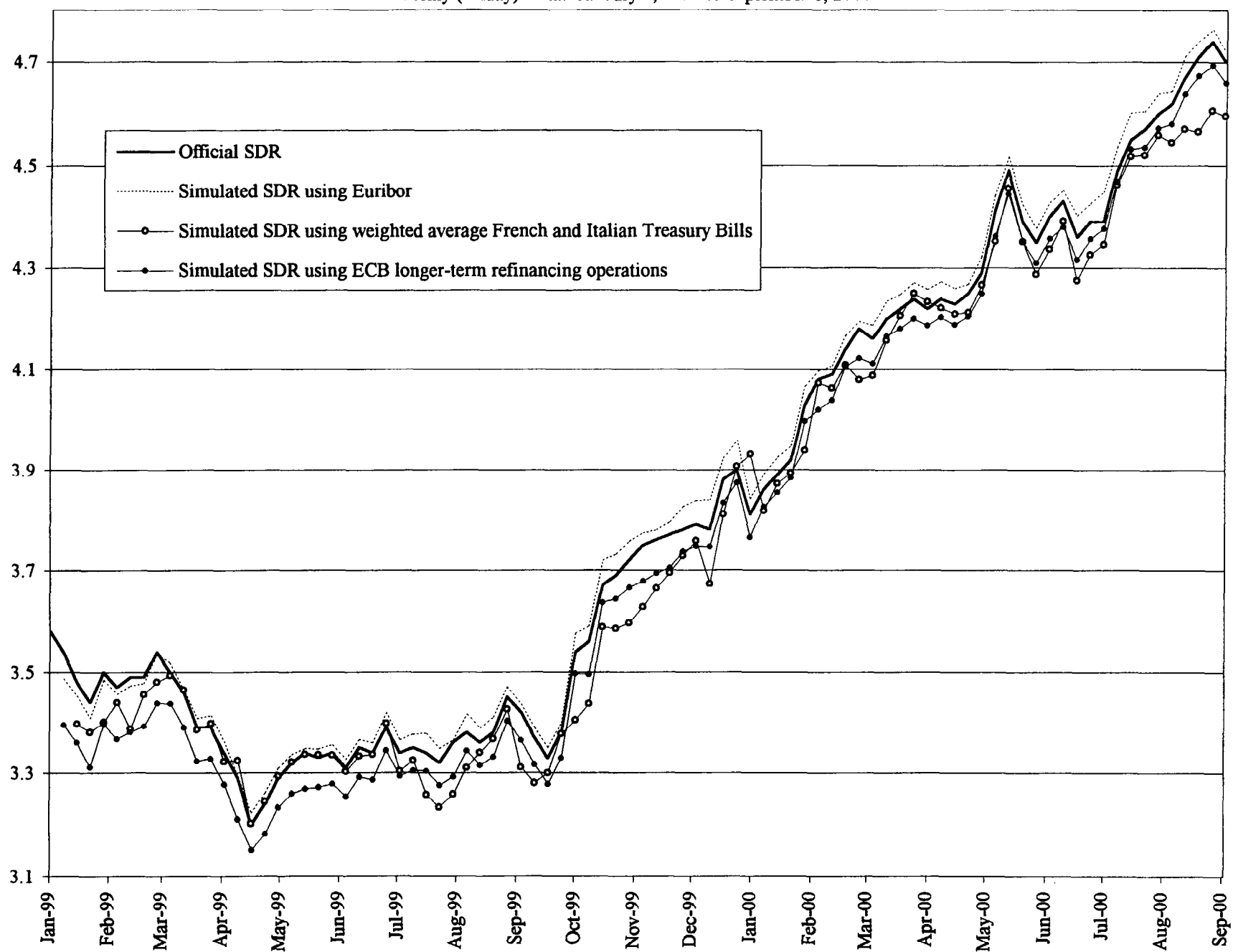
Figure 1. Euribor Alternatives



Source: IMF, Bloomberg and BIS.

Figure 2. SDR Interest Rates-Official versus Simulated: New Basket with Alternative Euro Rates
Using Euribor, French & Italian Treasury Bills and ECB Longer-term Refinancing Operations

Weekly (Friday) Data: January 8, 1999 to September 8, 2000



Sources: IMF, Treasurer's Department RATES database and Bloomberg.

14. While it might be possible, in principle, to derive hypothetical three-month treasury bill rates for the six euro area countries which do not issue bills with this maturity by imputing yield curves in the various national markets, such an approach would involve a number of arbitrary and nontransparent assumptions. For example, hypothetical three-month treasury bill rates could be derived from the three-month Euribor by applying the spread between actual yields on treasury bills with a different maturity, say six months, and the respective Euribor.⁷ This approach, however, would require that secondary markets for treasury bills be sufficiently liquid so that the yields in these markets would not be distorted by volatile and potentially high liquidity premia. In this respect, the early stage of development of markets for short-term securities in some euro area countries raises serious doubt about whether the derived implicit three-month rates would be economically sensible. In addition, this approach would involve an arbitrary assumption about the size of the spread over the whole maturity spectrum.

15. Finally, even if it were possible to derive economically sensible yield curves for all six euro area countries concerned, choices about the appropriate *weighting* of the hypothetical national three-month rates would have to be made. This would involve another arbitrary decision since data on outstanding amounts or transaction volumes at this maturity in these markets would not exist.

B. Repo Rates

16. The staff also considered the use of repo rates as a possible representative rate for the euro area but discovered that since market segmentation remains a severe problem, a homogeneous representative rate for the area could not be found. While the volume of repo operations for maturities over one day has increased significantly since the introduction of the euro, market integration is impaired by a lack of harmonization of repo agreements within the euro area and the fact that the infrastructure for the clearing and settlement of securities is less developed than the payment systems infrastructure. These structural characteristics imply that cross-border settlement costs for short-term securities continue to exceed significantly domestic settlement costs, which contributes to a preference for transactions based on domestic assets.⁸

French treasury bills, although fluctuating, did not exhibit a clear trend over that period, implying that the use of recent data, instead of the average over the whole period, would result in a significantly higher weight for French treasury bills. It would be preferable to derive the weights from data on the daily turnover in the secondary markets for three-month French and Italian treasury bills. While these data are being prepared by SICOVAM and MTS, they were not yet available to staff at the time when this supplement was issued.

⁷ A few major financial institutions derive a benchmark three-month interest rate for the German segment of the money market by using the spread between the six-month Euribor and the yield on Bubills.

⁸ In this context, it is worthwhile noting that the repo market is the only segment of the money market in the euro area in which domestic transactions increased more rapidly than cross-border transactions (see Javier Santillan et. al., op. cit.).

17. Moreover, repo operations in the respective national markets are subject to varying legal and tax requirements, which constitute an additional impediment to the standardization of market practices. In addition, repo rate differentials might also be due to the scarcity of the underlying security. In particular, repo rates for transactions based on "general collateral" usually differ from repo rates on transactions based on "special collateral".⁹ While efforts are being made to remove or minimize the impediments to harmonization in the repo market, substantial progress is likely to occur in the medium- rather than in the short-term. As a result, for the time being, there is no benchmark repo rate which could be considered as being representative for the euro area as a whole.¹⁰

C. Bid Rates in the Unsecured Money Market

18. While the Euribor is the benchmark reference rate in the unsecured money market in the euro area, there is no equivalent benchmark reference rate for the bid rate in this market.¹¹ The euro bid rates posted on the pages of private market information providers represent quotations either from individual banking institutions or brokers. While these quotations generally reflect changing conditions in the unsecured money market, they nevertheless also mirror the rating, liquidity position and trading strategy of each individual market participant. Moreover, as the spread between bid rates and offer rates in the unsecured money market is not constant across market participants or over time, it is not possible to derive a representative bid rate from the three-month Euribor.

D. ECB Three-Month Refinancing Facility

19. The staff also considered using the ECB longer-term refinancing rate as the representative rate for the euro area and concluded that this approach would not be

⁹ "General collateral" is defined as collateral which, owing to its homogeneous features, is broadly accepted. While the interest rate for repo operations based on "special collateral" depends largely on its availability, the rate for repo operations based on "general collateral" merely reflects demand for and supply of liquidity in the repo market as a whole (see Deutsche Bundesbank, *The Integration of the German Money Market in the Single Euro Area Money Market*, Monthly Report, January 2000).

¹⁰ The repo rates made available by private market information providers are quotations from market makers in the respective national segments of the repo market, which are not only influenced by changes in the overall liquidity in the national segments of the repo market but also by the scarcity of the respective underlying assets. While it can be assumed that the publication by the Banque de France of bid and ask rates for repo operations (including a three-month maturity) in the French repo market, which is among the most active repo markets in the euro area, is not distorted by repo rates for operations based on "special collateral," bid and ask rates in the French repo market cannot be considered as benchmarks for the euro area as a whole.

¹¹ Euribor is the rate at which euro interbank term deposits are being offered within the EMU zone by one prime bank to another at 11:00 a.m. Brussels time ("the best price between the best banks"). The Euribor is based on quotes from a broad sample of currently some 50 banks from 15 countries, including several major banks with headquarters outside the euro zone, and computed by Bridge Telerate. Euribor rates are quoted by all the major financial news services.

consistent with the guidelines established by the Executive Board on the inclusion of interest rate instruments in the SDR interest rate basket. In addition to its main refinancing operations, which are liquidity-providing reverse transactions with a weekly frequency and a maturity of two weeks, the ECB also executes regular refinancing operations with a three-month maturity, which are aimed at providing additional longer-term refinancing to the financial sector.¹² The ECB's longer-term refinancing tenders are regularly conducted in the form of multiple-rate auctions of a pre-announced quantity.¹³ In these operations, the ECB normally acts as a rate-taker and, therefore, the marginal interest rate does not, as a rule, have a signaling effect with respect to the stance of the ECB's monetary policy.¹⁴ During the period January 1, 1999 through September 8, 2000, the average spread of the ECB's longer-term refinancing rate was 11 basis points below the Euribor.

20. While the interest rate for the ECB's longer-term refinancing operations would have the advantage that it is a market-determined rate which is uniform for the euro area as a whole, a fundamental problem with its use in the SDR interest rate basket is that it is a rate at which Monetary Financial Institutions (MFI) within the euro area can *obtain* liquidity from the ECB rather than a rate at which they can *invest* in euro-denominated assets that reflect the actual choice of reserve managers. Thus, the rate does not fulfill the criteria for the inclusion of financial instruments in the SDR basket determined by the Executive Board. In addition, the interest rate for the ECB's longer-term refinancing operations reflects developments in the money market only on the day when the auction takes place, i.e., once a *month*, while the SDR interest rate is calculated on a *weekly* basis.¹⁵

E. Conclusions

21. While it is for the Executive Board to consider whether it prefers an alternative instrument to the three-month Euribor for the euro area in the SDR interest rate basket, any alternative should be consistent with:

- the proposed change in the method of SDR valuation from the current member-based approach to a currency-based approach, which implies a need to select a representative interest rate for the euro area as a whole;

¹² The ECB's longer-term refinancing operations, at an annual average of € 47 billion in 1999, accounted for roughly one-quarter of the liquidity supply.

¹³ In multiple-rate auctions, which are also known as "U.S.-style" variable-rate tenders, the allotment interest rate equals the interest rate offered in each individual bid. This type of auction has been used since March 24, 1999, for the ECB's longer-term refinancing operations.

¹⁴ Against this background, and taking into account the fact that the weighted average of the multiple rates of each allotment can be considered as a better indicator of market conditions, this supplement refers to the weighted average interest rate.

¹⁵ The allotment of the ECB's longer-term refinancing operations normally takes place on the first Wednesday after the end of the one-month reserve maintenance period.

- the Executive Board's guidelines for the selection of financial instruments in the SDR interest rate basket, which imply that they should be representative of the range of instruments that are available to investors in a particular currency, be responsive to changes in underlying credit conditions, and have a credit risk profile of the highest quality or, in the absence of appropriate official paper, be comparable to the credit risk on prime financial instruments; and,
- the principle that the interest rate on the SDR should be as transparent as possible, which implies that all interest rates used for its calculation should be market-based rates which are readily observable and freely available to the public, so that users of the SDR can easily replicate its interest rate.

22. **In this context, the staff:**

- does not consider the weighted average of the yield on three-month treasury bills issued by only two euro area countries as being adequately representative of the euro area as a whole; moreover, while it might theoretically be possible to derive hypothetical three-month treasury bill rates for a number of euro area countries by imputing yield curves in the various national markets, such an approach would inevitably be arbitrary and nontransparent;
- recognizes that the interest rate on the ECB's longer-term refinancing operations is uniform across the euro area as a whole, but believes that its inclusion in the SDR interest rate basket would require a revision of the Executive Board's guidelines on the selection of financial instruments for the SDR basket, as the ECB's repo rate is one at which MFIs in the euro area can *obtain* liquidity, rather than *invest* in euro-denominated assets and, in any case, is available only on a monthly basis; and,
- finds that there are no generally accepted benchmarks for either the bid rates in the unsecured money market or the repo rates in the collateralized money market, so that neither of these rates can be considered a viable option for the inclusion in the SDR interest rate basket. Staff attempts to estimate a euro-area bid rate in the unsecured money market or a repo rate in the collateralized money market would encounter difficulties similar to those involved in imputing yield curves for treasury bill rates—i.e., the need to make inherently arbitrary assumptions using non-transparent procedures.

23. **Consequently, the staff continues to concur with the assessment of the European Central Bank that the three-month Euribor is the most appropriate rate for inclusion in the SDR interest rate basket.** This assessment reflects the fact that the unsecured money market is by far the most integrated segment of the money market in the euro area and that the Euribor is the *only* freely available and widely recognized reference rate for this market. There is also precedent for such a choice—in the absence of an appropriate government security in Germany, the Fund has used a rate from the German private interbank market in the SDR interest rate basket for the past 20 years.

V. NATURE OF PROPOSED CHANGES—REQUIRED VOTING MAJORITIES

24. **At the informal meeting on August 24, 2000, a question was raised with regard to the majority required to approve the proposed changes in the current method of valuation of the SDR basket.** Article XV, Section 2 of the Articles of Agreement, which was introduced at the time of the Second Amendment, provides that:

“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 the valuation or a fundamental change in the application of the principle in effect.”

25. **Neither that provision nor the *Commentary on the Second Amendment*¹⁶ give any guidance as to what would constitute a change in the principle of valuation or a fundamental change in the application of the principle in effect to require an eighty five-percent majority of the total voting power for its adoption, rather than the 70 percent majority needed for all other changes.** Such a determination is left to the Executive Board. Since the Articles do not establish a special majority to decide on the majority required, that decision may be made by the majority of the votes cast (Article XII, Section 5(c)).

26. **Since the entry into force of the Second Amendment, the issue of the majority required for a proposed change in the method of valuation has only been raised once.** In 1980,¹⁷ when it was proposed to reduce the basket of currencies from sixteen to five, the staff was of the view (and the Executive Board agreed) that the mere reduction in the number of currencies, without a departure from the “standard basket” approach and without a change in the formula for determining the weights of the currencies used in the basket, did not amount to a fundamental change in the application in the principle in effect, and thus did not require an eighty five percent majority of the total voting power for its adoption.¹⁸

27. **Based on this precedent, and considering that under the changes now proposed: (i) the valuation of the SDR will continue to be made on the basis of a basket of currencies; (ii) the currencies in the resulting new basket would be the same as in the current basket; and (iii) the formula used in determining the weights of such currencies is**

¹⁶ *Proposed Second Amendment to the Articles of Agreement. A Report by the Executive Directors to the Board of Governors*, page 70.

¹⁷ The “standard basket of currencies” approach was first adopted in 1974 as an interim solution following the collapse of the par value system (see *Interim Valuation of the SDR*, SM/74/59), and later adopted on a permanent basis in 1978 (Decision No. 5718-(78/46) G/S, dated March 31, 1978), before the Second Amendment became effective. Prior to the Second Amendment, decisions changing the method of valuation of the SDR could be taken by a majority of the votes cast.

¹⁸ *SDR Valuation—Majority for Decision*, SM/80/180 (July 18, 1980).

not being modified, **the staff is of the view that the proposed shift for the selection, and the consequential change in the weighting, of currencies in the SDR basket from a country-based to a currency-based approach neither affects the principle of valuation nor amounts to a fundamental change in the application of the principle in effect.** This is also true with respect to the inclusion of the "freely usable currency" criterion for currency selection, because the considerations underlying the adoption of the 1980 five-currency basket were also based on the fact that the currencies included were widely used in international commercial and financial transactions, which are similar to the criteria used by the Fund in determining whether a currency is freely usable. **Thus, the staff believe that the proposed decisions could be adopted by a seventy percent majority of the total voting power.**

