The Substitution Account: The Problem, the Techniques and the Politics

Foreword

The idea of establishing a mechanism whereby national reserve currencies could be replaced by an internationally managed reserve asset has been debated in world monetary fora from time to time over the last 40 years.[1] Following the demise of the Bretton Woods system, the issue became the subject of renewed attention in 1972-74 during the reform exercise carried out by the Committee of Twenty (C-20). More recently, in 1978-79 the Executive Board of the IMF and the Interim Committee outlined the key features of a Substitution Account (SA) empowered to issue SDR-denominated claims in return for voluntary dollar deposits by the monetary authorities of member countries. As is now well-known, the Interim Committee discussed the scheme at its Hamburg meeting (April 1980), failed to reach agreement and shelved it indefinitely.

Nevertheless, in our view the SA remains a project of considerable interest, for it identifies correctly some of the causes of the growing instability in international foreign exchange and financial markets and proposes a reasonable therapy. Besides, in a longer-term perspective many of the problems and difficulties which caused the project to be scrapped may not be as compelling as they appeared in Hamburg. The aim of this paper is to try

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[1] For an exhaustive examination of the historical antecedents of the SA see Sir JOSEPH GOLD, "Substitution in the International Monetary System," *Journal of International Law*, 1980, vol. 12; see also DOROTHY SOBOL MEADOWS, "A Substitution Account: Precedents and Issues," *Federal Reserve Bank of New York Quarterly Review*, Summer 1979.

to substantiate this opinion by reviewing the purposes of the SA (Section 1), its main technical features (Section 2) and the reasons which prevented agreement from being reached in Hamburg (Section 3). In conclusion, the potential usefulness of a substitution scheme is assessed against the prospect of persisting payments imbalances in the world economy and of an emerging multicurrency reserve system.

1. The Problem

The periodic revival of the SA stems from the belief that a reserve system based on a nationally issued currency is inherently unstable,[2] as it makes creation of international liquidity dependent on the issuing country's balance of payments and domestic policies rather than on the global need for international payment instruments.

Thus, concern over a feared "dollar shortage" led in 1968 to the creation of the SDR. Shortly afterwards, under the pressure of expansionary domestic policies, accelerating inflation and emerging current account deficits in the United States, the system moved to an opposite situation of "dollar glut", in which ways had to be found to keep the "overhang" under control. These developments also emphasized the asymmetries in the international adjustment process, whereby the reserve currency country could neglect its external payments position while other countries were forced to comply with the rules of the game.

These new realities were reflected in the C-20 reform project, which envisaged symmetrical adjustment obligations for surplus and deficit countries as well as for the reserve currency country. The evolution of international liquidity would remain consistent with the maintenance of multilateral convertibility and the requirements of the par-value system, as the reserve currency country would settle

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imbalances with reserve assets rather than by increasing its foreign liabilities. Moreover, both deficit and surplus countries would be required to follow "appropriate" exchange rate policies and to take prompt corrective measures when necessary. Demand for additional international liquidity would be met through allocations of SDRs.

The reformers recognized that interim arrangements would be needed to facilitate the transition to the new system, and although no consensus was achieved on any specific solution, the proposal of establishing an SA — originally presented by the Italian deputies of the C-20 — was included in the Outline of Reform. It was envisaged that the IMF could "make provision for the consolidation of reserve currency balances to protect the future convertibility system against net conversion of any overhang of such balances which may exist at the restoration of general convertibility and to ensure that the issuers of the currencies concerned will be able to acquire reserve assets when in surplus and will not lose reserve assets beyond the amount of any future official settlement deficits. For this purpose, and also to permit countries that wish to do so to exchange official currency holdings for SDRs, the Fund would have authority to establish a Substitution Account".[3]

The SA was thus intended to facilitate the introduction of an "asset settlement" rule for the reserve centre by permitting the consolidation of existing reserve currency balances. Although the SA would bring about a change in the composition of international liquidity, reserve diversification was not included among its objectives nor, for that matter, regarded as a major problem. It is also worth noting that in those early discussions only slight attention was devoted to the problem of the financial balance of the SA and the maintenance of value of its assets, which were instead material in preventing agreement in the Interim Committee six years later.[4] Presumably, it was expected that the U.S. balance of payments would be in surplus after the reform and thereby strengthen the dollar and facilitate the amortization of the dollar balances held by the SA.

[3] "Outline of Reform," in *Documents of the Committee of Twenty*, Washington DC, 1974, page 14.

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The SA was not discussed again until the spring of 1978, when a proposal of the IMF Managing Director, Johannes Witteveen, prompted the Interim Committee to reconsider the issue. By that time the international monetary scene had changed dramatically. A regime of generalized floating rates had replaced the par-value system and the first oil crisis disrupted the structure of international payments. Financial intermediation by the Euromarkets had rapidly expanded, effectively recycling oil-generated surpluses to oil-importing deficit countries. Liability financing of payments deficits, once the privilege of reserve currency centres, had become a widespread practice, virtually turning the creation of international liquidity into a demand determined mechanism. In the meantime, the reform exercise had been concluded with modest results,[5] especially as regards the objectives of generalizing the asset settlement rule and bringing the creation of international liquidity under effective multilateral control.

The new scheme for an SA had a more limited scope than the earlier version: it envisaged that SDR allocations would be resumed, which would be consistent with the objective of making the SDR the principal reserve asset, but that the SDRs would be created against deposits of foreign exchange reserves, so as to avoid any addition to total liquidity.[6] Eventually an agreement was reached on resuming SDR allocations without setting up an SA.

The idea of an SA made headway again later in 1979 when the dollar came under pressure in foreign exchange markets. Although only limited statistical evidence was available to confirm it, there was a feeling that international reserve diversification by official holders played a part in the dollar's weakness and that such behaviour might spread further. This was regarded as a serious threat to the stability of foreign exchange markets, principally because the distribution of foreign exchange reserves had changed considerably since the oil crisis of 1974, with a large

[5] An informed and provocative account of the limited agreement reached at the Jamaica meeting of the Interim Committee is given by Tom de Vries, *Jamaica, or the Non-Reform of the International Monetary System*, Foreign Affairs, April 1976.

[6] The scheme implied that countries receiving SDRs under regular allocations would deposit an equivalent amount of reserve currencies in an Account with the Fund. The claims on the Account would not be treated as reserves and would not be transferable. There would be no provision for maintenance of value (in terms of SDRs) and the only activities performed by the SA would be the investment of the currencies received and the payment of interest to depositors.

Table 1

INTERNATIONAL RESERVES
BY COUNTRY GROUPS AND BY INSTRUMENTS
(SDR billion)

	1970	%	1975	%	1980 (*)	%
Total reserves minus gold	56.3	100.0	158.7	100.0	273.3	100.0
G-10 + Switzerland	33.1	58.7	69.7	43.9	111.2	40.7
Other industrial countries	6.4	11.4	14.8	9.3	26.5	9.7
Non oil developing countries	13.0	23.1	27.1	17.1	64.9	23.7
Oil exporters	3.8	6.8	47.1	29.7	70.7	25.9
Gold (at market price)	39.5	100.0	121.6	100.0	496.4	100.0
G-10 + Switzerland	32.4	82.0	98.9	81.3	401.9	81.0
Other industrial countries	1.7	4.3	5.6	4.6	23.6	4.8
Non oil developing countries	4.1	10.4	12.9	10.6	51.8	10.4
Oil exporters	1.3	3.3	4.2	3.5	19.1	3.8
Total reserves	95.8	100.0	280.3	100.0	769.7	100.0
Gold (at market price)	39.5	41.2	121.6	43.4	496.4	64.4
SDR and reserve position in IMF	10.9	11.4	21.4	7.6	28.0	3.7
Foreign exchange	45.4	47.4	137.3	49.0	245.3	31.8
— dollars	34.3	35.8	106.6	38.0	190.7	24.8
— other	11.1	11.6	30.7	11.0	54.6	7.1

Source: IMF, *International Financial Statistics*, and — for ECUs and their counterparts — BIS.

(*) End of October. Foreign exchange and gold figures include the amounts swapped to the FECOM by EMS participants, and do not include the ECU counterparts.

increase of reserves held by oil-exporters and non-oil LDCs (Table 1). This was a reason for believing that portfolio motives would play a larger role in international reserve management.

More in general it was felt that the reduced weight of the U.S. economy in the world no longer justified the hegemony of the dollar in the international monetary system and that, in the absence of official action, market forces would in any case bring about the desired reduction in its role and an increase in that of other currencies. From this point of view there was widespread concern that: *a*) not only would the *transition* to a system based on a multiplicity of reserve currencies be characterized by a high volatility of exchange rates, but also that *b*) a multicurrency reserve system would in itself be unstable owing to the inducement to shift funds from one currency to another in response to changed

expectations on interest and exchange rate developments.[7] Hence it was believed to be necessary to find ways to meet directly — i.e. off the market — the growing demand for alternative reserve assets.

A large scale substitution of SDR-denominated assets for dollars in international reserve holdings would contribute to the stability of the international monetary system by reducing pressures on foreign exchange markets as well as incentives for further changes in reserves composition, the SDR being already a diversified basket of the main reserve currencies. It is also quite clear that, although the dollar would be strengthened by the SA, this was not the objective of the operation. In fact, great care was taken throughout the subsequent negotiations to avoid any language that might characterize the SA as a dollar support operation.[8]

In March 1979, against this background, the Interim Committee asked the Executive Board of the IMF to reconsider the issue of an SA as a means of facilitating the orderly diversification of official reserve holdings and as "a further step towards making the SDR the principal reserve asset in the international monetary system."

2. The Techniques

Under the scheme developed by the IMF Executive Board,[9] an SA would be set up — at least initially in the form of a Trust administered by the Fund — to issue SDR-denominated claims

[7] This view was subsequently argued by the GROUP OF THIRTY — Reserve Assets Study Group — in *Towards a Less Unstable International Monetary System*, New York, 1980.

[8] An explicit view of the Substitution scheme as a dollar support package — designed to stabilize the dollar standard system rather than to favour its transition to a reserve system based on the SDR — has been put forward by R.I. MCKINNON, "Dollar stabilization and American Monetary Policy," *American Economic Review*, May 1980. This view leads him to regard the SA as an arrangement among the major industrial countries and, in our view, to underrate the issue of reserve diversification by oil-surplus countries.

[9] As described in the Executive Board Report for the Interim Committee meeting in Hamburg (April 1980). At that time, agreement had yet to be reached on a number of issues concerning the structure and operations of the SA.

against U.S. dollars. The operation was designed, in principle, to be permanent, although a liquidation procedure was envisaged should it appear that the SA was not viable or that its purposes were not being achieved. Deposits could be made by member countries of the IMF, other than the United States, and also by non-member countries, such as Switzerland, after esplicit authorization by the Fund. The deposits would be accepted by the SA at the time of its establishment as well as at later dates, in order to encourage wide participation, both by countries and through the amounts contributed.

The dollars received by the SA would be invested with the U.S. Treasury in suitably chosen non-marketable securities and earn a corresponding "dollar" interest rate. The SDR claims issued by the SA would earn the full combined interest rate used by the Fund to determine the SDR interest rate.[10] The adoption of a floating rate, fully in line with market yields on competing assets, was intended to ensure that the claims' market price would not diverge from their face value and so avoid the emergence of two prices for the SDR (the other one being that calculated by the Fund on the basis of current exchange rates).

The SDR claims could be exchanged freely among participants and also, in due course, be sold to other entities — public and private — in participating countries, with a view to developing a broad secondary market. The liquidity of the SDR claims would also be strengthened by a designation procedure similar to that in operation for the SDR proper[11] and as last resort — after all room for desi-

[10] Since May 1, 1981 the SDR interest rate has been brought to 100 per cent of the combined rate, which is obtained as a weighted average of interest rates on selected money market instruments in five major countries (United States, Japan, Germany, United Kingdom and France). Since January 1, 1981 the weights in the interest rate basket are the currency shares in the SDR valuation basket — which has also been simplified from sixteen currencies to those of the five countries listed above. Since the basket is defined in terms of fixed quantities of the currencies included ("standard" basket), the weights vary with each currency's exchange rate vis-à-vis the other currencies in the basket. Hence, the combined interest rate fully reflects ex-post "covered" yields on the financial instruments included. For an exhaustive treatment of the features and properties of the standard basket see J.J. POLAK, "The SDR as a Basket of Currencies," IMF *Staff Papers*, Dec. 1979.

[11] Under this procedure a Fund member in a strong reserve and balance of payments position may be designated to purchase SDRs from another Fund member and to provide it with the corresponding amount of convertible ("freely usable") currencies up to a pre-established acceptance limit. A rather low acceptance limit was envisaged for the SA, of the order of 25 per cent in excess of the SDR claims received by each participant against dollar deposits.

gnation had been exhausted — by allowing members to encash their claims with the SA against US dollars. Recourse to these " assisted " procedures would, however, be subject to a requirement of need, that is, would be restricted to participants experiencing adverse ballance of payments or reserve developments.

A key aspect of the SA would be to ensure that the SDR claims indeed combined superior risk and return characteristics — compared with the substituted asset — with a high degree of liquidity. It was recognized that potential participants would not agree to deposit their reserves with the SA if it implied a reduction in their ability to dispose freely of them. Accordingly, preference was given to a market-oriented approach, whereby the SDR claims would be made fully competitive with alternative market investments, and limitations on their free transferability would be kept to a strict minimum. It was also envisaged that in due course the market itself would ensure the claims liquidity.

A main issue in the IMF Executive Board debates on the SA plan was that of the provisions for the maintenance of value of its assets. As already explained, the SA would hold dollar assets earning a " dollar " interest rate and issue SDR denominated claims carrying the full combined interest rate: a shortfall in its balance sheet could thus arise as a consequence of an adverse interest rate differential, of adverse dollar/SDR exchange rate movements or of a combination of the two. The SA would therefore remain at least in balance as long as the interest rates differential offset exchange rate movements, so that the *total returns* on its assets and liabilities would be equalized (see the appendix for a formal treatment of the issue). In the long run, there would be at least a tendency for that condition to be realized through interest rate arbitrage, provided the interest rate paid by the U.S. Treasury and the SDR interest rate basket related to closely comparable market instruments. There are, however, a number of reasons why covered interest rate parity may not hold; and in fact empirical research has often found that forward markets perform rather poorly as predictors of future exchange rate developments. First, the interest rate parity condition refers to expected (" ex-ante ") and not realized (" ex-post ") values, so that under conditions of uncertainty the determinants of market behaviour by arbitrageurs would not necessarily coincide with the determinants of the SA financial

balance. Second, the fact that certain currencies are in demand as international reserve instruments may systematically cause the interest rate parity condition not to hold, during the time required for reserve holders to adjust their portfolios in response to a perceived change in the attractiveness of assets denominated in alternative currencies.

The existence of formal or informal agreements whereby other countries undertake to support the reserve currency on exchange markets may further contribute to " create room " for the persis-

TABLE 2

NATIONAL CURRENCY MONEY MARKETS AND SDR INTEREST RATES (*)

	$ (1)	£ (2)	Yen (3)	DM (4)	FF (5)	SDR (6)	$ - SDR interest rate differential (7) = (1) - (6)
				in national currency			
Dec. 1973 to Dec. 1980	7.51	11.13	8.15	6.21	9.84	8.33	— 0.82
Dec 1976 to Dec. 1980	8.48	11.30	6.71	6.07	9.77	8.53	— 0.05
Sept. 1978 to Dec. 1980	10.57	13.78	7.93	7.67	10.42	10.32	0.25
Sept. 1979 to Dec. 1980	11.62	15.20	10.24	9.53	12.26	11.82	— 0.20
				in SDRs (**)			
Dec. 1973 to Dec. 1980	— 2.69	3.25	35.00	32.62	3.08	8.33	—11.02
Dec 1976 to Dec. 1980	— 4.62	37.09	35.32	12.46	5.75	8.53	—13.15
Sept. 1978 to Dec. 1980	9.98	36.26	0.04	5.99	4.79	10.32	— 0.34
Sept. 1979 to Dec. 1980	13.15	26.82	22.98	— 1.19	2.83	11.82	1.33

Source: IMF, *International Financial Statistics* and national sources for France and Germany.

(*) Average interest rates over the reference period. The interest rates are: for U.K. and U.S., the 3 months Treasury Bill rate; for France and Germany the 90 days interbank rate; for Japan, the unconditional call money rate (the new Japanese interest rate recently included in the SDR basket was not available for the periods required). The SDR rate (col. 6) is calculated on the basis of the new 5 currency basket (*Source*: IMF *Survey*, Jan. 26, 1981, No. 2).

(**) Interest rates adjusted for changes in the SDR exchange rate vis-à-vis the national currency over the reference period. The SDR value is calculated on the basis of the new 5 currency basket.

tence of negative differentials in covered interest rates between assets denominated in different currencies. Finally, interest parity may only hold under rather stringent conditions — in particular, perfect capital mobility and asset substitutability — which are not likely to obtain in reality.

Illustrative calculations performed for the period 1974-80 on the basis of the new SDR basket interest rate (Table 2) show that sizeable divergences from zero in covered differentials did indeed take place. Column 7 of Table 2 (lower part) shows the yearly gain or loss of a substitution operation over the various periods, as a percentage of the initial deposits with the SA.[12] The results obtained are obviously very sensitive to exchange rate movements, and hence to the choice of the period of reference. In general, however, large losses would always be shown for the periods starting before 1978, while the effects of the U.S. authorities' changed attitude towards the external value of the dollar and domestic inflation[13] are clearly reflected in the narrowing of the adverse interest differential for the period starting in October 1978 and in the positive differential for the period starting in October 1979.

While of course the fact that losses would have resulted over certain arbitrary periods in the past provides no evidence on future developments, the figures do point to a considerable potential variance of results in an environment in which large movements of funds between the major currencies tend to amplify cyclical movements in interest rate differentials — by producing "sympathetic" exchange rate fluctuations — rather than smooth them out. This conclusion is corroborated by the results of extensive simulations on the dynamic properties of the SA's balance sheet performed by the IMF staff which show a tendency for surpluses or deficits to cumulate rapidly, owing to the effects of interest compounding.[14] The issue then arises of defining an appropriate pro-

[12] These results are obtained on the hypothesis that interest is received and paid out by the SA at the end of the period of reference.

[13] As reflected in the $30 billion support package of November 1, 1978 and the changes in monetary policy management introduced on October 6, 1979.

[14] *Substitution Account - Results of a Simulation Study of the Account's Financial Balance,* April 1980, unpublished.

cedure for covering any losses that may emerge together, of course, with an acceptable key for burden sharing. Leaving aside for the time being the second issue, there are basically two alternative approaches to the problem of ensuring the SA's financial viability.

The first would be to stipulate that interest payments be met at all times without, however, trying to maintain an overall balance between assets and liabilities. This approach is consistent with a scheme in which no encashment is allowed for,[15] and in which the substitution operation is irreversible. In other words, the SDR claims would be perpetuities earning a floating interest rate, the market value of which would not diverge from face value as long as their risk and return characteristics were in line with those of competing reserve instruments, and which would be bought and held for their own merits and not as claims on the SA's assets. In the event of interests received being insufficient to cover interests to be paid on the SDR liabilities, participants would be asked to make up the difference, in pre-established proportions.[16]

The alternative approach, which was eventually adopted, postulated the maintenance of an overall balance between assets and liabilities, regardless of the origin of any losses that might emerge. Although recourse to encashment was included as a rather remote possibility, it was suggested that in principle the value of the SA's assets was to be reconstituted periodically so that the operation of substitution could be reversed, if necessary. It was envisaged that the SA's losses would be covered partly by contributions of participants and partly by recourse to the IMF gold stock: the IMF staff estimated that an amount of gold as high as 15 to 20 per cent of initial deposits would have to be set aside as capital (or "earmarked") for the SA, in order to have a reasonable certainty that the SA's balance would be safeguarded over a sufficiently long period.

[15] The possibility of encashment would obviously require full maintenance of value of the SA's assets so as to allow participants at all times to disengage the reserves committed without incurring a loss.

[16] This proposal was first put forward by Lamberto Dini, then Executive Director of the IMF, in the late spring of 1979. It was subsequently abandoned, as many of the potential participants would not consider the hypothesis of surrendering their reserves "forever." An additional difficulty was considered to be the fact that the only partial provision of maintenance of value could have detrimental effects on the market value of the SDR claims, should adverse exchange rate developments lead to a sharp fall in the value of the SA's assets.

3. The Politics

The Interim Committee formally examined the proposal to establish an SA at its Hamburg meeting in April 1980. The Communiqué issued at the end of the discussions noted that "provisional agreement had been reached on a wide range of features of such an Account" but that "some issues remained to be solved, including arrangements for the maintenance of financial balance in the Account."

Indeed, maintenance of value proved to be the most intractable issue. Once it was evident that some form of backing would be needed to ensure the financial viability of the SA, the problem of burden sharing became paramount, because of its obvious political connotations. At an early stage of the negotiations, the idea had been advanced that part of the IMF gold be used as the *sole* means to cover the losses of the SA.[17] The apparent advantage of such a proposal was that the financial balance of the SA could be ensured without resorting to national contributions, which would require parliamentary approval. Moreover, since Fund quotas would become the key for burden sharing, resort to Fund gold would have the added advantage of placing little burden on oil-surplus countries, whose quota in the Fund is relatively small, and be consistent with the need to offer oil producers a relatively riskless asset. In general, it could be maintained that, since the gold to be used is the property of the Fund, "nobody would pay" the cost of the SA.

This assumption proved, however, to be mistaken. Whatever the legal status of the IMF gold, most countries acted in the negotiations as if "their" gold was at stake. This was particularly true of the non-oil developing countries, who did not see what benefit they could reap from the SA in the first place. Since, in their view, the creation of an SA was a major step in the continuing process of reform of the international monetary system, they were willing to consider it only as part of a comprehensive package including measures in favour of the Third World. The relevant precedent for this was the Jamaica agreement of 1976 which provided for significant use of IMF gold for the exclusive benefit of LDCs. Accordingly, a number of countervailing requests were presented to the Interim Committee on behalf of these countries by the Group of 24 which further complicated the negotiations. Furthermore, even among industrial countries the idea of using the Fund's gold to meet losses from current operations met with major reservations.

[17] When, at a later stage, contributions by participants were envisaged, the combination of the Fund gold with contributions by participants became an issue, with some countries (mainly the U.S.) favouring the depletion of gold reserves before participants were called on to contribute to losses, and others insisting that contributions by participants should be made *pari passu* with any tapping of the Fund gold.

Aside from the issue of financial balance, other considerations also had an adverse influence. A first question was whether an SA would not give the United States the freedom to "print dollars" in unlimited amounts, thus providing *de facto* an international mechanism to shield the dollar from the consequences of inappropriate domestic policies. Another issue raised by developing countries was whether the SA would not reduce the lending potential of Euromarkets, on which so many of them were dependent for balance of payments financing. LDCs also feared that the creation of SDR-denominated claims yielding a higher return than normal SDRs would be detrimental to the latter and perhaps undermine the basis for future SDR allocations.

For each of these and other potential difficulties, counterarguments had been produced, in many cases convincingly, by the IMF staff. The impression remained, however, that on the whole the costs of the SA could well outweigh its potential benefits, unless the United States followed appropriate domestic policies and the dollar remained strong. But if that were the case, most observers were ready to conclude that there would be no need for an SA.

A number of developments affecting the international monetary system also played a decisive role in building up the case against the SA. First of all, changes in the stance of the US exchange rate policy in November 1978 and in monetary management in October 1979 had brought about a significant strengthening of the dollar on foreign exchange markets, thus reducing the incentive for reserve diversification, while the prospect of a recession in the United States and of large current payments deficits

in Germany and Japan pointed to the continuing strength of the dollar. In addition, their growing current external deficit was inducing Germany and Japan — who had supported the SA as a means of avoiding or reducing the need for their currencies to play a reserve role — to increase the supply of assets denominated in their currencies. This fact helped to reduce the imbalance in the composition of official portfolios, and hence lessen the pressure on foreign exchange markets. Altogether, the prospect of relative exchange markets stability and the doubts about the financial viability of the SA combined to prevent the successful conclusion of the negotiations.

4. The Problem Revisited

The lack of agreement on the scheme proposed by the IMF Executive Board was a political event which should be seen in the proper perspective. That failure is to a large extent a product not only of the specific factors mentioned above, but also of the " age of uncertainty," which seems to have begun with the collapse of the Bretton Woods system and which successive oil shocks are prolonging indefinitely. It is evident that, under such conditions, the negotiation of an international agreement (monetary or otherwise) becomes a thankless task, since the parties around the table are hesitant to enter into binding long-term commitments at a time when " keeping options open " appears the only sensible course.

However, the final judgement on the usefulness of a substitution scheme should be based on considerations of a more structural or long-term nature.[18] Specifically, the case for or against such a scheme will eventually depend on whether the seemingly irresistible evolution towards a multicurrency reserve system is judged to be in the interest of the international community.

[18] The Interim Committee Chairman, Filippo Maria Pandolfi, at a press conference following the conclusion of the Hamburg meeting, noted that " the Substitution Account was never conceived as a short-term device of financial engineering, but rather as a step in the long-term evolution of the international monetary system." See IMF *Survey*, No. 9, May 5, 1980, p. 133.

The views on this issue are mixed. The Group of Thirty Report[19] regards that evolution as an indication that " there is a serious reserve asset problem in today's international monetary arrangements." The President of the Bundesbank, Karl Otto Poehl, argues that one positive aspect of the system is that " the dollar is brought under some of the same constraints as other currencies." But he adds that " it does not necessarily follow that the trend towards a multiple currency reserve system should be encouraged in any way by the competent authorities."[20] For Fred Bergsten, formerly of the U.S. Treasury, " it is a matter of mathematics and logic that, given a matrix of options consisting of many currencies, the opportunity and motives for diversification and switching from one currency to another could grow. So too could the potential for instability and volatility of the system."[21] The banking community, on the other hand, is apparently not too worried by the drawbacks of a multicurrency system and has taken a rather cold attitude towards official substitution schemes.[22]

It goes beyond the scope of this paper to analyze the working of a multicurrency reserve system. We would not, however, jump to the conclusion that such a system can operate in a satisfactory way under all circumstances merely because it seemed to work smoothly for a while. Indeed we doubt whether the very particular situation which prevailed during 1979 and the first half of 1980 could be legitimately extrapolated into the future. The fact that over that period a large share of current external deficits was concentrated in countries whose currencies were in strong demand facilitated both the financing of deficits of issuing countries and currency diversification by reserve holders, and hence brought about greater exchange rate stability. But whereas over the medium-term oil-related imbalances in international payments are likely to persist, the distribution of surpluses and deficits can be expected to resume a more traditional pattern. The pronounced weakness of the DM since April 1980 would also point to the importance of the current

[19] Group of Thirty, *op. cit.*, p. 3.

[20] Karl Otto Poehl: " The Multiple Currency Reserve System," *Euromoney*, October 1980, p. 43.

[21] Speech at the Center for International Business, Dallas, Texas, October 28, 1980.

[22] See for example: Morgan Guaranty Trust, *World Financial Markets*, Sept. and Oct. 1979 and Dec. 1980; Padraic Fallon, " Diversification versus Substitution," *Euromoney*, Oct. 1979, p. 19.

account balance for the market assessment of a currency's strength, so that a reserve role apparently cannot go together with persistent current external deficits.

At the same time, the further accumulation of reserves by oil exporting countries will continue to increase the share of foreign exchange transactions related to portfolio allocation; the possibility therefore arises of exchange rate movements partially unrelated to changes in "fundamentals" in reserve currency countries.

In sum, the potential for instability in exchange markets may indeed be heightened by the transition to a multicurrency reserve system. Moreover, the management of such a system would require close economic policy coordination among reserve currency countries under penalty of unleashing destabilizing capital movements. In any event a marked loss of autonomy in monetary management would be the price to be paid by these countries, if a repetition is to be avoided of Triffin-type confidence crises — such as those that plagued the dollar over the past twenty years.

These considerations would indicate that a second look at the SA, although not necessarily in the precise form of the project discussed in Hamburg, may well be needed in a not too distant future. Indeed a number of improvements could be made which might facilitate the adoption of the scheme. J.J. Polak, the chief architect of the SA, recently suggested that "it should prove possible to construct a simpler account, as an integral part of the Fund, under which the risks of profit or loss would be distributed between the United States, on the one hand, and the Fund acting on behalf of the membership as a whole, on the other hand." Although the implementation of such a proposal would require an amendment of the IMF Articles of Agreement, Polak maintains that it would "avoid the complication of committing specific Fund resources to back up such an Account as well as the requirement for depositors to accept part of the risk of the Account." [23]

The issue of SDR-denominated paper by the IMF, the IBRD and other official development agencies as part of their enhanced role in the recycling of oil-generated surpluses may also contribute

[23] J.J. Polak, remarks at the Georgetown University Bankers Forum, Washington D.C., Sept. 29, 1980. Reprinted in IMF *Survey*, Vol. 9, No. 20, October 27, 1980, p. 339.

to the objectives pursued through the SA, without raising many of its difficulties. In this case, however, the burden of maintaining its value would be placed entirely on the debtor countries.

In conclusion, a reformed SA may well turn out to be an effective way of handling some of the causes of instability in present international monetary arrangements. In fact, it is interesting to note that, throughout the SA negotiations, doubt was rarely cast on the ability of the scheme to carry out the task entrusted to it. Rather, the scheme was rejected because it was regarded as too expensive and probably unnecessary. Our feeling is that the first criticism can be taken care of, and that the second may prove unfounded in light of the ongoing evolution of the international monetary system.

Rome

Stefano Micossi - Fabrizio Saccomanni

APPENDIX

The SA balance sheet would show on the asset side the dollars invested with the U.S. Treasury and the interest earned thereupon, net of interest paid on the SDR claims.[1] On the liability side, it would show the SDR claims issued vis-à-vis the dollar deposits. If it is assumed that the interest earned on the dollar assets coincides with the dollar interest rate included in the SDR interest rate basket and that the Account is not re-opened after its inception, the condition for the SA to remain at least in balance over an arbitrary time horizon after its inception can be written:

$$(1) \qquad A_o\,(1+r_{1t})\,\frac{e_o}{e_t} - r_t\,L_o \geq L_o$$

where A and L are respectively the SDR *value* of the Account's assets and liabilities; r is the SDR rate of interest and e the *dollar* price of the SDR. The time subscripts refer for the *exchange rates* to the end of the period and for the *interest rates* to the average over the period from zero to t.

We further set r_i and e_i as respectively the interest rates and the dollar prices of the currencies in the basket (in the order, for $i = 1, \ldots, 5$, US \$, DM, £, yen, FF; and $e_1 = 1$); k_i as the quantities of each currency in the basket; and $w_{it} = k_i\,e_{it}/e_t$ as their weight (*value share*). Recalling that $A_o = L_o$ and $e_t = \sum_i k_i\,e_{it}$ equation (1) can be written:

$$(2) \qquad r_{1t} - \sum_{i\neq 1} w'_{it}\left(r_{it} + \frac{e_{it} - e_{io}}{e_{it}}\right) \geq 0$$

where

$$(3) \qquad w'_{it} = w_{it} \Big/ \left(1 - w_{1t} - \frac{e_t - e_o}{e_t}\right).$$

As $w_{1t} = 1 - \sum_{i\neq 1} w_{it}$, then $\sum_{i\neq 1} w_{it}/(1 - w_{1t}) = 1$ and $\sum_{i\neq 1} w'_{it} \cong 1$ for relatively small changes in e_t (the dollar price of the SDR).

[1] In the hypothesis that interest on the SDR liabilities would be paid by drawing on the Account's assets, i.e. basically in U.S. dollars and possibly in SDRs or SDR claims, in case the SA had acquired such instruments from its operations.

The term $(e_t - e_o)/e_t$ in equation (3) represents the effect on the dollar interest rate r_{1t} of changes in the dollar/SDR exchange rate.

The term under summation in equation (2) is thus a weighted average of interest rates on the SDR basket currencies other than the dollar adjusted for exchange rate changes of each currency vis-à-vis the SDR, with weights proportional to the corresponding weights in the basket. Equation (2) therefore shows that, for the SA to remain at least in balance, the (ex-post) covered interest rate differential between dollar assets and alternative investments in the other SDR basket currencies must be non-negative.

S.M. - F.S.