

Reforming the International Monetary System in the 1970s and 2000s: Would a Special Drawing Right Substitution Account Have Worked?

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Abstract

Advocates of a more pluralistic international monetary and financial system seek to reduce reliance on a single national currency and to bring international liquidity under collective control. One recently revived proposal would transform US dollar official reserves into claims denominated in the IMF's key currency basket, Special Drawing Rights (SDRs). Drawing on new archival evidence and simulations, this article highlights issues that derailed earlier agreement on such an account and shortcomings of design and ambition revealed by

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subsequent developments. One design issue was account losses if US dollar yields failed to exceed SDR yields enough to offset dollar depreciation. In fact, uncovered interest parity did not hold and could well have left the account persistently insolvent. Another shortcoming was ambition: the proposed account proved simply too small to achieve the desired lowering of the dollar's share of foreign exchange reserves. Any new proposal needs to address these shortcomings.

I. Introduction

The financial crisis of 2008 demonstrated the US dollar's dominance in international finance and prompted calls to reform the international monetary system (IMS). European banks scrambled to retain dollar funding for their huge global dollar assets: a dollar shortage gripped funding markets (McGuire and von Peter 2009). To ease this shortage, the Federal Reserve extended dollar credit to major central banks, eventually without limit, and to selected emerging market central banks.

This demonstration of the dollar's pre-eminence raised again the long-standing issue of the advisability of the IMS's reliance on a single national currency. James (2009), Eichengreen (2011) and McKinnon (2012) have argued that US leadership can stabilize a dollar-centred system. Others view 'dollar hegemony' as incompatible with pluralism, which would instead entail collective (not national) control of global liquidity, fair sharing of any rents, no national privileges, and protection against the hegemon's errors or self-dealing.

At the same time, the financial crisis brought back into the spotlight a long-standing alternative global reserve asset, the Special Drawing Right (SDR). To counter a contraction in private financing, the US Treasury supported the proposal of Edwin (Ted) Truman (2009a, 2009b) for a one-time increase in the allocation of SDRs to International Monetary Fund (IMF) members in August 2009. The IMF also signed bilateral agreements to issue SDR-denominated notes, which Ocampo (2010a) interpreted as a step towards a larger transformation of dollars held in official reserves. However, the SDR 161 billion increase left SDRs still with only a single-digit percentage of global foreign exchange reserves (Ocampo 2010b, p. 331; Obstfeld 2011).

The widely read March 2009 statement of Xiaochuan Zhou, governor of the People's Bank of China, invoked the Triffin dilemma in arguing for 'an international reserve currency that is disconnected from individual nations and is able to remain stable in the long run, thus removing the inherent deficiencies caused by using credit-based national currencies' (Zhou 2009). This was the generalized dilemma as stated by Padoa-Schioppa (2012): national control of global liquidity does not in general produce an outcome that is optimal for the world. Zhou also advocated centralization of reserves in the IMF through 'an open-ended SDR-denominated

fund based on the market practice, allowing subscription and redemption in the existing reserve currencies.' The IMF showed interest (IMF 2011).

With central bank balance sheets swollen from holdings of domestic or foreign bonds, those who seek pluralism and diversification from the dollar can hardly argue merely for further SDR issues. Instead, diversification of official foreign exchange reserves would require their transformation into holdings denominated in other currencies. Accomplishing this in an off-market transaction, so as not to depress the dollar's exchange rate, was the core idea of the substitution account.

Policy makers active in the 1970s, when the dollar was weak and global inflation high, have recently revisited this device for transforming liquid assets from the dollar to other currencies: Bergsten (2007a, 2007b), Wijnholds (2009), Boorman and Icard (2012), Camdessus (2012) and Padoa-Schioppa (2012). On the US side, participants in the late 1970s discussion about a substitution account have reconsidered the issues (Kenen 1983, 1994, 2005, 2010a, 2010b, 2010c; Bergsten 2007a, 2007b; Cooper 2009).¹ A younger generation (e.g. Angeloni et al. 2011) has also considered a substitution account in some scenarios, but Farhi et al. (2011, p. 45) found 'no satisfactory answer' to the question of who should bear the exchange risk.

This article seeks to inform the renewed interest in the substitution account by analysing how it would have performed had it been set up along the lines of the international dialogue that ended in 1980. Kenen (2010a, 2010b) concluded from such an exercise that the account would have had to have been 'topped up' by the United States by about US\$475 billion to break even from 1980 to 2008. Since he took this cost to be small relative to the US economy, he advocated such a scheme today.

We contend that he did not do justice to the issues that divided policy makers in 1980. These include the related questions of the interest rate to be paid by the US Treasury on dollars placed into the account and the means for sharing possible shortfalls arising if uncovered interest parity failed to hold. Records from the time period, now located in archives, show that the IMF projected that the account could well run substantial deficits over time for which participants would somehow have to compensate.

In what follows, we describe in Section II the evolving substitution account as proposed from 1973 to 1980. A longer perspective makes clear why it was ultimately rejected. Next, Section III profiles the key outstanding issues, again relying not only on published accounts, like Sobol (1979), Wallich (1980), Micossi and Saccomanni (1981), Gowa (1984) and Boughton (2001), but also on archival sources from the IMF, the BIS and the UK Treasury. Section IV reports simulations of the substitution account's performance depending on the resolution of major outstanding issues. Section V draws conclusions.

¹Not all participants in the substitution account discussions of the late 1970s are in favour. Truman (2012, p. 29) describes it as a 'solution in search of a problem'.

II. What Was the Substitution Account?

The concept of exchanging dollar reserve assets for a reserve unit issued by the IMF or another multilateral agency had a long period of gestation towards what was ultimately a stillbirth. From the early 1960s, the sustainability of the Bretton Woods system of using national currencies as reserve assets concerned many observers. Most prominently, the Triffin dilemma predicted a loss of confidence in the US dollar's gold link as the value of official liquid claims on the United States increased. More generally, Triffin argued for the need to choose the rate of global reserve growth collectively rather than allow it to be a by-product of national decisions.

Very early on, many schemes shared the idea of a neutral unit of account issued by a multilateral fund against the deposit of officially held dollars.² At first, US unwillingness to consider any scheme that would replace the dollar blocked progress, but starting in 1965, as the US balance of payments problems persisted, President Lyndon B. Johnson's administration embraced the reform discussions then underway in the Group of 10.

In the absence of US objections, the talks gained traction and culminated in a resolution that met half of the goal: the creation of a new reserve unit that IMF members would create, but not as a way to transform existing foreign exchange reserves. Rather than transforming an existing asset *stock*, the reform was intended to assert collective control over the *flow* of future reserve creation.

In setting up the SDR, ambiguity triumphed over clarity of purpose, as officials compromised to meet expectations that had been built up for an announcement at the Rio IMF Annual Meeting in September 1967. Careful terminology avoided the label of reserve asset and the SDR was designed to add to rather than to replace existing reserves. US and UK officials referred to it publicly as front-line reserves while French officials assigned it a lesser role as a new limited form of credit (with 'reconstitution' requirements analogous to repayment after use). Ambiguous in concept and requiring a super-majority of IMF votes to make further allocations, SDR issuance remained very limited. As a result, the SDR neither contributed significantly to international official reserves nor replaced foreign exchange as the primary reserve asset. Nor did it preserve the Bretton Woods system. In 1971, the United States ceased to convert dollars into gold, and the dollar began to float against major currencies by early 1973.

The evident failure of the SDR to save the Bretton Woods system alongside wider and persistent global imbalances between the United States, on the one hand, and Japan and West Germany, on the other, led to renewed proposals for reform. The prospect of a destabilizing rush of official reserves out of the US dollar, against the backdrop of resistance by the German and Japanese authorities to wider

²One example was the British Mutual Currency Account scheme of 1962. See Schenk (2010, pp. 245–52) and Sobol (1979, pp. 41–2).

international use of their currencies, led the Committee of Twenty (representing the executive directors of the IMF) to consider a substitution account in 1973–1974.

The plan would allow central banks to replace a portion of their foreign exchange reserves with SDRs issued by a special account overseen by the IMF. By February 1973, the US Treasury was prepared to envisage a one-time conversion of some existing US dollar reserves into SDRs, replacing liabilities to sundry national creditors with a liability to an IMF-based substitution account. The US Treasury, however, remained wary of either undertaking a new financial obligation by guaranteeing the SDR value of the account or of paying better yields to the account than it was offering the public. If the terms were too generous, particularly considering the huge scale of possible liabilities to the account, the US Treasury (and Congress) would be unable to agree to the proposal. It thus kept an open mind on the need to transform US dollar reserves while pressing for a symmetrical global adjustment mechanism to discipline countries in persistent surplus. Others, particularly in Europe, hoped to devise a system that forced the US economy to reduce its deficits and redeem its liabilities in some form other than additional dollar liabilities. In February 1973, the IMF's US executive director, William B. Dale, dismissed the substitution account as an interesting academic exercise, noting that 'while the broad analytical issues were of great interest, the more fundamental questions lay in the obligations of debtors and creditors' and 'unless the proponents of the various schemes had some practical way of dealing with the problem of financial obligation on the part of the reserve centres [that is the United States], little progress could be made.'³ Certainly without American support or at least acquiescence, no arrangement to transform US dollar reserves could go forward.

Nevertheless, the Committee of Twenty's final report in June 1974 included an illustrative proposal for a substitution account, leaving open the contested questions of interest rates payable on assets and liabilities, the disposition of any profit or loss and the terms of liquidation. In the end, these were the very obstacles that scuppered the 1980 substitution account. Lurking behind these issues was the European desire to require the US Treasury to amortize the dollar assets in the fund over time by exchanging them for SDRs. The settlement of dollar obligations in a medium not created by the United States could make the IMS more symmetric and exert collective control over international liquidity.⁴ By the time the Committee of Twenty's report was completed, the urgency of responding to the oil crisis, inflation, floating exchange rates, development challenges and the deficits of less-developed countries pushed the complex and longer-term topic of a substitution account down

³IMF Archives (IMFA) Executive Board Minute (EBM) 73/19, 23 February 1973. Sobol (1979) states that the proposal failed because of the below-market rate of return then paid on the SDR and a lack of consensus on adjustment obligations as between debtor and creditor countries.

⁴See Final Report and Outline of Reform of the Committee of Twenty, 14 June 1974 (IMF 1986).

the IMF agenda. There was little political support for it and it was ignored in amendments to the Articles of Agreement agreed upon in 1976.

A depreciating dollar and negotiations for fresh allocations of SDRs revived the discussion of a substitution account at the end of 1977 (Boughton 2001, pp. 937–8; Solomon 1982, p. 285). In this context, the controversy over the potential expansionary effect of fresh allocations of SDRs on international liquidity prompted IMF Managing Director Johan Witteveen to propose in February 1978 that developed countries (including the United States) might deposit an amount of dollars equivalent to the amount of SDRs they were allocated into a ‘substitution account’ in order to neutralize the impact on international liquidity and to increase the proportion of global reserves denominated in SDR. The IMF would invest the proceeds in long-term US Treasury securities.⁵ The United States was initially non-committal, although the British and Belgians supported the scheme as a way to increase the use of the SDR.⁶ After months of deliberation, the United States rejected the proposal on three grounds: it would require the US Treasury to borrow the dollars to be deposited in the account; it would be too small to make much of a difference to the distribution of global reserves and it could further weaken confidence in the dollar. The European reaction was also ‘remarkably negative’.⁷ The Germans, French and Italians rejected Witteveen’s plan early on as too lenient on the Americans in terms of both the low interest they would pay on the US Treasury securities and the lack of arrangements to amortize the funds in the account (that is for the United States to pay off its liabilities).⁸ In the end, a further modest allocation of SDRs for the next three years was agreed upon and Witteveen’s initiative was deferred for future study.

These early iterations of a substitution account as a vehicle to increase the role of the SDR in the IMS clearly exposed the key obstacles that remained unresolved in 1980:

- The importance of US enthusiasm to the success of any scheme, but, at the same time, the equivocal position of the US Treasury and administration on promoting a rival to the US dollar as a reserve currency.
- The appropriate return on SDR assets in the account.
- The need for the United States to take on a major burden in any scheme.
- The desire of the Europeans that the United States amortize its obligations, imparting symmetry to the system.

⁵Telegram, 24 February 1978 from W. Ryrie at IMF Washington. The National Archives (TNA), London, T382/102; telegram from UK IMF Director, W. Ryrie, to Treasury. TNA T381/130.

⁶Telegram from UK Treasury to UK Director IMF (Ryrie), 5 July 1978. TNA T381/130.

⁷Telegram from Ryrie at IMF Washington, 24 February 1978, reporting a lunch meeting of European IMF directors with Witteveen. TNA T382/182.

⁸Telegram from Ryrie to London, 14 July 1978. TNA T381/130. Paper for Ken Couzens, end-January 1979. Bank of England paper, 23 March 1978. TNA T382/102.

At the beginning of November 1978, the United States reversed its benign neglect of the dollar exchange rate and took a tough set of measures that halted the dollar's decline. This change in US policy opened another opportunity to revisit the role of the dollar.

By December, the new IMF managing director, Jacques de Larosière, was taking soundings on a fresh and more ambitious scheme for the next Interim Committee of the IMF in March 1979.⁹ The goal was still enhancing the SDR and reducing dependence on the US dollar as a reserve currency, but the mechanism became more elaborate to overcome the objections to Witteveen's scheme and to target those countries that wanted to diversify their existing stock of reserve holdings. As reported by William Ryrie, the UK's IMF executive director, 'what was needed was a voluntary arrangement which would give countries which felt they had dollars in excess the opportunity to deposit them in exchange for some acceptable instrument and he [de Larosière] was thinking in terms of an SDR-denominated asset issued by the Fund.'¹⁰ The IMF would then invest the account's dollars in long-term US securities. US Treasury Under-Secretary Anthony Solomon was guarded when de Larosière approached him informally, but was willing to consider the plan while de Larosière quietly sounded out a select group of other countries. In order to make a more substantial contribution to reforming the reserves system, the total amount of the account would perhaps be about US\$20 billion, much greater than Witteveen's earlier proposal for about half of that amount.¹¹

Despite these preparations, the IMF executive directors in February 1979 received the proposal with caution rather than enthusiasm, although the US representative, Sam Cross, pledged to keep an 'open mind'.¹² Cross's agnostic view was partly a ruse to avoid raising expectations. Solomon privately told his British and German counterparts that his main concern was the effect of prolonged and public discussion of such proposals on the dollar and he urged that a small, discrete group should take the discussions forward.¹³ Solomon hoped in the long term to promote the SDR as a replacement for private rather than official holdings of dollars, but he conceded that a substitution account aimed at central banks would take a step towards this goal by creating new SDR-denominated assets. German Finance Minister Manfred Lahnstein remained among the most prominent sceptics: although he 'feared too

⁹The Interim Committee comprised ministers of member states and had greater political weight and decision-making powers than the executive board comprised of officials.

¹⁰Telegram from Ryrie in Washington reporting a discussion with de Larosière, 13 December 1978. TNA T381/130.

¹¹DJS Hancock memorandum, 26 February 1979, TNA T381/130.

¹²Telegram from Ryrie (Washington) to UK Treasury, 14 February 1979. TNA T385/248.

¹³Secret and Personal note of discussion of Kenneth Couzens with Solomon and Lahnstein, 15 February 1979. TNA T385/248.

much allure for journalists in the substitution account', and also 'feared nothing would come of it', he agreed to continue deliberations in a small group. The lukewarm response of the Interim Committee in March 1979 kicked the scheme into the long grass of further investigation by the executive board. The non-committal public statement of the Interim Committee was drafted by the British by the end of February, weeks before the Committee met.¹⁴ Meanwhile, ministers and deputies of the Group of Five (G5) (the United States, the United Kingdom, Japan, West Germany and France) agreed to meet secretly to discuss the technicalities out of public earshot.

This archive-based account contradicts both Boughton's (2001, p. 938) claim that 'the most pronounced enthusiasm came from European countries itching to diversify their reserves' and Robert Solomon's (1982, p. 286) contention that Antony Solomon's enthusiasm added momentum. Some further insight is available from the British Treasury chair's account of the G5 working group.¹⁵ In June 1979, Solomon was reported to be warming to the proposal and the UK negotiator noted that 'the US seemed prepared to go along with the creation of a substitution account' so long as the United States did not bear more than half of the exchange risk, eventual liquidation was conditional on US agreement and the SDR assets did not have a fixed maturity (that is the scheme was open-ended). Furthermore, the plan had to be presented as an enhancement of the SDR rather than as a support for the US dollar. The Germans disagreed, insisting that the purpose was to avoid a flight from the dollar to, for example, the Deutsche mark and they resisted bearing any exchange risk. The timing of the necessary legislation was also an obstacle given the need to approve the new European Monetary System. They also wanted the United States to agree to redeem some of the dollars in the account over time. The French agreed with the Germans on sharing the exchange risk and amortization and predicted resistance in the French parliament. They also argued that the success of the account would depend on a reduction of US balance of payments deficits since 'it is no good taking dollars out of the system without assurance that they won't be created all over again'. The Americans clearly resisted this. The Japanese position was 'quiet'.

The British Labour government (1974–79) sought to promote international monetary reform, but Margaret Thatcher's Conservative government, elected in May 1979, had other priorities. In June 1979, Nigel Lawson (then financial secretary to the Treasury) scathingly commented, 'we should not waste valuable manpower on matters such as the IMF substitution account. Over the years I can recall no aspect

¹⁴Kenneth Couzens was invited by J. Polak to draft the conclusions of the Interim Committee and this was sent to the UK Chancellor of the Exchequer (Chair of the Interim Committee) on 5 March 1979. TNA T385/248.

¹⁵The following paragraph draws on a Brief for Incoming Chancellor of the Exchequer, Geoffrey Howe, by M. Hedley-Smith, 7 June 1979. TNA T382/102.

of the financial scene where so much high-powered effort has been expended to so little return'.¹⁶ The British were not alone in their scepticism.

The Americans continued to resist bearing more than half of the exchange risk or committing to amortizing the assets. The UK representative described the 3 August executive board meeting as 'fairly fractious and did not conclude until almost midnight'.¹⁷ He reported 'widespread feeling that a substitution account would not aid in the international adjustment process' and the recommendations from the Board to the Interim Committee remained inconclusive. The British delegation was frustrated that ministers would not receive a more definitive steer, but there was no consensus on the complex set of alternative variations of the technical aspects, particularly interest payments, burden of exchange risk and the terms of liquidation. The IMF ministers' meeting in Belgrade in October 1979 coincided with a crisis in market confidence in the US dollar. This was not the time for a bold policy departure and differences over the technicalities remained unresolved. By April 1980, the proposal for a substitution account had been abandoned for a third time.

With respect to the 1980 iteration of the substitution account, Kenen (2010a) states that 'the proposal . . . was not adopted for two reasons: the strengthening of the dollar in foreign-exchange markets at the start of the 1980s and, more importantly, the refusal of the United States to take sole responsibility for maintaining the dollar value of the SDR-denominated claims on the proposed account' (see also Widman 1982, pp. 157–8; Wilkie 2012, pp. 97–9). While the impetus for reform did recede with the dollar's recovery and the burden-sharing of risk was an important issue, this synopsis misstates the technical, political and institutional obstacles to the scheme. It is clear that there was no expectation that the United States would take all the exchange rate risk, although agreement over the burden-sharing remained elusive. The Europeans sought to constrain the United States to reduce its official liabilities as a price of transforming and solidifying them and, in the face of resistance, stiffened their position on yields and exchange-risk sharing. Moreover, the plan would require national legislation in many cases, which would be politically contentious and slow. Ultimately, given these uncertainties and plans for a monetary union in Europe (the European Monetary System with its European Currency Unit was launched in March 1979), there was no political will to embark on an elaborate and possibly expensive scheme to retire a small proportion of dollar reserves.

So far, we have characterized the evolving proposal for a substitution account in political terms as a case of failed international financial diplomacy. In economic terms, the long-run solvency of the account is one of the central theorems of international finance. The open economy version of Irving Fisher's hypothesis holds

¹⁶Nigel Lawson to Geoffrey Howe (Chancellor of the Exchequer), 13 June 1979. Howe minuted, "I . . . have reached similar conclusions." TNA T382/102.

¹⁷Telegram from Washington to UK Treasury, 6 August 1979. TNA 382/102.

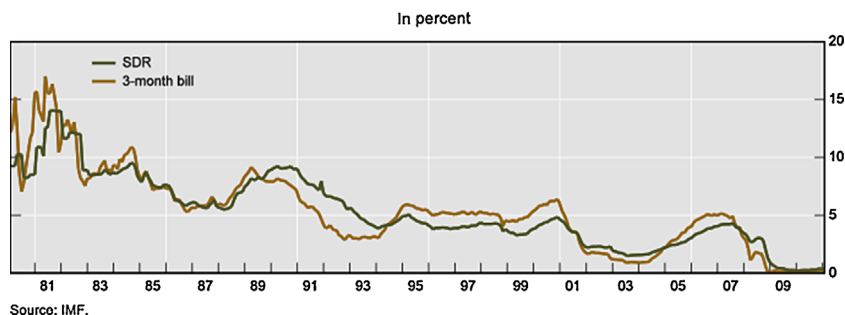


Figure 1: SDR and US Treasury bill yields, 1980–2010.

that over time, currency movements offset interest differentials so that higher yielding currencies depreciate. While this hypothesis boasts a fine pedigree, the data over the years have treated it very badly. In fact, our simulations below show that US Treasury bill yields over the last 30 years were not high enough to offset the decline of the US dollar against the SDR. Since the SDR interest rate is based on the component treasury bill rates, the substitution account in which the United States paid treasury bill rates harks back to tests of uncovered interest parity, using not short-term bank rates, but rather government bill yields (Aliber 1973).

In retrospect, this test of uncovered interest parity fails. On average, Figure 1 shows that the SDR yielded 5.17% in the period from mid-1980 to the end of 2010, while the US dollar yielded slightly more at 5.37%. As we shall see, the trend depreciation of the dollar exceeded the yield cushion.

III. What Were the Major Unresolved Issues?¹⁸

Any revival of the substitution account would inevitably have to deal with the unresolved issues of the 1980 negotiations. These include the interest rates on its assets and liabilities and the means to assure its solvency in the event of dollar weakness against the other currencies included in the SDR basket.

A. *The Interest Rates on Account Assets and Liabilities*

The substitution account would invest its dollars in non-marketable US Treasury securities, but their maturity and yields remained unresolved. Interest payable could be related to a range of US marketable securities but the British, Dutch and others also sought to ensure that the United States paid a premium to reflect the

¹⁸The final proposal is in the Executive Board report to the Interim Committee, 15 April 1980. IMFA ICMS/Doc/80/3.

non-marketability of these assets (and to promote the account's solvency).¹⁹ The interest rate and exchange rate assumptions that the Fund staff built into its simulations required an additional capital commitment amounting to 35% of the value of the account to prevent deficits from appearing. The IMF staff had a very tough assignment. From 1964–79 the US Treasury bill rate had remained below the weighted average of the SDR components even as the dollar depreciated and would have needed to be, on average, 3% higher to have made up for the dollar depreciation. The Fund staff attributed this to the special circumstance of initially high confidence in the stability of the US dollar and one-off 'lags in the adjustment of financial markets'. For their simulations, IMF staff allowed the US Treasury bill rate premium over the SDR rate to fall a more modest 0.5%, 1% or at most 1.5% short of compensating for a US dollar depreciation of 1% per annum against the other SDR currencies over the next 30 years. They also factored in some cyclical and random disturbances.²⁰ These simulations clearly highlighted the importance of interest rates payable on assets and liabilities of the account to the costs of sustaining it. Higher interest rates payable by the US Treasury would reduce the commitment of extra capital by members or of IMF resources such as gold. (The interest payable on SDR-denominated assets issued by the account was less discussed; see Box 1 in McCauley and Schenk 2014).

B. How to Meet Any Shortfall of Dollar Returns below SDR Returns

Technical differences in the proposals to maintain the account's solvency arose from domestic political constraints on participants and from differences in the desired international adjustment process. The IMF staff simulations highlighted how, if the US dollar were to depreciate against the SDR beyond the cushion afforded by higher US interest rates, the financial balance of the account would quickly deteriorate. The viability of the account therefore depended on the United States following economic policies conducive to a strong dollar. Thus, in January 1980, Robert J. Whitelaw (Australia) noted, 'Ultimately, the substitution account could be effectively guaranteed only if the US Government followed economic policies that tended to maintain the value of the dollar'.²¹ Europeans worried that, with a substantial share of its dollar liabilities immobilized in the account, the United States might actually feel less pressure to adjust its balance of payments.

¹⁹Executive Board Minutes, 7 April 1980. IMFA EBM80/62.

²⁰Memo for Executive Board, 'Substitution Account—results of a simulations study of the Account's financial balance', 2 April 1980. IMFA SM/80/83.

²¹This view was echoed by Lamberto Dini (Italy) representing also Greece, Malta and Portugal; and Francisco Garces (Chile) representing a range of South American members. IMFA Executive Board Seminar 80/2, 7 January 1980.

Could the US Treasury be induced to promise to maintain the dollar's SDR value to sustain solvency of the account? In Cooper's (2009, p. 4) phrase, this 'would be a show-stopper for the United States, since no Congress would provide an unconditional guarantee of value for assets'.²² If the US Treasury had to bear all the risk, it might as well, as suggested by Governor Wallich of the Federal Reserve Board, issue SDR-denominated liabilities itself rather than going through the complexities of a substitution account (Solomon 1982, p. 289).²³ If the United States was unwilling, would the claimants on the substitution account be prepared to bear the risk in order to stabilize the IMS? If so, unless the account solved a prisoners' dilemma among dollar holders, they might as well continue to hold the dollars themselves and save the bother of the account. Somehow the risk had to be shared and the United States took a firm position that other participants would have to shoulder at least half of the burden of exchange risk.²⁴

One politically expedient way would be to use the IMF's resources, which in effect would implicitly share any losses among the participants. Would Europeans and less developed countries agree that IMF gold should be used to maintain the dollar's SDR value? To some Europeans, gold backing would allow the United States a free hand to adopt policies that would weaken the dollar. For less developed countries, using the IMF's gold to prop up an account that would benefit mainly rich participating countries (that is those with large dollar reserves) would contradict the agreement reached in 1976 to use the IMF's gold to create a trust fund for the poorest members. For these reasons, many of the parties involved were convinced that, to ensure equity and discipline on US policy, the United States had to bear part of the burden of any losses in the account.

B.1. Sharing Rules

The distribution of any burden among depositors, the United States and the IMF was highly contentious. As noted, the IMF staff simulation of the account's performance over 30 years allowed the dollar's downward trend to continue and examined the consequences of the interest rate differentials in favour of the dollar not affording a sufficient offset.²⁵ Most discussion focused on the flow problem and

²²Although this is what the United Kingdom did to try to 'retire' sterling reserves in the 1960s (Schenk 2010).

²³In the event, after November 1978 the United States sold 'Carter bonds' denominated in Deutsche mark and Swiss franc (but not sterling) in an (ultimately profitable) effort to prop up the US dollar.

²⁴Brief for Chancellor of the Exchequer, Sir Geoffrey Howe, by M. Hedley-Miller (she chaired the G5 meeting in London), 7 June 1979. TNA T382/102.

²⁵Memo for Executive Board, 'Substitution Account: results of a simulations study of the Account's financial balance', 2 April 1980. IMFA SM/80/83.

members sought a solution whereby the United States would bear at least half of the shortfall of interest income from the account's dollar assets in relation to the required interest payment on SDR liabilities. The rest of the burden could be borne by depositors themselves or by IMF resources.²⁶ However, Europeans worried that, if the United States bore no share of potential losses, US policy making could face perverse incentives (that is moral hazard). At the time of the discussions, the US dollar was weakening, which suggested that there might be substantial losses to be met.

One set of solutions required all participants (including the United States) to commit to contributing a maximum amount of 'callable capital', although the distribution of burden between the United States and others was never agreed upon. One approach would first exhaust gold profits, then have a vote on whether to liquidate the account immediately; only if the decision were against liquidation would further capital be called (see McCauley and Schenk 2014 on liquidation). The burden on participants during the account's lifetime clearly depended on the commitment of the IMF's gold to ensure the account's solvency.

B.2. Profits on Gold Sales

The amount of gold needed to support the account depended on the price of gold and the dollar exchange rate, as well as interest rate differentials. As the plan was being discussed, the rise in the dollar price of gold had outpaced the decline in the US dollar's SDR value, so that only a proportion of the account's value in gold would be necessary to insure against any shortfall. Early simulations by IMF staff at the end of 1979 suggested that one-third of the Fund's remaining gold supply (about 32 million ounces) would be required for an account of SDR 50 billion.²⁷ The value of this gold would amount to about 20% of a substitution account of such size. From 1976 the IMF had agreed to sell about one-third of its gold (then 50 million ounces) to reduce the role of gold in the IMS as newly agreed to under Article V. To this end, half was sold at market prices and the profits were vested in a trust fund for developing economies and the other half was sold back to members at a low, historic price. With this precedent, any further sale of IMF gold was highly contentious, and also required an 85% majority vote. By April 1980, the IMF staff estimated that only 20–25 million ounces of gold would need to be committed to an account of SDR 50 billion.²⁸ This new estimate brought the commitment of gold into line with the volume of gold that had recently been sold to the benefit of the developing countries.

²⁶Minute of meeting at UK Treasury with German, French, Japanese Treasury representatives, 30 November 1979. TNA T382/102.

²⁷Discussed at Executive Board Seminar 80/2, 7 January 1980. IMFA SM/79/294.

²⁸Minutes of the Interim Committee of the Board of Governors on the International Monetary System, 25 April 1980. IMFA ICMS/Meeting 14 (1980). Gowa (1984) cites this range as well.

Many members strongly resisted using the IMF's gold resources for the substitution account, since the benefits would not be distributed equitably. Joaquín Muns (Spain) and Lamberto Dini (Italy) stressed that this was a potentially illegal use of the Fund's gold.²⁹ As influential Brazilian Director Alexandre Kafka put it, 'the Fund's gold was in the last analysis owned by individual countries but would be used only to help the participants in the substitution account', mainly richer nations.³⁰ Muns and Jacques de Groote (Belgium) also expressed concern that an account with 'gold backing' might resurrect the role of gold in the IMS, which had just been abandoned. Conversely, Cross (United States) and Gerhard Laske (West Germany) favoured transferring gold to the account, or even immediately selling it to provide liquid and interest-earning assets and to lock in the high gold price.³¹ Cross stressed that all countries would benefit from a stronger IMS so the equitable treatment constraint did not arise, but C. D. Deshmukh (India) and Jahangir Amuzegar (Iran) expressed scepticism. At the Executive Board seminar on the subject in early January 1980, those executive directors rejecting the use of IMF gold or expressing severe reservations accounted for almost 30% of the votes in the IMF, which did not bode well for reaching 85% approval. Without the IMF's gold as backstop, participants would find it difficult to agree on burden-sharing among themselves that could be sold to their national parliaments.

IV. Simulations of the Substitution Account Performance

Our baseline scenario finds that the substitution account would have faced recurrent difficulty.³² We then find that the *flow* issue of a higher interest rate payable by the US Treasury would have kept the account solvent while the *stock* issue of 25 million ounces of gold would not have.

We assume reinvestment of interest earnings, so that both assets and liabilities rise with total returns, including both cumulative interest and currency valuation changes. Exchange-rate revaluations are limited to the asset side since the simulations are reported in SDR terms.

²⁹Statement by Mr Muns on the use of part of the Fund's gold in support of the Substitution Account, IMFA EBM 80/38, 7 March 1980.

³⁰IMFA Executive Board Seminar 80/1, 7 January 1980. Kafka represented Brazil and eight other South and Central American members with 3.19% of IMF votes.

³¹IMFA Executive Board Seminar 80/2, 7 January 1980.

³²McCauley and Schenk (2014) consider whether a different starting time—which was never explicitly discussed—would have helped the account's solvency; they find that 1980 would have been among the best times to start.

Our baseline simulation assumes that the account amounted to the proposed SDR 50 billion, began at the dollar's trough in mid-1980 and benefited from the profit on 25 million ounces of IMF gold. With hindsight, even this favourable combination was a recipe for trouble. Our simulation differs from that of Kenen by sticking more closely to the original proposal whereby IMF gold rather than annual US 'topping up' would keep the account in balance.

Liabilities in SDR would have grown steadily but assets would not have, leaving an unsteady balance between them (Figure 2; see also Table 1 in McCauley and Schenk 2014). The SDR 50 billion liability would have reached a SDR 262 billion liability by 2010. Compounded at Treasury bill yields, dollar assets equivalent to SDR 227 billion would have fallen short of liabilities by SDR 35 billion or 14%. This turned out better than the IMF's 1980 projections, which suggested a 20% shortfall after 30 years with interest accrued at the Treasury bill rate. Importantly for the prospects of a sustainable account, deficits recurred. In particular, the account would have needed the support of gold as early as the Plaza Accord era in 1987, throughout the 1990s and again for the years after the dollar's peak in early 2002.

Gold profits would only have made a difference for a while. Profits on 25 million ounces of gold of as much as SDR 20 billion would have filled the gap between assets and liabilities in the late 1980s and late 1990s. However, they would have left a gap in most of the 1990s and since 2002. Thus, liquidation discussions in the 1990s could have required calling up contributions from participants. Remarkably, even near its peak price in 2011, gold profits in 2010 would not have restored balance.

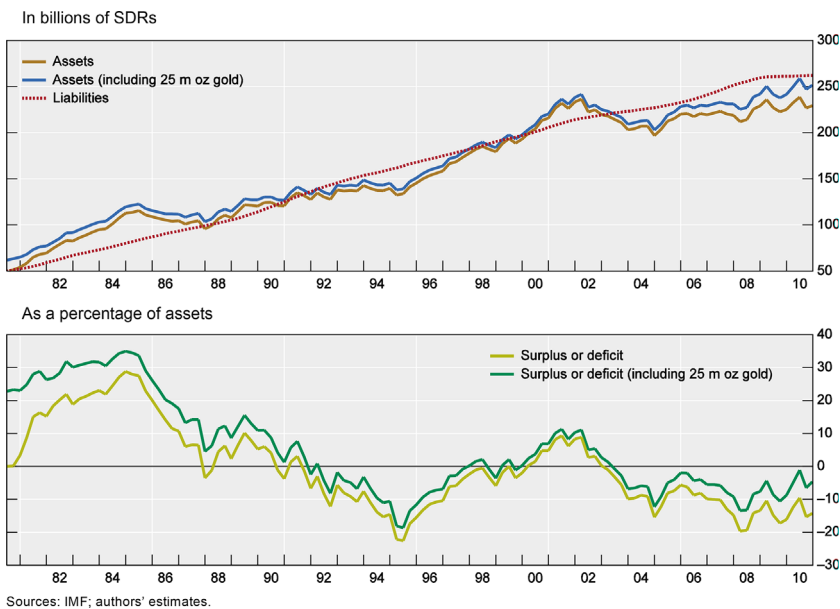
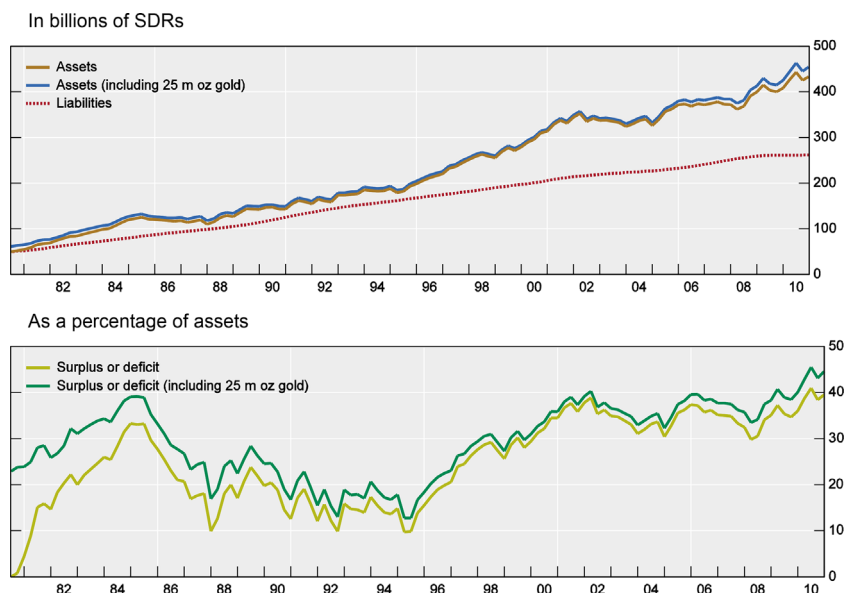


Figure 2: Substitution account's solvency: baseline scenario.

While the amount of gold discussed would not have maintained solvency, higher bond yields payable by the US Treasury on the account's US dollar assets would have. In principle, compounding using a bond yield adds a term premium, which proved generous in a period of declining trend inflation. Figure 3 shows that, receiving interest at the 20-year bond rate, as suggested by some protagonists at the time, the account would have racked up a considerable surplus. A fortiori, the investment in fixed-rate Treasury bonds in 1980 or 1981, then carrying double-digit yields, as proposed by US Executive Director Cross, would have done wonders.

This finding helps put in new perspective the shift by reserve managers towards longer-maturity US bonds since 1980 (McCauley and Rigaudy 2011). Without acting collectively through a substitution account, reserve managers have over the period 1980–2010 shifted from investing dollars in short-term instruments to medium- and even long-term bonds. By receiving medium- or long-term yields on their US dollar holdings, they have been better able to offset the effect of the decline of the US dollar's exchange rate on their reserves' total returns.³³



Sources: IMF; authors' estimates.

Figure 3: Substitution account's solvency: start 1980; pay Treasury bond yield.

³³ Compare to Jeanne (2012, p. 1983), who assumes reserves are invested at Treasury bill rates, which contributes to his finding that Brazil, China, India and Russia all suffered losses on their reserves when measured with a domestic consumption numeraire.

V. Conclusions

A substitution account to absorb unwanted US dollar reserves and to increase the role of the SDR has attracted IMS reformers for over a generation. In the 1970s, part of the appeal of such schemes was to develop a mechanism that might ultimately require the United States to redeem its liabilities in SDR, or at the very least would create an SDR-denominated reserve asset that could rival the dollar. Repeated efforts to design such an institution have stumbled over technical and political obstacles. Kenen (2010a) points to the refusal of the United States to bear the sole burden of losses as a key reason why the substitution account was not adopted, but negotiators did not in fact insist that the US exclusively bear the account's risk. Nevertheless, several obstacles proved insurmountable, including the use of gold reserves, the returns on the liabilities and assets of the account and the responsibility of the United States ultimately to redeem its outstanding US dollar liabilities. Even if these issues had been resolved, and the IMF's gold had been committed to the account, it would not have broken even with US Treasury bill returns. Oddly, agreement might well have been reached to have the US Treasury pay the account a bond yield.

To have shrunk the share of dollar reserves substantially, the substitution account needed to become a conversion process rather than a one-shot deal. As conceived in 1980, the substitution account would have immobilized a substantial fraction of global reserves. In mid-1980, SDR 50 billion represented about 16% of global foreign exchange reserves outside of those held by the United States and a third of US dollar reserves. Our baseline scenario shows the initial SDR 50 billion growing fivefold. Yet at end-2010, this sum would have fallen to less than 5% of global reserves. Thus, although the substitution account was aimed at resolving the 'stock' problem of large existing balances of US dollar reserves, its benefit measured in stock terms would have eroded steadily over time. Thus, the substitution account would have had to have been re-opened repeatedly to solve the presumed problem. Only in this sense of an 'endogenous' process starting with an 'exogenous' 1980 deal can it be said that if 'the Substitution Account been implemented, we would have avoided the large overhang of dollar reserves that now threatens the durability of the international dollar standard' (Alessandrini and Fratianni 2009, p. 59).

A substitution account that offers a perpetually open exit from US dollar reserves addresses not a 'stock' but a 'flow' problem. This may have been (and be) what the proposers were (and are) really after—a way to turn the SDR into a more important reserve asset.³⁴ Indeed, in the 1980 proposal there was a provision to re-open the account once it had reached SDR 50 billion. However, it is hard to imagine the account being upsized unless it was at least in balance. As we have seen, this would have been rare in the case of the US Treasury paying interest at its bill rate. Moreover, additional 'deposits' would have to have been well-timed near US dollar

³⁴See Alessandrini and Presbitero (2012, pp. 141–2) on endogenous creation of SDRs.

troughs to maintain the account's performance. As is well known, tests of uncovered interest parity depend for their results on the sample period chosen. However, with the dollar near a cyclic bottom in 1980, the sample period examined was a fair test; many starting points would have produced worse results for the account.

The upshot is that proposals for a substitution account must deal with an inconvenient fact—the account would not have added up even with a substantial endowment of gold profits and a favourable start date unless the United States had committed to pay a bond yield on the account's assets. Over a generation, reserve managers found their way to this result: without coordination, they extended the maturity of their dollar portfolios (in perhaps Pavlovian fashion) as dollar bond yields fell from double-digit levels. Indeed, given the current preference of reserve managers for bonds, any renewed negotiations for a substitution account would almost surely focus on the US Treasury paying bond yields. How such negotiations would proceed, and what results might be obtained over time, with the Federal Reserve having made large-scale bond purchases, and bond yields having reached very low levels, are interesting questions. Choosing the right moment to open such an account and anticipating the possible rhythm of deficits as well as surpluses on its balance sheet would pose significant challenges.

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