

Revisiting the Substitution Account

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Abstract

The Governor of China's Central Bank has recently revived a proposal for the creation of a 'substitution account' managed by the International Monetary Fund into which central banks and governments could deposit dollar reserves in exchange for claims denominated in Special Drawing Rights, the Fund's quasi-currency. This paper summarizes simulations that measure the potential cost of such an arrangement to the United States, which would have to guarantee, in whole or in part, the solvency of the account. It shows that the cost would be fairly small relative to the size of the account unless the dollar were to depreciate substantially *vis-à-vis* the SDR., and this eventuality is quite unlikely, because the dollar bulks large in the currency basket that defines the SDR.

Introduction

In the late 1970s, the management of the International Monetary Fund proposed the creation of a Substitution Account within the IMF, into which governments and central banks could deposit US dollar reserves in exchange for claims denominated in Special Drawing Rights (SDRs), the Fund's own quasi-currency. The proposal was widely discussed at the time, but failed of adoption for two reasons – the strengthening of the dollar in foreign-exchange markets at the start of the 1980s, and the refusal of the United States to take sole responsibility for maintaining the dollar value of the SDR-denominated claims on the proposed account.¹

When the proposal was still under consideration, I produced a voluminous set of simulations, showing how a Substitution Account might evolve under a wide range of assumptions about the relevant interest rates and the dollar value of the SDR, then published a paper based on those simulations (Kenen 1980), and I returned to the subject thereafter (Kenen 1993, 1995). The subject was also considered by a study group of the Group of Thirty (Group of Thirty, 1980).

The subject lay dormant for nearly three decades, but it was revived early in 2009 by Zhou Xiaochuan, Governor of the People's Bank of China.² His country holds more than \$2 trillion in

¹ On the original proposal and the subsequent negotiations, see Boughton (2001); also Sobol (1979), Wallich (1980), and Gowa) 1984, who analyses the issues from the standpoint of a political scientist.

²Zhou Xiouchuan, "Reform of the International Monetary System," People's Bank of China, March 2009. His sug-

reserves, largely in US dollars,³ and it cannot readily diversify the currency composition of its huge holdings without causing a significant depreciation of the dollar *vis-à-vis* other major currencies. The very large dollar sales required to reduce substantially China's huge holdings would be hard to conceal from the market or from the US Treasury, and would surely exacerbate tensions between China and the United States. The creation of a Substitution Account, however, could meet China's need to diversify its huge reserves without causing a large depreciation of the dollar against other major currencies. It was the Governor's speech that prompted me to return to the subject and produce the new set of simulations described in this paper.

The Framework

All of my simulations assume that a Substitution Account was created at the start of 1995 under the auspices of the IMF. At the start of that year, member countries of the IMF are assumed to deposit voluntarily US\$1,000 in the account – a number that can be interpreted as millions or billions of dollars – a matter to which I return at the end of this paper. They receive in exchange SDR-denominated claims at the then-prevailing conversion rate between the dollar and the SDR. At the end of that year and every subsequent year through the end of 2008, they earn interest at the prevailing SDR interest rate, while the Account itself earns interest from the United States at the 90-day US Treasury bill rate. The simulations close at the end of 2008 (which is not to imply that the account itself would be terminated at that time). The simulations are conducted on three bases:

- With no supplementary dollar payments by the United States, even when the dollar value of the SDR claims on the account falls below the number of dollars held in the account.
- With annual 'deficiency payments' made by the United States whenever the number of dollars in the account falls short of the dollar value of the SDR claims on the account (i.e., when the account is potentially insolvent), or
- With annual 'cost-sharing payments' made by the United States in an amount equal to only *half* of the gap between the number of dollars held in the account and the dollar value of the SDR claims on the account, the implicit assumption being that the other half of the gap would be closed by the IMF itself, by drawing on its own dollar holdings or, perhaps, selling some of its gold holdings.

Three summary figures are attached to each simulation:

gestion was promptly endorsed by Bergsten (2009), who had sought to revive the idea even before the Governor's suggestion (Bergsten 2007).

³Although China does not report the currency-composition of its reserves to the IMF, it is commonly believed that some 70 per cent of its reserves consist of US dollars.

The dollar surplus (+) or deficit (-) remaining in the account at the end of 2008.
The sum of the deficiency or cost-sharing payments made by the United States.
The total cost to the United States of its involvement in the account.

The last of these three numbers needs to be explained. The interest earned by the IMF on the dollars deposited initially in the account does *not* represent a cost to the United States, because the United States would have had to pay interest on the dollars deposited in the account if those dollars had been retained by the depositors.⁴ Hence, the interest cost to the United States is defined as the dollar cost with compound interest of the deficiency or cost-sharing payments made by the United States after the establishment of the account.

One other point needs emphasis. In many simulations, the US interest rate and the SDR interest rate are made to change independently (and in the ‘worst-case’ simulations, the former is made to fall at the same time that the latter is made to rise). These ‘shocks’ are unrealistic, because the SDR interest rate, like the SDR exchange rate, is a weighted average of national interest rates (those of the United States, United Kingdom, Euro Area, and Japan), with the US interest rate accounting for more than 40 per cent of the average. But programming the simulations to allow for the interdependence of the two interest rates and then recalculate the SDR-dollar exchange rate each time the dollar was made to appreciate or depreciate *vis-à-vis* any one of its other component currencies did not seem worthwhile for the purposes at hand. The simulations are meant to gauge the approximate cost to the United States of creating a substitution account, not to rewrite hypothetical history in detail.

The Simulations

A total of 18 simulations were run, divided into two main groups, hypothetical and historical, of which 14 are summarized in Table 1, and four year-by-year simulations are appended as Tables A1 through A4. The hypothetical simulations use arbitrarily chosen values for the US and SDR interest rates and the SDR-dollar exchange rate; the historical simulations use actual values (until, of course, they are ‘shocked’ permanently in the year 2000). Each simulation traces the year-by-year evolution of the account reflecting changes in the dollar value of the SDR, the interest rate paid by the IMF on the SDR-denominated liabilities of the account, and the US Treasury bill rate, which is the rate chosen to calculate the interest paid into the account by the United States.

⁴ It is implicit in this assertion that the interest rate paid on balances in the account does not differ significantly from the interest rate that depositors would have earned had they held onto their dollar reserves, and that may not be true. In the simulations presented here, the IMF earns dollars at the interest rate on three-month US Treasury bills, and some of the dollars deposited in the account might have otherwise earned higher interest rates on other dollar instruments. The US Treasury bill rate was chosen for comparability with the SDR interest rate, which is, as noted in the text, an average of four key short-term interest rate.

Table 1 Summary of Selected Substitution Account Simulations

Dollar and SDR amounts may be deemed to be in millions or billions. Simulations begin at the end of 1995 with an initial deposit of \$1000 with the IMF, and they close at the end of 2008. Simulated shocks to interest rates and exchange rates start at the end of the year 2000.

| Type | Permutation | Final Amounts in Account | | | Deficiency or Cost-sharing | | Dollar Surplus (+) or Deficit (-) at End of Simulation | Cost to United States** |
|-----------------------------------|-----------------------------------|--------------------------|---------|-------------------------|----------------------------|-----------------------------|---|-------------------------------|
| | | Dollars | SDRs | | Payments* | | | |
| | | | in SDRs | in dollar equivalent | Number | Cumulative dollar amount | | |
| <i>With Deficiency Payments</i> | | | | | | | | |
| Hypothetical | Base case ¹ | 2005.8 | 1181.5 | 1772.2 | -- | -- | 233.8 | 0.00 |
| Hypothetical | US interest rate falls by 100 bp | 1841.0 | 1181.5 | 1772.2 | 0 | 0 | 68.8 | 0.00 |
| Hypothetical | SDR interest rate rises by 100 bp | 2005.8 | 1287.2 | 1930.8 | 0 | 0 | 75.0 | 0.00 |
| Hypothetical | Dollar depreciates by 20 per cent | 2295.0 | 1181.5 | 2126.6 | 1 | 188.5 | 168.4 | 289.2 |
| Hypothetical | Worst-case scenario ² | 2295.0 | 1287.2 | 2317.0 | 8 | 361.9 | -22.0 | 454.0 |
| <i>With Cost-sharing Payments</i> | | | | | | | | |
| Historical | Base case | 1591.9 | 1017.0 | 1566.5 | 1 | 3.1 | 25.4 | 3.6 |
| Historical | US interest rate falls by 100 bp | 1574.3 | 1017.0 | 1566.5 | 2 | 112.3 | 7.8 | 119.5 |
| Historical | SDR interest rate rises by 100 bp | 1717.7 | 1109.5 | 1708.9 | 2 | 118.3 | 8.8 | 129.4 |
| Historical | Dollar depreciates by 20 per cent | 1910.3 | 1017.0 | 1879.8 | 3 | 278.0 | 30.5 | 322.0 |
| Historical | Worst-case scenario ² | 2041.0 | 1109.5 | 2050.7 | 4 | 541.1 | -9.7 | 586.2 |
| Historical | US interest rate falls by 100 bp | 1574.3 | 1017.0 | 1566.5 | 2 | 56.2 | 7.8 | 59.7 |
| Historical | SDR interest rate rises by 100 bp | 1717.7 | 1109.5 | 1708.9 | 2 | 59.2 | 8.8 | 66.6 |
| Historical | Dollar depreciates by 20 per cent | 1910.2 | 1017.0 | 1879.8 | 3 | 139.0 | 30.4 | 161.6 |
| Historical | Worst-case scenario ² | 2041.0 | 1109.5 | 2050.7 | 4 | 248.2 | -9.7 | 278.3 |

*As no deficiency or cost-sharing payment is made at the end of any simulation, the maximum number of deficiency or cost-sharing payments is eight.

**Sum of deficiency or cost-sharing payments including accumulated interest on them.

¹As interest rates and exchange rates are constant in this case, there can be no deficiency or cost-sharing payments and thus no cost to the United States.

²US interest rate falls by 100 bp, SDR interest rises by 100 bp, and dollar depreciates by 20 per cent.

Note that the base-case historical simulation, tracing the evolution of the account from 1995 to 2008 using actual interest rates and the actual SDR-dollar exchange rate, displays just one small deficiency payment and thus imposes little cost to the United States; see Table A1, appended, for details. The much larger costs to the United States shown elsewhere in Table reflect nontrivial shocks to exchange rates and the SDR-dollar exchange starting in the year 2000. The most costly which the dollar depreciates *vis-à-vis* the SDR and, in consequence, those pertaining to the ‘worst-case’ scenarios, where the US interest rate falls, the SDR interest rate rises, and the dollar depreciate *vis-à-vis* the SDR.

With full deficiency payments made by the United States, the cumulative cost to the United States is \$322.0 in the historical simulation where the dollar depreciates *vis-à-vis* the SDR, and it rises to \$586.2 in the ‘worst-case’ historical simulation where, in addition, the US interest rate falls and the SDR interest rate rises. The corresponding results with cost-sharing payments, rather than full deficiency payments, are \$161.6 when the dollar depreciates *vis-à-vis* the SDR, and \$278.3 in the “worst-case historical simulation.”⁵ It is thus clear that, although the interest-rate shocks by themselves have relatively small effects by them selves, they raise the cost too the United States when combined with a depreciation of the dollar. As noted earlier, however, these are unrealistic cases because the SDR interest rate depends heavily on the US Treasury bill rate, which is the rate chosen to calculated the interest paid into the account by the United States. They are included to pre-empt criticism that the scenarios pay insufficient attention to very bad outcomes for the United States.

It should also be remembered that the costs to the United States do not and should not include the interest payments it makes to the IMF on the dollars deposited initially with the substitution account, because, as noted previously, the United States would have to pay interest on those dollars even if they were not deposited in the account although the relevant US interest rates might not be the one used in the simulations.

Toward a Global Reserve Currency

The introduction of a substitution account may over time become the first step toward a more radical transformation of the international monetary system – a movement toward use of the SDR as a major reserve asset and, ultimately, the main reserve asset. Absent a global market in which the SDR can be traded for national currencies, it cannot now perform the main function of a reserve currency; it cannot be used for intervention to influence the value of a country’s currency. But a government holding SDRs at the IMF, including those created *via* a substitution account, could be empowered to sell them to another IMF member in exchange for that country’s national currency, then use that other country’s currency to intervene in the foreign-exchange market. Conversely, a

⁵ When examining the cost-sharing simulations, bear in mind that the number of dollars in the account at the end Of each year include not only the cost-sharing payments made by the United States but also the payments made by its cost-sharing partner, presumably the IMF itself.

country acquiring another country's currency by way of intervention in the foreign-exchange market could likewise be empowered to sell them to the issuing country in exchange for SDRs at the IMF.

The conversion rate for transactions involving the SDR would take place at the currently posted SDR value of the currency involved – and value that the IMF could undertake to calculate and publish on a daily basis, using an internationally agreed basis for valuing each national currency in terms of the SDR.

Under any such regime, of course, each IMF member would be obliged to consent to sell its currency to – and buy its currency from – every other IMF member in exchange for SDRs. These would be off-market transactions and would not necessarily prevent a country from allowing its currency to float freely (provided that other countries refrained from intervening to influence the value of their currencies in terms of the first country's currency).

It is thus conceivable that the SDR could become something close to being a supranational reserve currency without vesting in any international institution such as the IMF the power to buy or sell a member's currency at its discretion using SDRs. The members of the IMF, however, would have to vest in the IMF the authority to issue SDRs on a regular basis, as member countries sought to augment their holdings with the growth of the global economy.

I cannot pretend to have thought through every ramification of this evolutionary route to the internationalization of reserves, including most obviously the task of transforming existing currency reserves into SDR-denominated claims. Yet this approach to the internationalization of reserve creation seems to me more practical than an attempt to negotiate *de novo* the creation of a supranational central bank to issue a new global currency.

Conclusion

The simulations described in this paper make clear that the creation of a substitution account could be costly to the United States, but that cost must be weighed against another that cannot be readily quantified –the economic effects of reserve-currency diversification by foreign central banks that presently hold far larger dollar reserves than they might reasonably need to cope with balance-of-payments problems. Furthermore, it might be possible to reduce that cost to the United States by adopting a cost-sharing regime of the sort illustrated in this paper.

Table 2 lists eleven countries which, at the end of 2007, held nongold reserves large enough to purchase a full half-year of their merchandise imports. Their holdings totaled almost \$4.5 trillion, far more than they could reasonably expect to need (although some of them did have to turn to the IMF during the 2008-09 financial crisis).⁶ Although we cannot know the currency composition of

⁶ The combined reserves of the European Central Bank and its member countries were not considered for inclusion in this table, because the IMF does not consolidate them and relate them to the members' imports in its own table, on

those countries' reserves, it would be prudent to assume that most of the countries held a large fraction of their nongold reserves in US dollars and could be tempted to diversify into other currencies if they came to believe that the dollar was likely to depreciate substantially.

Table 2 IMF Member Countries with Large Nongold Reserves at the end of 2007*

| Country | Total Reserves in SDR Billions | Ratio of Reserves to Imports |
|---------------------|--------------------------------|------------------------------|
| China | 968.4 | 83.2 |
| Japan | 602.9 | 79.9 |
| Russia | 295.4 | 98.6 |
| India | 169.0 | 50.7 |
| Korea | 165.4 | 38.2 |
| Brazil | 113.5 | 73.7 |
| Singapore | 103.1 | 32.2 |
| Algeria | 69.8 | 209.1 |
| Malaysia | 63.9 | 35.8 |
| Thailand | 53.9 | 31.5 |
| Libya | 50.2 | 480.1 |
| Total | 2655.5 | --- |
| Dollar equivalent** | 4467.4 | --- |

Source: International Monetary Fund, *International Financial Statistics Yearbook*, 2009

*IMF members with nongold reserves equivalent to more than 50 billion SDR and sufficient to purchase 26 weeks of 2007 imports.

**At SDR-dollar exchange rate prevailing at the end of 2007.

It would therefore be prudent to give serious thought to Governor Zhou's suggestion that we look once again at the potential benefits and costs of a substitution account lodged in the IMF.

which this one is based, and it did not seem worthwhile to perform the necessary calculations. (I doubt, in any case, that those reserves would equal or exceed 26 weeks of the member countries' imports.)

Table A1. Historical Simulation with US interest rate falling by 100 basis points in 2000

Deficiency payments made

| End of Year | US\$ per SDR | SDR Interest Rate | US Interest Rate | Dollar Amount in SA | SDR Amount in SA | Dollar Value of SDR Amt | US Interest Payment | Deficiency or CS Payment | Cost to United States |
|---|--------------|-------------------|------------------|---------------------|------------------|-------------------------|---------------------|--------------------------|-----------------------|
| 1995 | 1.4865 | 4.58 | 5.65 | 1000.00 | 672.72 | 1000.00 | --- | --- | 0.00 |
| 1996 | 1.4380 | 3.90 | 5.14 | 1051.40 | 698.96 | 1005.10 | 51.40 | 0.00 | 0.00 |
| 1997 | 1.3492 | 4.07 | 5.20 | 1106.07 | 727.40 | 981.41 | 54.67 | 0.00 | 0.00 |
| 1998 | 1.3359 | 4.10 | 4.90 | 1160.27 | 757.23 | 1011.58 | 54.20 | 0.00 | 0.00 |
| 1999 | 1.3725 | 3.48 | 4.77 | 1215.62 | 783.55 | 1075.42 | 55.34 | 0.00 | 0.00 |
| 2000 | 1.3023 | 4.44 | 5.00 | 1276.40 | 818.34 | 1065.72 | 60.78 | 0.00 | 0.00 |
| 2001 | 1.2567 | 3.43 | 2.48 | 1308.05 | 846.37 | 1063.63 | 31.65 | 0.00 | 0.00 |
| 2002 | 1.3595 | 2.24 | 0.63 | 1316.29 | 865.34 | 1176.43 | 8.24 | 0.00 | 0.00 |
| 2003 | 1.4860 | 1.65 | 0.02 | 1316.55 | 879.61 | 1307.11 | 0.26 | 0.00 | 0.00 |
| 2004 | 1.5530 | 1.84 | 0.39 | 1391.12 | 895.76 | 1391.12 | 5.13 | 69.43 | 69.43 |
| 2005 | 1.4293 | 2.60 | 2.15 | 1421.03 | 919.09 | 1313.65 | 29.91 | 0.00 | 70.92 |
| 2006 | 1.5044 | 3.69 | 3.72 | 1473.89 | 953.02 | 1433.73 | 52.86 | 0.00 | 73.56 |
| 2007 | 1.5803 | 4.05 | 3.41 | 1567.06 | 991.62 | 1567.06 | 50.26 | 42.91 | 118.98 |
| 2008 | 1.5403 | 2.56 | 0.46 | 1574.27 | 1017.01 | 1566.49 | 7.21 | --- | 119.53 |
| Dollar surplus (+) or deficit (-) in account at end of 2008 | | | | | | 7.78 | | | |
| Total of deficiency or cost-sharing payments | | | | | | 112.34 | | | |
| Total cost to the United States | | | | | | 119.53 | | | |

Table A2. Historical Simulation with SDR interest rate rising by 100 basis points in 2000

Deficiency payments made

| End of Year | US\$ per SDR | SDR Interest Rate | US Interest Rate | Dollar Amount in SA | SDR Amount in SA | Dollar Value of SDR Amt | US Interest Payment | Deficiency or CS Payment | Cost to United States |
|---|--------------|-------------------|------------------|---------------------|------------------|-------------------------|---------------------|--------------------------|-----------------------|
| 1995 | 1.4865 | 4.58 | 5.65 | 1000.00 | 672.72 | 1000.00 | --- | --- | 0.00 |
| 1996 | 1.4380 | 3.90 | 5.14 | 1051.40 | 698.96 | 1005.10 | 51.40 | 0.00 | 0.00 |
| 1997 | 1.3492 | 4.07 | 5.20 | 1106.07 | 727.40 | 981.41 | 54.67 | 0.00 | 0.00 |
| 1998 | 1.3359 | 4.10 | 4.90 | 1160.27 | 757.23 | 1011.58 | 54.20 | 0.00 | 0.00 |
| 1999 | 1.3725 | 3.48 | 4.77 | 1215.62 | 783.55 | 1075.42 | 55.34 | 0.00 | 0.00 |
| 2000 | 1.3023 | 5.44 | 6.00 | 1288.55 | 826.17 | 1075.92 | 72.94 | 0.00 | 0.00 |
| 2001 | 1.2567 | 4.43 | 3.48 | 1333.39 | 862.74 | 1084.20 | 44.84 | 0.00 | 0.00 |
| 2002 | 1.3595 | 3.24 | 1.63 | 1355.13 | 890.70 | 1210.91 | 21.73 | 0.00 | 0.00 |
| 2003 | 1.4860 | 2.65 | 1.02 | 1368.95 | 914.30 | 1358.65 | 13.82 | 0.00 | 0.00 |
| 2004 | 1.5530 | 2.84 | 1.39 | 1460.17 | 940.23 | 1460.17 | 19.03 | 72.19 | 72.19 |
| 2005 | 1.4293 | 3.60 | 3.15 | 1506.16 | 974.11 | 1392.30 | 46.00 | 0.00 | 74.46 |
| 2006 | 1.5044 | 4.69 | 4.72 | 1577.30 | 1019.82 | 1534.22 | 71.14 | 0.00 | 77.98 |
| 2007 | 1.5803 | 5.05 | 4.41 | 1693.01 | 1071.32 | 1693.01 | 69.56 | 46.15 | 127.57 |
| 2008 | 1.5403 | 3.56 | 1.46 | 1717.73 | 1109.46 | 1708.90 | 24.72 | --- | 129.43 |
| Dollar surplus or deficit (-) in account at end of 2008 | | | | | | 8.82 | | | |
| Total of deficiency or cost-sharing payments | | | | | | 118.34 | | | |
| Total cost to the United States | | | | | | 129.43 | | | |

Table A3. Historical Simulation with US dollar depreciating by 20 per cent in 2000

Deficiency payments made

| End of Year | US\$ per SDR | SDR Interest Rate | US Interest Rate | Dollar Amount In SA | SDR Amount in SA | Dollar Value of SDR Amt | US Interest Payment | Deficiency or CS Payment | Cost to United States* |
|---|---------------|-------------------|------------------|---------------------|------------------|-------------------------|---------------------|--------------------------|------------------------|
| 1995 | 1.4865 | 4.58 | 5.65 | 1000.00 | 672.72 | 1000.00 | --- | --- | |
| 1996 | 1.4380 | 3.90 | 5.14 | 1051.40 | 698.96 | 1005.10 | 51.40 | 0.00 | 0.00 |
| 1997 | 1.3492 | 4.07 | 5.20 | 1106.07 | 727.40 | 981.41 | 54.67 | 0.00 | 0.00 |
| 1998 | 1.3359 | 4.10 | 4.90 | 1160.27 | 757.23 | 1011.58 | 54.20 | 0.00 | 0.00 |
| 1999 | 1.3725 | 3.48 | 4.77 | 1215.62 | 783.55 | 1075.42 | 55.34 | 0.00 | 0.00 |
| 2000 | 1.5628 | 4.44 | 6.00 | 1288.55 | 818.34 | 1278.86 | 72.94 | 0.00 | 0.00 |
| 2001 | 1.5080 | 3.43 | 3.48 | 1333.39 | 846.37 | 1276.36 | 44.84 | 0.00 | 0.00 |
| 2002 | 1.6314 | 2.24 | 1.63 | 1411.72 | 865.34 | 1411.72 | 21.73 | 56.59 | 56.59 |
| 2003 | 1.7832 | 1.65 | 1.02 | 1568.53 | 879.61 | 1568.53 | 14.40 | 142.41 | 199.58 |
| 2004 | 1.8636 | 1.84 | 1.39 | 1669.34 | 895.76 | 1669.34 | 21.80 | 79.01 | 281.36 |
| 2005 | 1.7152 | 2.60 | 3.15 | 1721.92 | 919.09 | 1576.38 | 52.58 | 0.00 | 290.22 |
| 2006 | 1.8053 | 3.69 | 4.72 | 1803.25 | 953.02 | 1720.47 | 81.33 | 0.00 | 303.93 |
| 2007 | 1.8964 | 4.05 | 4.41 | 1882.77 | 991.62 | 1880.47 | 79.52 | 0.00 | 317.33 |
| 2008 | 1.8484 | 2.56 | 1.46 | 1910.26 | 1017.01 | 1879.79 | 27.49 | --- | 321.97 |
| Dollar surplus (+) or deficit (-) in account at end of 2008 | | | | | | 30.47 | | | |
| Total of deficiency or cost-sharing payments | | | | | | 278.01 | | | |
| Total cost to the United States | | | | | | 321.97 | | | |

Table A4. Historical Simulation with 'worst-case' scenario*

Deficiency payments made

| End of Year | US\$ per SDR | SDR Interest Rate | US Interest Rate | Dollar Amount in SA | SDR Amount in SA | Dollar Value of SDR Amt | US Interest Payment | Deficiency or CS Payment | Cost to United States* |
|---|---------------|-------------------|------------------|---------------------|------------------|-------------------------|---------------------|--------------------------|------------------------|
| 1995 | 1.4865 | 4.58 | 5.65 | 1000.00 | 672.72 | 1000.00 | --- | --- | 0.00 |
| 1996 | 1.4380 | 3.90 | 5.14 | 1051.40 | 698.96 | 1005.10 | 51.40 | 0.00 | 0.00 |
| 1997 | 1.3492 | 4.07 | 5.20 | 1106.07 | 727.40 | 981.41 | 54.67 | 0.00 | 0.00 |
| 1998 | 1.3359 | 4.10 | 4.90 | 1160.27 | 757.23 | 1011.58 | 54.20 | 0.00 | 0.00 |
| 1999 | 1.3725 | 3.48 | 4.77 | 1215.62 | 783.55 | 1075.42 | 55.34 | 0.00 | 0.00 |
| 2000 | 1.5628 | 5.44 | 5.00 | 1276.40 | 826.17 | 1291.11 | 60.78 | 0.00 | 0.00 |
| 2001 | 1.5080 | 4.43 | 2.48 | 1308.05 | 862.74 | 1301.04 | 31.65 | 0.00 | 0.00 |
| 2002 | 1.6314 | 3.24 | 0.63 | 1453.10 | 890.71 | 1453.10 | 8.24 | 136.81 | 136.81 |
| 2003 | 1.7832 | 2.65 | 0.02 | 1630.38 | 914.30 | 1630.38 | 0.29 | 176.99 | 313.83 |
| 2004 | 1.8636 | 2.84 | 0.39 | 1752.21 | 940.23 | 1752.21 | 6.36 | 115.47 | 430.52 |
| 2005 | 1.7152 | 3.60 | 2.15 | 1789.88 | 974.12 | 1670.76 | 37.67 | 0.00 | 439.78 |
| 2006 | 1.8053 | 4.69 | 3.72 | 1856.52 | 1019.82 | 1841.07 | 66.64 | 0.00 | 456.15 |
| 2007 | 1.8964 | 5.05 | 3.41 | 2031.62 | 1071.33 | 2031.62 | 63.31 | 111.79 | 583.50 |
| 2008 | 1.8484 | 3.56 | 0.46 | 2040.96 | 1109.46 | 2050.69 | 9.35 | --- | 586.18 |
| Dollar surplus (+) or deficit (-) in account at end of 2008 | | | | | | -9.73 | | | |
| Total of deficiency or cost-sharing payments: | | | | | | 541.06 | | | |
| Total cost to the United States | | | | | | 586.18 | | | |

*This is an implausible case in which the US interest rate falls by 100 basis points, the SDR interest rate rises by 100 basis points, and the dollar depreciates by 20 per cent.

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