

# Towards a New International Monetary Order: The World Currency Unit and the Global Indexed Bond

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*We have standardized every other unit in commerce except the most important and universal unit of all, the unit of purchasing power. What businessman would consent for a moment to make a contract in terms of yards of cloth or tons of coal, and leave the size of the yard or the ton to chance?*

*Fisher (1913, pp. 501–2)  
Cited in Warren Coats (1994, p. 1)*

*Governments of all nations of the world could easily create indexed units of account for their citizens.*

*Shiller (1998, p. 33)*

## 1. INTRODUCTION

**I**NSTABILITY in currency markets has caused large interest rate swings<sup>1</sup> and is capable of causing great damage to regional economies as well as the global economy. It is against this background that the controversial ‘Tobin tax’ on foreign exchange transactions was proposed (Tobin, 1978). It is also against this background that when Malaysia introduced foreign exchange control he found sympathy in a mainstream economist, namely Paul Krugman (1998).

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<sup>1</sup> Following the devaluation of the Thai Baht on 2 July, 1997, many South East Asian countries, in an attempt to ward off depreciation pressures, raised interest rates dramatically. In Hong Kong, the interbank rate rose to nearly 300 per cent on 26 October, 1997, as the Hong Kong Monetary Authority refused to accommodate market demand for liquidity.

There is little doubt that the high interest rates maintained by central banks to slow down the depreciation of currencies were instrumental to the melt-down of some of the economies, in particular Indonesia.<sup>2</sup> High interest rates are thought to be able to prevent a currency from sliding, but whereas the British pound – a currency without the blessing of defensive, and sharply higher interest rates – managed in 1992 to suffer only a moderate degree of devaluation, the Thai Baht, the Indonesian Rupiah and the Korean Won, all experienced substantial depreciation notwithstanding sharply higher interest rates. Meanwhile high interest rates also kept investors at bay, reducing economic growth and creating large fiscal deficits. It appears that as the economies weakened, pressure on the regional currencies mounted despite the high interest rates. A vicious circle – in the form of depreciation leading to higher interest rates, in turn leading to weaker economies and thus more pressure on currencies to depreciate – had developed.

The tragic thing in this course of events is that even otherwise well-managed firms fell. International borrowing in the highly globalised world of today is not, by nature, an imprudent venture. Yet the potential risks associated with international borrowing in a turbulent world are huge. To the extent that the debt is denominated in one foreign currency, rapid depreciation of the local currency could ruin those firms whose incomes are denominated in the domestic currency. To protect themselves against possible default creditors will scramble to dump their bond holding, and recall any outstanding callable loans. To the extent that the debt is denominated in the local currency, depreciation of the local currency could ruin the lenders if they do not get out fast enough. Either way, once fears of depreciation have been ignited, herd behaviour becomes rational and foreign lenders will scramble to either call back their loans or dump their bonds. Such self-defence actions become even more necessary if short-term interest rates are raised by central banks, since higher short-term interest rates will further sap the strength of companies. An otherwise containable problem could then cascade into a full-scale catastrophe.

This discussion leads to the concept of *sovereign risk*, which are risks not related to the soundness of the businesses raising money in international markets, but rather with the soundness of the entire economy and particularly with the risk of large depreciation.<sup>3</sup> A sound, well-managed locally oriented business in Thailand or Indonesia which had an outstanding internationally raised debt, *whether denominated in the home currency or in a foreign currency*, in 1997 would run into repayment or liquidity problems on account of the currency crisis. The local currency may well have been overvalued relative to economic fundamentals (Schnatz, 1998), but any overvaluation is not the fault of the firms

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<sup>2</sup> Indonesia was actually rated as a 'star performer' in 1996 in being able to reduce inflation and the current account deficit while achieving a good growth rate in the PECC Economic Outlook.

<sup>3</sup> It is of course understood that sovereign risks are far from being just exchange risks. But exchange risks are sufficient to constitute a major component of sovereign risks at times.

concerned. Yet none of these considerations would spare them from serious difficulties.

It may seem logical that firms whose revenue is essentially denominated in the local currency should try to raise their capital locally. Many of the South East Asian countries, however, had been facing relatively high interest rates at home so that there was great attraction to borrow more cheaply internationally, especially in view of an explicit undertaking by their central banks to link their currencies to the US dollar. To some analysts, an implicit guarantee that these currencies would not devalue was the basis of a moral hazard problem, leading to a large influx of foreign capital in search of higher returns (Eichengreen and Hausmann, 1999).

The domestic interest rates were high partly because domestic savings were not sufficient to finance all the domestic investment, and partly because of an exchange risk premium. This paper argues that the exchange risk premium can be much lower if a standardised currency basket is used as the basic linking instrument for those countries which have a currency board arrangement. We also argue that the introduction of a standardised debt instrument called *the Indexed Global Bond* will improve the efficiency of the world's capital market and will facilitate the development of rational monetary policy. Section 2 outlines six basic concepts underlying the proposal. Section 3 describes the proposal and explores the implications. Section 4 discusses the practical difficulties in implementing the proposal and assesses the prospect of the world adopting the proposal.

## 2. BASIC CONCEPTS

I now introduce six definitions and explain the concepts behind them.

- (i) *The World Currency Unit*: This is defined as the *basket of the GDPs* of the world's five major economies, namely the United States, the Euro zone, Japan, Canada and Australia,<sup>4</sup> scaled down to equal US\$100 during the base year. Let  $Q_{i0}$  be the GDP of country  $i$  in base year 0, where country  $i$  is one of the top five countries/economic entities in terms of gross domestic product. Thus in the base year:

$$1 \text{ WCU} = \lambda \sum Q_{i0} \cdot e_{i0} = \text{US\$}100, \quad (1)$$

where:  $\lambda$  is the scaling factor,

$i$  is any of the five major economies,

$e_{i0}$  is the exchange rate converting one unit of the currency of  $i$  into US\$ in the base year 0.

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<sup>4</sup> These economic zones are representative in that they comprise the world's major industrial zones as well as major producers of primary goods.

As a constant value unit (*valun*, to use Coats' terminology, see Coats, 1994, p. 7) the nominal value of WCU may change, but at any time it should buy the same basket of output. Thus the nominal value at time  $t$  is equal to:

$$\lambda \sum Q_{i0} \cdot (P_{it}/P_{i0}) \cdot e_{it} \quad (2)$$

To show how this relates to the real exchange rate, note that the cumulative appreciation of the real exchange rate relative to the base year can be written as:

$$\varepsilon_{it} \equiv \frac{\frac{P_{it}}{P_{ft}} e_{it}}{\frac{P_{i0}}{P_{f0}} e_{i0}}$$

which can be treated as a relative real exchange rate appreciation index and is equal to:

$$\left[ \frac{P_{it}}{P_{i0}} \cdot e_{it} \right] \cdot \left[ \frac{P_{i0}}{P_{ft}} \cdot \frac{1}{e_{i0}} \right]$$

This implies

$$(P_{it}/P_{i0}) \cdot e_{it} = \varepsilon_{it} \cdot e_{i0} \cdot P_{ft}/P_{f0} \quad (3)$$

where  $e_{i0} \cdot P_{ft}/P_{f0}$  can be regarded as the nominal valuation of the relative real exchange rate  $\varepsilon_{it}$ . Equations (2) and (3) show that the nominal value of a WCU will be higher if the nominal exchange rate of the currency  $i$  in the base year,  $e_{i0}$ , is higher, or if inflation in the US since the base year is higher. Alternatively, the nominal value of a WCU may rise if the relative appreciation of the real exchange rate  $\varepsilon_{it}$  is higher. In short, the nominal value of a WCU  $= \lambda \sum Q_{i0} \cdot \varepsilon_{it} \cdot e_{i0} \cdot P_{ft}/P_{f0}$ .

Notwithstanding some key differences, the concept is closely related to the Special Drawing Right, which is a basket of five major currencies and was created by the IMF in 1969. Table 1 lists the key similarities and differences between them.

- (i) *The benchmark global real cost of capital*: This is defined as the interest rate applicable to borrowers with a minimum of default risk and it is calculated when both repayments and the loan amount are expressed in the *World Currency Unit*.
- (ii) *The real cost of capital for a project*: This is equal to the benchmark global real cost of capital plus the risk premium applicable to the project.
- (iii) *The global real rate of return on an investment*: This is the rate of return on the original investment when both returns and costs are calculated in the *World Currency Unit*. Such calculation can be performed with or without there being financial instruments denominated in WCUs. There

TABLE 1  
Comparison Between the WCU and the SDR

<i>World Currency Unit</i>	<i>Special Drawing Right</i>
Proposed by this author as an instrument to streamline international capital markets.	Created by the IMF in 1969 as a supplementary reserve asset.
May be used to denominate internationally raised bonds called the Indexed Global Bond.	May be used to denominate private as well as sovereign financial instruments.
May be used as the key instrument for currency boards to peg local currencies.	As of 30 April, 1996, the currencies of three member countries of the IMF were pegged to the SDR.
Currencies whose values are reflected in the WCU include the US dollar, the Euro, the Japanese yen, the Canadian dollar, and the Australian dollar, but the <i>WCU is not a basket of currencies</i> . Rather it is a <i>basket of GDPs or a basket of GDP-weighted real exchange rate indices</i> .	The US dollar, the Deutsche mark, the French franc, the Japanese yen, and the pound sterling, representing the top five exporters in the world during the reference period, are included in the basket in proportion to their relative importance in international trade and reserves.
Instruments denominated in the WCU are effectively protected through diversification against extreme exchange swings and are <i>automatically indexed against inflation</i> .	The SDR interest rate is effectively a weighted average of the yields on specified short-term instruments in the domestic money markets of the five respective countries but is <i>not inflation-protected</i> .
The WCU is intended to be a common and principal unit of account in the world's capital market.	The SDR is intended to be a supplementary reserve asset.

is an *ex ante* and a realised or *ex post* rate. *The ex ante global real rate of return* is the global real rate of return that is expected to be achieved, either on an investment or on average among a broad range of investment projects. The *ex post* global real rate of return is the real rate of return expressed in the WCU realised for an investment or on average among a broad range of projects.

- (iv) *The nominal (in contrast to global) realised rate of return on an investment*: This is the rate of return calculated in the currency of the investment-originating country. It is inclusive of the rate of appreciation of the investment income *vis-à-vis* the currency of the originating country.
- (v) *The nominal realised borrowing cost of an investment*: This is the actual rate of interest paid by an investor when all repayments are calculated in the currency of the investment-originating country.

## 3. THE PROPOSAL

The proposal has three elements. First, is the *standardisation of the world's international debt instruments* through the issuance of 'indexed global bonds,' which are denominated in the composite 'world currency unit' and thus automatically indexed against global inflation. Second, is promotion for the use of the world currency unit as the *key currency* to link with for *currency boards* throughout the world. Third, is the development of a monetary policy guidepost in the form of the ratio between the *benchmark global real cost of capital* and the *average global real rate of return on a broad range of investment projects*. If the guidepost ratio is larger than one, there is a *prima facie case for relaxing monetary policy; if the latter is less than one, on the other hand, there will be a case for tightening up monetary policy*.

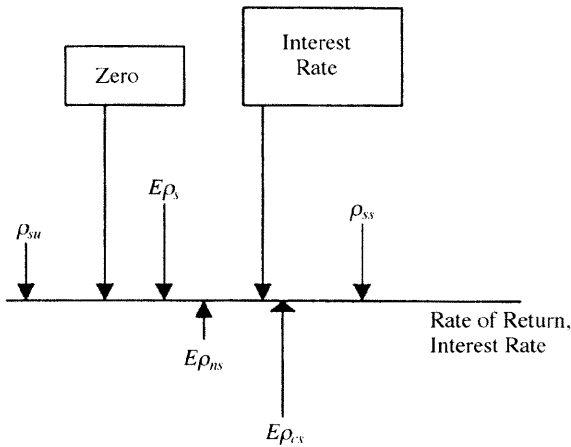
We shall start with the third element of the proposal.<sup>5</sup> There is much evidence that the return to industrial investment has been declining over the past three decades and that a productivity slowdown has occurred on a global scale (Morrison, 1993; Echevarria, 1997; and Hamilton and Monteagudo, 1998). This is in part related to increasing competition from emerging markets and globalisation, and in part due to the limits of technological breakthrough. Real interest rates, however, have stayed at a high level. This may be the main reason behind the global excess capacity in manufacturing and high unemployment and may well be an important underlying reason behind the Asian financial crisis which has taken place since July 1997.

Thus, prior to the currency crisis in Asia *the average real rate of return on global investment has been declining*, while global real interest rates have been maintained at a high level, resulting in widespread unemployment and idle capacity. Particularly for Asian countries, the effective cost of borrowing had become much higher than the effective rate of return on productive investment. High interest rates, on the one hand, engender excess capacity and stifle demand. On the other hand they cause a serious adverse selection problem (Stiglitz and Weiss, 1981; and Boyd and Smith, 1993). Because global competition had driven down the rate of return in manufacturing, manufacturing investment could not compete with *high risk, high return speculative investments* for funds.

In Figure 1 the expected rate of return for non-speculative investment is  $E\rho_{ns}$ . Because this is lower than the interest rate it is unprofitable. On the other hand, more speculative, high risk investment carries a possibility of a high (successful) rate of return ( $\rho_{ss}$ ) as well as a negative (unsuccessful) rate of return ( $\rho_{su}$ ). However, the negative rate of return is irrelevant in view of limited liability and possibility of default. The *constrained* expected rate of return is  $E\rho_{cs}$  and is

<sup>5</sup> A referee points out that the theoretically correct measure, the risk-free marginal product of capital, may be difficult to measure.

FIGURE 1



higher than the interest rate. In this example high interest rates are seen to lead to more risky investment.

The problem in South East Asia has been aggravated by the availability of funds looking for both high yields and liquidity, which boils down to high-yield short-term debt. Clearly, borrowers who pay such high rates of interest cannot afford to invest the borrowed money in low return investment and therefore tend to put the funds into highly speculative ventures.

### **Proposition 1: Monetary Policy and the Condition for Viability of an Investment**

*The key to global investment being compatible with full employment equilibrium lies in a monetary policy such that the real global cost of borrowing (the 'benchmark global real cost of capital') is no higher than the global rate of return to investment when the world capital stock is utilised fully.*

In order for an investment to be viable over the long run, the realised rate of return on investment must not be smaller than the realised interest rate. In general, an international borrower borrowing in a foreign currency, whose incomes are denominated in the domestic currency, would be highly wary of depreciation of the home currency. The reason is that depreciation will render the investment unprofitable as returns in foreign currency terms are reduced drastically by the depreciation. If the funds are borrowed in the domestic currency and raised internationally, lenders will demand higher interest rates to compensate for exchange risks. On the other hand, suppose the local currency is

linked to the WCU, the link would be much easier to defend because the competitiveness of the economy will not be jeopardised by the movement of a single currency. Lower risk of depreciation means interest rates can be a lot lower.

Humankind has been looking for a stable anchor for their monies since money was born. The various commodity standards, particularly the gold standard and the silver standard, bore witness to this search and its futility. The fact is that the value of any single commodity or single currency is subject to fluctuations. Coats (1989) proposed using an SDR valuation basket with a constant real value as a new monetary anchor. My proposal builds on his work and spells out a useful and practicable interpretation of constant real value.

**Proposition 2: Lower Risks Associated with World Currency Unit-linked Currencies**

*The availability of a standardised WCU provides a more stable anchor for small countries to link their currencies under a currency board arrangement. This reduces bilateral exchange rate volatility and is conducive to lower interest rates.*

Let us now consider the first component of the proposal regarding the standardisation of an international debt instrument.

**Proposition 3: Efficient International Capital Market**

*Equalising the perceived (risk-adjusted) cost of capital is a necessary condition to efficient allocation of global capital. A standard indexed WCU-denominated bond helps equalise the perceived cost of capital. Such a 'global bond' will also be very attractive to the world's savers as it will be a good store of value. Being less subject to exchange risk, they will likely accept lower interest rates thus rendering low risk, low return, investments viable.*

Different expectations of currency movements may lead to an investment with a lower expected rate of return being financed at the expense of investments with higher rates of return. This happens when the investor expects the borrowed currency to depreciate by more than others expect or to appreciate by less than others expect. Individual borrowers may be subject to different interest costs on account of differences in the risks associated with the loans, but in so far as the differences in interest costs are due to borrower-specific risks, allocation of capital is efficient. An index WCU-denominated bond is less subject to 'sovereign risks' than are single currency-based bonds and thus is more conducive to the cultivation of borrower and lender responsibility. In contrast if loans are denominated in a single currency borrowers' efforts in reducing risk may be overwhelmed by the exchange risks as perceived by lenders. By the same



token, if a country follows a currency board arrangement and its currency is linked to the WCU, exchange risks and exchange risk-related default risks become less of a concern to lenders lending money to that country.

A bonus to the proposal of indexing the WCU-denominated 'global bond' is that it makes a world depression less likely. It may be recalled that during the 1930s deflation has wiped out many investment projects. The real cost of borrowing increases in the face of deflation if interest payments and repayments are fixed in nominal terms. If prices and incomes are falling, indexing offers the borrower protection as it allows repayments as well as debt-servicing cost to fall.

**Proposition 4: Indexing Reduces Risks of Global Deflation Risks**

*The implicit indexing of the global bond shelters borrowers from the risks of deflation. Because of this protection their productive activities continue to be viable even in the face of falling prices. Thus less unemployment and idle capacity will be engendered.*

Just as indexing loan instruments to the general price level protects borrowers from the risks associated with deflation, it also protects creditors from the risks associated with inflation, and in providing this protection it also allows real interest rates to stay at a more reasonable level. Following a major depreciation, such as what happened in Thailand in July 1997, the market expects inflation to rise sharply. But to what extent inflation rises is anybody's guess, so an inflation risk premium emerges on top of the average expected inflation rate among market participants. With the loan denominated in WCU and creditors being compensated in full *ex post* for any realised inflation, market interest rates tend to be lower, thus providing a more favourable environment for recovery.

**Proposition 5: Indexing Reduces Risks of Recession Due to Excessively High Interest Rates**

*Indexing loan instruments against the general price level eliminates any need for a risk premium arising from uncertainty over the rate of inflation and is therefore conducive to a lower interest rate regime and hence economic recovery.*

4. PRACTICAL DIFFICULTIES AND CONCLUDING REMARKS

If having a monetary anchor which has stable value is technically possible and administratively feasible, one wonders why nothing that resembles this development has happened so far. The SDR, a close relative of the WCU, has far from having become a standard for the issue of international debt instruments, except for the IMF. Only a handful of tiny countries, including Libya, Myanmar,

Rwanda and the Seychelles, linked their currencies to the SDR. Coats (1994) provided a good explanation. For one thing, the SDR's purchasing power 'has been far from constant and remains as uncertain as the inflation rates of its component currencies' (p. 17). The convenience of using a commonly accepted unit of account is also so great that 'even a relatively bad one already in use is better than using an uncommon unit' (p. 15). For major players in international trade and finance, there is little to gain from pioneering a substitute unit of account to take the place of their currencies. For small players there is little credibility and there are plenty of difficulties in pioneering a new standard. To make things worse, the meaning of the name Special Drawing Rights is obscure and even humiliating for sovereign countries to link their currencies to.

In principle individual borrowers can, even today, custom-make their liability structure by borrowing in different currencies in order to reduce their exposure to the exchange risks against a single currency. At the same time, they are free to offer price index adjustment on their debt. This procedure, unfortunately, suffers from several drawbacks.

First, this procedure is highly costly. It implies a need to offer multiple issues of bonds, implying multiple defraying of overhead flotation costs. Smaller businesses, in particular, will not be able to take advantage of such opportunities.

Second, in so far as the debt is not standardised, the cost of capital, *ex ante* or *ex post*, will vary from borrower to borrower and from project to project. As explained, this goes against capital market efficiency.

Third, most savers have little scope to diversify the currency denomination of their portfolios and to hedge against inflation. They are then apt to have their savings channelled into high risk 'inflation hedges' which could become the embryo of bubble economies with their inherent dangers.<sup>6</sup> The Asian financial turmoil which started in 1997 shows that the world is not short of capital but rather is short of reliable investment outlets. Notwithstanding or because of financial market innovations a safe investment vehicle that offers future retirees a modest inflation-adjusted rate of return and protection for exchange risks is still for many people not available.

My proposal for a *world currency unit* is a direct response to Shiller's (1998) call for a coordinated effort in setting up 'indexed units of account.' It is, however, not my intention to propose having one single currency for the entire world. Indeed such an undertaking, even if possible, is likely to be undesirable because of the diversity of economic conditions around the world. However, a

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<sup>6</sup> The asset bubble of Japan and its bursting is a case in point. It is most unfortunate but in retrospect unavoidable that asset prices in Japan boomed during the eighties given Japan's huge success in accumulating savings. The rise of the yen, a direct consequence of the success of Japan's exports machine, led to the fall in the yen value of foreign assets acquired. It also produced much incentive to sell assets in Japan. This results in a double jeopardy for Japanese banks whose liabilities do not fall with the value of assets.

WCU as an anchor for many of the world's currencies is eminently feasible. To meet the need for a stable anchor for the world's currencies, the GDP-weighted basket of real exchange rates seems to be the best answer. Modern computing technology has made it possible to design an 'alloy' of currencies with almost any degree of value stability that we want. Certainly such alloys are far superior to any material that occurs by the bounty of nature.

A global bond denominated in the world currency unit and thus indexed against inflation is the true investment vehicle with a stable value. There is no technical difficulty in designing such a vehicle, though there will certainly be some difficulties arising from a lack of consensus about weighting. Economists are well aware of the fact that the index number problem can never be resolved. There is simply no perfect weighting that serves all purposes. As noted earlier on, the WCU can be considered as a GDP-weighted basket of real exchange rates of five major currencies. The assumption is that world capital is used in direct proportion to the GDPs of the world. The definition of the WCU encompasses five totally convertible currencies. Canada and Australia are key resource-producing economies, so the Canadian dollar and the Australian dollar complement the first three currencies quite well. The five economies together accounted for roughly 53 per cent of world trade in 1997.

Admittedly, the original basket of GDPs will, over time, become increasingly out of date. The relative sizes of the GDPs of the five major economies will change. Other economies may rise in prominence. In particular, China is likely to be such an economy. Its currency, moreover, will in time become fully convertible. Clearly the WCU needs updating from time to time. We can envisage WCUs of different vintages. This should not pose serious difficulty, however, as one WCU of one vintage can convert into one WCU unit of the previous vintage through the use of a scaling factor at the time the new WCU is introduced.

Still another problem is that the price indices needed to revalue the WCU are available only at discrete points in time. In comparison with the potential benefits this problem is, however, only a minor one. Our experience with inflation-linked instruments suggests that the business world has taken the need to make supplementary payments upon new releases of price indices a perfectly normal and acceptable business cost/risk.

Once the WCU and the indexed global bond have been launched, it will be a relatively simple matter for smaller countries who want to use a currency board system to link their local currencies with the WCU. Alternatively, they can link with a trade-weighted basket of currencies.<sup>7</sup> Either way, the risks of major devaluations *vis-à-vis* one currency would be much smaller. Standardising the unit of account through the WCU will have one major advantage. Borrowers as

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<sup>7</sup> Linking to one single currency is not recommended because of the much greater risk of over- or undervaluation.

well as lenders all over the world will know that interest rate differentials reflect the different merits of the borrowers rather than the different perceptions of the different players in the debt market about exchange risks.

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