ARE GRAINS OF SAND IN THE WHEELS OF INTERNATIONAL FINANCE SUFFICIENT TO DO THE JOB WHEN BOULDERS ARE OFTEN REQUIRED?*

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This paper criticises the effectiveness of a Tobin tax in acting as a deterrent to short-run round trip speculation on exchange rate movements. It is demonstrated that given the usual magnitude of a proposed Tobin tax, the deterrent to short-term speculation will be negligible and in all likelihood smaller than the deterrent to real trade flows and arbitrage activities. Finally, an alternative proposal for preventing currency speculations while creating incentives for global full employment, based on Keynes's 1940s writings, is proposed.

In this JOURNAL's 'Policy Forum', Eichengreen, Tobin, and Wyplosz (1995, p. 164) (hereafter ETW) argue that volatility in foreign exchange markets due to speculation can have 'real economic consequences devastating for particular sectors and whole economies'. To constrain 'speculative behaviour... they [ETW] propose a global transactions tax... to discourage short-term round tripping' (Greenway, 1995, p. 160). At the same time this ETW proposal appeared in print, the winter 1994–5 Mexican peso crisis spilled over into the dollar problem. In international financial markets where image is often more important than reality, the dollar was dragged down by the peso while the German mark and Japanese yen appeared to be the only safe harbours for portfolio fund managers.

In April 1995, Federal Reserve Chairman Alan Greenspan testified before Congress that 'Mexico became the first casualty... of the new international financial system' where electronic global communication permits hot portfolio money to slosh around the world 'much more quickly'. As the proportion of foreign assets, especially from 'emerging markets', continue to bulk larger in portfolios, Keynes's (1936, p. 156) 'beauty contest' analogy is an appropriate description of international fund managers' behaviour with respect to the foreign exchange market. To be profitable, fund managers must, in an instant, conjecture how other market players will interpret a news event occurring anywhere in the world. Even in the absence of reliable information, rapid evaluations of the potentials effects of any event on exchange rates and hence on portfolio value are essential as rival market participants can move funds from one country to another in nanoseconds with a few clicks on the computer keyboard or a quick telephone call to some international market at any time of day or night.

In today's global economy any news event that fund managers even suspect that others will interpret as a whiff of currency weakness can quickly become

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a conflagration spread along the information highway. This results in lemming-like behaviour that can be self-reinforcing and self-justifying. If the major Central Banks immediately do not dispatch sufficient resources to intervene effectively to extinguish speculative currency fires, then the resultant publicity is equivalent to hollering ‘fire’ in a theatre. The consequent panic worsens the situation and central banks whose currencies are seen as safe havens may lose any interest in a coordinated response to the increasing inferno.¹

Essentially pragmatists such as ETW are arguing that hot-money flows produce obvious disruptive real effects and therefore the social costs of an unfettered exchange rate system far exceeds any social benefits. In contrast, traditional theory presumes that government intervention in the form of taxes or regulations impose significant social costs while there are only social benefits produced by laissez-faire foreign exchange markets that permit individual free choice. (Some orthodox theorists will consider ‘ad hoc’ central bank intervention in exchange markets an acceptable short-run palliative if disruptive ‘shocks’ create disorderly market conditions. Purists will deny the need for any intervention.²)

If the pragmatists are correct that the social costs of free exchange markets exceed benefits, then what is required is not a system of ‘ad hoc’ central bank interventions while what Greenspan calls the ‘new international financial system’ burns the real economy. What is necessary is to build permanent fireproofing rules and structures that prevent ‘beauty contest’ induced currency fires. Crisis prevention rather than crises rescues must be the primary long-term objective. If the developed nations do not hang together on a currency-fire prevention system, then they will all hang separately in a replay of the international financial market crisis of the Great Depression.

1. IS SOCIAL CONTROL OF EXCHANGE MARKETS BAD?
Reasonable people do not think it is a violation of civil liberties to prohibit people from boarding an airplane with a gun. Moreover, no one would think we are impinging on individual rights, if the society prohibits anyone from entering a theatre with a Molotov cocktail in one hand and a book of matches in the other — even if the person indicates no desire to burn down the theatre. Yet, in the name of free markets, we permit the ‘Soros effect’³ where one or more fund managers anticipate the possibility of an exploding Molotov cocktail and therefore yell ‘fire’ in the crowded international financial markets any time the ‘image’ of a possible profitable fire moves them.

¹ The more uncertain (i.e. not statistically reliably predictable (see Davidson, 1991)) the future appears, the more fund managers may admit they can not anticipate what will happen in the near future. Consequently the greater the impending speculative storm, the more desirable it will be to storing saving in a ‘safe harbour’. This possession of safe liquid assets soothes our fears of becoming illiquid if anything unpredictable occurs during the stormy period.
² Orthodox theorists reach this conclusion by conflating the concept of speculation with that of arbitrage. Since the latter is always a stabilising force, orthodoxy insists that the former is also always stabilising.
³ In a single day in September 1992, fund manager George Soros not only made millions by speculating against sterling but he also forced the Bank of England to abandon any attempt to maintain an orderly exchange market while staying within the EMS.
Fifty years ago, Keynes (1980, p. 25) recognised that ‘there is not a country which can – safely allow the flight of funds [hot money]…. Equally there is no country that can safely receive… [these portfolio] funds which cannot safely be used for fixed investment’. ETW (1995, p. 164) have taken up this Keynesian theme and argued for fire prevention in the form of a permanent ad valorem tax on exchange transactions to put ‘sand in the wheels of super-efficient [international] financial markets’. (This is equivalent to taxing, rather than banning the Molotov cocktail member of the theatre audience.) ETW have also explored the possibility of imposing compulsory interest-free deposits or other capital requirements (therefore creating an ‘opportunity cost’ tax) to ‘discourage short-term round tripping, but not long term investment’ (Greenway, 1995, p. 160).

The 1995 policy form discussion in this JOURNAL of the ‘Tobin tax’ between ETW (1995) and Garber and Taylor (1995) did not focus on the theoretical rational for such taxes. Rather the emphasis was on the institutional feasibility. Kenen’s contribution (1995) concentrated specifically on capital controls and why he perceives the impossibility of such controls at this time. Little discussion of the theoretical rational for imposing any controls or costs on foreign exchange transactions is provided.

Keynes on the other hand, provided a rationale for such controls when he recognised that the existence of organised spot markets plus the social convention that assumes the existing state of affairs will continue until there is some reason to expect change. As long as the social convention is maintained, portfolio managers ‘need not lose sleep’ for they know that only an unforeseen ‘change in the news over the near future’ can affect the value of their portfolio in the near future (Keynes, 1936, p. 153). Each fund manager believes her portfolio is liquidity safe for any short period, while the underlying real investments and trade flows are fixed and illiquid for the community. In The General Theory, Keynes explained how this distinction could impose severe real costs on a closed economy especially when savers feared that the existing state of normal affairs might not be maintained. In the 1940s, Keynes reanalysed this problem in the open economy context and concluded, as the citation above suggests, that a system of outright prohibition of international hot money (liquidity-seeking) flows would be required. With the help of the formulas developed below, it is easy to see why Keynes believed that government controls of international hot money flows was desirable.

II. CAPITAL UNCERTAINTY AND SPECULATIVE FLOWS
Since the spot market price of any liquid asset in a well-organised, orderly free market can change over time, savers who are storing claims on resources must contemplate the possibility of an appreciation or depreciation in the asset’s

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4 In Keynes's day major international financial markets did not operate around the global and hence permit trading 24 hours a day. In today's global financial system, sleep is more of a luxury for international portfolio managers.

5 Each manager believes herself equally capable as her rivals to interpret quickly the effects of any changes as they occur.
market price at any future date affecting the market value of their portfolio. This potential capital gain or loss is obtained by subtracting today’s spot price \( p_s^0 \) from the expected spot price at a future date \( p_s^{t_1} \). When \( (p_s^{t_1} - p_s^0) > 0 \), a capital gain is expected from holding the asset till \( t_1 \); if \( (p_s^{t_1} - p_s^0) < 0 \), a capital loss will be expected.

Let \( q \) be the future expected income to be received from holding a financial security and \( c \) be its carrying costs where both \( q \) and \( c \) are denominated in terms of a specific currency. Offsetting the possible capital loss on choosing any liquid asset is the value of earnings \( (q - c) \) over the time interval the asset is held. There are also transactions costs \( T_s \) incurred in both buying and reselling any liquid asset. Measured in absolute monetary values \( q \) and \( c \) tend to increase with the length of the time interval the asset is held. On the other hand, \( T_s \) is independent of the time interval and normally increases at a decreasing rate as the transaction value of the asset increases. Consequently, as Hicks (1935, p. 67) argued, since transactions costs are independent of time...it will not pay to invest money for less than a certain period’. In other words, if there are no expected capital gains (or losses) then for any given expected flow of \( q - c \), \( T_s \) sets a minimum time interval that the asset must be held to prefer it to cash.

Orthodox literature tends to adopt the convention that \( q \) and \( c \) are evaluated as annual rates of return rather than as the absolute sums suggested supra. This annual rate of return evaluation approach often encourages the analyst to treat \( T_s \) as negligible. But as Kahn (1954, p. 91) has noted, if transactions were costless, maximising the value of one’s portfolio would be determined entirely by what is expected to happen between the initial instant and the immediate next instant ‘and expectations about later dates do not become directly relevant until tomorrow, when behaviour is decided afresh’. In other words, if \( T_s \) is negligible while the spot price is expected to change from moment to moment, then no rational fund manager should worry about the long-run earnings \( (q - c) \) of any portfolio investment. Every expected small change in the next moment’s spot market price will provide sufficient capital gains or losses to induce significant changes in one’s portfolio holdings. It therefore follows that given an unchanging expectation of the future earnings stream and potential capital gains or losses, when the magnitude of transactions costs (in absolute value terms) increase, then, the minimum time interval until one can expect a positive return from holding an asset increases. There is, however, always some possible larger absolute value of a capital gain that permits the holder to sell the asset earlier than this minimum period and still obtain a positive return.

ETW give the impression that because their proposed small grains of sand (i.e. a very low tax rate) converts to larger negative rates the shorter the time interval of a speculative round trip, therefore, the greater the disincentive the shorter the interval. For example, ETW (1995, p. 164) note that a 0.5% ‘tax translates into an annual rate of 4% on a three months’ round trip...more for shorter trips’. (Of course a 0.5% Tobin tax also translates into a 12% annual rate on a one month trip or a 365% tax on a one day round trip.) By evoking such high annual rates of return, the impression is conveyed that a ‘grains of sand’ small Tobin tax will be an overwhelmingly large deterrent for daily or
even monthly speculative flows, while the 'grains of sand' tax is 'a negligible

In truth, however, the Tobin tax, like all transactions costs, is independent
of the round trip time interval, and therefore its deterrent capability is not a
function of the time period. Comparing annualised rates for different time
intervals obscures rather than clarifies the question of how big a deterrent is
any given magnitude of a Tobin tax on a speculative round trip. This issue can
be clarified by measuring capital gains or losses, \( q, c, \) and \( T_s \) as absolute values
in the formulas developed infra. Then our analysis can demonstrate that an
expected increase in the spot exchange rate of anything in excess of 1.1% is
sufficient to more than offset the deterrent effect of a negative 365% annual
rate on a daily round-trip, or a 12% return on a monthly trip, etc. imposed by
a 0.5% Tobin tax. Accordingly, for our purposes, using absolute magnitudes
provides a clearer guide to policy than annualised rates.

If, for a specific liquid asset the portfolio manager (without any risk
aversion\(^6\)) expects
\[
(q - c) + (p_{t+1}^s - p_t^0) - T_s > 0,
\]
then the manager is a 'bull'. If it is expected that
\[
(q - c) + (p_{t+1}^s - p_t^0) - T_s < 0,
\]
then the fund manager is a 'bear'. A portfolio manager will choose, ceteris
paribus, to move her money into those assets that are expected to yield the
highest positive values\(^2\) and sell those assets that have negative perspective
yields.

In the simplest case, if \( (q - c) \) minus \( T_s \) equals zero, then if
\[
(p_{t+1}^s / p_t^0) > 1
\]
then the person is a bull, while if
\[
(p_{t+1}^s / p_t^0) < 1
\]
the person is a bear. In a closed economy, if one holds money as a liquid store
of value, then there is no future net income\(^8\) \([ (q - c) = 0 \), no capital gain or loss
\([ (p_{t+1}^s - p_t^0) = 0 \)], and no transactions costs \( (T_s = 0) \).

\(^6\) Mainstream theorists often assume that the fund manager requires a risk premium evaluated in terms
of a probability. Thus if we were to analyse the problem in terms of probabilistic risk equation (1) would be
rewritten as:
\[
(q - c) + P((p_{t+1}^s - p_t^0)) - T_s > 0,
\]
where \( P ( < 1) \) is the probability risk or decision weight. On the other hand, Keynes (1936, p. 148) and others
(e.g. Davidson, 1991) have argued that uncertainty is different from probabilistic risk. In a world of
uncertainty no reliable probability ratio can be assigned. Consequently, in what follows, the equations in the
text will not be weighted by any probability ratio. This implies that fund managers must rely upon their
'animal spirits' in deciding whether to act on their conjectures about the future.

\(^7\) If we permit unlimited borrowing to finance asset holdings, then since the cost of borrowing is included
in computing \( c, \) the portfolio manager will buy all available assets as long as they meet inequality (1). If fund
managers are limited in their ability to borrow, then they will choose those assets with the highest values for
inequality (1).

\(^8\) If bank demand deposit money provides some positive interest income each day that it is held, then the
\( q \) in our equations would have to be redefined as daily income in excess of what could be earned by holding
demand deposits (cf. Keynes, 1936, p. 167n). In principle nothing is lost by ignoring this complication.

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In an open-economy, flexible exchange rate system, fund managers will not only have to anticipate the expected future income (net of carrying costs), transactions costs of buying and reselling, and capital gain or loss on all tradeable domestic and foreign liquid securities that can be held in one’s portfolio. For international liquid assets they must also factor in possible changes in exchange rates to the decision as to what, if any, international liquid assets to buy, hold or sell at any moment of time.

Whenever some event, whether ephemeral or not, induces one or more managers of large portfolios to change their expectations regarding future spot exchange rates suddenly, then there can be a significant movement of funds from one country to another. Even the mere suspicion that an event will encourage others to undertake a significant international flow can encourage lemming-like behaviour in fund managers to change their expectations of \((p^{f_1}_s - p^{f_0}_s)\) and act promptly to try to beat the crowd.

In today’s floating exchange rate system, nations must hold significant foreign reserves as a buffer stock to encourage and support orderly, organised exchange markets. Orderliness can be maintained in the face of lemming-like speculative portfolio flows by:

1. Selling accommodatingly until the foreign reserves of the nation suffering the outflow of hot money are nearly exhausted. Then the nation cannot maintain an orderly exchange rate market and fund managers who are late-comers can not readily convert their holdings into foreign assets if at all.

2. The country being drained of reserves increases its interest rate (i.e., the \(q - c\) term) sufficiently to offset the expected potential capital loss from holding liquid assets denominated in its currency.

3. Central banks (singularly or cooperatively) actively intervene in the exchange market in an attempt to change private sector expectations regarding \((p^{f_1}_s - p^{f_0}_s)\).

4. Some form of taxation is added to increase the value of the \(T_s\) term to offset the expected capital gain from an exchange rate change.

5. Some form of outright prohibition of hot money portfolio-flows are successfully introduced.

The Tobin tax falls under item (4) where governments use taxation in an attempt to stop speculative flows of hot money. By modifying inequalities (1)–(4) to account for a Tobin tax, we can estimate the magnitude of the effects of the tax on portfolio decisions. We want to focus attention on a comparison of the \(ceteris paribus\) effect of an expected change in the exchange rate on the fund manager’s behaviour with and without a Tobin tax. To do so, let us include the fund manager’s expected capital gains (or losses) for each security \((in \text{ terms of the currency the security is denominated in})\) in the magnitude of \((q - c)\). This will permit us to reserve the term \((p^{f_1}_s - p^{f_0}_s)\) for analysing the \(ceteris paribus\)

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9 The fear of this occurrence can, in itself, induce a panic among fund managers similar to what occurs when someone yells fire in a theatre.

10 In his *Treatise on Money*, Keynes (1930, pp. 313–4) proposed ‘punitive taxation’ on the floating of foreign issues in the domestic securities market and an additional 10% income tax on income earned by domestic residents on foreign loans in order to constrain foreign domestic portfolio investment primarily for income earning purposes. In this *Treatise* proposal, Keynes did was not dealing with speculative activities.

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effect of a manager altering his view as to the value of the spot exchange rate in the near future. Thus the relationship for determining one’s bullishness (or bearishness) requires evaluating the following terms:

\[(q - c) + (p^{11}_s - p^{00}_s) - (x) (p^{11}_s + p^{00}_s) - T_s,\]

where \((x)\) equals the magnitude of the Tobin tax rate. If

\[(q - c) + (p^{11}_s - p^{00}_s) - (x) (p^{11}_s + p^{00}_s) - T_s > 0, \tag{5}\]

the person is a bull, while if

\[(q - c) + (p^{11}_s - p^{00}_s) - (x) (p^{11}_s + p^{00}_s) - T_s < 0, \tag{6}\]

the portfolio manager is bearish. By comparing inequalities (5) and (6) with inequalities (1) and (2) it is obvious that given the values of \((q - c)\) and \(T_s\), a small Tobin tax increases slightly the differential between changes in expected future spot price and current spot price (for any given time interval) before speculative bull or bear responses are induced vis-à-vis the no Tobin tax situation. Consequently a small ‘grains of sand’ Tobin tax, like any other small transaction cost, can stop speculation on small movements in the exchange rate. As the following inequalities demonstrate, any significant change in the exchange rate in the short-run will quickly swamp any ‘grains of sand’ Tobin tax disincentive. Moreover, as we will also suggest, the Tobin tax can have a significantly larger impact on stemming international trade and arbitrage activities than its impact on a simple speculative round-trip.

For comparison with the no tax situation where we assumed \((q - c) - T_s = 0\), when there is a Tobin tax, if

\[(p^{11}_s/p^{00}_s) > [(1 + x)/(1 - x)], \tag{7}\]

then the person is a bull. Moreover, there will still be bearish sentiment, even if the current spot price is expected to rise as long as

\[(p^{11}_s/p^{00}_s) < [(1 + x)/(1 - x)]. \tag{8}\]

Comparing inequalities (7) and (8) with inequalities (3) and (4) provides us with a measure of the magnitude of the minimum expected changes in the exchange rate that must occur to induce bullishness or bearishness in the presence of a Tobin tax compared to the no tax case. For example, if the magnitude of the Tobin tax is \(0.5\%\), then, ceteris paribus, the expected future spot price must increase only by more than \(1.1\%\) more than it would have had to increase in the absence of the tax to induce a bullish sentiment. In other words, even though the negative annual rate of return on a one-day round trip is \(365\%\) when there is a \(0.5\%\) Tobin tax, any increase in the spot price of more

\[If one prefers to introduce risk aversion via a probabilistic risk factor \(P\), where \(P < 1\), then the relevant inequalities are:

\[\begin{align*}
\text{if } & (q - c) + P[(p^{11}_s - p^{00}_s) - (x) (p^{11}_s + p^{00}_s)] - T_s > 0, \tag{5a} \\
\text{the person is a bull, while if } & (q - c) + P[(p^{11}_s - p^{00}_s) - (x) (p^{11}_s + p^{00}_s)] - T_s < 0, \tag{6a} \\
\end{align*}\]

the portfolio manager is bearish.

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than an additional 1\% compared to the no tax situation can still spawn significant speculative flows. Consequently, the imposition of a Tobin Tax \emph{per se} will not significantly stifle even very short run speculation if there is any whiff of a weak currency in the market. In fact, any Tobin tax significantly less than 100\% of the expected capital gain (on a round trip) is unlikely to stop the sloshing around of hot money.

In other words, all that is required to set off speculative flows is an expected change in the exchange rate that is \[
\frac{(1 + x)}{(1 - x)} > \frac{(1 + x)}{(1 - x)}
\] greater than what would set off speculation regarding the exchange rate in the absence of the Tobin tax. Obviously, then, if an institution can be developed that assures portfolio managers that exchange rates will be stable over time, this will do more to inhibit speculative short-term round tripping than any small Tobin tax.

Almost by definition during a speculative run on a currency, one expects significantly large changes in the exchange rate over a very short period of time. For example, the Mexican peso fell by approximately 60\% in the Winter of 1994-5. A Tobin tax of over 23\% would have been required to stop the speculative surge of the peso crisis. At best then a 'grains of sand' small Tobin tax might slow down the speculative fever when 'grains of sand' small exchange rate changes are expected. When dealing with small differentials in exchange rates, however, one is likely to be discussing the question of arbitrage rather than speculation. Accordingly, the Tobin tax is more likely to be a constraint on arbitrage flows rather than on speculative flows. The former usually involves small differences in spot prices, while the latter term should be reserved for larger differences in prices.

The grains of sand Tobin tax might be the straw that breaks the speculative back of very small portfolio managers, since normal transactions costs (\(T_s\)) of foreign transactions are essentially regressive (cf. Hicks, 1967, p. 67). An additional proportional (Tobin) tax on top of a large regressive transactions cost can keep small speculators out of the market. For movements of larger sums, however, the normal transactions costs quickly shrink to a negligible proportion of the total transaction. Since in today's free-wheeling financial markets, individuals with even small portfolio sums can join mutual funds that can speculate on foreign currencies, however, a Tobin tax is unlikely to constrain even small investors – who can always join a large mutual fund to reduce the impact of total transactions costs sufficiently to reduce the remaining Tobin tax to relative insignificance whenever speculative fever runs high.

Finally, there is a rule of thumb that suggests that under the current flexible exchange rate system, there may be four or more normal hedging financial transactions involved in any single arms-length international trade transaction. This exceeds the two financial transactions implicit in a ETW proverbial short-term speculative (non-hedged) round-trip.\footnote{12} If this two-to-one ratio is

\footnote{12} Although there is very little direct evidence of this multiple for arms-length real international trade flow, there are logical reasons why a multiple should exist. First any bank that provides a forward transaction to a customer without having a client who needs an identical opposite trade will hedge the risk via engaging in spot and swap transactions. Such bank behaviour implies a multiple of the original customer transaction.}

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anywhere near correct, a 0·5 % Tobin tax could be equivalent to instituting an additional 2 % universal tariff on all goods and services traded in the global economy. It would appear then that a Tobin transaction tax might throw larger grains of sand into the wheels of international real commerce than it does into speculative hot money flows.

Whether this 2 to 1 ratio is accurate or not, the important principle involved here is that as long as some hedging transactions are required on arms-length real trade flows, the impact of the Tobin tax is likely to be at least as large and probably larger on international trade than on international portfolio flows.\(^\text{13}\) Independent of questions of the political and economic feasibility of instituting a ubiquitous Tobin tax, therefore, proposals to increase marginally transactions costs for foreign exchange by either a Tobin tax or a small feasible opportunity cost tax on capital is unlikely to prevent speculative feeding frenzies that lead to attacks on major currencies while it may inflict greater damage on international trading in goods and services and arbitrage activities.

It is such considerations that led Keynes to suggest an outright prohibition of all significant international portfolio flows through the creation of a Supranational central bank and his ‘bancor’ plan. At this stage of economic development and global economic integration, however, a supranational central bank is not politically feasible. Accordingly what should be aimed for is a more modest goal of obtaining an international agreement among the major trading nations.\(^\text{14}\) To be economically effective and politically feasible, this agreement, while incorporating the economic principles that Keynes laid down in his bancor plan, should not require any nation to surrender control of local banking systems and fiscal policies.

Keynes introduced an ingenious method of direct prohibition of hot money flows by a ‘bancor’ system with fixed (but adjustable) exchange rates and a trigger mechanism to put more of the onus of resolving current account deficits on surplus nations. It is possible to update Keynes’s prohibition proposal to meet 21st century circumstances. In the next section, such a system will be proposed. Moreover, this system will be in the best interests of all nations for it will make it easier to achieve global full employment without the danger of importing inflationary pressures from one’s trading partners.

There is not enough space in this paper to debate all possible alternative proposals for fire prevention of currency speculation. It is, however, the proper public forum for raising the public’s consciousness for a need for a permanent currency fire prevention institution rather than merely relying on either fire fighting intervention such as the suggested Emergency Fund financed by contributions of the G7 nations and managed by the IMF, or a laissez-faire

Secondly, the growth of swap and forward transactions vis-à-vis spot transactions is consistent with the view that more hedging per trade transactions are occurring compared to the past. (I am indebted to Jan Kregel for this suggestion.)

\(^\text{13}\) Many politicians favour a Tobin tax as a ‘cash cow’ rather than for its alleged affect on slowing international speculation. A Tobin tax is seen as a rich source of tax revenue. Kelly (1994) has estimated that a 0·5 % Tobin tax would yield one billion pounds sterling per day for the English government.

\(^\text{14}\) To encourage global cooperation within this agreement, the major trading partners should insist that other nations that want to trade with them and receive most favoured nation treatment must join the agreement.

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policy on international capital markets that can produce currency fires to burn the free world’s real economies. We must recognise the very real possibility that there can be no safe harbour when a major currency is attacked.

III. REFORMING THE WORLD’S MONEY

Fifty years ago, Keynes (1980, p. 168) provided a clear outline of what is needed when he wrote:

‘We need an instrument of international currency having general acceptability between nations.... We need an orderly and agreed upon method of determining the relative exchange values of national current units.... We need a quantum of international currency... [which] is governed by the actual current [liquidity] requirements of world commerce, and is capable of deliberate expansion.... We need a method by which the surplus credit balances arising from international trade, which the recipient does not wish to employ can be set to work... without detriment to the liquidity of these balances.’

What is required is a closed, double-entry bookkeeping clearing institution to keep the payments ‘score’ among the various trading regions plus some mutually agreed upon rules to create and reflux liquidity while maintaining the international purchasing power of the international currency. The eight provisions of the clearing system suggested in this section meet the criteria laid down by Keynes. The rules of this Post Keynesian proposed system are designed (i) to prevent a lack of global effective demand due to any nation(s) either holding excessive idle reserves or draining reserves from the system, (ii) to provide an automatic mechanism for placing a major burden of payments adjustments on the surplus nations, (iii) to provide each nation with the ability to monitor and, if necessary, to put boulders into the movement of international portfolio funds in order to control movements of flight capital, and finally (iv) to expand the quantity of the liquid asset of ultimate international redemption as global capacity warrants.

Some elements of such a clearing system would include:

1. The unit of account and ultimate reserve asset for international liquidity is the International Money Clearing Unit (IMCU). All IMCU’s are held only by central banks, not by the public.

2. Each nation’s central bank is committed to guarantee one way convertibility from IMCU deposits at the clearing union to its domestic money. Each central bank will set its own rules regarding making available foreign monies (though IMCU clearing transactions) to its own bankers and private sector residents.

Williamson (1987, p. 200) recognises that when balance of payments ‘disequilibrium is due purely to excess or deficient demand’, flexible exchange rates per se can not facilitate international payments adjustments.

This provides as an added bonus by making tax-avoidance and profits from illegal trade more difficult to conceal.

Correspondent banking will have to operate through the International Clearing Agency, with each central bank regulating the international relations and operations of its domestic banking firms. Small scale smuggling of currency across borders, etc., can never be completely eliminated. But such movement’s are
Since Central Banks agree to sell their own liabilities (one-way convertibility) against the IMCU only to other Central Bankers and the International Clearing Agency while they simultaneously hold only IMCUs as liquid reserve assets for international financial transactions, there can be no draining of reserves from the system. Ultimately, all major private international transactions clear between central banks’ accounts in the books of the international clearing institution.

3. The exchange rate between the domestic currency and the IMCU is set initially by each nation – just as it would be if one instituted an international gold standard. Since enterprises that are already engaged in trade have international contractual commitments that would span the change-over interval, then, as a practical matter, one would expect that the existing exchange rate structure (with perhaps minor modifications) would provide the basis for initial rate setting.

Provisions 7 and 8 infra indicate when and how this nominal exchange rate between the national currency and the IMCU would be changed in the future.

4. Contracts between private individuals will continue to be denominated into whatever domestic currency permitted by local laws and agreed upon by the contracting parties. Contracts to be settled in terms of a foreign currency will therefore require some announced commitment from the central bank (through private sector bankers) of the availability of foreign funds to meet such private contractual obligations.

5. An overdraft system to make available short-term unused creditor balances at the Clearing House to finance the productive international transactions of others who need short-term credit. The terms will be determined by the pro bono clearing managers.

6. A trigger mechanism to encourage a creditor nation to spend what is deemed (in advance) by agreement of the international community to be excessive credit balances accumulated by running current account surpluses. These excessive credits can be spent in three ways: (1) on the products of any other member of the clearing union, (2) on new direct foreign investment projects, and/or (3) to provide unilateral transfers (foreign aid) to deficit members. Spending on imports forces the surplus nation to make the adjustment directly through the balance on goods and services. Spending by way of unilateral transfers permits adjustment directly by the current account balance; while direct foreign investment provides adjustment by the capital accounts (without setting up a contractual debt that will require reverse current account flows in the future).

Proviso 6 provides the surplus country with considerable discretion in deciding how to accept the ‘onus’ of adjustment in the way it believes is in its

merely a flea on a dog’s back – a minor, but not debilitating, irritation. If, however, most of the residents of a nation hold and use (in violation of legal tender laws) a foreign currency for domestic transactions and as a store of value (e.g. it is estimated that Argentinians hold more than $5 billions US dollars), this is evidence of a lack of confidence in the government and its monetary authority. Unless confidence is restored, all attempts to restore economic prosperity will fail.

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residents’ best interests. It does not permit the surplus nation to shift the burden to the deficit nation(s) through contractual requirements for debt service charges independent of what the deficit nation can afford. The important thing is to make sure that continual oversaving by surplus nations can not unleash depressionary forces and/or a building up of international debts so encumbering as to impoverish the global economy of the 21st century.

In the unlikely event that the surplus nation does not spend or give away these credits within a specified time, then the clearing agency would confiscate (and redistribute to debtor members) the portion of credits deemed excessive. This last resort confiscatory action by the managers of the clearing agency would make a payments adjustment through unilateral transfer payments in the current accounts.

Under either a fixed or a flexible rate system, nations may experience persistent trade deficits merely because trading partners are not living up to their means – that is because other nations are continually hoarding a portion of their foreign export earnings (plus net unilateral transfers). By so doing, these oversavers are contributing to a lack of global effective demand. Under provision 6, deficit countries would no longer have to deflate their real economy merely to adjust payment imbalances because others are oversaving. Instead, the system would seek to remedy the payment deficit by increasing opportunities for deficit nations to sell abroad and thereby earn their way out of the deficit.

Some may fear that if a surplus nation is close to the trigger point it could short circuit the system by making loans to reduce its credit balance prior to setting off the trigger. Since preventing unreasonable debt service obligations is an important objective of this proposal, a mechanism which monitors and can restrict such pre-trigger lending activities may be required.

One possible way of eliminating this trigger avoidance lending loophole is as follows: An initial agreement as to what constitutes sensible and flexible criteria for judging when debt servicing burdens become unreasonable is established. Given these criteria, the clearing union managers would have the responsibility for preventing additional loans which push debt burdens beyond reasonable servicing levels. In other words, loans that push debt burdens too far, could not be cleared though the clearing union, i.e. the managers would refuse to release the IMCU’s for loan purposes from the surplus country’s account. (I am indebted to Robert Blecker for suggesting this point.)

The managers would also be required to make periodic public reports on the level of credits being accumulated by surplus nations and to indicate how close these surpluses are to the trigger point. Such reports would provide an informational edge for debtor nations permitting them to bargain more successively regarding the terms of refinancing existing loans and/or new loans. All loans would still have to meet the clearing union’s guidelines for reasonableness.

I do not discount the difficulties involved in setting up and getting agreement on criteria for establishing unreasonable debt service burdens. (For some suggestions, however, see the second paragraph of provision 8.) In the absence of cooperation and a spirit of goodwill that is necessary for the clearing union to provide a mechanism assuring the economic prosperity of all members, however, no progress can ever be made.

Moreover, as the current international debt problem of African and Latin American nations clearly demonstrates, creditors ultimately have to forgive some debt when they previously encourage excessive debt burdens. Under the current system, however, debt forgiveness is a last resort solution acceptable only after both debtor and creditor nations suffer from faltering economic growth. Surely a more intelligent option is to develop an institutional arrangement which prevents excessive debt servicing burdens from ever occurring.

Oversaving is defined as a nation persistently spending less on imports plus direct equity foreign investment than the nation’s export earnings plus net unilateral transfers.

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7. A system to stabilise the long-term purchasing power of the IMCU (in terms of each member nation's domestically produced market basket of goods) can be developed. This requires a system of fixed exchange rates between the local currency and the IMCU that changes only to reflect permanent increases in efficiency wages. This assures each central bank that its holdings of IMCUs as the nation's foreign reserves will never lose purchasing power in terms of foreign produced goods, even if a foreign government permits wage-price inflation to occur within its borders. The rate between the local currency and the IMCU would change with inflation in the local money price of the domestic commodity basket.

If increases in productivity lead to declining nominal production costs, then the nation with this decline in efficiency wages (say of 5%) would have the option of choosing either (a) to permit the IMCU to buy (up to 5%) less units of domestic currency, thereby capturing all (or most of) the gains from productivity for its residents while maintaining the purchasing power of the IMCU, or (b) to keep the nominal exchange rate constant. In the latter case, the gain in productivity is shared with all trading partners. In exchange, the export industries in this productive nation will receive an increased relative share of the world market.

By altering the exchange rate between local monies and the IMCU to offset the rate of domestic inflation, the IMCU's purchasing power is stabilised. By restricting use of IMCUs to Central Banks, private speculation regarding IMCUs as a hedge against inflation is avoided. Each nation's rate of inflation of the goods and services it produces is determined solely by (a) the local government's policy towards the level of domestic money wages and profit margins vis-à-vis productivity gains, i.e., the nation's efficiency wage. Each nation is therefore free to experiment with policies for stabilising its efficiency wage to prevent inflation. Whether the nation is successful or not, the IMCU will never lose its international purchasing power. Moreover, the IMCU has the promise of gaining in purchasing power over time, if productivity grows more rapidly than money wages and each nation is willing to share any reduction in real production costs with its trading partners.

Provision 7 produces a system designed to maintain the relative efficiency wage parities amongst nations. In such a system, the adjustability of nominal exchange rates will be primarily (but not always, see Provision 8) to offset changes in efficiency wages among trading partners. A beneficial effect that follows from this proviso is that it eliminates the possibility of a specific industry in any nation put at a competitive disadvantage (or secure a competitive advantage) against foreign producers solely because the nominal exchange rate

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21 The efficiency wage is related to the money wage divided by the average product of labour, it is the unit labour cost modified by the profit mark-up in domestic money terms of domestically produced GNP. At this preliminary stage of this proposal, it would serve no useful purpose to decide whether the domestic market basket should include both tradable and non-tradable goods and services. (With the growth of tourism more and more nontradable goods become potentially tradeable.) I personally prefer the wider concept of the domestic market basket, but it is not obvious that any essential principle is lost if a tradable only concept is used, or if some nations use the wider concept while others the narrower one.

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was changed independently of changes in efficiency wages and the real costs of production in each nation.

Nominal exchange rate variability will no longer create the problem of a loss of competitiveness due solely to the overvaluing of a currency as, for example, experienced by the industries in the American ‘rust belt’ during the period 1982–5. ETW (1995, p. 164) has noted that the appreciation of the dollar against the yen in the early 1980s ‘nearly destroyed the American automotive industry’. Even if temporary, currency appreciation can have significant permanent real costs, e.g., industries may abandon markets and the resulting idle existing plant and equipment may be cast aside as too costly to maintain.

Proviso 7 also prevents any nation from engaging in a beggar-thy-neighbour, export-thy-unemployment policy by pursuing a real exchange rate devaluation that does not reflect changes in efficiency wages. Once the initial exchange rates are chosen and relative efficiency wages are locked in, reductions in real production costs that are associated with a relative decline in efficiency wages is the main factor (with the exception of provision 8) justifying an adjustment in the real exchange rate.

Although provision 6 prevents any country from piling up persistent excessive surpluses this does not mean that it is impossible for one or more nations to run persistent deficits. Proposal 8 infra provides a programme for addressing the problem of persistent export–import deficits in any one nation.

8. If a country is at full employment and still has a tendency towards persistent international deficits on its current account, then this is *prima facie* evidence that it does not possess the productive capacity to maintain its current standard of living. If the deficit nation is a poor one, then surely there is a case for the richer nations who are in surplus to transfer some of their excess credit balances to support the poor nation.\(^{22}\) If it is a relatively rich country, then the deficit nation must alter its standard of living by reducing the relative terms of trade with major trading partners. Rules, agreed upon in advance, would require the trade deficit rich nation to devalue its exchange rate by stipulated increments per period until evidence becomes available to indicate that the export–import imbalance is eliminated without unleashing significant recessionary forces.\(^{23}\)

If, on the other hand, the payment deficit persists despite a continuous positive balance of trade in goods and services, then there is evidence that the deficit nation might be carrying too heavy an international debt service obligation. The *pro bono* officials of the clearing union should bring the debtor and creditors into negotiations to reduce annual debt service payments by (1) lengthening the payments period, (2) reducing the interest charges, and/or (3) debt forgiveness.\(^{24}\)

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\(^{22}\) This is equivalent to a negative income tax for poor fully employed families within a nation.

\(^{23}\) Although relative prices of imports and exports would be altered by the change in the terms of trade, the adjustment is due to the resulting income effect, not a substitution effect. The deficit nation’s real income will fall until its import surplus disappears.

\(^{24}\) The actual programme adopted for debt service reduction will depend on many parameters including: the relative income and wealth of the debtor *vis-à-vis* the creditor, the ability of the debtor to increase its *per capita* real income, etc.
If any government objects to the idea that the IMCU provisions provide governments with the ability to limit the free movement of 'capital' funds, then this nation is free to join other nations of similar attitude in forming a regional currency union and thereby assuring a free flow of funds among the residents of the currency union.

IV. CONCLUSION

In normal times with free capital markets, 'speculators may do no harm as bubbles on a steady stream of enterprise. But the position is serious when enterprise becomes the bubbles on a whirlpool of speculation' (Keynes, 1936, p. 159). The grains of sand of a Tobin tax may prick the small bubbles of speculation, but the sand is more likely to significantly restrict the flow of real trade and international arbitrage activities. On the other hand, the sands of the Tobin tax will be merely swept away in whirlpools of speculation. Boulders are needed to stop the destructive currency speculation from destroying global enterprise patterns, for 'it is enterprise which builds and improves the world's possessions' (Keynes, 1930, p. 148).

ETW should be praised for forcing economists to focus their attention on the problem of excessive speculative volatility in the exchange rate markets. This problem is not easily resolved. If we start with the defeatist attitude that it is too difficult to change the awkward system in which we are enmeshed, then no progress will be made (cf. Garber and Taylor, 1995; Kenen, 1995). We must reject such defeatism at this exploratory stage and merely inquire whether particular proposals for improving the operations of the international payments system to promote global growth will be effective without creating more difficulties than those inherent in the current system. The health of the world economic system will not permit us to muddle through.

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