

THE CASE FOR REGULATING INTERNATIONAL CAPITAL FLOWS

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How one interprets financial market activity and chooses a policy stance regarding the regulation of such markets depends on the underlying economic theory that one explicitly, or implicitly, utilizes to explain the role of financial markets in an entrepreneurial economy. There are two major alternative theories of financial markets: (1) the Classical efficient market theory (hereafter EMT) and (2) Keynes's liquidity preference theory (hereafter LPT). Each theory produces a different set of policy prescriptions.

EMT is the backbone of conventional economic wisdom. The mantra of EMT is "the market knows best" how to optimally allocate scarce capital resources and promote maximum economic growth. This EMT view was succinctly epitomized in US Deputy Treasury Summers's statement: "the ultimate social functions [of financial markets are] spreading risks, guiding the investment of scarce capital, and processing and disseminating the information possessed by diverse traders...prices will always reflect fundamental values The logic of efficient markets is compelling" (Summers and Summers, 1989 , p. 166).

In contrast, the logic of Keynes's LPT requires that the primary function of financial markets is to provide liquidity not efficiency. (And a liquid market requires orderliness.) If Keynes's LPT of orderly financial markets is relevant, then the world's international capital markets can never deliver, in either the short-run or the long-run, the results claimed by EMT.

Peter L. Bernstein is the author of the best-selling book entitled AGAINST THE GODS (1996); a treatise on risk management, probability theory and financial markets. Bernstein argues that the LPT and not EMT is the relevant theory for the world in which we live. Bernstein states "The fatal flaw in the efficient market hypothesis is that there is no such thing as an [efficient] equilibrium price....[and] a market can never be efficient unless equilibrium prices exist and are known"(1998b, emphasis in original; also Bernstein, 1998a). In other words, in Bernstein's view, EMT is not applicable to real world financial markets.

If EMT theory is not applicable to the real world then, as we argue in Section V infra, there is an important role for some degree of international capital flow regulation as a necessary but not

sufficient condition to produce a golden age of economic development for the global economy of the 21st century. Accordingly, in Section VI *infra*, there are some suggestions for reforming the international payments mechanism based on Keynes's General Theory approach.

Since the 1970s, however, Summers's "compelling" efficient market logic has provided the justification for nations to dismantle most of the ubiquitous post-war capital regulations of financial markets. The argument for this "liberalization" of financial markets was that it would produce lower real costs of capital and higher output and productivity growth rates compared to the growth rates experienced between World War II and 1973 when international capital flow controls were practiced by most countries of the world, including the United States.

What are the facts and do they support this EMT argument for financial liberalization? Section I provides evidence showing that the post 1973 period of capital market liberalization has not delivered what prestigious efficient market theorists (including Nobel Prize winners) claimed it would. Sections II to IV explains why, if we use Keynes's LPT instead of EMT for understanding real world financial markets, this evidence should not surprise us .

I. THE FACTS

In these days when Asian tigers collapse, Russian bears default and the fear of the Brazilian "real" reeling menace our global economy, we are being haunted by the question "Can 'it' happen again?" Can we have another Great Depression at the end of the 20th century?

Writing in 1936, Keynes noted, "It is enterprise which builds and improves the world's possessions.... Speculators may do no harm as bubbles on the steady stream of enterprise. But the position is serious when enterprise becomes the bubbles on a whirlpool of speculation". Comparing the pre-1973 and post-1973 record indicates that, since 1973, enterprise has slowly become enmeshed in an ever-increasing whirlpool of speculation. The years 1950 to 1973, on the other hand, were an era of unsurpassed economic global prosperity that Adelman (1991) has characterized as a "Golden Age of Economic Development...an era of unprecedented sustained economic growth in both developed and developing countries".

Table 1 provides the statistical evidence (augmented by more recent data) that Adelman used in reaching her golden age conclusion. Adelman (1991, p. 15) found that the average annual growth rate of OECD real GDP per capita from 1950 till 1973 was "almost precisely double the previous peak growth rate of the industrial revolution period. Productivity growth in OECD countries was more than triple (3.75 times) that of the industrial revolution era".

The resulting prosperity of the industrialized world was transmitted to the less developed nations through world trade, aid, and direct foreign investment. From 1950-73, average growth in per capita GDP for all less developed countries (LDCs) was 3.3 per cent, almost triple the average growth rate experienced by the industrializing nations during the industrial revolution. Aggregate GDP of the LDCs increased at almost the same rate as that of the developed nations, 5.5 per cent

and 5.9 per cent respectively. The higher population growth of the LDCs caused the lower per capita income growth.

Since 1973 OECD economic growth has been approximately half of what it was during

the golden age and not much better than the experience of the 19th and early 20th century industrialized nations. Although experiencing slower growth rates than in the 1950-1973 period, LDCs on average did better than OECD nations between 1973 and 1995, in no small measure due to the now-ended "economic miracle" of Southeast Asia.

TABLE 1. REAL GDP (ANNUALIZED GROWTH RATE)

YEARS REAL GDP PER CAPITA

WORLD OECD NATIONS DEVELOPING NATIONS*

1700-1820 na 0.2% na

1820-1913 na 1.2% na

1919-1940 na 1.9% na

1950-1973 na 4.9% 3.3%

1973-1981 na 1.3% na

1981-1990 1.2% 2.2% 1.2%

1991-1993 -0.4% 0.6% 2.6%

1994-1995 1.3% 2.3% 2.9%

TOTAL REAL GDP

WORLD OECD NATIONS DEVELOPING NATIONS*

1950-1973 na 5.9% 5.5%

1966-1973 5.1% 4.8% 6.9%

1974-1980 3.4% 2.9% 5.0%

1981-1990 3.2% 3.1% 3.3%

1991-1993 1.2% 1.2% 4.6%

1994-1995 2.8% 2.6% 4.7%

(*Excluding Eastern and Central Europe and Former Soviet Union

Today's world unemployment situation is very grim. Although the unemployment rate in the European Union declined from 11.3% in July 1996 to 10.2% in May 1998, the International Labour Organization estimates the global unemployment rate will increase to 15 per cent by the end of 1998 with 150 million unemployed (compared to 125 million in 1996). In the 1990s, unemployment rates in many OECD nations reached and remained close to historical highs not seen since before the Second World War. With the currency crisis threatening Latin America and perhaps even China, higher global unemployment and slower global economic growth seems inevitable. Fed Chairman Alan Greenspan has indicated that the United States cannot remain an island of prosperity in the global sea of recession and depression.

. What can we conclude from these facts? First, financial liberalization since 1973 has not produced the achievements its advocates claimed it would. The historical record clearly demonstrates that a fixed exchange rate system is associated with better global economic performance than a flexible rate system. Second, during the post-war period, until 1973, global economic performance was nothing short of spectacular despite fixed exchange rates, widespread capital controls, and increasing rigidities in national labor markets. Third, since 1973, global economic performance has been comparatively worse. The global economy has stumbled from one economic crisis to another, e.g., stagflation in the 1970s, the Latin American and African Debt problems of the 1980s, and the international financial market crises of the 1990s. Since the 1990's began, the global economy has suffered a major financial crisis every two to three years: the 1992 EMS currency crisis, the 1994-5 Mexican pesos crisis, and the 1997-8 Asian and Russian crisis. At the end of the next section, we will explain why the introduction of the Euro has the potential to cause a major global economic crisis in the next few years. Economics has once more become the dismal science.

II. EXPLAINING THE FACTS

Until 1973, the international payments system was, in large measure, shaped by Keynes's thesis that flexible exchange rates and free international capital mobility are incompatible with global full employment and rapid economic growth in an era of multilateral free trade (Felix, 1977-8). Operating until 1973 under an international payments system that accommodated Keynes's "incompatibility thesis", the global economy experienced unparalleled economic growth and prosperity despite wide-spread capital controls and increasing labor markets rigidities and the growth of the welfare state. This accommodation occurred when a fixed exchange rate and capital controls system was combined with a civilizing principle that Keynes had emphasized, namely that creditor nations must accept a major responsibility for solving persistent international payments imbalances.

Unfortunately the essence of Keynes's General Theory analysis of a money-using, market-oriented, entrepreneurial economy was never incorporated into orthodox economic theory.

Accordingly, by the 1960s, mainstream classical economists were developing closed and open economy models based on three classical axioms that Keynes had overthrown. Using these axioms, classical (supply-side) models were propagated that “demonstrated” that Keynes’s incompatibility thesis was wrong. Instead these classical models “proved” that free trade and optimum global economic growth required a laissez-faire approach with flexible exchange rates, free international capital mobility and flexible domestic labor markets. In these classical models, regulation to limit financial flows (whether of cross-border capital flows or within a nation) imposed huge costs on society. Free the banking system and all financial markets from “onerous” government oversight and regulation, permit unregulated off-shore banking and, policy makers were assured, a world of heavenly economic bliss would envelop the planet.

Those who called themselves Neoclassical Synthesis Keynesians had already adopted microfoundations for their models that required these three (neo)classical axioms that Keynes rejected (Davidson, 1984). This unfortunate marriage of classical axioms with Keynesian macro policies was dubbed “Bastard Keynesianism” by Joan Robinson. Their logical inconsistency made these “Keynesians” easy prey for the classical counterrevolution. Nevertheless, this successful academic resurrection of the classical system would have not been sufficient to alter the policy mix if it were not for events of the 1970s.

The 1973 oil price shock created huge international payments imbalances and unleashed inflationary forces in oil consuming nations. Politicians found irresistible the allure of the Panglossian siren song that “all is for the best in the best of all possible worlds provided we let well enough alone”. Without having to admit that they did not know what to do, policy-makers used the conclusions of the 1960s classical counter-revolutionary theories to justify their abandonment of Keynes's international policy prescriptions to constrain "hot money" international capital flows and to maintain fixed, but adjustable, exchange rates. Instead a "leave it to the efficient marketplace" philosophy was adopted. Then if anything went wrong, policy makers could suggest that they could not be blamed -- for, after all, the market "knows" best as Nobel prize winners Friedman, Lucas, Merton and Scholes continually assure us.

The resulting new international world of finance made the exchange rate itself an object of speculation. Utilizing new computer technology, financial capital could speed around the globe at the speed of light. Since the mid-1970s, international financial transactions have grown thirty times as fast as the growth in international trade (Felix, 1997-8). International financial flows now dominate trade payments. Exchange rate movements reflect changes in speculative positions rather than changes in patterns of trade.

Significant exchange rate movements affect the international competitive position of domestic vis-a-vis foreign industries and therefore tend to depress the inducement to invest in large projects with irreversible sunk costs. In an uncertain (nonergodic) world where the future cannot be reliably predicted from past and present price signals, volatile exchange rates undermine entrepreneurs’ confidence in their ability to appraise the potential profitability of any large investment project. Every exchange rate increase not only threatens domestic industries with significant loss of export-market share but also home-market share loss as imports become less expensive. Managers realize that any upward blip in the exchange rate during the lifetime of any contemplated investment project can saddle their enterprises with irreversible costly idle

capacity. Consequently, the marginal efficiency of investment is reduced. The greater the uncertainty regarding future exchange rates, the less investment globally -- just as Keynes's (1936, ch. 17) analysis of liquidity preference and investment predicted. As a result, trade and real investment spending in open economies have become the tail wagged by the international speculative exchange rate dog.

It is not surprising, therefore, that when the free world changed from a fixed to a flexible exchange rate system, the annual growth rate in investment in plant and equipment in OECD nations fell from 6% (before 1973) to less than 3 % (since 1973). Less investment growth means a slower economic growth rate in OECD nations (from 5.9% to 2.8%) while labor productivity growth declined even more dramatically (from 4.6% to 1.6%).

Instead of producing the utopian promises of greater stability and more rapid economic growth promised by classical economists, liberalization of capital flow regulations has been associated with exchange rate instability, slower growth, higher unemployment, volatility in bond rates and sharp increases in real long-term bond rates. Liberalization drove the final nail into the coffin of the golden age of economic development.

The post-1973 international payments system has not serve the emerging global economy well. The Financial Times of London and The Economist, both early strong advocates of the post-1973 floating rate system, acknowledged that this system is a failure and was sold to the public and the politicians under false advertising claims. In its 26 September 1998 (p. 80) issue, The Economist concluded that either a pure floating rate or a dirty (semi-fixed) floating exchange rates were of "no use".

As early as 1986 New York Times columnist Flora Lewis noted that government and business leaders recognize that "the issues of trade, debt, and currency exchange rates are intertwined". Lewis warned that the world is on a course leading to an economic calamity, yet "nobody wants to speak out and be accused of setting off a panic...the most sober judgment is that the best thing that can be done now is to buy more time for adjustments to head off a crash.... Decision makers aren't going to take sensible measures until they are forced to by crisis". Is the Asian financial crisis the event that will finally galvanize public opinion and political leaders to the need for major international monetary institutional reforms?

Or will Keynes's (1936, p. 158) aphorism "Worldly wisdom teaches that it is better for reputation to fail conventionally than succeed unconventionally" rule the day. I do not see any national leader willing to challenge conventional economic analysis and call for a complete and thorough overhaul of an international payments system that is far worse than the one we abandoned in 1973. Instead there are calls for patches on the current payments system in terms of a marginal transactions tax here and/or a marginally larger lender of last resort there, or marginally higher capital adequacy ratios for banks as part of a package for more "transparency", and even inconsistent calls for Keynesian spending in Japan while lauding fiscal budget surpluses in the United States and reducing government deficits in the EU. There is no one with significant media visibility who has the courage to speak out in public forums and suggest that the classical economic philosophy that has rationalized our macro economic affairs in recent decades is a formula for potential economic disaster at worst and modest global economic growth at best.

Until we reform the world's international payments system it will be impossible for any individual nation, except perhaps the United States, to undertake national macro policies to maintain high levels of aggregate demand internally without fear of a balance of payments constraint. As long as the US dollar is the main form of foreign reserves, only the United States does not have to worry about a balance of payments constraint. Accordingly, since 1981, the United States has run large trade deficits with impunity. Because of the United States large trade deficit in 1998, the effective demand of the global economy is some \$200+ billion higher and the global economy is better off than it would have been if the US was constrained by its huge current account deficit.

With the introduction of the Euro in 1999, however, if international liquidity holders reveal a preference for the Euro over the dollar as a international liquid store of value, then Gresham's Law will come into play and the global stimulus that has been coming from the United States in the last decade could readily disappear in the early years of the 21st century. The result will be an additional deflationary force unleashed on the global economy. And yet, it is only through a significant stimulus to global effective demand that we can restore a golden age of economic growth for the 21st century similar to what the global economy experienced between 1950 and 1973.

This Post Keynesian message is contrary to the conventional wisdom of mainstream economic theory that attributes the cause of persistently high unemployment to labor market rigidities (in closed economic models) and, in an open economy context, government interference in exchange rates, capital flows, and investments (via crony capitalism). Since the late 1960s, the conventional wisdom of economists has been to advocate micro-policies to free-up both labor and capital markets.

This belief in a policy to loosen labor and capital movements, I call "the laxative theory to economic bliss". If such purgative capital and labor market medicines succeed in increasing employment and growth in any one country, it does so only by exporting some of its unemployment to its trading partners. The pursuit of these purgatory prescriptions in many nations simultaneously invokes a negative sum game that unleashes deflationary forces around the globe.

III. UNDERLYING THEORY: KEYNES VS CLASSICAL MICROFOUNDATIONS

Samuelson (1969, p. 184) has made the acceptance of a basic classical postulate, the ergodic axiom, the sine que non of economics as a science. Following Samuelson's ergodic edict, Lucas and Sargent (1981, pp. xi-xvi) made the ergodic axiom not only a necessary and sufficient condition for forming rational expectations but also a necessity for developing economics as an empirically based science. In an ergodic system, estimates of today's objective probabilities calculated from an observed data set provide (statistically) reliable information about the conditional probability function that will govern future outcomes. Accordingly, the future is merely the statistical shadow of the past.

This ergodic axiom is the 20th century stochastic process equivalent of the perfect certainty assumption of the 19th century deterministic classical model. This axiom assures that the future

long-run equilibrium path of the economy is immutably preprogrammed and embodied in today's "fundamentals". In such a predetermined system, the market will necessarily optimally allocate capital among projects so long as self-interested agents are free to make market decisions based on statistically reliable current information about future rates of return.

The ergodic axiom is one of three axioms that Keynes rejected when he emphasized the uncertainty that surrounds future outcomes. Keynes's description of uncertainty matches technically what mathematical statisticians call a nonergodic stochastic system. In Keynes's "general theory" (1936, p. 161-3), the explanation of the long-run persistent existence of self-interested speculators in financial markets makes sense only if one assumes that market participants "know" that it is impossible to calculate any reliable mathematical based expectation of gain calculated in accordance with existing probabilities. Today's (presumed to exist) objective probability conditional distribution is not a reliable actuarial guide to the future.. Had Scholes and Merton understood The General Theory before they won their Nobel Prize, they and their partners in Long Term Capital Management hedge fund would not now be de facto wards of the State. As Galbraith (1998) stated the fact that Merton and Scholes "may soon seek the protection of the personal bankruptcy laws is almost besides the point; the intellectual bankruptcy of the [EMT] economics underlying their actions is already complete".

In 1937, Keynes emphasized this difference between his "general theory" and the classical orthodoxy embodied in EMT. In classical theory, Keynes (1937. pp.112-5). wrote:

"[f]acts and expectations were assumed to be given in a definite form; and risks...were supposed to be capable of an exact actuarial computation. The calculus of probability...was supposed capable of reducing uncertainty to the same calculable state as that of certainty itself....I accuse the classical economic theory of being itself one of these pretty , polite techniques which tries to deal with the present by abstracting from the fact that we know very little about the future....[a classical economist] has overlooked the precise nature of the difference which his abstraction makes between theory and practice, and the character of the fallacies into which he is likely to be lead".

In Keynes' General Theory (1936, p.159) money is never neutral and therefore dealings in liquid financial assets can affect real economic outcomes. In a world of nonergodic uncertainty, the primary function of organized financial markets is to provide liquidity. Liquidity involves the ability to buy and resell assets in a well-organized, orderly market in order to obtain the medium of contractual settlement (i.e., money) to meet one's nominal contractual liabilities when they come due. Orderliness means limiting market movements by controlling the net cash flows into and out of the market, just as a theatre owner sells just as many tickets as seats to control crowd inflow into a Broadway hit, and laws preventing shouting fire in a crowded theatre encourage an orderly crowd outflow – rather than encouraging everyone to make a fast and disorderly exit through the doors.

The ability to maintain one's liquidity is important to people in the real world, but it would not be an important social function if market efficiency ubiquitously prevailed. When one presumes markets are efficient, then logical consistency requires the presumption that individuals can plan their future spending on goods and services efficiently by buying and selling financial assets

whose maturity date matches the individual's life-cycle spending pattern stream vis-a-vis the individual's income pattern stream (e.g., as assumed in overlapping generation models). Sudden liquidity needs to meet uncertain, unpredictable future contractual obligations when they come due have no role to play in EMT.

If, however, agents in one's model believe their world is uncertain (nonergodic) as Keynes and later Hicks (1977, p. vii) claim, then decision makers "know" that what others call today's "fundamentals" do not provide a statistically reliable guide to future market valuations. Although in his published papers using nonstochastic modeling, Hicks [1979, p.113n] associated uncertainty and Keynes's liquidity analysis with a violation of the ordering axiom, in a private letter to me, he indicated that he should have labeled his "own point of view as nonergodic".

Financial markets provide liquidity as long as market participants accept the convention "that the existing state of affairs will continue indefinitely, except as we have specific reasons to expect a change" (Keynes, 1936, p. 152). Accordingly, "a practical theory of the future [market valuation is]...based on a flimsy foundation. It is subject to sudden and violent changes. The practice of calmness and immobility, of certainty and security, suddenly breaks down. New fears and hopes will, without warning, take charge of human conduct. The forces of disillusion may suddenly impose a new conventional basis of valuation" (Keynes, 1937, pp. 114-5).

In the real world, protecting the value of one's portfolio of liquid (resalable) financial assets against unforeseen and unforeseeable changes in financial market values becomes an important economic activity. Every portfolio fund manager must, in an instant, conjecture how other market players will interpret a news event occurring anywhere in the world. With instant global communications, any event occurring in the world can set off rapid changes in subjective evaluation of the market value of one's portfolio. Speculation about the psychology of other market players can result in lemming-like behavior which can become self-reinforcing and self-justifying. In a nonergodic system, if enough agents possess the same "incorrect" expectations (to use a Stiglitz [1988] phrase), the result can be that these faulty expectations actually create future outcomes (cf. Arestis and Sawyer, 1998, pp. 188-9). The first "irrational" lemmings to hit the ocean of liquidity may not drown. They may survive to make more mistakes and lead more leaps into liquidity in the future.

IV. THE NEED FOR MARKET ORDERLINESS

Financial markets furnish liquidity by providing an orderly, well organized environment where financial assets can be readily resold for cash -- while the essential properties of the underlying real capital assets prevent them from producing the attribute of liquidity. Market orderliness requires a private or a public institution that regulates the net flows into and out of the market. Orderly liquid financial markets, however, encourage each investor to believe they can have a fast "exit strategy for the moments when they are dissatisfied with the way matters are developing". Without liquidity, the risk of making an investment as a minority owner would be intolerable."(Bernstein, 1998a p.18). This fast exit strategy potential is inherent in any well-organized financial market, and therefore, it promotes the separation of ownership and management (Keynes, pp. 150-1) (Davidson, 1972) (Bernstein, 1998). With a liquid capital

market, owners have no legal or moral commitment to stick around long enough to make sure their capital is used efficiently.

In the absence of a liquid financial market “[t]here is no object in frequently attempting to revalue an investment to which we are committed” (Keynes, 1936, p. 151) for there can be no fast exit strategy. If capital markets were completely illiquid then there would be no separation of ownership and control. Once some volume of capital was committed, the owners would have an incentive to use the existing facilities in the best possible way no matter what unforeseen circumstances might arise. Perhaps then capital markets might behave more like the efficient markets of mainstream theory. Bernstein’s (1998a, p. 23) homily that “an efficient market is a market without liquidity” is a lesson that policy makers must be taught. Judicious use of capital controls can promote efficiency by constraining any sudden change in the demand for liquidity that would adversely affect the real economy.

If financial markets are primarily organized to provide liquidity, then when bullish sentiment about the uncertain future dominates financial markets, rising capital market prices encourage savers to readily provide the funding that induces entrepreneurial-investors to spend sums on new investment projects that (i) far exceeds their current incomes and (ii) induces exuberant expectations of future returns. The result is an investment boom. If some time in the future, doubts suddenly arise concerning the reliability of these euphoric expectations, then bearish sentiment will come to the fore and the investment boom will turn into a bust.

When the bearish view of the future becomes overriding, an excessive demand for liquidity can develop that will impede the production of new investment capital even when real resources are idle and therefore readily available to produce new real capital goods. The basic message of the Keynes’s General Theory is that too great a demand for liquidity can prevent “saved”(i.e., unutilized) real resources from being employed in the production of investment goods. These resources will be involuntarily unemployed.

Unlike Old and New Keynesians, Keynes explicitly recognized that the introduction of sand in the wheels of liquidity-providing financial markets via a transactions tax is a double-edged sword. Keynes [1936, p. 160] noted that a financial transactions tax “brings us up against a dilemma, and shows us how the liquidity of investment markets often facilitates, though it sometimes impedes, the course of new investment”.

In the absence of concerted intervention by a market maker, what market conditions will create non-volatile movements of prices in real world financial markets?

“It is interesting that the stability of the [financial] system and its sensitiveness... should be so dependent on the existence of a variety of opinion about what is uncertain . Best of all that we should know the future . But if not , then, if we are to control the activity of the economic system ... it is important that opinions differ” [Keynes, 1936, p. 172]

In other words, an ergodic system would provide the “best of all” possible worlds for financial market stability. Then the future can be reduced to actuarial certainty, i.e., “we should know the

future". Market efficiency would be assured as long as agents operated in their actuarially known self-interest. There would be no need for a fast exit strategy.

If the system is nonergodic, however, then actuarial certainty and the possibility of rational probabilistic risk spreading -- which, according to Laurence Summers, is an essential function of efficient markets -- is impossible. Consequently, a second best solution is to encourage substantial numbers of market participants to hold continuously differing expectations about the future so that any small upward change in the market price brings about a significant bear reaction, while any slight downturn induces a bullish reaction. The result will be to maintain spot financial market (resale) price orderliness over time and therefore a high degree of liquidity.

If, however, there is a sudden shift in the private-sector's bull-bear disposition, what I call a bandwagon effect, then price stability requires capital regulations to prevent the bears from liquidating their position too quickly (or the bulls from rushing in) and overcoming any single agent (private or public) who has taken on the responsible task of market maker to promote "orderliness". Capital controls serve the same function as laws that make it a crime to yell fire in a crowded theater. In the absence of such social constraints on free speech, the resulting rush to the exit may inflict more damage than any potential fire.

Despite their willingness to accept the "compelling logic" of EMT, the common sense of Tobin and his New Keynesian followers regarding real world financial markets can not help but break into their logical models-- with injury to their logical consistency. Thus to solve today's international monetary problems, some "Keynesians" advocate a Tobin tax. Tobin (1974) has been warning that free international financial markets with flexible exchange rates create volatile international financial markets that can have a "devastating impact on specific industries and whole economies". Tobin advocates that governments limit market volatility by increasing the transactions costs on all international payments via a small "Tobin tax". Unfortunately though Tobin's assessment of the problem is correct, the empirical evidence is that any increase in the transactions costs significantly increases rather than decreases measured market volatility (Davidson, 1998). Moreover, a Tobin tax does not create a greater disincentive for short-term speculators as Tobin has claimed (Davidson, 1997) . Hence, the "Tobin tax" solution is the wrong tool to solve the growing international financial speculative market problem.

Since the Mexican peso crisis of 1994, pragmatic policy makers have advocated a lender-of-last-resort (LOLR) to stop international financial market liquidity hemorrhaging and to

"bail-out" the international investors. In 1994, US Treasury Secretary Rubin encouraged President Clinton to play this LOLR role. With Clinton's liquidity facilities exhausted, the IMF stepped into this lender role when the Asian crisis of 1997 and the Russian bear emerged in 1998. When the IMF recently reached the end of its liquidity rope, IMF Director Stanley Fisher suggested that the G-7 nations take over the "lender of last resort" (LOLR) function. Fisher's cry for a G7 LOLR collaboration is equivalent to recruiting a volunteer fire department to douse the flames after someone has cried fire in a crowded theater. Even if the fire is ultimately extinguished there will be a lot of innocent casualties. Moreover, every new currency fire requires the LOLR to pour more liquidity into the market to put out the flames. The goal should

be to produce a permanent fire prevention solution, not to rely on organizing larger and larger volunteer fire fighting companies after each new currency fire breaks out.

Finally, the man who "broke the Bank of England", George Soros, as well as the economist Rudi Dornbusch have recommended a currency board solution. A currency board fixes the exchange rate so that the domestic money supply does not exceed the amount of foreign reserves a nation possesses. Thus, if and when investors panic and rush to exit from a nation, the currency board maintains the exchange rate by selling foreign reserves and reducing the domestic money supply by an equivalent sum. A currency board solution, therefore, is equivalent to the blood letting prescribed by 17th century doctors to cure a fever. Enough blood loss can, of course, always reduce the fever but often at a terrible cost to the body of the patient. Similarly, a currency board may douse the flames of a currency crisis but the result will be a moribund economy.

Jeffrey Sachs and others have suggested a return to completely flexible exchange rates. Unfortunately whenever there is an persistent international payments imbalance, free market exchange rates flexibility can make the situation worse. For example, if a nation is suffering a tendency towards international current account deficits due to its payments for imports exceeding its receipts from exports, then free market advocates argue that a decline in the exchange rate will end the deficit by stimulating exports and retarding imports. If, however, the Marshall-Lerner condition does not apply, then a declining market exchange rate worsens the situation by increasing the magnitude of the payments deficit.

If, the payments imbalance is due to capital flows, there is a similar perverse effect. If, for example, country A is attracting a rapid net inflow of capital because investors in the rest of the world think the profit rate is higher in A, then the exchange rate will rise. This rising exchange rate creates even higher profits for foreign investors and contrarily will encourage others to rush in with additional capital flows pushing the exchange rate even higher. If then suddenly there is a change in sentiment (often touched off by some ephemeral event), then a fast exit bandwagon will ensue pushing the exchange rate perversely down.

V. WHERE DO WE GO FROM HERE?

The function of capital controls is to prevent sharp changes in the bull-bear sentiment from overwhelming market makers and inducing rapid changes in price trends for such volatility can have devastating real consequences

There is a spectrum of different capital controls available. At one end of the spectrum are controls that primarily impose administrative constraints either on a case-by-case basis or expenditure category basis. These controls include administrative oversight and control of individual transactions for payments to foreign residents (or banks) often via oversight of international transactions by banks or their customers. Mayer (1998, pp. 29-30) has argued that the Asian problem was due to the interbank market that created the whirlpool of speculation and that what is needed is "a system for identifying...and policing interbank lending" and banks' contingent liabilities resulting from dealing in derivatives. Echoing our nonergodic theme, Mayer (1998, p. 31) declares "The mathematical models of price movements and covariance underlying

the construction of these [contingent] liabilities simply collapsed as actual prices departed so far from `normal' probabilities".

Other capital controls include (a) policies that make foreign exchange available but at different exchange rates for different types of transactions and (b) the imposition of taxes (or other opportunity costs) on specific international payments, e.g., the Tobin Tax or the 1960s United States Interest Equalization Tax. Finally there can be many forms of monetary policy decisions undertaken to affect international payment flows, e.g., raising the interest rate to slow capital outflows, raising bank reserve ratios, limiting the ability of banks to finance purchases of foreign securities, and regulating interbank activity as suggested by Mayer.

The recent experience of the IMF, as lender of last resort imposing the same conditions on all nations requiring international liquidity loans, should have taught us that in policy prescriptions one size does not fit all situations. Accordingly, the type of capital regulations a nation should chose from the spectrum of tools available at any time will differ depending on the specific circumstances involved. In this brief paper it would be presumptuous of me to catalog what capital regulations should be imposed for any nation under any given circumstances. Nevertheless, it should be stressed that regulating capital movements is a necessary but not sufficient condition for promoting global prosperity.

Elsewhere (Davidson, 1992, 1997) I have developed in detail a proposal for reforming the entire international payments system via an international clearing union that provides for capital controls and other necessary and sufficient conditions to permit the establishment of a golden age in the 21st century. The main proviso of my proposal are:

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 (through IMCU clearing transactions) to its own bankers and private sector residents. 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.
4. Contracts between private individuals will continue to be denominated into what ever domestic currency permitted by local laws and agreed upon by the contracting parties.
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.

7. A system to stabilize 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.

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. 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. If 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.

In the context of this seminar, it should be noted that proviso #2 permits capital controls. Proviso #6 embodies Keynes's innovative idea that whenever there is a persistent (and/or large) imbalance in current account flows -- whether due to capital flight or a persistent trade imbalance --, there must be a built-in mechanism that induces the surplus nation(s) to bear a major responsibility for eliminating the imbalance. The surplus nation must accept this burden for it has the wherewithal to resolve the problem.

In the absence of #6, under any conventional system, whether it has fixed or flexible exchange rates and/or capital controls, there will ultimately be an international liquidity crisis (as any persistent current account deficit can deplete a nation's foreign reserves) that unleashes global depressionary forces. Thus, proviso #6 is necessary to assure that the international payments system will not have a built-in depressionary bias. Ultimately then it is in the self-interest of the surplus nation to accept this responsibility, for its actions will create conditions for global economic expansion some of which must redound to its own residents. Failure to act, on the other hand, will promote global depressionary forces which will have some negative impact on its own residents.

Some think that my specific clearing union plan, like Keynes's bancor plan, a half century earlier, is Utopian. But if we start with the defeatist attitude that it is too difficult to change the awkward system in which we are trapped, then no progress will be made. Global depression does not have to happen again if our policy makers have sufficient vision to develop this Post

Keynesian approach. The health of the world's economic system will simply not permit us to muddle through.

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