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Toward A Common Currency?

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Over 100 countries have declared to the International Monetary Fund that their currencies are allowed to float against other currencies, meaning that the currency is not formally pegged to some other currency or basket of currencies. This was up from 38 in 1988, suggesting a significant move toward greater flexibility of exchange rates. Yet during the 1990s half a dozen countries installed currency boards, a particular strong form of exchange rate fixity; ten European currencies were eliminated in favor of a common currency, the euro; other countries were actively considering installing currency boards, or even adopting the US dollar for domestic use.

After a quarter century of floating among the major currencies, exchange rate policy is still source of vexation, and the appropriate choice is by no means clear. Should a country allow its currency to float, subject perhaps to exchange market intervention from time to time? Or should it fix its currency to some other currency or currencies, and if so to which one(s)? Economists do not offer clearly persuasive answers to these questions. Yet for most countries, all but the largest, with the most developed domestic capital markets, the choice of exchange rate policy is probably their single most important macro-economic policy decision, strongly influencing their freedom of action and

effectiveness of other macro-economic policies, the evolution of their financial systems, and even the evolution of their economies.

This paper will not answer these questions, but it will suggest that the responses that have been given by economists over the past few decades are inadequate and possibly quite poor advice to decision-makers. It goes on to suggest that in the long run the major industrialized nations -- the core of the international monetary system -- may find it advantageous to adopt a common currency.

A Brief History of Exchange Rate Policy

The choice of exchange rate regime was not always so vexing; during much of the modern era it was in practice dictated by convention, by internationally agreed rules, or by uncontrollable external circumstances. If we date the modern era from 1867, when a trans-Atlantic cable first linked Europe and North America electronically -- connections were established within Europe from 1851, and across the Pacific in the 1870s -- international monetary experience among the major countries can be divided into four distinct periods, each with fuzzy edges. The first covers the period roughly 1870-1914, during which most countries adopted a gold standard for their domestic money, implying fixed exchange rates among currencies beyond the modest flexibility allowed by

the mint gold points and transport costs.

This relative uniform regime -- although some countries remained on (generally depreciating) silver, and others had gold-inconvertible currencies from time to time -- was interrupted by the First World War. The period 1914-1946 saw great variation, both among countries and over time, with the widespread and episodic use of exchange controls, periods of floating exchange rates, an aborted attempt in the late 1920s to restore a variant of the gold standard, and an effort in the late 1930s to stabilize exchange rates among some major currencies by coordinating monetary policy and market intervention.

From 1946 to 1973 exchange rate policy was dominated by the Bretton Woods Agreement of 1944, with its commitment to currencies convertible for current account transactions and fixed exchange rates (beyond a narrow band of permissible variation) but adjustable if necessary. It was initially embraced by 44 countries, a list that grew over time. The collective decision to eschew exchange controls and fix exchange rates was strongly influenced by the mainly negative "lessons" from the experience of the interwar period.

The Bretton Woods arrangement came under increasing strain in the late 1960s, and in March 1973 (earlier for Britain and Canada) the practice of fixing exchanges was abandoned by the major countries of Europe and Japan, and we entered the fourth period,

1973 to the present, of floating exchange rates. Many countries, however, elected to fix their currencies to some major currency -- the US dollar, the French franc, the British pound. And most members of the European Community found intra-European exchange rate flexibility intolerable (among other things, it interfered with the Common Agricultural Policy), so in 1979 re-created a mini-Bretton Woods system in the exchange rate mechanism of the European Monetary System (EMS), which in 1999 evolved into Europe's Economic and Monetary Union (EMU) with its common currency.

Scope for Choice of Exchange Rate Arrangements

The IMF Articles of Agreement were amended in 1978 to drop the requirement for members to declare exchange rate parities and take the necessary steps to keep market exchange rates near parity. Under the new (and still current) formulation, member countries can in effect choose any exchange arrangement that suits them, provided that it is declared to the IMF, provided that it is consistent with the general objective of the IMF, which is to foster "orderly economic growth with reasonable price stability," and provided that countries "avoid manipulating exchange rates...to prevent effective balance of payments adjustment or to gain an unfair competitive advantage over other members" (Art.IV.1 (iii)).

Curiously, the revised IMF Articles (Art.IV.4) envision the possibility that international monetary conditions might someday permit the re-introduction of par values for currencies, in effect a return to (quasi) fixed exchange rates, the arrival of such conditions to be determined by a 85 percent voting majority of the IMF members.

Member countries, which by now include all economies in the world except Cuba, North Korea, Hong Kong, Taiwan, and a number of mini-states, have among them elected a wide variety of exchange arrangements, ranging from freely floating to rigidly fixed to a major currency, with many combinations in between.

A Brief History of Thought about Exchange Rate Policy

The adoption of flexible exchange rates by many countries in the aftermath of the First World War did not reflect the preferences of policy-makers, but rather their inability, in the immediate post-war circumstances, to re-establish convertibility of the national currency into gold. Restoration of gold convertibility, implying fixed exchange rates among such currencies, was the desired aim, preferably at pre-1914 conversion rates, if necessary with some depreciation to allow for the inflation that had occurred during and immediately after the war.

Already in the 1920s, however, some economists, most notably

John Mayard Keynes (1923, 1930), saw the advantage for national well-being of "managed money;" and managed money at the national level was understood to be inconsistent with rigorous adherence to gold standard conventions. Keynes' proposed solution to this dilemma was to widen gap between the official gold purchase price and the gold selling price. Any country that did this would introduce a band of floating exchange rates which would give some scope for independent national monetary policy.

Keynes' proposal was not formally adopted, but the breakdown of the gold (exchange) standard from 1931 created more scope for independent national action than Keynes had urged or desired. The experience with floating exchange rates, under admittedly difficult circumstances, did not leave contemporaries with a good feeling about them. Ragnar Nurkse, in an influential study for the League of Nations, summarized the interwar experience with floating exchange rates in these terms (1944, p.210):

"A system of completely free and flexible exchange rates is conceivable and may have certain attractions in theory; and it might seem that in practice nothing could be easier than to leave international payments and receipts to adjust themselves through uncontrolled exchange variations in response to the play of demand and supply. Yet nothing would be more at variance with the lessons of the past."

He went on to elaborate three serious disadvantages of

floating rates: risk for trade transactions that cannot be hedged at moderate cost; costly and disturbing shifts in labor and capital among sectors in response to exchange rate changes that might prove to be temporary; and "self-aggravating" movements in exchange rates that intensify disequilibria rather than promote adjustment.

Nurkse's antipathy to flexible exchange rates was widely shared, both among men of affairs and within the academy. John H. Williams of Harvard and the Federal Reserve Bank of New York wrote in 1937, following the Tripartite Agreement to stabilize exchange rates among the US dollar, the British pound, and the French franc, that "...there is no evidence of any desire for a really flexible currency." (quoted in Nurkse, p.211n).

The major exception to this general sentiment was Milton Friedman(1953), who argued in a memorandum written in 1950 for the US Economic Cooperation Administration, which administered the Marshall aid to Europe, that among the alternatives available a strong case could be made for allowing the European currencies, at the time heavily burdened by direct controls on international transactions, to float against one another. The ECA was desirous of reducing the heavy restrictions on intra-European trade as well as trade with the rest of the world; but most countries resisted trade liberalization in part out of fear of unsustainable imbalances in payments, largely vis-a-vis the dollar but partly

vis-a-vis one another. (Within Europe, Belgium had the strongest currency.) And against the background of the Great Depression and the Keynesian revolution in thinking about macro-economic management, all were committed to maintaining some version of full employment, i.e. to nationally managed money. Friedman saw exchange rate flexibility as a way to reconcile otherwise conflicting objectives. Friedman argued (p.199) that a system of flexible exchange rates would eliminate the necessity for far-reaching international coordination of internal monetary and fiscal policy in order for any country separately to follow a stable internal monetary policy. "Inflation and deflation in any one country will then affect other countries primarily in so far as it affects the real income position of the initial country; there will be little or no effect through purely monetary channels."

Friedman was initially nearly alone in his views. Most contemporary economists favored fixed exchange rates and feared the instabilities that flexible exchange rates might bring, or reveal (see, e.g. Triffin (1957, 1966), Kindleberger (1966), Bernstein (1945)).

But just as experience during the 1920s and 1930s cultivated a distaste for exchange rate flexibility, experience during the 1950s and 1960s cultivated increasing antipathy, especially in academic circles, to the Bretton Woods version of fixed exchange

rates -- that is, rates fixed beyond narrow bands of permissible variation, but adjustable if necessary to correct a "fundamental disequilibrium" in international payments. It became clear that national authorities held on to their fixed rates for too long, and that by the time a fundamental disequilibrium was evident to them, it was also evident to everyone else. This arrangement created a mechanism for periodic transfers of public wealth, held in the form of gold or foreign exchange reserves, to private parties who speculated successfully on a discrete change in exchange rates, selling before an expected devaluation and repurchasing afterward. Even with pervasive controls on capital movements, determined firms and individuals could move much capital legally through manipulating the "leads and lags" of commercial payments and other loop-holes in the control system; and of course funds also moved illegally, with bribes or misrepresentations of trade invoices or elsewhere.

This prospect in turn inhibited authorities from changing exchange rates, hoping that the payments difficulties were temporary, or led them to impose and increasingly tighten controls on all international transactions in order to reduce payments deficits -- thus thwarting the very purposes for which a well-functioning payments system is desired.

Observing this excessive rigidity, as well as the growth in both possibilities for and magnitude of international capital

movements, economists increasingly came to favor greater flexibility in exchange rates. Numerous proposals for introducing greater flexibility, short of full floating, were put forward. Some concentrated, like Keynes in the 1920s, on giving greater freedom for differences in national monetary policies, by widening the band of permissible variation around central parities; others concentrated on providing for gradual secular changes in exchange rates without provoking massive speculation around prospective discrete changes (e.g. Williamson, 1965). And of course numerous combinations of the two approaches were possible. Federal Reserve Bank of Boston (1969) and Halm (1970) provide useful compendia on academic thinking in the late 1960s.

The "Bellagio Group," under the collective leadership of Fritz Machlup, William Fellner, and Robert Triffin held a series of meetings from 1964 between academics and central bankers to review the functioning of the international monetary system in its diverse aspects, including exchange rate arrangements as well as provision for international liquidity. This group exposed key central bankers to the evolution in academic thinking, and may have played some role in persuading central bankers that flexible exchange rates were workable, or at least would not be more troublesome than the fixed exchange rate system with which they were then having to cope.

The debate was summarized tendentiously by Harry G. Johnson

(1973) in his widely read "The Case for Flexible Exchange Rates, 1969," first published in the United States by the Federal Reserve Bank of St. Louis but widely reproduced thereafter. In contrast to Friedman, from whom he drew his title, Johnson was writing after extensive liberalization of payments on current account and some liberalization on capital account; and he was writing after 20 years experience under the Bretton Woods system. He both reflected and helped shape the prevalent view among academic economists, if not bankers and government officials, who on the whole remained hostile to exchange rate flexibility.

The essay is well-balanced in its section headings: he states the case for fixed rates; the case for flexible rates; and the case against flexible rates. But only one paragraph is devoted to stating the case for fixed rates, the remainder of the section to why it is "seriously deficient." And the section on the case against flexible rates is basically devoted to knocking it down, consisting as it does in Johnson's view "of a series of unfounded assertions and allegations." It is not a balanced account; Johnson had made up his mind, and hoped to impose his conclusions on others by a devastating critique of the (unnamed) opposition.

Johnson's affirmative analysis is itself based on a series of unfounded assertions and allegations, an idealization of the world of financial markets without serious reference to their actual behavior. The key tenets were:

1) that the foreign exchange market was rather like the strawberry market or any other market small relative to the size of the economy, such that impacts of developments in this market on the overall economy could be neglected (a curious stance, since in his other writings Johnson was insistently general equilibrium in his approach);

2) that the foreign exchange market is a stable market: "a freely flexible exchange rate would tend to remain constant so long as underlying economic conditions (including government policies) remained constant; random deviations from the equilibrium level would be limited by the activities of private speculators..." (p.208);

3) that exchange rate movements would be dominated by inflation differentials between the respective countries; and

4) that under flexible exchange rates the market would quickly develop the wide range of appropriate hedging instruments that were manifestly not present in the late 1960s, permitting reductions in such uncertainties as flexible rates might occasion.

Running through the essay is the view that the major if not the sole sources of disturbance to exchange rates are government policies. And, as in Friedman, "Flexible rates would allow each country to pursue the mixture of unemployment and price trend objectives it prefers..."(p.210), i.e. it can choose its preferred point on the Phillips curve.

After a quarter century of experience with floating exchange rates this essay now seems somewhat naive -- a label that would offend Johnson, even though he sometimes applied it to others. He demonstrates a charming faith in the ability of private markets to get the exchange rate right, and to keep it there. He wrote before the advent of the "asset price" approach to exchange rates had been developed, with its sudden jumps in response to news, even to news that turns out to be incorrect.

It is worth noting that Johnson was making a case for floating exchange rates among the currencies of major countries, with well-diversified economies, such as Britain, Germany, or his native Canada. He explicitly excuses developing countries, indicating with approval that they would probably link their currencies to some major currency. But the choice of which currency would not be consequential provided currency movements largely tracked inflation differentials, i.e., provided real exchange rates among the major currencies remained relatively stable, as he expected they would.

The general movement to flexible exchange rates among major currencies that occurred in 1973 was short-lived. Many (continental) Europeans felt that flexible rates among their currencies would be highly disruptive of the recently completed common market (which Britain, Denmark, and Ireland joined in 1973, beginning a decade-long process of transition to full

participation), especially its common agricultural policy. Under the CAP target prices were set annually for farm products before each crop season, in a synthetic unit of account, the Ecu. Flexible exchange rates among participating currencies implied -- horrors! -- that farm prices might actually decline within the crop year in those currencies that appreciated. To prevent this, so-called green exchange rates, different from market rates, were applied to intra-European agricultural trade, thus necessitating internal border adjustments, i.e. disrupting free intra-European trade in agricultural products, and thereby threatening the common market. Faced with this complication, and concerned about the implications of an unstable dollar for intra-European exchange rates (something that should not be a problem on Johnson's view of exchange market behavior), German Chancellor Schmidt and French President Giscard d'Estaing, both former finance ministers who prided themselves on their economic knowledge and experience, persuaded their colleagues to re-create within Europe the main features of the Bretton Woods system, albeit with a substantially wider -- nine percent versus three percent -- band of permissible exchange rate flexibility around central parities.

The debate over the best exchange rate regime continues unabated, still unresolved. An extensive discussion in the 1990s focussed on the desirability of introducing a common currency -- fixed exchange rates at their extremity -- within Europe, with

many economists expressing doubt about its wisdom or concern about the outcome (see, e.g., Obstfeld (1997) and the references there cited). The fact that all of the countries experiencing financial crises in 1997-98 had de facto (but not declared) fixed exchange rates has encouraged a re-look at the most appropriate exchange rate policy for developing countries, with many economists concluding that flexible exchange rates are preferable to fixed.

One factor that has inhibited serious resolution of exchange rate choices is the continuing use by the economics profession of an extraordinarily primitive theory of money in its theorizing, and its insistence on separating monetary and real factors in analyzing economies. This pedigogically useful practice prevents economists from finding any welfare costs associated with disturbing the allocative role of money prices (as opposed to relative prices), such as might occur with exchange rate fluctuations that are not associated with serious signals to reallocate resources. A recent paper by Obstfeld and Rogoff (1998) breaks with parts of this tradition, and finds in a highly stylized but promising model that the welfare cost of exchange-rate variability can be as much as one percent of GDP, a non-trivial amount.

Evaluation of Performance under Alternative Exchange Arrangements

Can we draw on a quarter century of experience with floating

exchange rates to determine the correct choice for exchange rate policy? Unfortunately not. A number of studies have tried to ferret out the influence of exchange rate arrangements on economic performance. They involve before/after case studies of countries that have changed their arrangements, comparative case studies, and econometric analysis of pooled cross-country experience. All suffer from the usual problems plaguing empirical work in economics: there is no entirely satisfactory way to "control" for all relevant cross-country differences or for the relevant changes in the domestic and international economic environment over time. Not surprisingly, therefore, the results are not conclusive and are sometimes contradictory -- they vary with country coverage, time period, and detailed specification of the "model" that tries to control for other relevant variables, many of which would be endogenous to a more comprehensive model specification.

One empirical generalization however can be safely made on the basis of over two decades' experience under floating exchange rates: real exchange rate movements are highly correlated in the short and medium run with nominal exchange rate movements, except when very high inflation rates are involved. That is, Harry Johnson's conviction that exchange rate movements between two currencies would largely reflect inflation differentials between the countries turns out to be empirically incorrect.

Exchange Rate Choices for Developing Countries

The "incompatible triangle" of fixed exchange rates, independent monetary policy, and freedom of capital movements has been understood by economists for a long time. Countries have to choose which of these objectives they will drop, although most governments resist the choice and attempt to fudge in various ways, often producing financial crises in the process.

What is less obvious is that floating rates, independent monetary policy, and freedom of capital movements may also be incompatible, at least for countries with small and poorly developed domestic capital markets, i.e. for most countries. That would leave a more limited menu of choice for such countries: between floating rates with capital account restrictions and some monetary autonomy, or fixed rates free of capital restrictions but with loss of monetary autonomy. Put bluntly, two prescriptions regularly extended to developing countries by the international community, including the IMF and the US Treasury, namely to move toward greater exchange rate flexibility and to liberalize international capital movements, may be in deep tension, even deep contradiction.

Within a country, the national price level is beyond reach of anyone except its central bank; it is taken as autonomously determined by all players in financial markets. The same is not true for the price levels of small, open economies: their national

price levels are strongly influenced by their exchange rates, at least in the short- to medium-run. Yet the exchange rate is technically not anchored by anything in the long run, being the barter price between two nominal variables (as Kareken and Wallace pointed out two decades ago), and not even in the short run if the central bank is not pegging it or does not have sufficient reserves to resist movement against large market-driven shocks. Thus a large financial player can influence the exchange rate, hence the price level, of relatively small countries by selling their currencies short. Furthermore, given the dynamics of thin financial markets, a single player does not need enough resources to move the exchange rate radically; he only has to start a run on the currency, through a combination of sales and rumors. If the word goes out persuasively that a currency will depreciate, many will join the bandwagon and the currency will depreciate. If the price level adjusts and the central bank later accommodates the adjustment for macroeconomic reasons, the depreciation will have been justified, ex post. This is a fundamentally unstable dynamic, with multiple equilibria, as Obstfeld (1986) has pointed out. According to Aliber (1962), the Belgian franc was dragged down by the French franc in the early 1920s, despite very much better "fundamentals," and the currency depreciation led to inflation that subsequently justified the depreciation.

The core problem is that for economies with imperfectly

developed financial markets the exchange rate is the most important asset price, and it will be jerked around by changes in portfolio sentiments. But for an open economy the exchange rate is also the most important price in the market for goods and services. Jumping asset prices can badly disrupt the markets on which the economic well-being of the majority of residents depend. Hedging possibilities will be limited in a poorly developed financial market, and in any case long-run investments cannot be hedged financially.

Furthermore, it is an open question whether a broad, diversified financial market based on the domestic currency can develop under floating exchange rates. With floating exchange rates and freedom of capital movement, residents face constant fluctuation in the real value of domestic assets as the exchange moves, and they have the option of investing abroad in more stable, more liquid financial instruments (albeit also with fluctuating real values in terms of home currency). Under direct competition, domestic markets are unlikely to develop to the point at which they are competitive with assets held abroad. It is noteworthy, for instance, that among Latin American countries long-term fixed interest mortgages exist only in Panama, a country that uses the US dollar domestically.

The unwelcome conclusion that flows from this discussion is that free movements of capital and floating exchange rates are

basically incompatible, except for large and diversified economies with well-developed and sophisticated financial markets. Of course, free movements of capital are also incompatible with fixed but adjustable exchange rates. Thus unless countries are prepared to fix permanently the values of their currencies to some leading currency, or to adopt some leading currency as their national currency, they may reasonably choose to preserve the right to control at least certain kinds of capital movements into and out of their jurisdictions, in the interests of reducing both nominal and real exchange rate variability (see Cooper (1999)).

In Johnson's view, capital movements play a highly stabilizing role. But many developing countries are only marginally creditworthy, and financially fragile, so international capital movements may aggravate rather than mitigate both real and financial economic shocks. Any general retreat from risk by asset holders will affect them adversely.

What should developing countries do? It depends very much on the details of their economic structure and their circumstances: on what kinds of real shocks they experience; on how flexible are their wages and rents; on how supple and effective is their management of fiscal and monetary policy; on their administrative capacity to enforce restrictions on capital movements, particularly surges in or out; and on a host of other factors. In any case, the choice is not easy, and countries are not obviously

foolish for being reluctant to embrace floating exchange rates enthusiastically.

Exchange Rate Choices for Rich, Diversified Countries

Flexible exchange rates have obtained since 1973 among the major currencies of the world: the US dollar, the Japanese yen, the British pound, the Canadian dollar, and the continental European currencies centered around the German mark. In contrast to what Nurkse might have expected, the experience has not been a disastrous one, and indeed arguably floating exchange rates helped their economies navigate more smoothly among some major world disturbances, such as the oil price shocks of 1974, 1979-80, and 1986 and the German unification of 1990. On the other hand, some have argued that because world oil prices are denominated in dollars the three oil shocks themselves were caused by sharp movements in dollar exchange rates. While I find this implausible, the fact that the case can be put forward suggests the complexities of cause and effect when it comes to currency arrangements and their impacts on real economies.

Nominal and real exchange rates also responded strongly to the "fiscal twist" of the early 1980s, when the United States pursued an expansionist fiscal policy while Britain, Germany, and Japan, later joined by France, pursued contractionary fiscal policies. Whether one assesses the consequential sharp

appreciation of the dollar in the early 1980s as benign or malign, it certainly had real and durable effects not only on foreign trade but also on the structure of output, not least because of high fixed costs sometimes associated with product entry into a national market (as emphasized by Krugman, 1989). Arguably the depth and duration of Japan's recession in the 1990s can be explained in part by excessive exchange-rate-induced industrial expansion in Japan in the mid-1980s, when the cheap yen made Japanese goods highly competitive in the American market.

More recently, the dollar-yen exchange rate reached -85 per dollar briefly in 1995 and then moved to -145/$ briefly in 1998, a swing of 70 percent over three years (and back to -108/$ by January 1999). The USA and Japan were both successfully pursuing low inflation monetary policies (Japan at 1 percent, USA at 2.3 percent increase in the consumer price index per year). What then justifies a swing of this magnitude? What disturbance does it create for trade (e.g. in stimulating anti-dumping suits by US firms) and for investment planning -- not only for exports, but for a domestic market subject to import competition? What disturbance does it create for balance sheets, especially of financial institutions? How many economically sound firms were thrown into bankruptcy? Might the prolonged recession in Japan -- including extensive overseas investment by Japanese firms -- be related in part to fear of wide swings in exchange rates? Are

they hedging against future exchange rate uncertainty by diversifying their production across currency zones, especially into Europe and into North America? As noted above, exchange rate movements of this type certainly violate the expectations and contentions of advocates of floating rates thirty years ago, and they cannot signify well-functioning international monetary arrangements. But are there practical alternatives?

Before turning to various proposals, we should note another potential source of disturbance: the creation of the euro out of ten pre-existing currencies in early 1999. A number of economists (e.g. Bergsten(1997, 1999), Masson and Turtelboom(1997), Portes and Rey(1998)) have suggested that exchange rate volatility between the dollar and the euro may well be higher than it was between the dollar and the German mark before 1999. The reasons are partly structural -- euroland is much more self-contained than the individual countries were, so exchange rate variation will cause fewer internal disturbances, hence fewer calls for action to stabilize exchange rates; and partly institutional, since the newly created European Central Bank is charged with pursuing price stability, not stabilizing currency values. Thus the ECB need pay attention to exchange rates only insofar as their movements threaten price stability, and early pronouncements by the ECB indeed indicate relative indifference to the dollar-euro exchange rate.

This greater volatility could be greatly aggravated if during the next decade foreign exchange holders around the world decide to switch their claims substantially from US dollar-denominated ones to euro-denominated ones, as some have suggested will occur (e.g. Bergsten (1997), Portes and Rey (1998)). I have argued elsewhere (Cooper, 1999) that a rapid switch from dollars to euros is not likely to occur because of the absence of sufficient suitable euro-denominated securities, and that growing internationalization of the euro will occur more gradually and smoothly in a context of world economic growth. But if a rapid switch does occur, it is likely to take place in several episodes rather than all at once, leading to episodic depreciation of the dollar, but at a rate and to an extent that is impossible to predict, since the potential for such switching will be seen to be very large.

Exchange rates are increasingly determined by financial transactions, which overwhelm trade and other current transactions in their magnitude. Financial transactions are subject to bandwagon effects, as each player seeks to be ahead of others in the market, and institutional investors seek performance that does not deviate negatively from performance of their peers. Yet the erratic exchange rates determined by such behavior also govern international trade. Particular trade transactions can be financially hedged in the short run, at a cost; but investment for

the purpose of engaging in trade cannot be similarly hedged. The result is likely to be both too little total investment, and too much investment in the wrong places, driven by the need of firms to hedge by locating within each major currency area, even if economic efficiency would be better served by locating elsewhere and importing. Furthermore, sustained misalignment of exchange rates is likely to increase protectionist pressures, as it did in the United States during the mid-1980s and in Europe during the early 1990s.

In short, movements in exchange rates, while providing a useful shock absorber for real disturbances to the world economy, are also a substantial source of uncertainty for trade and capital formation, the wellsprings of economic progress. What can be done about it?

Broadly speaking, four types of exchange rate arrangements have been suggested for Britain, EMU, Japan, and the USA, the core of the international monetary system. The first is floating exchange rates, the arrangements that have generally prevailed during most of the past quarter century. As just noted, such arrangements have not been disastrous, but they have not lived up to earlier claims for floating rates either. In some respects they have been problematic, and they may become more troublesome in the future. What are the alternatives?

One is to establish target zones -- central rates with a

rather wide band of permissible variation -- among the core currencies, as has been advocated by Williamson (1985), Bergsten and Henning(1994), and recently espoused by Paul Volcker (1995). A second is to allow exchange rates to float, but to have monetary policy in the core areas targeted on the same price index, as advocated by McKinnon (and, in 1930, by Keynes). A third, more radical idea is to create common currency among the core countries, as suggested by Cooper (1984).

Target zones can have narrow or wide bands of permissible exchange rate variation, and they can have "soft" or "hard" edges to the bands, depending on the degree of commitment that governments publicly undertake to keep the exchange rate firmly within the band. The original Bretton Woods arrangement was in effect a target zone with a narrow band and hard edges. More recent variants emphasize wide (e.g. 20 percent) bands and soft edges, such that governments would not be absolutely committed to hold the exchange rate within the band, giving private investors a one-way bet on the ability of the authorities to hold, but would signal the market that it would be increasingly concerned as market rates approach the edges and might intervene directly in foreign exchange markets and/or adjust monetary policy to keep market rates from straying too far outside the bands. The purpose of such an arrangement would be to prevent major misalignments in exchange rates, while allowing market forces to determine exchange

rates most of the time. Its intermediate objective would be to create expectations in financial markets that exchange rates will rarely if ever move outside the permissible band.

As formulated by Williamson on various occasions, target zones would be centered on "fundamental equilibrium exchange rates" calculated on the basis of internationally agreed current account targets. But of course this feature is not necessary; target zones could be established around any prevailing market exchange rates that the monetary authorities deem to be about right for the long run. This possibility is important to keep in mind, since the normative grounds for establishing current account targets in a world of high mobility of private capital and wide international differences in the effective use of capital are not at all clear. Rich countries may properly be net importers of capital, as Canada and Australia have been for decades, and as the United States has been for the past decade.

Of course, as exchange rates approach the edges of the bands, monetary policy in both affected entities may have to be devoted to the exchange rate target, and thus perhaps diverted from domestic objectives. This prospect places a premium both on some flexibility in use of fiscal policy for macro-economic stabilization, as Robert Solomon (1999) has emphasized, and on a mechanism for coordinating monetary policies between the relevant entities, since coordinated monetary action can affect both the

exchange rate and aggregate demand.

McKinnon (1984, 1996) has proposed an alternative, but not entirely dissimilar, arrangement between Germany, Japan, and the United States (EMU could easily be substituted for Germany). Concretely, as applied to Japan and the USA (see McKinnon and Ohno, 1997), the proposal involves determining a target exchange rate based on purchasing power parity of wholesale (not retail) prices and establishing a permissible band of 10 percent around this rate, with soft edges. The width of the band would be narrowed over time, as confidence in the system grew. Monetary policy in both countries would be keyed in the long run to stabilizing the respective domestic wholesale (in the US, producer) price indices. Concerted market intervention would attempt to keep exchange rates within the permissible band, but such intervention would not be completely sterilized, to allow exchange rate intervention to influence domestic monetary conditions.

Wholesale prices are dominated by tradable goods, and lack domestic sales taxes and retail mark-ups. They also exclude services. Thus there should be a high correlation in the movement of British, European, Japanese, and American wholesale prices, such that monetary policy in each entity would be targeted on roughly the same price index. If they were successful, inflation rates measured by consumer prices in these regions would differ

for a variety of reasons (e.g., changes in sales tax rates, greater competition in retail trade, changes in mix of services consumed and in prices of services), but such differences would presumably have little impact on international trade. Since price stability in wholesale prices would lead to some inflation measured in consumer prices, that would introduce some flexibility for adjustments in real wages in the face of nominal wage rigidity, thus facilitating adjustment to shocks both within and between economies. Stability in consumer prices, in contrast, introduces relative price rigidity in the presence of downward price inflexibility, which is widely observed, and thus impedes adjustment.

Cooper (1984) took the process of exchange rate coordination a strong step further, by suggesting an eventual currency union among the major industrial democracies: Europe, Japan, and the United States. A common currency would credibly eliminate exchange rate uncertainty. One currency would of course entail one monetary policy for the currency area, and a political mechanism to assure accountability. The suggestion was not politically realistic in the mid-1980s, and is not politically realistic today, but is set as a vision for a decade or two into the 21st century. The Europeans, in creating EMU, have taken a major step in the direction indicated. The idea could be taken further.

The suggestion draws its inspiration from three empirical prognostications. The first prognostication is that international financial transactions will grow relative to international trade in goods and services, and that financial factors will come to dominate exchange rate determination even more than they do today. At the same time, the exchange rate will become more important in determining the profitability of trade and investment than it is today.

The second prognostication is that real shocks among these entities will not be radically asymmetrical. Because all are large, highly diverse economies, disturbances within these economies are likely to be more important than disturbances between them, and adjustment to such shocks as occur will be no more difficult, and perhaps easier, than adjustments to shocks within those economies.

The third prognostication is that financial markets will be just as fickle in the future as they have been in the past. That is to say, they will continue to fail to satisfy Harry Johnson's contention that they are far-seeing and universally stabilizing in their behavior.

These prognostications together suggest that as time goes on flexible exchange rates will gradually evolve from being mainly a useful shock absorber for real shocks into being mainly a disturbing transmitter of financial shocks, increasingly

troublesome for productive economic activity. Thus a cost-benefit calculation for flexible versus fixed exchange rates will gradually alter the balance against flexibility, even for large countries.

How Would a Common Currency Work?

The following paragraphs sketch how the common currency might be constituted, how it might be reached, and how it might be expected to function. The key components to a common currency area would be the United States, the members of the european Economic and Monetary Union (EMU), Japan, and probably the United Kingdom (which might by time of adoption in any case be a member of EMU). These countries constitute the core of the international monetary system, and are likely to do so for some decades to come. Canada, Australia, New Zealand -- indeed any of today's 29 members of the Organization for Economic Cooperation and Development (OECD) -- would be welcome to join, although for reasons given below becoming full members might be unwise. Members must have democratic governments, to ensure legitimacy. Other countries could, at the initiative of each, link their currencies to the key currency. The common currency could be given any name that commanded wide acceptance -- e.g., bancor (the name suggested by Keynes for his international central bank currency), crown, dirham (the name of the major Roman unit of

currency), or ena (for europe-nippon-america). The common currency might, but need not, imply common banknotes for ordinary circulation. Member countries could continue to circulate banknotes containing national symbols, just as (before introduction of the new, hard-to-counterfeit higher-denomination bills) Federal Reserve notes within the United States can be separately identified with the twelve Reserve banks of issue, and even with different names. The central point is that they would be fully convertible into one another at a rigidly fixed exchange rate, and electronic payments would all take place in the common currency.

One currency requires a single monetary policy. Monetary policy could be made by a Board of Governors, made up either of pre-existing central bank governors (existing central banks would continue as branches) or of individuals appointed to long terms for their knowledge and probity, or of some combination of the two. If it were made up of governors of the national central banks alone, votes would be apportioned according to GDP, updated at regular intervals.

The Governing Board would decide monetary policy throughout the currency area. But it needs to be made politically accountable, a serious deficiency (in my view) with the current arrangements of Europe's EMU. In contrast, the US Federal Reserve is independent of the executive branch of government, but is not

independent of the political process, hence political accountability, since its statutes is determined by simple legislation, which could be altered through the normal legislative process. The same was true of the German Bundesbank before its absorption into the framework of the EMU. A supra-national parliament is not required, however, to make the Board of Governors accountable. Its decisions could be over-ruled by a heavy (e.g. 70 percent) vote of national governments as represented by ministers of finance, with votes apportioned by GNP, who are ultimately accountable to parliaments. Such action would presumably be rare, but if in the collective judgement of governments the Board of Governors was pursuing grossly inappropriate actions, its actions could be countermanded. This possibility would itself likely be sufficient to keep monetary policy within the bounds of public acceptability.

The objective of monetary policy should be to maintain "stability of the currency," an artful phrase drawn from the statutes of the German Bundesbank, which leaves somewhat more latitude than the charge of the Maastricht Treaty to the European Central Bank to maintain "price stability." The Board of Governors should also look after the soundness and smooth functioning of the financial system, a responsibility erroneously not given to the ECB, acting as appropriate as a lender of last resort. And of course it should cooperate with governments in the

pursuit of their general macro-economic objectives.

As an interim process for getting from here to there, the prospective members could adopt the Keynes/McKinnon approach, described above, of targeting monetary policy on stabilizing national indices of producer prices. With low trade barriers these will be made up mostly of tradable goods competitively linked through foreign trade (some agricultural products are today the major exception, but even agricultural trade may be more liberalized after another round or two of multilateral trade liberalization). Over time, the indices could be brought into close direct correspondence. International consultation and even coordination could take place over when (if ever) particular price movements might be excluded, e.g. an exceptional rise in world oil prices. (Indeed, prices of all crude materials might be excluded from the targeted index from the start.) Success in stabilizing closely related price indices in the participating regions should lead to medium run convergence of exchange rate expectations.

How would the adjustment process work with such a scheme in place? How often would it have to work? Asymmetrical real disturbances leading to payments imbalances would of course lead to monetary contraction in regions experiencing negative shocks, and to monetary expansion in regions experiencing positive shocks. Those changes alone would lead to economic contraction and economic expansion, respectively. The possibility of economic

contraction in response to negative shocks leads many economists to prefer flexible over any form of fixed exchange rate. Several important mitigating circumstances need to be mentioned.

First, Europe, Japan, and the United States are all large, highly diversified, open economies, so the likelihood is low that asymmetrical shocks would affect them differentially in a quantitatively significant way. Shocks for each region as a whole are likely to be diversified, and largely offsetting. (It is this factor that leads to some doubts about the inclusion of countries such as Australia or New Zealand, with their relatively high dependence on exports of primary products. But a decade or two hence they may be more highly diversified.)

Second, asymmetrical monetary shocks will virtually disappear with a common currency; that indeed is the point of the proposal. Neither diverse monetary policies nor diverse expectations about future movements of exchange rates would create adjustment problems among the participating regions, as they do now and will increasingly do in the coming years. These translate into real shocks through the movement of real exchange rates, a source of asymmetrical real disturbance that would be eliminated under the proposal.

Third, such asymmetrical real shocks as might occur can be mitigated by offsetting fiscal action, focussed on non-tradable goods. Governments would not of course have direct access to the

common Monetary Authority; but they would have access to a broad capital market covering all of the participating countries.

Fourth, real wages could if necessary, over time, move down as well as up, since monetary policy focussed on the producer price index would leave room for differential movements in consumer prices. An international regime in which monetary authorities all successfully stabilize consumer prices requires long-run flexibility in exchange rates so long as nominal wages are inflexible downward, as they seem to be. Anchoring monetary policy in stable producer prices would avoid this implication.

Conclusion

This paper argued that flexible exchange rates have not performed nearly so well as their early advocates insisted they would. Nominal exchange rate flexibility has led to substantial variation in real exchange rates, and that in turn has created a source of uncertainty for business decisions. As world capital markets become more completely integrated, financial movements will increasingly dominate changes in exchange rates, creating disturbances for business activity. Financial movements, as in the past, will be only loosely linked to changes in economic fundamentals; in the short and even medium run, they develop their own dynamic. This will lead both to too little investment and to misallocation of investment.

Whatever benefits flexible exchange rates may provide as a macro-economic shock absorber, and they are real, will be increasingly dominated and eventually overwhelmed by the costs of flexible exchange rates as a generator of economically unjustified shocks to productive activity. This worsening cost-benefit ratio makes a case for a common currency among the world's major economies. A common currency at the core of the world economy will also make easier the management of exchange rates by other countries.

References

Aliber, Robert Z., "Speculation in the Foreign Exchanges: the European Experience, 1919-1926," Yale Economic Essays, Spring 1962.

Bacchetta, Philippe, and Eric van Wincoop, "Does Exchange Rate Stability Increase Trade and Capital Flows?" NBER Working Paper No. July 1998.

Bergsten, C. Fred, "The Dollar and the Euro," Foreign Affairs 76 (July/August) 1997.

Bergsten, C. Fred, and Randall Henning, Global Economic Leadership and the Group of Seven, Washington: Institute for International Economics, 1996.

Bernstein, Edward M., "Monetary Stabilization: the United Nations Program," in Seymour E. Harris, ed., Economic Reconstruction, New York: McGraw-Hill, 1945.

Cooper, Richard N. "A Monetary System for the Future," Federal Reserve Bank of Boston, 1984; reprinted in Essays in World Economics: The International Monetary System, Cambridge, MA: MIT Press, 1987.

Cooper, Richard N., "Key Currencies after the Euro," The World Economy, 22 (January 1999), 1-23.

Cooper, Richard N., "Should Capital Controls Be Banished?" Brookings Papers on Economic Activity, 1999, No.1, spring.

Fischer, Stanley, et al., Should the IMF Pursue Capital-Account Convertibility?, Essays in International Finance, No. 207, Princeton, NJ: International Finance Section, Princeton University, May 1998.

Friedman, Milton, "The Case for Flexible Exchange Rates," Essays in Positive Economics, Chicago: University of Chicago Press, 1953.

Froot, Kenneth, Paul O'Connell, and Mark Seasholes, "The Portfolio Behavior of International Investors, I," processed, July 1998, forthcoming in Journal of Finance.

Ghosh, Atish R., Anne-Marie Gulde, Jonathan D. Ostry, and Holger C. Wolf, "Does the Nominal Exchange Rate Regime Matter?" NBER Working Paper No.5874, January 1997.

Giavazzi, Francesco, and Alberto Giovannini, Limiting Exchange Rate Flexibility, Cambridge, MA: MIT Press, 1989.

Gros, Daniel, "Global Exchange Rate Stability after the Introduction of the Euro," in The Euro and the New International Financial Order, forthcoming 1999.

Halm, George N., ed., Approaches to Greater Exchange Rate Flexibility, Princeton University Press, 1970.

Hausmann, Ricardo, Michael Gavin, Carmen Pages-Serra, and Ernesto Stein, "Financial Turmoil and the Choice of Exchange Rate Regime," Washington: Inter-American Development Bank, processed, 1999.

Helliwell, John F., How Much Do National Borders Matter?, Washington: Brookings Institution, 1998.

Johnson, Harry G., "The Case for Flexible Exchange Rates, 1969," Further Essays in Monetary Economics, Cambridge: Harvard University Press, 1973.

Keynes, John Maynard, A Tract on Monetary Reform, London: Macmillan, 1923.

Keynes, John Maynard, A Treatise on Money, volume 2, London: Macmillan, 1930.

Kim, Woochan, "Does Capital Account Liberalization Discipline Budget Deficits?" Harvard University Ph.D. dissertation chapter, May 1999.

Kim, Woochan, and Shang-Jin Wei, "Foreign Portfolio Investors Before and During a Crisis," OECD Working Paper No. 210, Paris, February 1999, processed.

Kindleberger, Charles P., Europe and the Dollar, Cambridge, MA: MIT Press, 1966.

Kindleberger, Charles P., "The Case for Fixed Exchange Rates, 1969" in The International Adjustment Mechanism, Federal Reserve Bank of Boston, 1969.

Krugman, Paul, Exchange-Rate Instability, Cambridge, MA: MIT Press, 1989.

League of Nations (Ragnar Nurkse), International Currency Experience, Geneva: League of Nations, 1944.

Little, J.S., and G.P. Olivei, eds., Rethinking the International Monetary System, Federal Reserve Bank of Boston, 2000.

Maddison, Angus, Monitoring the World Economy 1820-1992, Paris: OECD Development Centre, 1995.

Masson, Paul, and Bart Turtelboom, "Transmission of Shocks under EMU, the Demand for Reserves and Policy Coordination," in Masson, Paul R., T.H. Krueger, and B.G. Turtelboom, eds., EMU and the International Monetary System, Washington: International Monetary Fund, 1997.

McKinnon, Ronald I., An International Standard for Monetary

Stabilization, Washington: Institute for International Economics, 1984.

McKinnon, Ronald I., The Rules of the Game: International Money and Exchange Rates, Cambridge, MA: MIT Press, 1996.

McKinnon, Ronald I., and Kenichi Ohno, Dollar and Yen, Cambridge, MA: MIT Press, 1997.

Meltzer, Allan H., "Some Evidence on the Comparative Uncertainty Experienced under Different Monetary Regimes," in Colin D. Campbell and William R. Dougan, eds., Alternative Monetary Regimes, Baltimore, MD: Johns Hopkins University Press, 1986.

Obstfeld, Maurice, "Europe's Gamble," Brookings Papers on Economic Activity, 1997, no.2.

Obstfeld, Maurice, "Rational and Self-Fulfilling Balance-of-Payments Crises," American Economic Review 76 (March 1986), 72-81.

Obstfeld, Maurice, and Kenneth Rogoff, "Risk and Exchange Rates," NBER Working Paper No. 6694, August 1998.

Portes, Richard, and Hélène Rey,"The Emergence of the Euro as an

International Currency," Economic Policy, April 1998, pp.307-343.

Quirk, Peter J., Fixed or Floating Exchange Regimes: Does It Matter for Inflation?" IMF Working Paper 94/134, November 1994.

Solomon, Robert, Money on the Move: the Revolution in International Finance since 1980, Princeton University Press, 1999.

Soros, George, The Crisis of Global Capitalism, New York: PublicAffairs, 1998.

Stulz, René M., "Equity Flows, Banks, and Asia," in NBER Reporter, Winter 1998/1999, pp. 20-24.

Tornell, Aaron, and Andres Velasco, "Fixed versus Flexible Exchange Rates: Which Provides more Fiscal Discipline?" NBER Working Paper No. 5108, May 1995.

Triffin, Robert, Europe and the Money Muddle, New Haven: Yale University Press, 1957.

Triffin, Robert, The World Money Maze, New Haven: Yale University Press, 1966.

Volcker, Paul, "The Quest for Exchange Rate Stability: Realistic or Quixotic?" The Stamp 50th Anniversay Lecture, University of London, November 1995.

Williamson, John, The Crawling Peg, Essays in International Finance No.50, Princeton International Finance Section, 1965, reprinted in Peter B. Kenen, ed., The International Monetary System, Boulder, CO: Westview Press, 1993.

Williamson, John, The Exchange Rate System, 2nd edition, Washington: Institute for International Economics, 1985.

Williamson, John, and Randall Henning, "Managing the Monetary System," in Peter B. Kenen, ed. Managing the World Economy: Fifty Years after Bretton Woods, Washington: Institute for International Economics, 1994.

Endnotes

. This paper draws heavily on my "Exchange Rate Choices," published in Little and Olivei (2000).

. Triffin (1966, pp. 180-194, in internal memos written in 1949) argues, however, that in the interests of trade liberalization the IMF should encourage member countries to adopt flexible exchange rates, under IMF surveillance, as a strictly transitory measure. Canada in fact floated its currency during most of the 1950s, following the Korean boom in commodity prices; and British officials seriously considered floating the pound in the early 1950s, but in the end rejected that course.

. For a review of the empirical literature, see Cooper in Little (2000).

. Recent research involving detailed micro data on equity trading suggests strong persistence and positive feedback trading in emerging markets, that is, investors buy on a rising market and sell on a falling market. There is also substantial evidence of herd behavior. In other words, the assumption of independence of agents' behavior is not warranted, and the possibility of destabilizing movements is high. See Kim and Wei (1999), Froot et al. (1998), and Stulz (1999).

. Under anti-dumping regulations agreed in the Uruguay Round, a firm whose home currency has appreciated must adjust its foreign prices to the change within 60 days to avoid being charged with dumping; de minimus margins for dumping, including "dumping" produced by changes in exchange rates, are only two percent. In short, the anti-dumping rules expose normal business practice of list pricing to foreign customers to protectionist action in the presence of routine movements in exchange rates.

. It is noteworthy that the statute creating the German Bundesbank charged it with pursuing among other objectives "stability of the currency," a marvelously ambiguous formulation, while the Maastricht Treaty creating the ECB charges it with pursuing "price stability" as its primary objective.

Gros (1999) is more skeptical that dollar-euro exchange-rate volatility will be higher than pre-1999 dollar-DM volatility, since it will depend on the as yet unknown approach of the ECB to monetary policy.

. In discussing international coordination of policies Keynes (1930) suggested that all major countries target the same index of prices of a basket of internationally traded commodities, ranging from aluminum to zinc. Concretely, writing under a gold standard, he suggested adjusting the official conversion price of gold periodically to maintain its value in terms of an index of 62 commodities -- the equivalent of targeting price stability of the index.