
From Gold to the Ecu

The International Monetary System in Retrospect

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Our present international monetary system evolved from the international gold standard, to which, even nowadays, some reformers would have us return. It is not a standard hallowed by the ages. Although gold and silver coins appeared in ancient times, widespread standardization of money units as weights of gold goes back only to the nineteenth century. Money in medieval Europe was a hodgepodge of gold, silver, and base-metal coins of various degrees of fineness issued by a great variety of national and local rulers and traded at fluctuating rates of exchange. As standardization gained ground, silver was probably a more important monetary metal than gold. Fiat paper currencies were far from unknown, as in Sweden in parts of the eighteenth century and in the American colonies before and during the Revolutionary War.

Great Britain had traditionally been on the silver (“sterling”) standard. It eased into a bimetallic system after 1717, when Sir Isaac Newton, as Master of the Mint, recommended a particular value at which to fix the guinea gold coin in silver shillings. Britain was inflated off its metallic standard, leaving Bank of England notes as irredeemable standard money, from 1797 until 1821. When redeemability was restored, the one-pound gold sovereign, first minted in 1817, became the standard unit.

The United States officially adopted bimetallism with the Coinage Act of 1792. Silver was in fact the dominant metal, as reflected in the very word

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“dollar,” the widely used name for the Spanish piece of eight reales, one of various large silver coins that were popular in Europe and that had first been minted in Bohemia in 1519. (The Continental Currency of the American Revolution had been denominated in “Spanish milled dollars.”) Silver continued as the effective standard through the operation of Gresham’s Law because the 15:1 relation between the values of gold and silver specified by the 1792 law clashed with the 15H:1 bimetallic ratio adopted by France under Napoleon. That discrepancy lasted until the coinage acts of 1834 and 1837 cut the gold content of dollar-denominated coins by 6.2 percent, thus changing the U.S. bimetallic ratio to 16:1, reversing the discrepancy with the outside world, and effectively switching the country from a silver to a gold standard. Legally the system was still bimetallic. From the Revolutionary War until the Civil War (with a partial exception during the War of 1812), the U.S. government issued only coins but no paper money. The issue of banknotes was left to privately owned banks (and, in a few states, to state-owned banks).

Gold discoveries in California and Australia around midcentury tended to cheapen gold relative to silver and, through the operation of Gresham’s Law, to turn bimetallic standards into effective gold standards. Some economists worried about a serious loss of the purchasing powers of gold currencies, and the French economist Michel Chevalier even recommended a switch to the silver standard (Jevons [1884] 1964, 101). In 1865, France, Belgium, Switzerland, and Italy, and later Greece, formed the Latin Monetary Union in hopes of promoting international standardization of currencies on a bimetallic basis.

The Civil War in the United States inaugurated a regime of irredeemable paper money that lasted until January 1879. Gold and silver coins were still issued, but they traded at a premium against the greenback dollar, which became the usual monetary unit except in the Pacific Coast states. Meanwhile, laws of 1873 and 1876 discontinued the unrestricted coinage of silver dollars and revoked the limited legal-tender power accorded to the somewhat heavier silver trade dollars. These changes meant that a return to convertibility of paper money would no longer restore bimetallism in the United States. Rather, it would establish a gold standard with subsidiary silver coinage.

Around 1873 silver began depreciating against gold on world markets. The newly established German Empire was selling off silver to acquire gold reserves, and silver discoveries in the American West were contributing to its depreciation. The Netherlands and the Scandinavian countries switched from silver to gold standards in the 1870s. The members of the Latin Monetary Union discontinued the free coinage of silver, fearing that the inflow of silver into their mints, which had offered an unlimited market for silver, would inflate their money supplies. Their bimetallism became a “limping” standard, a de facto gold standard. Early in 1879, Austria-Hungary, whose paper gulden had been inflated off its traditional silver

standard, saw the quantity of silver formerly defining the gulden sink in value below supposedly equivalent coins and banknotes. Austria and Hungary feared an inflationary inflow of silver into their mints and so closed them to the free coinage of silver. For the next thirteen years the gulden remained a paper currency floating in midair at a higher value, in relation to gold currencies, than the silver-bullion content of coins.

The actions of Germany, Scandinavia, the Netherlands, and the United States (with its return to redeemability in 1879) thus led a widespread move onto the gold standard from the 1870s. Austria-Hungary moved onto a gold standard in 1892, introducing a new unit, the crown, equal to one-half of the old gulden. Its gold content was set in close correspondence to the foreign-exchange quotation of the gulden at the time of transition. (Actually, Austria-Hungary moved onto a gold-exchange standard: paper money was not unconditionally redeemable in gold coin, but the Austro-Hungarian Bank stabilized the crown's exchange rate against gold-standard currencies through market interventions.) Russia, by piecemeal steps culminating in 1897, adopted a gold standard at a gold content corresponding to the then prevailing exchange rate of the paper ruble (which, like the gulden, had earlier been a silver unit). After a transitional period of floating from 1893 to 1898, India switched from a silver standard to a gold-exchange standard; official foreign-exchange operations pegged the rupee to sterling.

To judge from parliamentary and academic discussions and pamphlet literature in Austria-Hungary and Russia, the chief motive for moving onto the gold standard was not so much unsatisfactory performance of the earlier monetary system as, rather, one of prestige: the gold standard was considered the most modern monetary system, the one most appropriate for advanced countries (Yeager 1984).

This argument from modernity testifies to the absence of a long tradition behind the gold standard. As a truly international system it prevailed for only a few decades up to 1914; its beginning dates somewhere between 1870 and 1900. The Gold Standard Act of 1900 consolidated the de facto gold standard existing in the United States since 1879. Nevertheless, for about three decades, greenback and then bimetallist agitation had caused real doubt about the durability of the U.S. gold standard, doubt reflected in otherwise surprisingly high interest rates on dollar-denominated bonds (Friedman and Schwartz 1982, 515–17).

In 1914 the major powers shared practically a common currency: exchange rates between their currencies were nearly fixed within the gold points. China was still on silver, and several Latin American currencies still had silver currencies or fluctuating paper currencies. But the major powers seemed firmly set on gold.

The decades just before World War I exhibited greater freedom of trade, capital movements, migration, and travel than ever before, although, with hindsight, historians can detect signs of moves back from near free trade toward protectionism as early as the 1870s. Human freedom and the

gold standard appeared to support each other. In two of my favorite passages on monetary history, two otherwise quite dissimilar economists, Benjamin M. Anderson and John Maynard Keynes, waxed lyrical about the personal freedom and the expectations of continued progress that characterized the heyday of the classical gold standard.

Those who have an adult's recollection and an adult's understanding of the world which preceded the first World War look back upon it with a great nostalgia. There was a sense of security then which has never since existed. Progress was generally taken for granted.... We had had a prolonged period in which decade after decade had seen increasing political freedom, the progressive spread of democratic institutions, the steady lifting of the standard of life for the masses of men....

In financial matters the good faith of governments and central banks was taken for granted.... No country took pride in debasing its currency as a clever financial expedient.

London was the financial center, but there were independent gold standard centers in New York, Berlin, Vienna, Paris, Amsterdam, Switzerland, Japan, and the Scandinavian countries. There were many other countries on the gold standard, with some tendency for the weaker countries to substitute holdings of sterling or other means of getting increased earnings. For their purpose the sterling bill was quite as good as gold.... But, in general, the great countries held their own gold. They relied upon themselves to meet their international obligations in gold. At times of great crisis a country under very heavy pressure would seek international cooperation and international assistance, and would get it—at a steep rate of interest. (Anderson 1949, 3–4, 6)

What an extraordinary episode in the economic progress of man that age was which came to an end in August 1914! The greater part of the population, it is true, worked hard and lived at a low standard of comfort, yet were, to all appearances, reasonably contented with this lot. But escape was possible, for any man of capacity or character at all exceeding the average, into the middle and upper classes, for whom life offered, at a low cost and with the least trouble, conveniences, comforts and amenities beyond the compass of the richest and most powerful monarchs of other ages. The inhabitant of London could order by telephone, sipping his morning tea in bed, the various products of the whole earth, in such quantity as he might see fit, and reasonably expect their early delivery upon his doorstep; he could at the same moment and by the same means adventure his wealth in the natural resources and new enterprises of any quarter of the world, and share, without exertion or even trouble, in their prospective fruits and advantages;

or he could decide to couple the security of his fortunes with the good faith of the townspeople of any substantial municipality in any continent that fancy or information might recommend. He could secure forthwith, if he wished it, cheap and comfortable means of transit to any country or climate without passport or other formality, could despatch his servant to the neighboring office of a bank for such supply of the precious metals as might seem convenient, and could then proceed abroad to foreign quarters, without knowledge of their religion, language, or customs, bearing coined wealth upon his person, and would consider himself greatly aggrieved and much surprised at the least interference. But, most important of all, he regarded this state of affairs as normal, certain, and permanent, except in the direction of further improvement, and any deviation from it as aberrant, scandalous, and avoidable. The projects and politics of militarism and imperialism, of racial and cultural rivalries, of monopolies, restrictions, and exclusion, which were to play the serpent to this paradise, were little more than the amusements of his daily newspaper, and appeared to exercise almost no influence at all on the ordinary course of social and economic life, the internationalization of which was nearly complete in practice. (Keynes 1920, 10–12)

The Decline of the Gold Standard

Far beyond the realm of mere monetary arrangements, the outbreak of World War I was a watershed in world history, one all the more poignant for the string of avoidable blunders that caused it.⁰ Anyway, in the words of Howard S. Ellis, the gold standard has been “dead as a dodo ... since the guns of August 1914, since which it has only twitched” (quoted in Hinshaw 1971, 105-6). The word “twitched” refers to efforts to resurrect it after the war.

Exchange rates among major currencies fluctuated until the mid-1920s. Hyperinflations plagued eastern and central Europe. Perhaps the best-chronicled hyperinflation of all time climaxed in Germany in 1923, when stabilization was finally achieved at one new mark for 1 trillion (10^{12}) old marks. (It was not the most extreme inflation, however. My favorite economic statistic is the black-market rate on the dollar at the climax of the Hungarian inflation of 1946— 4.6×10^{30} pengös (Nogaro 1949, 119 n 3, and 120), a figure 10 trillion times as large as the number of seconds of estimated time elapsed since the Big Bang at the start of our universe.)

⁰. The explanation of the war that invokes the Leninist theory of imperialism, one theme of a course I was assigned to teach at the University of Maryland long ago, seems to me contrary to fact and reason.

France pulled back from the apparent brink of hyperinflation in July 1926 and eventually stabilized the franc at about one-fifth of its prewar gold parity, a rate that somewhat undervalued the franc and gave the country a comfortable balance-of-payments position for several years. Great Britain returned in May 1925 to the gold standard—no longer the gold-coin standard, however, but a gold-bullion standard—at the full prewar parity. In contrast with the new French parity, this rate turned out to overvalue the pound at least slightly, which made the balance-of-payments position precarious. Britain was particularly vulnerable to withdrawal of foreign funds deposited or invested in London at short term.

Foreigners held voluminous deposits in London partly because many of the smaller countries returned after World War I not to the full gold standard but to a gold-exchange standard. Under that arrangement, a country's currency, instead of being redeemable in gold directly, was tied at a fixed exchange rate to a major currency that was on the gold standard. This arrangement was widely recommended as a device for "economizing" on gold by making gold reserves do double duty, serving directly as backing for gold-standard currencies and at one remove also as backing for gold-exchange-standard currencies. Like the gold-bullion standard, this arrangement was an attempt—whether conscious or not—to have the trappings or symbols of the gold standard without its full restraint on money issues. As such, it contributed to the precariousness of the whole system of the 1920s, aptly described as "pegging operations on a vast scale" (Brown 1940, 2:805). The systems instituted after both world wars resembled each other in that respect. (A fuller story of the precarious interwar system would have to bring in international wrangles over war debts and reparations.)

Foreshadowed by earlier departures of some minor currencies from the gold standard, an international financial crisis broke out in 1931. Starting in Austria, a morbidly fascinating international chain reaction culminated in Britain's departure from the gold standard in September (Yeager 1976, 339-344). Instead of clinging to gold, most of the British dominions and colonies, along with some other countries, pegged their currencies to sterling, thus inaugurating the Sterling Area.

The United States clung to gold for another year and a half, then allowed the dollar's exchange rate to float from April 1933 through January 1934. Official transactions manipulated the price of gold upward until, under the Gold Reserve Act of January 1934, President Roosevelt redefined the dollar in gold at a 41 percent devaluation. Thus began a thirty-seven-year period during which gold's price was fixed at thirty-five dollars an ounce. What was restored was not a full gold standard, however, but a so-called limited gold-bullion standard. Gold coins were abolished and, with minor exceptions, private ownership of gold was forbidden. Redemption in gold bullion was limited to dollars presented by official foreign holders such as governments and central banks.

A congressional joint resolution of June 1933 abrogated the gold

clause. The clause promised payment of bond interest and repayment of principal in dollars “of the present weight and fineness.” Before 1933 the clause had been included almost routinely in many private and government issues, and its wording assured bondholders of payment in dollars containing as much gold as the dollar had contained when their bonds were issued. If the gold content of the dollar were to be reduced in the meanwhile, then a bondholder would receive enough additional dollars to make his payment equal in value to the amount of gold originally stipulated. In effect, the clause made gold, not the dollar, the standard of deferred payments.

The congressional resolution set this provision aside: now a bondholder was to receive only the originally specified number of dollars, regardless of what had happened to the dollar’s gold content. Contending that this resolution was unconstitutional, some holders of private and government bonds brought suit to collect what they had been promised. The Supreme Court ruled in February 1935 that abrogating the clause in private bonds was indeed constitutional: private agreements must not infringe Congress’s constitutional power to coin money and regulate its value—that is, to define the dollar. A different situation existed with U.S. government bonds: Congress did not have authority to repudiate obligations undertaken by the United States. Partly, however, because their legal briefs were judged deficient in proving actual damages suffered, the plaintiffs could not collect the additional dollars they sought.

To forestall more cleverly prepared lawsuits, Congress passed a further law amending the jurisdiction of the federal courts to bar them from hearing further gold-clause cases. The episode is interesting as an example of the U.S. government quite deliberately repudiating its own solemn promises. Some economists have argued that this action, regrettable as it was, was preferable to the alternative under the exceptional economic conditions of the time. Still, memories of this episode must have affected people’s reactions later on, as in the 1960s, when gold-value guarantees on foreign-held dollars were suggested as one way to palliate the developing weakness of the U.S. balance of payments and the dollar.

Despite the Sterling Area depreciations of 1931 and the subsequent depreciations of the dollar and currencies linked to it, France, Switzerland, the Netherlands, Belgium, Italy, and Poland issued a joint statement during the London Economic Conference of July 1933 expressing their intention to maintain the existing gold parities of their currencies. France in 1935 and 1936 even minted 100-franc gold pieces corresponding to the franc’s new gold parity defined by a law of 1928. Further events, to be described below, kept these coins from actually going into circulation.

Amidst world depression and in the face of the depreciations of sterling and the dollar and the currencies that followed them downward, gold currencies became increasingly overvalued. Countries that nevertheless tried to cling to gold suffered balance-of-payments strains and unnecessarily severe domestic depression. Czechoslovakia devalued in 1934, Belgium and Danzig

in 1935. Increasing distrust of the French franc's parity showed up in forward discounts reaching 37 or 38 percent annual rates at times in the late summer of 1936.

The franc was suffering from one-way-option bear speculation such as sterling had suffered in 1931 and such as sterling and many other currencies would sometimes suffer under the Bretton Woods system after World War II. (A one-way option means almost a heads-I-win-tails-I-break-even opportunity; for speculators know in which direction any adjustment of a fixed exchange rate will occur, while the worst that could realistically befall them is not a change in the opposite direction but simply no change.) As things worked out, the franc had to be devalued in September 1936 by about 30 percent; devaluations of the Swiss franc and other gold currencies quickly followed. Yet after a few months, the devalued French franc came under renewed bearish pressure.

The U.S., British, and French governments announced the French devaluation of September 1936 along with a Tripartite Monetary Agreement. In it they recognized that exchange rates are matters of common concern. Each participant promised to maintain its own currency's exchange rate against the other two currencies at levels that would not be changed without twenty-four hours' advance notice. This assurance would facilitate cooperation in managing rates. Belgium, the Netherlands, and Switzerland soon adhered to the agreement, which has been widely interpreted as a forerunner of the Bretton Woods agreements of 1944.

The decade of the 1930s brought severely shrunken world trade, "beggar thy neighbor policies" by which governments tried to create jobs at other countries' expense (as by raising tariffs and tightening import restrictions), and unstable exchange rates. Exchange controls were widespread and stringent, most notably in Nazi Germany. Most of these troubles were consequences, however, of the world depression and of the inadequate monetary arrangements and policies that made it so severe. People complained frequently about competitive exchange depreciation, that is, of governments' actions to drive their currencies below their equilibrium values to promote exports and ward off imports. Yet harmful delays in correcting overvaluations were probably at least as common as deliberate undervaluations.

Interwar experience was widely supposed—notably in Ragnar Nurkse's influential *International Currency Experience* (1944)—to teach enduring lessons about the evils of floating exchange rates. Nurkse cites four episodes in particular as horrible examples: the French experience of 1922–26 of floating amidst domestically inflationary conditions, Britain's float for the first several months after being driven off gold in September 1931, the U.S. float in 1933–34, and the French float of June 1937 to May 1938, when the franc, after a second devaluation, was still under bearish pressure. But these were exceptional episodes—periods of transition flanked by exchange-rate pegging and themselves characterized by official manipulations. The most unsatisfactory episodes of the 1930s were not examples of free floating.

If the 1930s properly count as the death-throes period of the gold standard, some summary remarks about that system belong here. First, as a generally practiced international system, it was a brief episode in world history, stretching from somewhere between 1870 and 1900 until 1914. Its resurrection after World War I was incomplete and temporary. Second, despite its short-lived influence, the ideology of the gold standard contributed to deflationary monetary policies tragically inappropriate to conditions of the early 1930s (Temin 1989; Eichengreen 1992). As long as they clung to the fixed exchange rates of the gold standard, many countries experienced the clash between the requirements of internal and external balance that would be fully explained only by macroeconomic theories still to be developed. Especially in countries that had suffered severe inflations in the 1920s, fear of inflation conditioned policies, inappropriately, under drastically changed conditions. Third, history shows that a government-managed gold standard does not ensure price-level stability or macroeconomic stability, though the record of government-managed paper moneys has often been worse. Fourth, the historical gold standard was not a self-maintaining system: governments eventually perverted it and finally replaced it with discretionary paper standards. (Remember the U.S. abrogation of the gold clause.) Fifth, what really interferes with commercial and financial transactions, especially international ones, is not lack of official convertibility of currencies into gold but impediments to convertibility in the contemporary sense, that is, government interference with free buying and selling of currencies on the foreign-exchange market. Sixth, the mystique that the gold standard may earlier have possessed—its being esteemed as at once modern, permanent, and ethically obligatory—no longer exists; and such a mystique, once destroyed, can hardly be resurrected.⁰

The Postwar Monetary Order

Monetary experiences during a world war like that of 1939–1945 are so exceptional, with governments dominating and tightly controlling international monetary relations, as hardly to require review here. The conference held at Bretton Woods, New Hampshire, in July 1944 does deserve mention. Postwar international monetary arrangements trace to the charter of the International Monetary Fund (IMF), negotiated there.

The Fund was organized in 1946 and opened for business in the spring of 1947. The philosophy of the Bretton Woods or IMF system supposedly embodies lessons of interwar experience and embraces several points. One is

⁰. Credible commitment to gold before World War I “depended on a unique constellation of political and economic factors.” The kind of cooperation among central banks that facilitated the system’s operation “rested on a specific conjuncture of political, economic, and intellectual circumstances unique to the late-nineteenth and early-twentieth centuries” (Eichengreen 1992, 390–91).

a horror of fluctuating exchange rates. Another endorses freedom of national governments to aim their monetary and fiscal policies at domestic macroeconomic objectives, including full employment, uninhibited by rigid exchange rates. The American negotiators tended to sell the scheme as a return to the essentials of the gold standard, improved in its details, while the British negotiators, notably Lord Keynes, tended to sell it as achieving freedom from the fetters of the gold standard. The IMF philosophy also recognized exchange rates as matters of intergovernmental concern, not to be changed outside specified initial limits without international consultation and approval.

The IMF was supposed to enforce its rules. Each member country was to declare a par value for its currency against either gold or the U.S. dollar and prevent exchange transactions on its territory at rates further than 1 percent away from the declared parity. Ordinarily each national authority would enforce these limits by whatever exchange-market transactions of its own proved necessary. (The United States, by exception, fulfilled this obligation by standing ready to buy and sell gold at its official price.) Each country was free to change its exchange rate up to as much as 10 percent away from the initially declared rate, but further changes might be made only after consultation with and approval of the IMF. (As things worked out, several momentous exchange-rate changes were made without the Fund's approval and even without its being notified in advance.) The Fund was required to give its approval if it found the change necessary to correct a "fundamental disequilibrium" (a concept left without precise definition), and the Fund might not withhold approval because of dissatisfaction with a member country's internal policies. In principle the IMF required free convertibility of currencies, that is, their exchangeability for other currencies on unhampered markets, but exceptions were provided. Countries might maintain exchange controls during a "postwar transition period" of unspecified length. Beyond that, countries could maintain—and might even be expected to impose—exchange controls to cope with disruptive capital movements, as distinguished from current-account transactions. (In practice, controlling capital-account but not current-account transactions ultimately proved almost impossible.)

Besides administering these rules, the Fund was charged with helping to finance exchange-rate pegging. A country suffering from balance-of-payments difficulties and weakness of its currency on the market was expected to support its currency—provided this condition was deemed temporary rather than indicative of "fundamental disequilibrium." It would buy its own currency in whatever amounts were necessary to keep its quotation from sinking below the prescribed narrow band, paying with foreign exchange (notably dollars) or gold (readily salable for dollars) drawn from reserves previously accumulated for that purpose. Facing exhaustion of these reserves, a weak-currency country could borrow the necessary additional foreign exchange from the IMF. (Technically the transaction was called a

“purchase,” not a borrowing, because the country deposited the counterpart in its own currency of the foreign currency drawn; but as the rules required eventual reversal of the transaction, though with a few exceptions, the transaction was in effect a loan from the IMF.) The IMF was able to make such loans out of a fund of gold and, more important, U.S. dollars and other currencies subscribed by the member countries. The bulk of these contributions took the form of home-currency demand notes that each member could be required to redeem when necessary in actual money. Subsequent arrangements enabled the IMF to supplement the funds obtained from members’ subscriptions with funds obtained by special borrowings and with funds created in the form of Special Drawing Rights (described below in the section on the collapse of Bretton Woods).

The Bretton Woods system had no automatic method of balance-of-payments adjustment. It lacked the mechanism inherent in a system of truly fixed exchange rates such as a full-fledged gold standard, namely, the mechanism that would regulate each country’s domestic money supply through the currency’s link to gold and the country’s gain or loss of gold through balance-of-payments surpluses or deficits in a way that tended to correct or forestall those imbalances. Nor did the system employ the mechanism of floating exchange rates, forbidden by the IMF’s rules. Rather, it confronted balance-of-payments disequilibriums, particularly deficits, with a mere “breath-holding policy” (Allen 1961): ordinarily a country would simply wait and hope for a payments deficit to go away more or less of its own accord, meanwhile continuing to peg its exchange rate by drawing on its own gold and foreign-exchange reserves and perhaps drawing on the IMF. In exceptional cases the country might try to restrain imports and capital outflows by trade and exchange controls, although controls violated the system’s philosophy, or it might devalue its currency in cases of “fundamental disequilibrium.” The Bretton Woods system thus held the exchange-rate mechanism of balance-of-payments adjustment in abeyance. Fundamental adjustment to changing conditions was at the mercy of national monetary managers.

In the course of events, exchange-rate adjustments occurred less often than, according to the usual interpretation, the intellectual founders of the IMF system expected. One can plausibly argue that rates exhibited too much rigidity. Circumstances described below apparently discouraged official readiness to make rate adjustments.

Yet many adjustments did occur. The first notable wave of adjustments came with Britain’s devaluation of the pound from \$4.03 to \$2.80 in September 1949, promptly followed by devaluations of most other non-dollar currencies. This upheaval invites comparison with the one of almost exactly eighteen years before. Britain devalued again in November 1967, from \$2.80 to \$2.40, followed on this occasion by far fewer countries than before. After earlier adjustments, France devalued the franc again in 1957, 1958, and 1969. Devaluations were common in high-inflation countries of

Latin America, Africa, and Asia. Some upward revaluations, such as Germany's in 1961 and 1969, did occur, but they were much less common than devaluations. One reason is that whereas the finite size of reserves and credits limits the defense of an overvalued currency, no symmetric limit restrains maintaining an undervaluation: the country can simply keep on accumulating external reserves bought with newly created home money, though at the eventual risk of importing inflation. Some exchange-rate adjustments during the collapse of the Bretton Woods system will also be mentioned later on.

At least three reasons explain why exchange rates were not altered to adjust balances of payments as often as originally expected. The first concerns the J-curve effect: it takes time for the price changes caused by an exchange-rate adjustment to affect incentives and responses and so affect balances of payments in the "normal" way. Meanwhile, the sheer arithmetic of the changes, applied to old and sluggishly responding trade patterns, is actually perverse. Working with short time horizons, governments are naturally reluctant to make moves likely to appear unsuccessful for some time. Second, an exchange-rate adjustment may appear to be a sign of government failure. In particular, political opponents and adversely affected economic interests may point to a devaluation as proof of domestic inflationary blunders.

Third, merely the live possibility, not to mention the expectation, of an exchange-rate adjustment flags on one-way-option speculation. If adjustments had become a routine recourse in times of balance-of-payments difficulty, making them seem frequently possible, then speculative capital movements would have torn apart the intended system of even usually fixed exchange rates.

For such reasons, the Bretton Woods system turned out to be one of fixed exchange rates punctuated by only infrequent parity adjustments among the major currencies. (A different story applies to the inflation-prone currencies of many smaller countries.) No automatic balance-of-payments adjustments operated, but only a *mélange* of patchwork expedients.

The Supposed Heyday of the Bretton Woods System

Nowadays it is common (e.g., in editorials of the *Wall Street Journal*) to look back with nostalgia to the supposed heyday of the Bretton Woods system, dating from after the first years of postwar recovery, or perhaps from the end of the Korean War, to around 1970. Prosperity generally prevailed, and the real volume of world trade grew even faster than countries' total real outputs. Several rounds of multilateral negotiations reduced tariff levels. The postwar transition period of exchange controls permitted by the IMF charter eventually came to an end as, around 1958–60, the major countries

that had not already done so now made their currencies externally “convertible,” that is, freely tradable on the exchange markets.

It seems, therefore, that the Bretton Woods system of fixed but adjustable exchange rates, administered and financially supported by the IMF, was a clear success. This impression could be wrong.

First, exchange-rate arrangements hardly caused the prosperous times. Instead, prosperity accompanied national full-employment policies that, through monetary and fiscal measures, kept total spending ample to buy the outputs of fully employed economies. Such actual or apparent success could not last forever. Sooner or later people would catch on to “expansionary” policies (as they clearly did in the 1970s) and would respond to high or rising levels of spending more with price and wage increases than with sustained rises in output and employment. But the period of fully catching on can be and apparently was quite long—roughly two decades. Meanwhile, domestic prosperity facilitated tariff reductions and the growth of international trade.

Second, the system was a “disequilibrium system,” lacking any “automatic” and continuously operating balance-of-payments adjustments. It was marked early by exchange controls and later by backsliding. After a period of “dollar shortage,” palliated by U.S. financial aid to the outside world, chronic balance-of-payments problems shifted to the United States.

Various U.S. controls of the 1960s, notably the Interest Equalization Tax and a ban on private American ownership of gold not only within but even outside the United States, as well as other measures to restrain lending, investing, and travel abroad, exemplify the patchwork measures characteristic of the Bretton Woods system. Calling in 1965 for “voluntary” controls over capital exports, President Johnson sought the effect of momentous legislation without enactment by Congress. Business firms were asked to subordinate profit considerations to the administration’s notions of national interest. The program’s spurious voluntary character and its inherent vagueness violated sound legal principles and were questionable on grounds of political philosophy. Vagueness and appeals to patriotic volunteering put a premium on compliance with the program’s spirit as well as its letter, inhibiting vigorous dissent and democratic debate.

Disequilibrium showed up in crises of one-way-option speculation that periodically swept the system. Besides those mentioned elsewhere in this survey, Great Britain experienced crises in 1947, 1951–52, 1956, 1957, 1961, 1964, 1966, and 1968. Even when the defenders of existing parities do succeed in riding through a crisis, it causes much disruption.

The Bretton Woods system fulfilled original expectations only briefly, for a few years in the 1960s.

The Collapse of Bretton Woods

The system’s collapse stretched out over many years. It was pretty clearly

complete by 1 March 1973, but it is hard to say just when it began. One might even argue that the decline started as soon as removal of the controls of the postwar transition period inaugurated the full-fledged system. The switch in the general direction of world disequilibrium—from precariously suppressed payments deficits and currency weakness outside North America (the “dollar shortage”) to weakness in the U.S. balance of payments and the dollar—came around 1960, give or take a few years. The early and mid-1960s brought various expedients to shore up the U.S. balance of payments and defend the dollar. They included not only the already mentioned controls but also measures to finance external deficits, such as the government’s issue of special bonds denominated in foreign currencies (“Roosa bonds”) and creation of a network of swap credits among central banks.

In November 1967, after coping over the years with several crises of bear speculation, Great Britain finally devalued the pound sterling from the \$2.80 rate set in 1949 to \$2.40. Speculative attention then turned bearishly to the dollar and bullishly to gold. Since 1960–61 the United States and several other governments had been cooperating in the London Gold Pool, feeding gold to the open market when necessary to keep its price from rising appreciably above the official figure of \$35 an ounce. In March 1968 the members of the Pool discontinued this effort. A two-tier market was established: gold would continue to trade among governmental and intergovernmental agencies at the old official price, but its open-market price was freed from intervention. Although the U.S. government remained avowedly willing to redeem officially held dollars in gold, in practice various pressures behind the scenes discouraged large-scale redemptions. Late 1968 brought an episode of bear speculation on the French franc and bull speculation on the German mark. The authorities withstood this crisis with emergency and patchwork measures and with no change in official currency parities, a supposed success that brought a congratulatory message from President Johnson to General de Gaulle.

Notable events of 1969 were another franc-mark speculative crisis in May, again temporarily weathered without parity changes, a surprise devaluation of the franc in August, and a temporary float of the mark in September before its upward repegging in October.

In 1970 the United States registered an unprecedentedly large balance-of-payments deficit, nearly \$10 billion on the official-settlements basis, reflecting dramatic reversals of short-term capital flows. In June, after floating from 1950 to 1962 and then being pegged for eight years at 92½ U.S. cents, the Canadian dollar was again allowed to float upward against the U.S. dollar.

In 1971 the U.S. official-settlements deficit reached nearly \$30 billion, largely reflecting precautionary or speculative transfers of funds out of dollars. U.S. dollar liabilities of kinds that count in the foreign-exchange reserves of their foreign official holders more than doubled: their increase in

1971 alone exceeded their total accumulation throughout all earlier history, even counting in that cumulative amount the 49 percent increase that had already occurred in 1970.

Besides these numbers, 1971 brought momentous events. In early May a speculative stampede out of dollars into several European currencies occurred, resulting in upward floats of the German mark and Dutch guilder, upward revaluations of the Swiss franc and Austrian schilling, and a fuller separation of the commercial and financial foreign-exchange markets in Belgium. Worse than being mere palliatives, these piecemeal adjustments aroused expectations of more to come. One-way-option speculation against the dollar mounted in the summer. The "Nixon shock," so called by the Japanese, came on 15 August. The United States "closed the gold window," dropping all remaining pretense that officially held dollars were still redeemable in gold. Foreign authorities faced the choice of either continuing to peg their currencies against the now purely fiat dollar or else floating or revaluing them. A temporary 10 percent import surcharge was meant to prod other countries to raise their currencies against the dollar. At home, President Nixon imposed a wage and price freeze, which would later thaw into a complicated system of controls.

After four months during which major currencies floated against the dollar, negotiations culminating at the Smithsonian Institution in Washington in December 1971 achieved what President Nixon hailed as "the most significant monetary agreement in the history of the world" (Solomon 1977, 208). Most major currencies were revalued upward against gold, while the dollar was devalued by 8 percent. (The official gold price was raised to thirty-eight dollars. By now, however, gold parities had ceased to be operational except as a way of implying the central rates of currencies against each other.) By these Smithsonian adjustments, the central rates became \$2.6057 per pound sterling (as against the \$2.40 rate set in 1967), 31.0 cents per German mark (as against the 25 cents set in 1961 and 27.3 cents set in 1969), and 308 Japanese yen per dollar (as against the long-standing rate of 360). Furthermore, the Smithsonian agreement widened the permissible ranges of currency fluctuations to 2.25 percent on either side of the central rate from the 1 percent specified in the IMF charter and the 0.75 percent generally practiced.

Supposedly, after a few months' interruption, the Bretton Woods system was now reconstructed on a sounder basis, with new equilibrium central rates set according to econometric calculations. The reconstruction lasted scarcely fourteen months. Already in June 1972 the British pound came under bear speculation and had to be set afloat.

Which particular events triggered the final collapse of early 1973 was almost a matter of accident, but vulnerability to accidents had marked the system all along. Disappointment about delay in the Vietnam settlement was evidently one factor. Others were worries about the federal budget deficit and rapid money-supply growth in the United States, along with the par-

ticular timing of the inevitable further easing of wage and price controls. In January a flight of funds from Italy into Switzerland triggered introduction of a floating “financial lira” and an upward float of the Swiss franc, which left other nondollar currencies all the more attractive for speculators fleeing the dollar. On 12 February the United States announced a further devaluation, this time by 10 percent. The now almost meaningless official gold price became \$42.22. (Actually, the dollar’s new parity was expressed against the IMF’s Special Drawing Right, to be explained below.) Japan allowed the yen to float, and Italy allowed the lira to float in its commercial as well as financial market, thus joining Canada, Britain, Ireland, and Switzerland as floaters.

Speculators evidently considered the latest U.S. devaluation inadequate. On 1 March alone the German Bundesbank had to absorb \$2.5 billion in support of the dollar against the mark, its most massive intervention ever in a single day. Then it gave up trying. Similar actions affected other major currencies not already floating. When the major European foreign-exchange markets reopened officially on 19 March, after partial suspensions, several European currencies were floating jointly against the dollar. (With varying membership, the European currency “snake” had existed since April 1972. It was to be consolidated in March 1979 into the present European Monetary System.)

Significantly, policymakers did not choose to switch from fixed to floating exchange rates; the recommendations of academic economists are not what prevailed. Instead, after prolonged and vigorous defense, the Bretton Woods system simply collapsed. Meanwhile, the defense effort had entailed massive purchases of dollars around the world as central banks and governments strove to maintain fixed parities and keep their currencies from rising against the dollar. During 1970–72 and the first quarter of 1973, foreign official holders increased their dollar claims of types counting as international reserves by 346 percent. In the process, they created massive amounts of local high-powered money, unintentionally setting the stage for multiple expansions of total money supplies through the operation of fractional-reserve banking. This monetary “explosion” fueled a subsequent severe speedup of price inflation throughout the world. (See *International Financial Statistics*; see also Ingram 1974, Rabin 1977, and Rabin and Yeager 1982.)

By now the original rationale of the International Monetary Fund—to supervise and help finance a system of fixed but adjustable exchange rates—had vanished. Like all good bureaucrats, however, the staff of the Fund had already been busy devising new functions for themselves. Under decisions made at the Rio de Janeiro meetings of the Fund in September 1967 and the provisions of an amendment to the Fund’s charter ratified in the summer of 1969, the Special Drawing Right (SDR) had been created as one device for patching up the decaying system.

The chief rationale for the SDR was that the role of the U.S. dollar as

the main component of official foreign-exchange reserves was anomalous. A continuing uptrend in the volumes of world trade and payments, balance-of-payments disequilibriums, and official trading to peg exchange rates required a growing volume of reserves. Continuing growth of dollar reserves required continuing deficits in the U.S. balance of payments; yet these deficits and the attendant buildup of U.S. liquid liabilities to foreigners, especially seen in relation to dwindling U.S. gold reserves, made the position of the dollar seem increasingly precarious and vulnerable to speculation. The system as it had unintentionally evolved, in short, made continuing U.S. payments deficits both necessary and alarming.

The supposed solution was to create a new international reserve asset, the SDR, sometimes nicknamed “paper gold.” The IMF could create it out of thin air and distribute it to its members in such amounts as would contribute to a correct total of so-called international liquidity. The United States could then attend to correcting its international deficit without blocking the necessary growth of foreign-held reserves. Furthermore, the SDRs allocated to the United States would supplement its gold reserves and aid in defense of the dollar.

It is unnecessary here to review the complicated rules concerning the issue and employment of SDRs. Suffice it to say that the scheme did not work as intended. Years elapsed between its being first proposed, then adopted, and finally implemented. More or less by coincidence, the first issues of SDRs came just when they were least appropriate, in 1970, 1971, and 1972, when foreign official accumulations of dollars were reversing any supposed shortage of international liquidity into a glut of international—and domestic—liquidity. SDR holdings have never amounted to more than a very small percentage of official reserves anyway.

The SDR has, however, gained some prominence as a unit of account, especially in operations of the IMF itself and in denominating some private loans and bonds. Originally defined by the same quantity of gold then theoretically defining the dollar, the SDR was subsequently redefined in such a way as to avoid any jump in its size at the time of the change. In 1974 it was defined by a basket of sixteen currencies, then simplified in 1981 to a basket of only five. The simplified basket originally consisted of 40 U.S. cents plus specified amounts of the German, Japanese, French, and British currencies. The weights of the five currencies in the basket are periodically adjusted (as of 1996 the U.S. component is 58.2 cents). The SDR is thus defined by national fiat moneys lacking any defined values of their own. Under the current system of floating, the value of the SDR in any particular currency changes from day to day (except for a few minor currencies pegged to it). On 2 April 1996 the SDR was quoted at US\$1.4581.

For some time after the events of March 1973, the IMF maintained that floating was only temporary. Its Committee of Twenty labored at devising a return to a system of “stable but adjustable par values.” That hope lapsed well before the Second Amendment to the IMF Charter was proposed in

1976 and ratified in 1978. Belatedly, floating became legal. Each member might choose to peg its currency to some other currency or to let it float. The original Bretton Woods requirement that each currency have a declared parity against gold (or the U.S. dollar) was reversed into an actual ban on gold parities. Further to reduce the monetary role of gold, in 1976 the IMF began a program of disposing of part of its gold stocks, partly by returning gold at the low official price to member governments, partly by selling gold in periodic auctions.

Since general floating began, the scale of IMF operations has actually increased greatly. Instead of serving only to defend fixed exchange rates, its loans go largely to help finance official interventions in the markets for floating currencies. Furthermore, the IMF has from time to time created and reshuffled so-called special “facilities” for loans on specially favorable terms to countries suffering designated troubles, such as burdensomely expensive oil imports or weakened export markets. The IMF has been getting into the foreign-aid business, blurring the originally sharp demarcation between its activities and those of its sister Bretton Woods institution, the World Bank.

Arrangements and Events Since 1973

Although the dollar is floating against the major foreign currencies and although the bulk of world trade takes place at floating rates, the current system is by no means one of universal floating. Many Latin American, African, and Asian currencies still remain pegged to the dollar, although flexibly or adjustably. Several are pegged to the French franc, a few to other currencies, and several to the IMF’s SDR. Several floating currencies are subject to official intervention intended to keep them stable against a basket of foreign currencies.

The most notable exception to general floating is—or was—the European Monetary System, which succeeded the similarly intended currency “snake” in 1979. The system’s significance was much reduced when its bands of permissible exchange-rate fluctuation were widened after episodes of speculative currency crisis in 1992 and 1993. In any case, its members are the countries of the European Union, although not all participate in its exchange-rate-stabilization mechanism. Each participating member declares a parity for its currency against the European currency unit, the ecu, which is defined by a basket of member currencies. (Besides being an acronym, “ecu” is the name of an old French dollar-sized silver coin.) These ecu parities imply parities of each participating currency against each of the others. Central banks are required to intervene in the markets to keep their bilateral exchange rates from deviating beyond prescribed margins. For short periods, each member central bank makes its own currency available to its partners in amounts necessary for these stabilizing interventions. Since 1994 a European Monetary Institute, succeeding an earlier European Monetary Cooperation Fund, has provided longer-term credits and issued ecus for

settling debts arising from these interventions.

The ecu, presumably to be renamed “euro,” may serve someday as the basis for the projected European monetary unification. (It now seems doubtful that the participating countries will introduce their common currency on schedule in 1999.) Like the SDR of the International Monetary Fund, the ecu does not yet exist in banknote form and rarely serves as a medium of exchange in private transactions. However, some official and private bonds and loans have been denominated in both of those basket currencies (with payments and repayments taking place in equivalent amounts of national currencies). The ecu has won more acceptance than the SDR in private markets. One apparent reason is that the ecu is a better alternative to or hedge against the U.S. dollar, since the dollar remains outside the ecu basket but is the largest component of the SDR basket.

Resemblances between the ecu and the SDR, along with exchange-rate arrangements, suggest interpreting the European Monetary System as a Bretton Woods system in miniature. As one might expect, crises of one-way-option speculation have occurred, and several readjustments of currency parities have been made. One main difference from the Bretton Woods system is that its members have contented themselves with less independence for domestic monetary policy. The German Bundesbank has provided leadership, promoting convergence of national inflation rates at a lower level than would presumably have occurred under free floating. Anyway, this is the reputation that the EMS has enjoyed. It will be interesting to see how it or its successor arrangement performs after the almost complete abolition of controls over trade and capital movements within the European Union.

From the start, the period of worldwide floating, like the Bretton Woods period, has been eventful (though, except within the EMS, without major crises of one-way-option speculation). October 1973 saw the Yom Kippur War between Israel and several Arab states, the Arab oil embargo against the United States and the Netherlands, the awakening of OPEC, and the near-quadrupling of oil prices around the turn of the year 1973–74.

Price inflation in countries around the world also heated up at about the same time; year-over-year rates of price increase reached double-digit levels in 1973 and 1974 (Rabin 1977). Superficial observers blamed the severe inflation of the 1970s on OPEC’s predation, on other “real” shocks, even including disappearance of anchovies from off the coast of Peru, and, above all, on the floating of exchange rates and attendant loss of the supposed financial discipline of fixed rates. Post hoc, ergo propter hoc. The explanation most in accord with economic theory, well supported by historical evidence, points to the earlier bout of worldwide money-supply inflation tracing to dogged but ultimately futile defense of fixed exchange rates; money-supply inflation raised prices with the usual lag of roughly two years.

Other events include the world recession of 1975, associated with the macroeconomic consequences of the oil price increases, another

oil shock in 1979, the sharp depreciation and then recovery of the British pound in 1976, associated with changing expectations of monetary policy and exchange-rate support, and the vicissitudes of the U.S. dollar in 1978 and 1979, culminating in appointment of Paul Volcker as Federal Reserve chairman in hope that he would stop inflation and save the dollar. What turned out in retrospect to be the rather lighthearted “recycling of petrodollars” to finance trade deficits caused by increased oil prices contributed to the international debt problem of third-world countries that reached the headlines in 1982.

More pertinent than further details of this unstable environment in which exchange rates have been fluctuating are some comments on volatility and misalignments. Rates have moved widely, even wildly. “As someone who has always strongly favored floating exchange rates,” Milton Friedman (1985) admitted that he “did not anticipate the volatility in the foreign exchange markets that we’ve had” (New York Times, 26 December, op-ed page). Bilateral rates have fluctuated 10 and 20 percent over periods of months and sometimes several percent from day to day or even within days. The dollar fell nearly 10 percent against the German mark from early April to early May 1986, climbed 7 percent for three weeks, then dropped 5 percent in a week (Wall Street Journal (WSJ), 9 June 1986, 27). Earlier, between Friday 20 and Monday 23 September 1985, on news of the Plaza agreement concerning market intervention, the dollar plunged by a reported record amount from one business day to the next—by 5.4, 5.3, 5.2, and 5.0 percent against the yen, mark, Swiss franc, and pound sterling, respectively (WSJ, 24 September 1985, 3; 26 September 1985, 3). After falling sharply during December 1991, in one week of January the dollar jumped nearly 8 percent against the mark and other European currencies (WSJ, 16 January 1992, C15). Contrary to hopes pinned earlier on development of market institutions and accumulation of experience, rate fluctuations appear not to have been getting milder over time. Again the question arises of how to apportion blame, if any is due, between the markets themselves and the climate of irresponsible and unpredictable government policies in which they operate.

It is an unsettled issue whether official intervention, together with rumors of its being started, altered, or suspended, has made exchange rates less or more volatile on the whole than they otherwise would have been. (Yeager 1976, chap. 14, explains how intervention might increase volatility and surveys episodes in which it apparently did. gyrations of the British pound in 1976–77 and of the U.S. dollar in 1977–78 further illustrate the influence of official intervention, its suspension, negotiations for international support of a currency, and related rumors, true and false.) In the view of Professor Steve Hanke, chief economist for a commodity- and currency-trading firm, the threat of more central-bank intervention leads to greater market volatility. It raises the risk for currency speculators and forces them to seek greater returns in compensation. “We’re getting another set of big

players in the market and you never know when they're going to hit the accelerator or slam on the brakes" (WSJ, 8 May 1986, 34). The financial press frequently carries stories interpreting day-by-day exchange-rate jumps as responses to news and correct or incorrect rumors about presence, intensification, absence, or diminution of official intervention. Newspaper stories scarcely prove cause and effect, of course. Hard evidence on such matters is elusive. But an economic historian, like a detective (cf. Winks 1970), would be ill advised to rule out any evidence a priori. Newspaper stories offer clues to the thinking of people in the markets, and their thinking and reactions are bound to affect what happens.

Explanations of exchange-rate volatility, however plausible, do not explain it away. How serious its consequences are is not clear. Volatility seems not to have impaired the volume of international trade, or not enough for the effect to be detectable beyond doubt (Aschheim and others, 1987, esp. 433–441). Capital movements have flourished, perhaps excessively in some sense; and foreign-exchange transactions associated with them now vastly overshadow transactions associated with trade in goods and services.

Volatility, some proponents of intervention argue, is a nuisance but not the worst defect of the current float. More serious, they say, are exchange rates "misaligned" with their long-run equilibrium levels or with relative price levels and other "fundamentals" (Williamson 1985; Bank for International Settlements 1986, 150). Misalignments cause alternations of splurge and austerity as a country's currency floats too high and then too low. They distort the allocation of resources between tradable-goods and nontradable-goods industries; they impose unemployment and other costs of otherwise unnecessary interindustry resource shifts; they contribute to inflation through ratchet effects; they breed protectionist measures; and so forth. Such concerns about misalignment form the core of the case for exchange-rate management—for "target zones" and the like.

The most conspicuous case of misalignment was the growing strength of the U.S. dollar up to early 1985. From its low in July 1980 to its peak in February 1985 "the multilateral trade-weighted value of the dollar rose 87 percent in nominal terms and 78 percent in real terms" (U.S. Council of Economic Advisers 1986, 31; other measures show roughly the same degree of nominal appreciation against other currencies on average).

Around the peak, concerted intervention by the Federal Reserve and other central banks worked for a decline in the dollar; and the Plaza Agreement of September 1985 reenforced this interventionist posture. Yet the turnaround and subsequent sharp decline cannot be attributed mainly to intervention. The dollar had risen unsustainably high. By early 1987, official worries focused on its weakness, and the Louvre Accord of February 1987 was intended to restrain its fall. Although the Louvre target zones for exchange rates never were publicly announced, it had become evident by late in the year that the official support of the dollar had collapsed. By the

end of 1987 the dollar had fallen to below half of its 1985 peak values against the mark and yen. Thereafter it recovered somewhat, reportedly thanks in part to official intervention; but by late 1991 and early 1992 the dollar was again scoring record lows against the mark.

This is not the place to offer and test explanations of the dollar's rise and fall in the 1980s. Changing influences of and reactions to the U.S. government budget deficit enter into the most prominent conjectures. The size of the exchange-rate swings in comparison with fundamentals such as relative price levels suggest that if the dollar was not massively overvalued at its peak of 1985, it must have been massively undervalued in mid-1980 and again at the end of 1987.

Some free-market champions are inclined to answer the question whether exchange rates have been correct during the period of floating by observing that markets are efficient and take account of all information cost-effectively available. Anyone who knew better than the opinion already reflected in exchange rates was free to profit from such superior knowledge. The rates that did emerge must have been correct. This interpretation comes dangerously close to tautology, to defining whatever happens on a free market as correct and not subject to second-guessing.

I am willing to employ hindsight. But I press the question: What would the alternative have been to the rate swings actually experienced? Dissatisfaction with one course of events does not imply knowing how and being able to achieve a more satisfactory course. Anyone who argues that the dollar's appreciation to its peak of early 1985 should have been prevented should say how and should examine the likely consequences of the measures contemplated. The alternative policies that occur to me do not seem attractive. (I refer, of course, to palliative policies of the usual variety, not to genuine commitment by governments and central banks to currencies of stable purchasing power.)

On the issue of the exchange-rate system, it is superficial to say that we should have kept rates fixed in 1973 and should fix them again now. Prodigious efforts to keep them fixed simply collapsed. More recently, even the Louvre accord for pegging rates loosely within fuzzy and unannounced ranges collapsed within several months. What is the point of saying that something should have been done or should now be done if in fact it could not and cannot be done?

Where Do We Go from Here?

Although my task has been to describe historical developments, I feel entitled to offer some hints about possible reforms.

First, we should be clear about just what is absurd in the existing system. It is not the free determination of prices on the foreign-exchange market (rates are not freely flexible anyway). The absurdity consists in what those prices are the prices of. They are the prices of national fiat moneys

quoted in each other, each lacking any defined value. At bottom, the unit of account in the United States is whatever value the supply of and demand for cash balances fleetingly accord to a scruffy piece of paper, the dollar bill. The value of each money responds to conjectures about the intentions of the government issuing it and about that government's ability to carry through on good intentions. These conjectures are understandably subject to sharp change.

Ideas for reform along the lines of the European Monetary System and its ecu are popular nowadays. Yet the ecu does not represent a fundamental reform. It is merely a basket of national currencies, each continuing to suffer erosion of its purchasing power for reasons amply illustrated in the entire history of fiat money.

In contrast, the "Eurostable" proposed by Jacques Riboud (1975, 1977) would be a stable unit. The Eurostable would also be a basket of currencies, but the number of units of each currency included in the basket would be periodically adjusted up (or down) in proportion to a price index of its home country. The Eurostable would thus have a stable average purchasing power over the goods and services whose prices entered into calculating the national price indexes employed in adjusting the basket's composition. So conceived, Riboud's Eurostable presupposes the continued existence of national currencies.

The idea underlying the Eurostable might be implemented in a simpler way. Instead of being defined by periodically adjusted amounts of national currencies, a stable unit might be defined directly by a basket of goods and services of the kinds and in the amounts appropriate for calculating a wholesale or cost-of-living index.

The issue of money denominated in a new stable unit need not necessarily be entrusted either to a supranational agency or to national governments. Proposals for radical reform can at least stimulate ideas. One promising approach would privatize the monetary system (Greenfield and Yeager 1983; Yeager and Greenfield 1989; Dowd 1989). No longer allowed to issue money, the government would merely designate a new unit of account and promote its general voluntary adoption by using it in its own accounting, taxation, contracting, payments, and other operations. Instead of being defined by government money or by any other particular medium of exchange, the unit would be defined by a bundle of goods and services comprehensive enough for the general level of prices quoted in it to be approximately stable. Private banks would issue notes and checkable deposits, and they might also offer checking privileges against equity mutual funds. The quantities of these media of exchange would accommodate themselves to the demand for them at the price level corresponding to the definition of the unit. Incipient imbalances would trigger corrective arbitrage. This automatic equilibration of demand for and supply of media of exchange at a stable price level would prevent price inflation and major recessions.

Under the discipline of competition, the private issuers of notes and deposits would probably stand ready to redeem them in convenient assets (gold or agreed securities) in amounts having the same total value in bundle-defined units as the denominations of the notes and deposits being redeemed. Most redemptions would probably take place at clearinghouses, where banks acquiring notes issued by or checks drawn on other banks would routinely present them for settlement against their own obligations presented by others. Net balances at the clearinghouse would be settled by transfers of the agreed redemption medium. The necessary calculations and operations would be carried out every business day by professionals. With the proposed reform in effect, ordinary persons would no more need to understand what determined the purchasing power of the unit of account than they needed to understand how the gold standard worked before World War I or than they need to understand Federal Reserve operations and the rest of today's unsatisfactory process of determining the purchasing power of the fiat dollar.

The particular reform just sketched needs no further argument here and no defense against appealing alternatives. It already illustrates what a fundamental monetary reform would be, in contrast to superficial tinkering with the arrangements under which undefined national fiat currencies trade against each other. The root absurdity of our existing system will eventually become manifest. How long will the U.S. government, like other governments, remain able to run up debt denominated in an undefined unit and ultimately repayable in nothing more definite than pieces of paper to be printed by itself?

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