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War and the International Trading System in the Twentieth Century

Abstract: Wars have been the main forces shaping the international trading system in the twentieth century. The early years of the twentieth century were dominated by the international gold standard. But as a result of World War I, this system was replaced by the troubled gold exchange standards of the 1920s and 1930s. As a result of World War II the interwar system was replaced in turn by the Bretton Woods system. And as a result of inflation of the late 1960s, produced in part by America's war in Vietnam, the Bretton Woods system was replaced by the current system of flexible exchange rates. The European monetary union was a response to German reunification and the perceived need to defuse potential conflicts through a high level of economic cooperation.

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Wars have often had profound consequences for the structure of the international trading and financial system. After the Napoleonic Wars, for example, Britain, the world's leader in industry and military power, adopted the gold standard; and as the century progressed, country after country followed Britain and joined the gold bloc. During the twentieth century there were three major reorganizations of the international trading and financial system, each produced by a war. The early years of the twentieth century were dominated by the international gold standard. But as a result of World War I, this system was replaced by the troubled gold exchange standards of the 1920s and 1930s. As a result of World War II the interwar system was replaced by the Bretton Woods system. And as a result of inflation of the late 1960s, produced in part by America's war in Vietnam, the Bretton Woods system in turn was replaced by the current system of flexible exchange rates.

(1) Prior to World War I, all of the major industrial nations were on the gold standard. This meant that exchange rates between these nations were fixed within narrow bounds. An ounce of gold was equal to a certain number of dollars in the United States, a certain number of Francs in France, a certain number of Pounds in England, and so on. In essence the basic currency of all of these countries was gold. A unified currency, supplied ultimately by the world's gold mines, had both advantages and disadvantages for the world's trading communities. The greatest advantage was that fixed exchange rates facilitated trade. One could buy raw materials in one part of the world, process them in another, and sell the final product in a third, without worrying that a sudden

change in exchange rates would undue all the careful calculations on which the ultimate profit was based.

Long-term investment was facilitated by the fixed exchange rates of the gold standard, and by the traditional ideology of the gold standard which held that nations had to be prepared to defend their exchange rates even when the costs of doing so were extremely high, thus producing long-term stability in exchange rates. Under the "rules of the gold standard game" -- as John Maynard Keynes styled them, with some irony -- a nation that was running a balance of payments of deficit, and hence was losing gold, was supposed to raise its domestic interest rates, tightening money and credit, actions that would reverse the flow of gold. Investors in capital-rich Britain could buy stocks and bonds or make direct investments in the United States without having to worry that the value of interest payments or profits brought home in later years would be adversely affected by changes in exchange rates. Indeed, London became the center of a worldwide capital market that sent capital out in all directions to build railroads, dig mines, create telephone networks, and so on. Rapidly developing, relatively high income nations such as Canada, the United States, and Australia, were the major recipients, but the flow of capital reached less developed nations in Europe, Africa, Latin America, and Asia. In the *Economic Consequences of the Peace*, John Maynard Keynes memorably described the functioning of the gold standard in these terms.

"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 dispatch 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."

The gold standard provided a second important dimension of economic stability: price stability. Under the gold standard increasing the money supply required an increase in the amount of gold backing the money supply. Normally, that meant, mining gold domestically or acquiring gold from abroad by running a balance of payments deficit. Some monetary gold could be had by diverting gold from artistic or industrial uses, but again, that was a costly, limited process. A money supply tied down by a "golden anchor" simply could not grow as rapidly as a pure fiat (paper) money system. Indeed, In the 1880s and early 1890s, the gold standard had produced deflation (falling prices). It was a matter of demand and supply. The demand for monetary gold rose with the growth of economic activity, and as more and more countries adopted the gold standard. The demand for monetary gold exceeded the supply and as a result the real value of monetary gold – the nominal value divided by the price level – rose. Deflation did not stop economic growth, real GDP per capita continued to rise. But deflation did produce considerable political tension. Farmers felt particularly aggrieved. Farmers are typically debtors who suffer during deflations. Interest rates may adjust (fall) to reflect deflation, but the adjustment may be slow, and does nothing for those who entered into contracts before the deflation became evident. In the United States western farmers were especially upset, because many of them had purchased farms on the frontier based on optimistic projections of crops and prices. They were the heart of the Populist movement that roiled American politics at the end of the nineteenth century.

After 1896, however, prices in the countries tied to gold turned up. The reason was an increase in the supply of gold. New discoveries in the Klondike, Western Australia, and most importantly South Africa (where the new cyanide process for extracting gold from gold ore could be used) added to the flow of gold and turned a mild deflation into a mild inflation. The change in the trend of prices quieted opposition to the gold standard. The years leading up to World War I were the heyday of the classical gold standard.

(2) The gold standard, with its mild inflation and with London distributing British savings to the rest of the world, seemed to be working remarkably well in the first decade of the twentieth century. But all that would change with the outbreak of World War I in 1914. All of the belligerents faced enormous costs. The printing press was an obvious source of funds; one that could not be ignored. And all of the nations at war turned in some degree to the printing press to finance the war. In Britain, the heart of the prewar gold standard, the gold standard was abandoned, the money supply was expanded, and prices (measured by the GDP deflator) rose by a factor of 2.7 between 1914 and 1920. In the United States, although President Wilson banned exports of gold in 1917, the connection to gold was maintained, and gold remained in domestic circulation. America as a safe haven for financial assets was a recipient of gold, and America's resources were immense. Hence, the inflation was less in the United States than in Britain or the other major powers -- prices rose by a factor of 1.9 in the United States. Even in America, however, the commitment to the gold standard was probably saved by the abrupt end of the war. Altogether, the United States was actively engaged only for about

18 months; from April 1917 to October 1918. Had the war gone on for several more years the United States would have followed the other belligerents off the gold standard.

After the war there was, naturally, considerable sentiment for returning to the gold standard, a system that had worked well in many ways before the war. But there were major obstacles. The main problem was the inflation. At higher price levels the world needed larger money supplies to finance transactions. Larger money supplies meant, under the gold standard, more gold to back the money supply, but the physical quantity of gold had not expanded in nearly the same proportion as the world money supply. Currencies would have to be devalued, that is made equivalent to smaller quantities of gold, or prices would have to be reduced through restrictive monetary policies, the latter generally a painful process involving temporary periods of high unemployment. A uniform international devaluation would have been possible if prices had risen at the same rates in different countries. But they had not; traditional trading partners had often experienced very different rates of inflation during the war. If every country simply went back to gold at the prewar gold prices, or at some common devaluation, some countries would find themselves with overvalued currencies and balance of payments deficits. Each country separately then had to decide the exchange rate at which it would return to the gold standard.

The decisions to be made about the return to the gold standard, moreover, were complicated by an important political change: the rise of political parties representing the working class. Under the gold standard maintenance of fixed exchange rates and stable prices had taken precedence over the use of monetary policy to stimulate economies in recession. Note that the famous description of the system by Keynes,

quoted above, describes the world from the point of view of a middle class English gentleman, not a working stiff. The rise of the left meant that politicians and monetary authorities could no longer adhere to the traditional ideology of the gold standard with the same impunity to criticism as they had before the war. More weight had to be given to reducing unemployment when it emerged, even if it meant endangering or abandoning the commitment to gold. The rise of the left was a long-term trend, but World War I accelerated the trend. The triumph of bolshevism in Russia, and the need to secure the cooperation of labor in the war effort in the other belligerents, strengthened the left, and undermined political support for the gold standard.

Nevertheless, attempts were made to reestablish ties to gold during the 1920s. France went back to the gold standard at a undervalued rate (a rate that made it attractive to holders of other currencies) and as a result enjoyed a balance of payments surplus during the 1920s. Indeed, France accumulated a substantial fraction of the world's monetary gold. Some observers at the time, and some subsequent scholars, have blamed France for accumulating so much gold that other countries were forced into restrictive monetary policies that contributed to the onset of the Great Depression. There were many reasons for France's commitment to accumulating gold. But the notion that a large reserve of gold would be a useful war chest may have played a role. Britain, however, followed a different course, and decided to return to the gold standard at the prewar par with the dollar. In 1924 economist John Maynard Keynes warned Winston Churchill, then Chancellor of the Exchequer, that going back to gold at the prewar par would pose unnecessary costs on the British economy. It would price British goods out of world markets, and inhibit growth of employment. Better, Keynes thought,

to devalue in line with the changes in American and British prices. Churchill, however, rejected that advice. Devaluation he thought would be inflationary (Wolcott 1990), and he was under pressure from the City of London (the financial district) to maintain the prewar parity. The City believed that its preeminent position in the world finance before the War had rested in part on the reputation of the pound as a currency of unchanging value. After all, the gold content of the pound had not been changed between the Napoleonic Wars and World War I.

There is some evidence that Britain's problems in the late 1920s were aggravated by its decision to return to par at the prewar exchange rates. These problems might have been alleviated if the countries accumulating gold, the United States and France, had allowed the gold inflows to increase their stocks of money and produce inflation. Higher prices in those markets would have made British exports more competitive. But instead the United States and France followed more restrictive policies; they "sterilized" the gold inflows, as it was said, in order to prevent them from causing inflation.

It seems unlikely, however, that there was any policy that Britain could have followed that would have altered the fate of the pound. The United States had been overtaking Britain and her European rivals for many years. Total real GDP in the United States had passed that of Britain in the 1880s, and real per capita income in the United States had drawn close to Britain's as a result of the war. Before the war a central banker might be indifferent between holding gold and pounds. Now, however, it made more sense to hold reserves in dollars, a currency that had remained on the gold standard, and the medium of exchange in the world's largest economy. New York,

moreover, supplanted London as the world's most important capital market. The United States had gone from being a debtor nation, the normal condition for a developing nation, to being a creditor nation, the normal condition for a mature economy. British citizens, moreover, had surrendered a part of their overseas holdings of securities. Developing nations trying to raise capital had to consider where the money was, and that was Wall Street. London did not, of course, disappear as a financial center. And there is no reason why it should have. After all, there are many examples of small nations that have been successful in nurturing financial centers. Switzerland comes immediately to mind. Nevertheless, it was obvious that there had been a shift in financial power and the United States was the beneficiary.

Although the United States chose to sterilize gold inflows in the 1920s, the United States was more helpful when it came to resolving the problems created by the German reparations. The Treaty of Versailles which concluded World War I called upon Germany, as the aggressor (a charge that Germany was forced to accept under the treaty), to pay reparations to the Allies. Eventually a separate commission set the amount at \$56 billion gold dollars, about \$550 billion at today's (2010) prices. Although not all would be due at once, it was a substantial sum for a country devastated by war and a long naval blockade. The economist John Maynard Keynes, had been a member of the British delegation to the Paris Peace Conference, but he became a notable critic of the Treaty, a position he spelled out in *The Economic Consequences of the Peace*. Keynes offered a number of criticisms of the Treaty, the most important centering on the potential impact of the reparations on the world trading system, and the bitterness that the reparations would cause in Germany. The economic problem was that in order to

earn the sums that needed to be transferred to the Allies under the treaty – Keynes would later use the term that has become standard among economists, “the transfer problem” – Germany would have to increase its exports and decrease its imports. Neither was very easy to do. Decreasing imports would be difficult for an economy prostrated by the war. More fertilizer would be needed to increase agricultural production, not less. Increasing exports held more potential, but there was, as Keynes saw it, and insurmountable problem. A flood of German exports on world markets would create furious opposition. Jobs were being lost, it would be said, because of competition from exports from a nation that a few years before had been a deadly enemy. Tariff barriers were bound to rise: the increase in exports simply would not be allowed to happen. Keynes argument stimulated a furious debate among both policy oriented economists and theorists of the coming generation.

As things turned out, only a small part of the reparations were ever paid, but the bitterness created in Germany proved, if anything, even greater than Keynes had predicted. In 1923 Germany defaulted on its obligations, and in retaliation French and Belgian troops occupied the Ruhr valley in Germany. This impasse was resolved by the Dawes Plan of 1924 which provided for the removal of the French and Belgians, for stretching out the reparations payments, and for loans from the United States to Germany. The American, Charles G. Dawes, was awarded the Nobel Peace Prize for 1925 for his work on the Plan. The Dawes plan, however, did not solve the German reparation problem. In 1929 a second plan -- named the Young Plan, after the American in charge, Owen D. Young, a Wall Street financier -- further reduced and extended Germany's reparation obligations. The Plan also created the Bank for International

Settlements to administer the reparations payments. But the assumptions that underpinned the Young Plan were dashed by the stock market crash and the onset of the Great Depression. Further attempts to reduce German obligations were made in the early 1930s, but these plans became irrelevant when the Hitler regime repudiated all of Germany's remaining obligations under the treaty.

(3) Finance in the United States during World War II, and in the other belligerents, was similar to World War I: huge demands by governments for revenues financed by taxes, borrowing from the public, and printing money. No method of finance could be neglected. Wage, price, production and exchange controls were used to dampen and hide some of the inflationary pressure, but when controls were removed at the end of the war there was a burst of inflation. Some of the inflation, evidently, had only been postponed. After the World War II it was clear that the world faced the same problem it faced after World War I: how to construct an effective framework for international transactions after the existing system had been torn asunder by war.

There was a strong feeling that mistakes in the area of international economic relations during and after World War I had worsened the depression and promoted the rise of Fascism, and there was a determination not to repeat those mistakes. One example was the decision made in 1941 by the United States to adopt "Lend Lease;" essentially a policy, despite the name, of giving weapons to our Allies, rather than indebting them in some way, to avoid a repetition of foreign complaints about a lack of American generosity that had poisoned relationships with the allies after World War I.

As the allied victory in World War II became inevitable plans were laid for constructing a new international monetary system. The hope was that the new system

could preserve the advantages of the fixed exchange rates of the gold standard, which had encouraged international trade and investment, without the rigidities and lack of cooperation that had frustrated the attempts to reconstruct the gold standard during the interwar years. An international conference to establish the new system was held at Bretton Woods, New Hampshire from July 1 to 22, 1944, and that location gave its name to the postwar monetary order. The British delegation included the economist John Maynard Keynes, the author of the *General Theory of Employment, Interest and Money* (1936). The Keynesian revolution had spread rapidly, especially in the United States, and Keynes was now widely recognized as the world's leading economist. The American delegation was led by an economist from the Treasury department, Harry Dexter White. White was less well known than Keynes, but was a forceful advocate of American views.

The most important issue to be determined at Bretton Woods was the role to be played by the dollar in the postwar international financial system. Keynes proposed the formation of a new international currency, the "bancor," to be issued by a world central bank. The bancor would not circulate from hand to hand, but would be used to settle accounts among central banks. It would play much the same role that gold had played in the "gold exchange standards" that had proliferated in less developed countries before World War I, and during the interwar years. It would not take real resources to increase the supply of bancor – the bancor would be "paper gold" – and the growth of the stock of bancor could be monitored and controlled, rather than left to the vagaries of chance discoveries. The seigniorage (profits) from creating the bancor would accrue to the world central bank and could be made available for use by international financial

institutions and shared on a worldwide basis. Under the gold standard the profits from gold mining had gone to a select few individuals in a select few countries. Keynes's imaginative proposal was not adopted due to American opposition, but was frequently referred to in subsequent years when international monetary reform was being considered.

The Americans proposed, and won acceptance for, a more U.S.-centric system. Exchange rates would be fixed in terms of dollars. Gold would still play a role, although an attenuated one, because the dollar would be fixed in terms of gold. The purpose of the tie to gold was to increase the credibility of the new system. It seems likely that at the time the tie to gold was seen as a way of increasing credibility among segments of the general public who were unfamiliar with the current realities of international trade. It is doubtful that many of the experts creating the system considered the idea that the dollar would ever need to be reined in by gold. Instead of Keynes's world central bank, two international agencies were created. The International Bank for Reconstruction and Development, usually known as the World Bank, would make longer term investments for the purpose of creating economic development. The International Monetary Fund would monitor the system of exchange rates and the balance of payments, and would make short-term loans to countries running temporary deficits. Permanent deficits would, however, require adjustment of exchange rates. Under the gold standard deficit countries were forced to contract their money supplies (as they lost gold) and surplus countries increased their money supplies (as they gained gold). It was felt that the effects were asymmetric; that the contractions forced on the deficit countries caused more pain in the form of high unemployment, than the expansions forced on the surplus

countries. The plan was for the International Monetary Fund to oversee a less costly approach to adjustment.

Initially, both banks were financed mainly by the United States. This was inevitable because the United States, unique among the major industrial nations, emerged from the war with an enhanced industrial system and enhanced position in international trade. There was no other country or private entity who could supply the funds needed for a successful restoration of the world's international trading system. The famous Marshall Plan, named after American Secretary of State George C. Marshall, which provided aid for reconstruction after the war is another, separate example of the kind of valuable aid that only the United States could provide (DeLong and Eichengreen, 1993). But the United States also received a major benefit from the Bretton Woods system: it strengthened the role of the U.S. dollar as a reserve currency. In future years the United States was able to run larger international deficits for longer periods of time than it otherwise might because foreigners were more willing to hold dollars or dollar denominated assets such as Treasury bonds, than they would have been under an alternative system -- such as a restored gold standard or bancor system. In effect, the world had asked the United States to make an investment: money now in the form of endowments for international financial agencies and direct transfer to restore economies devastated by the war, in exchange for seigniorage to be earned later by issuing dollars for use in international trade.

The Bretton Woods system did not go fully into effect immediately; countries needed time to recover from the war. The Netherlands, the United States and Britain declared their par values in 1946, but Germany and Japan did not declare their par

values until 1953, and Italy not until 1960. In the late 1940s and early 1950s much of that part of the world which had been devastated by the war suffered from a "dollar shortage." There was a strong demand for U.S. exports and countries had in place various controls aimed at assuring that precious foreign exchange earnings would be used to purchase U.S. exports that would contribute the most to rebuilding war torn economies. By the late 1950s, however, most of the European nations had declared their parities with the dollar and ended most of the exchange controls put in place at war's end.

(4) Expectations were high for the Bretton Woods system. It had been created in a burst of wartime idealism by some of the best economic minds of the century. And during the late 1950s and early 1960s the system appeared to work well. But it lasted for only two decades, hardly rivaling the gold standard which had lasted nearly a century. The Bretton Woods system was brought down by persistent U.S. inflation and balance of trade deficits. Under the Bretton Woods system U.S. inflation was different from inflation in other countries because the dollar was the base money for the entire world monetary system (except for the communist bloc). If some country besides the United States followed an inflationary monetary policy and ran a balance of payments deficit, the consequence for the system were minor. The country running persistent deficits would soon find itself short of reserves and would be forced to take deflationary measures. But if the United States ran a deficit other nations were not likely to react initially by demanding payment in gold. Instead they could simply choose to treat the new dollars as an increase in their monetary base and allow their own stocks of money

to expand. America could export its inflation. During the early years of the Bretton Woods System the problem was the "dollar shortage." At the time few people could have foreseen that a decade later the problem be a "dollar glut." The dollar, which was to be the anchor of the system, was unable to sustain its role.

How did this happen? There was, it is true, a short burst of inflation in the United States during the Korean War (1950-1954), but then the United States enjoyed price stability for a decade. Inflation on an annual basis was generally in the 2 to 3 percent range, and there was no sustained acceleration or deceleration. Then in the mid-1960s inflation began to accelerate. The GDP deflator rose 1.82 percent in 1965, 2.77 percent in 1966, 3.08 percent in 1967, and 4.13 percent in 1968. The inflation had many sources. One cause was mistaken ideas about monetary policy. There was a belief in some quarters in a stable "Phillips Curve;" the function describing the tradeoff between inflation and unemployment. This belief underpinned pressures being placed on the Federal Reserve for a more expansionary monetary policy on the grounds that the social benefits of permanently lower unemployment outweighed the social costs of permanently higher inflation. When unemployment failed to decline as hoped, economists became concerned. Some sought answers in changing conditions in the structure of the labor market. But eventually most agreed that the best explanation was that the tradeoff between inflation and unemployment was temporary. As expected inflation caught up with actual inflation unemployment tended to rise back toward its "natural rate." But understanding did not immediately produce a change in monetary policy. The Federal Reserve was, to some extent trapped. All that it could do when unemployment began to rise was to adopt an even more inflationary monetary policy.

Compared with domestic problem of unemployment, the international position of the United States was of secondary importance to American policy makers, but the implications of domestic inflation were clear: with exchange rates fixed, rising prices in the United States, other things equal, reduced exports and increased imports. The net international balance on goods and services began to decline in 1965 and finally became negative in 1971, the first time the balance had been negative since 1936. U.S inflation was only part of the explanation for the decline in the balance of trade. Perhaps equally important was the deterioration in America's competitive position in international trade as old rivals recovered fully from the war and new rivals came on line. Also worrying, and contributing to the inflation, was the growth in the federal budget deficit. After running a small surplus in 1960 the budget fell into a deficit that rose over time. In 1968 the deficit in nominal terms was the largest since 1945. The increase in the federal deficit reflected increases in both civilian and military spending. Indeed, military spending actually rose less rapidly during the 1960s than the civilian component of the federal budget.

The "New Economic Policy" (as the media anointed it) that characterized the 1960s although usually described, and with some truth, as Keynesian economics, can also be viewed as World War II economics. American economic policies in World War II were widely regarded by both economists and by the public as a brilliant success. Depression and unemployment had been vanquished and the American economy supplied an abundance of munitions that buried the Axis. New technologies -- synthetic rubber, computers, jet engines, nuclear energy, computers, and so on -- were quickly brought online. The idea that the economic policies that had produced this result -- fiscal

stimulus in the form of large federal deficits, monetary stimulus in the form of low interest rates, and wage and price controls and rationing when inflation became dangerous -- should be used in peacetime had enormous traction. Indeed, the idea that World War II in general showed how to get things done was widely accepted. President Lyndon Baines Johnson styled his anti-poverty initiatives, the "War on Poverty," and President Richard Nixon styled his anti-cancer initiative, the "War on Cancer."

America's involvement in the Vietnam War played a supporting role in the acceleration of inflation and the deterioration of the balance of trade. Overseas purchases of goods and services for the military contributed to the slide in net exports, but the balance would have turned against the United States in any event. Military spending did rise during the era of the Vietnam War. But between 1964 and 1970 civilian spending rose faster (9.25 percent per year) than defense spending (7.26 percent per year) (*Historical Statistics*, series Ea636 and Ea637). President Lyndon B. Johnson was trying to fight a two-front war: his "War on Poverty" at home and the War in Vietnam.

While the Vietnam War played merely a supporting role in the increase in inflation and the deterioration of the balance of trade; it played a larger role, although one which is hard to measure, in the deterioration of the political equilibrium in the United States. Opposition to the War in Vietnam escalated rapidly along with the loss of American life in Vietnam. Political polarization caused by the war in turn made it hard to form a consensus around policies designed to deal with deteriorating economic conditions. President Johnson's economic advisors recommended a tax increase to fight inflation, a standard Keynesian prescription, but Johnson hesitated to adopt their

recommendation in full because he did not want to undermine political support for his domestic and foreign initiatives. Opposition to the war grew so intense that Johnson lost his ability to govern effectively and was forced to abandon his quest for a second term as President in 1968. Foreign holders of dollars had to ask themselves whether a nation in the midst of an intense political upheaval could long serve as the anchor for the world monetary system.

Things came to a head in the summer of 1971. Inflation was actually decelerating slightly, but the public had become alarmed by what seemed to be an untamable inflation. The balance of trade had moved into the red. And frustration internationally with United States had grown exponentially. Foreign nations were experiencing inflation and currency problems that were universally assumed to be emanating from the United States. In October 1969 Germany had floated and then revalued its currency. In May 1971 seven European nations closed their foreign exchange markets. A number of central banks, moreover, exercised their right under the Bretton Woods agreements to convert their rapidly accumulating dollar reserves into gold, and others had been dissuaded from doing so by diplomatic pressures. France had converted nearly \$200 million into gold and in July 1971 Switzerland converted \$50 million into gold. These losses were part of a long-term trend. In 1957 the U.S. stock of monetary gold had stood at \$22.9 billion, not far below the postwar peak. But then it began a long slide, and had fallen to \$11.1 by the end of 1970 (*Historical Statistics*, series Cj1). Bretton Woods had envisioned an adjustment process for everyone besides the United States, but had paid little attention to what would happen if the American economy became an engine of inflation. President Richard Nixon responded to these pressures with a bold

initiative that he hoped would renew the economy and his political fortunes. In August 1971 he announced a number of radical actions. (1) He "closed the gold window." The United States would no longer convert dollars into gold on demand. (2) He placed a temporary tariff on imported goods. (3) He introduced a system of wage and price controls. And (4) He announced a number of tax increases and spending cuts. The narrative supporting these actions portrayed them as temporary measures that would be taken while more fundamental reforms were put in place that would return the United States to price stability without controls, convertibility of the dollar into gold, and balanced international trade.

The Bretton Woods system did not disappear instantly when Nixon adopted his new policy. A commitment to some form of fixed exchange rates survived for another year and a half. In December 1971 the so-called Smithsonian Agreement (the conference was at the Smithsonian Institution in Washington) was reached that continued fixed exchange rates with the leading currencies revaluing against the dollar. This system limped along through succeeding crises until March 1973 when the attempt to maintain fixed exchange rates was finally abandoned. As the monetary historian Anna J. Schwartz put it (1987, 350): "Market forces had triumphed."

It was also a triumph for economists who all along had supported flexible exchange rates. The most prominent of these economists was Milton Friedman, who was America's best known free market economist, and who had served as one of President Nixon's economic advisors. Friedman had first laid out his support for flexible exchange rates in a paper entitled "the case for flexible exchange rates" (1953), and had remained a firm advocate of flexible rates in the intervening years. Friedman's

essay was written during the Korean war, and reflected Friedman's concerns that a fixed exchange rate system could not cope effectively with the inflationary strains produced by the war, and that the Bretton Woods system was inhibiting rapid development of international trade, a prerequisite for American success in the Cold War with the Soviet Union. The support of Friedman and other free market economists for flexible exchange rates was not a decisive factor in their adoption -- their opposition to wage and price controls had not had much affect on Nixon -- but the fact that gold-standard-like monetary systems no longer enjoyed near universal support among economists probably played some role in undermining support for Bretton Woods.

(5) The system that emerged was often termed a "managed float" or possibly a "dirty float" depending on how the writer felt about it. As a theoretical matter one could imagine an exchange rate system in which governments took no notice of exchange rates and concentrated all of their attention on domestic markets. But inevitably governments did find it important from time to time to intervene. The most controversial intervention after the turn of the twentieth century was the policy of the Chinese government of maintaining an overvalued Yuan by buying dollars and dollar denominated securities. The purpose was to enlarge the market for Chinese exports. The cost of this policy fell on Chinese consumers (who had to pay more for imported goods than they would have if the exchange rate was allowed to float) on producers in nations that competed with China for the American market, and on American producers of goods that compete with imports. On the other hand, the policy has created a vigorous, export-oriented industrial sector in China, which employs a large workforce.

Hopefully, there will come a time when the industrial sector will reach maturity and will be able to compete effectively in domestic and foreign markets without the assistance of an overvalued Yuan.

Perhaps the most important exception to the regime of flexible exchange rates, however, was the European Monetary Union. The first attempt at European Economic Union was the European Coal and Steel Community which was established in 1951. It provided for a single regulatory authority over coal and steel in Germany, France, and several other European nations. Originally proposed by French foreign minister Robert Schuman in 1950, its goal was overtly political: to prevent another war between Germany and France by interweaving two industries crucial to a major war effort. It would be impossible, Shuman hoped, for one country to unilaterally pull its steel industry out of the community and use it to produce munitions. Other forms of economic integration followed and the idea that a currency union would provide many direct economic benefits and would produce further movement toward political integration gained support with the breakdown of the Bretton Woods System. The Smithsonian agreement had provided for rather wide boundaries for currency fluctuations. Several European nations, however, agreed to keep their currencies within a narrower range. This set of currency values was referred to rather imaginatively as the "snake in the tunnel." This early form of European monetary cooperation, however, did not survive the final collapse of the Bretton Woods system.

But diplomatic initiatives pointing toward European political and economic integration including the adoption of a currency union continued. The reunification of Germany in 1990 increased the pressure for European political and economic

integration: Fear that a reunified Germany might prove a threat to her neighbors had not completely disappeared in the 45 years since the end of World War II. The key moment was the adoption of the Maastricht Treaty in 1992. The treaty looked forward to the adoption of a single currency, and set out various criteria, known as the convergence criteria, with respect to interest rates, exchange rates, government deficits, inflation and so on, that a country had to meet if it was to be permitted to adopt the new currency. The adoption of the treaty was fraught with a number of controversies. In some cases there was opposition to the treaty simply on political grounds that national power was being surrendered to an international authority, and questions were raised about whether the convergence criteria were being fairly enforced. In 1999, however, eleven countries: Spain, Portugal, Italy, Belgium, the Netherlands, Luxembourg, France, Germany, Austria, Ireland and Finland adopted a common currency. Four countries: Greece, United Kingdom, Denmark and Sweden remained for various reasons would not adopt the common currency. The European Central Bank was established and a single currency, now called the Euro, was adopted. At first the Euro existed merely as a bookkeeping device, a "virtual" currency, but in 2002 paper currency and coins were introduced.

Economist Robert Mundell is widely regarded as the intellectual father of the Euro. In a famous essay that he published in 1961, "A Theory of Optimum Currency Areas," Mundell developed the fundamental tools for thinking about currency unions. In that essay Mundell pointed out some of the difficulties that a large area consisting of economically distinct regions would have if it adopted a single currency. Indeed, one might have concluded from that essay that Europe would have been better off with several

currencies. But the essay also stressed that there were also advantages to a currency union because it reduced transaction costs. In a subsequent paper (1973 [1969]) Mundell laid out a plan for a European Currency Union. There and in other writings Mundell stressed that a single currency would facilitate trade and that the process of adopting to a single currency would increase the relative advantages over time.

Since the adoption of the Euro its prestige has waxed and waned. In 2010 it suffered its greatest challenge yet when several states on the southern periphery of the Euro zone -- Greece, Portugal, and Ireland -- found themselves in severe financial difficulties, and others found themselves on the brink. Continuation of the Euro, it was assumed, would require transfers from the richer members of the zone to the countries experiencing difficulties. Inevitably, questions about the durability of the Euro zone were raised. Would the members with sound economies and balanced budgets be willing to bail out countries that had followed, or so it was perceived, foolish and unsustainable fiscal policies? As this is written, the question has not been resolved. It is clear that the political motivation for the Euro -- the idea that economic and monetary integration would reduce political tensions, and to be specific about one of the fears, restrain German territorial ambitions -- had faded. But by 2010 the Euro had become a fixed feature on the international financial stage. This fact raised a new concern. Would the disintegration of the Euro zone, particularly if it happened in a chaotic atmosphere, undermine confidence in financial markets, or perhaps even trigger a full blown financial panic? So it would seem that although the political motivation for the Euro rooted in fears unleashed by World War II had faded there were still good reasons for European

political and economic authorities to find a path through their difficulties that would preserve the Euro.

The international trading and financial system in the twentieth century, to sum up, was shaped mainly by wars and by economists. Keeping these facts in mind will help one understand what often seem on the surface to be mystifying problems.

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