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Why Does the World Need a Reserve Asset with a Hard Anchor?*

Dongsheng Di, Warren Coats, Yuxuan Zhao*

2020

Abstract

From the 1970s, the global currency system has two features: the use of one or a few sovereign currencies as the global reserve asset and the floating exchange rate regime between major currencies. This paper points out that the costs of the dollar's use as an international reserve currency exceed the benefits for both the US and the rest of the world. These costs include the exporting of American manufacturing as a byproduct of its current account deficit needed to supply its currency to the rest of the world. In addition to the detriment to trade from unpredictable exchange rate fluctuations, the termination of the U.S. obligation to redeem its currency for gold also removed an important restraint on deficit financing for the US and many other countries in the short-run, thus promoting excessive leverage that was a major contributor to the 2008 financial crisis. The paper suggests replacing several main countries' currencies in international reserves with a real Special Drawing Right (SDR) issued according to currency board rules.

Keywords: reserve currency, exchange rate volatility, exorbitant privilege, fiscal discipline, hard anchor, balance of payments, real SDR

"*Earlier the international use of the U.S. dollar benefited the United States. Now the costs and benefits of the dollar's reserve currency role are more balanced*." Said Ben Bernanke at the 16th Jacques Polak Annual Research Conference at the International Monetary Fund (IMF), November 5, 2015.

1 Introduction

The paper endeavors to establish that the costs of the U.S. dollar's use as an international reserve currency exceed the benefits for both the US and the rest of the World. Some American economists such as Jared Bernstein, Kenneth Austin and Michael Pettis expressed concerns about the growing burden of the U.S. dollar's status as the world's reserve currency.

Dr. Jared Bernstein, a senior fellow at the Center on Budget and Policy Priorities, argued in a New York Times opinion editorial (op-ed) article that "what was once a privilege is now a burden, undermining job growth, pumping up budget and trade deficits and inflating financial bubbles." "To get the American economy on track, the government needs to drop its commitment to maintaining the dollar's reserve-currency status." He boldly claimed that the dollar's reserve currency status had cost America 6 million jobs (Bernstein, 2014).

Kenneth Austin (2014), an international economist with the U.S. Treasury Department, claimed convincingly that the correct metric for estimating the cost in jobs was the dollar value of reserve sales to foreign buyers. By his

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estimation which amounted to six million jobs in 2008, and these would tend to be the sort of high-wage manufacturing jobs that were most vulnerable to changes in exports.

Michael Pettis (2011), a nonresident senior fellow in the Carnegie Asia Program based in Beijing, stated "The SDR should indeed replace the dollar as the dominant reserve currency if we want to eliminate the tremendous global trade and capital imbalances that have characterized the world for much of the past 100 years. This will not happen; however, until the United States forces the issue—which it seems unwilling to do, perhaps for fear that it would signal a relative decline in the power of the U.S. economy. But the United States should, in fact, support doing away with the dollar."

Ending the dollar's reserve-currency role will increase the cost of deficit financing in the US, increase net national savings, and increase the demand for and return on resources used by export and import substitution industries (manufacturing).

In 2009, Zhou Xiaochuan, Governor of the People's Bank of China, called for the ultimate replacement of the U.S. dollar as the world's reserve currency with one issued by the IMF—the SDR. "The acceptance of credit-based national currencies as major international reserve currencies, as is the case in the current system, is a rare special case in history. The crisis again calls for creative reform of the existing international monetary system towards an international reserve currency with a stable value, rule-based issuance and manageable supply, so as to achieve the objective of safeguarding global economic and financial stability."

Governor Zhou's prescient call for reform has largely fallen on deaf ears, yet the weaknesses of the existing non-system remain. The use of a national currency for pricing and settling cross-border transactions continues to suffer from a number of deficiencies: (a) the asymmetry between the market pressure for countries with a balance of payments deficit (other than reserve currency countries) to adjust and the lack of such pressure for surplus countries; (b) the Triffin dilemma like risk of foreign exchange reserve growth producing an increasingly large foreign holding of reserve currency countries' debt relative to the size of their own economies; (c) the weakened financial discipline on the reserve currency's domestic monetary and fiscal policies of the exorbitant privilege of being able to pay for its international purchases with its own currency (a privilege now enjoyed by a growing number of countries); (d) and from the lack of attention or concern by the central bank that issues the reserve currency for the needs of the international users of its currency when setting monetary policy. However, the weaknesses of the floating exchange rates that replaced the gold standard have also become clearer: increased cost of trade from volatile exchange rates (e.g., an over 40% swing in the Euro/USD rate since the introduction of Euro), political tensions from currency manipulations/wars, and prolonged and distorted balance of payments imbalances from lack of clear and enforced rules.

To address the weaknesses of a nationally issued reserve currency, the member countries of the IMF revised its Articles of Agreement to obligate central banks to make the SDR to be the principal reserve asset in the international monetary system (IMF Article, XXII). However, several weaknesses in the design of the SDR—such as their method of allocation, and limited uses— undermined the interest of the US and other developed countries. Moreover, the US may have been reluctant to give up its benefits from issuing the reserve currency (seigniorage from the wider holdings of its currency and the exorbitant privilege of borrowing abroad in its own currency) while downplaying the costs to the international monetary system (asymmetric adjustment pressures, and Triffin dilemma risks) and to itself (offshoring of manufacturing).

More recent proposals to address these problems, very much in line with Governor Zhou's recommendations, have been presented by one of us in earlier articles, which are summarized in our conclusion (Real SDR Currency Board, 2011, 2014). Broadening the demand for and supply of privately issued SDRs for invoicing and settling cross boarder payments will be an important part of expanding the use of IMF issued SDRs ("The SDR as a Means of Payment", 1982). The question addressed here is why the United States has not embraced these or similar reforms. We offer two reasons for the lack of U.S. support. While enjoying the benefit of seigniorage from dollars held abroad, the US seems to have underestimated its deindustrialization resulting from the trade deficits by which it supplied its currency to international holders. In addition to the detriment to trade from unpredictable exchange rate fluctuations, the

termination of the U.S. obligation to redeem its currency for gold removed an important restraint on deficit financing for the US and many other countries (politically desirable in the short-run) thus promoting the excessive leverage that was a major contributor to the recent global financial crisis. These themes are developed more fully in the following sections.

2 The Cost of Supplying Dollars

Spared the devastation of war on its own territory during the World War II, the United States rapidly expanded its industrial capacity to become the primary supplier of military equipment to the allied forces. It accepted the resulting huge current account surplus as a necessary but temporary burden of the war.

After the World War II, the U.S. economy experienced an enduring decline in employment in manufacturing (Figure 1). It changed from a self-reliant industrial economy to a trading economy. The relative decline in manufacturing reflected a large expansion of finance as a share of the U.S. economy such that Wall Street now enjoys 47% of the profits of all U.S. companies (Johnson, 2009). Though employment in manufacturing declined over the whole period, manufacturing output did not. Nonetheless, as the world demanded larger reserves of dollars, a larger share of the U.S. demand for manufactured goods was satisfied by foreign producers.

It is widely believed that the decline of job creating capacity in the U.S. manufacturing sector is due to technological improvements (increase on labor productivity). Figure 1 shows that besides the technology factor, there were also substantial job transfers from the US to Asian countries accompanying the extension of global supply chains. Almost all the major Asian economies accumulated huge dollar reserves during their export-oriented industrialization.

The world's demand for dollar reserves dramatically accelerated with the collapse of the gold exchange standard of the Bretton Woods system and the growth in foreign exchange reserves held by central banks.

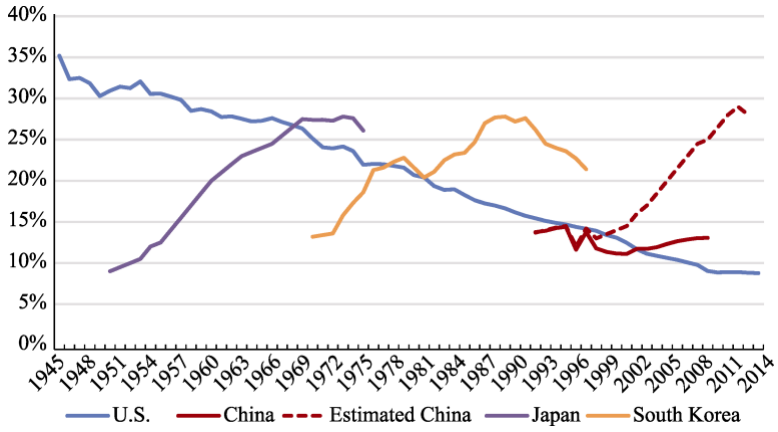


Figure 1 Manufacturing Jobs as Percent of Overall Employment

Source: U.S. Bureau of Labor Statistics; National Bureau of Statistics of China; International Financial Statistics (IFS), IMF.

Note: As the Chinese government only counted employment of registered residents in cities, the data for immigrant workers from the countryside who were employed in cities is estimated by the authors and reflected with a dotted line.

Over the past several decades the output of the U.S. manufacturing sector declined relative to the overall economy, and even former President Barack Obama's high profile policy of "reindustrialization" did not make any meaningful changes to this trend.

From 1975, following the formal termination of the U.S. obligation to redeem its currency held by other central banks for gold, to the end of 2014, the international reserves of central banks increased dramatically from USD 33 billion at the beginning of 1970 to almost 12 trillion in mid-2014. Over 60% of these reserves were held in U.S. dollar denominated assets. Thus, over this period the US had supplied the world with over USD 7 trillion in central bank reserves (Figure 2), the required current account and capital account deficits summing to that amount.

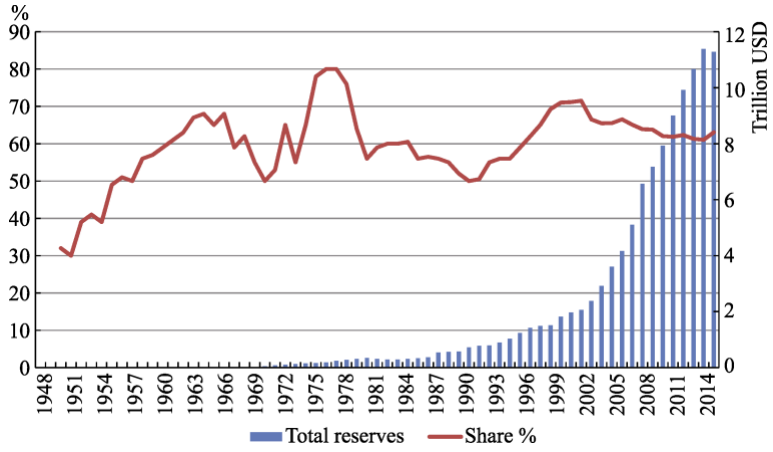


Figure 2 World Total Reserves (right) and Shares of U.S. Dollars (left) (1948–2014)

Source: IFS and Currency Composition of Official Foreign Exchange Reserves, IMF.

Note: "World" here includes 192 countries and regions without the US; "Total Reserves" refers to foreign exchange of US$, excluding gold.

Over this period most of the growth in the U.S. money supply occurred through its current account deficits (Figure 3). The correlation coefficient between changes in world reserves (around 60% of which are in dollars) and the U.S. current account deficit is 0.85.

Thus the supply of dollars to the world's central banks required a stronger dollar than would otherwise be the case. Supplying the world's demand of dollar reserves required fewer exports and more imports than would otherwise have been the case in the US. IPhones that should have been produced in the US and sold to American and global consumers were instead produced in China and other low wage countries whose manufacturing costs were lower than in the US at the more appreciated exchange rate of the dollar required to supply dollar reserves. Many U.S. manufacturing companies established additional, or relocated existing, factories abroad. While U.S. manufacturing output did not decline in absolute quantity, it did decline in relative terms as other sectors of the economy grew. In addition, with continued improvements in manufacturing labor productivity the number of workers in that sector declined. American consumers cheered the flood of inexpensive imports while manufacturing workers complained of unfair competition from cheap foreign laborers.

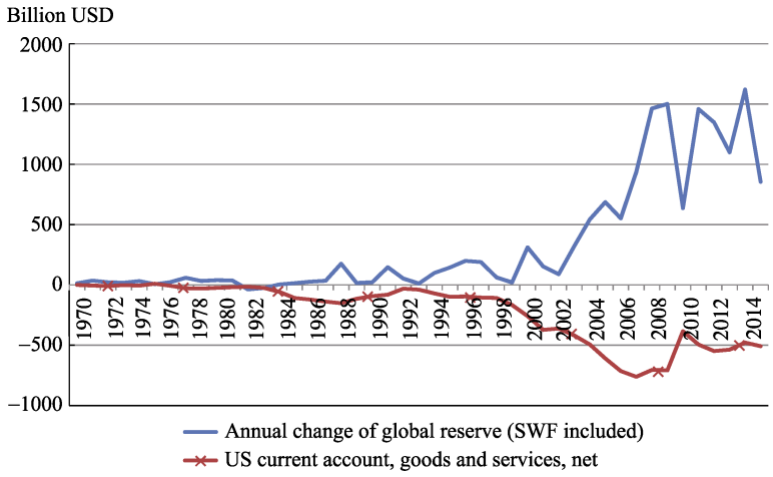


Figure 3 Global Imbalance: Relation between Global Reserve and the U.S. Current Account Deficit

Source: IMF and Sovereign Wealth Fund Institute.

Note: The changes of world reserves also include the changes of recent sovereign wealth fund.

Inescapably, if the US must maintain a current account deficit in order to supply the world with its currency, a larger share of its income/output will be produced abroad. To the extent that higher cost labor in the US can be

replaced by lower cost labor aboard (translated through the exchange rate), such production will move abroad. Manufacturing workers are higher paid on average than other non-professional workers and thus manufacturing jobs have "suffered" more than others (Figure 4). While this equalization of the return to labor globally reflects greater economic efficiency globally when trade is balanced, it is inefficient when trade is unbalanced.

The strong U.S. dollar or weak U.S. dollar debate in the US has waxed and waned largely along with increases or decreases to the U.S. trade deficit with China and less conspicuously with Germany. At the end of the day, the strength of the dollar relative to the currencies of its trading partners was left to the exchange rate targets and interventions of those countries. This outcome seems to rely on the fact that U.S. politicians and society have been more willing than other developed countries to tolerate its perpetual trade deficits. As we have noted, these deficits are a requirement of the international reserve currency role of the dollar and the frequent American claim that some countries have been accumulating international reserves beyond reasonable needs, is a judgment difficult to prove. It seems that those who benefit from a strong dollar are better able to defend their interests than are those who are hurt by the trade deficit and resulting de-industrialization. Wall Street, the U.S. governments and U.S. consumers play more important roles in defining the dollar policy than the manufacturers and labor unions.

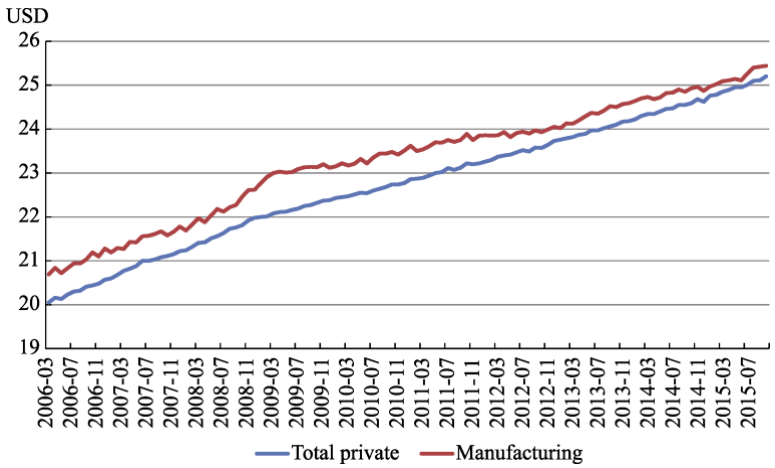


Figure 4 U.S. Average Hourly Wages

Source: US Bureau of Labor Statistics, retrieved from FRED (2015.11.15), Federal Reserve Bank of St. Louis.

As pointed out by Fred Bergsten, senior fellow and director emeritus in Peterson Institute for International Economics: "Historically, the dollar-based system evolved as a grand bargain, under which other countries could determine their exchange rates against the US and would finance whatever deficits it ran as a result. Surplus countries, from Germany to Japan to China, have periodically grumbled about their "excessive" build-up of dollars, but have generally kept their part of the deal." (Bergsten, 2011)

The de-industrialization of the US has also been caused by high and poorly designed business profits taxes and increasing regulatory costs of doing business in the US. The loss of potential manufacturing jobs has deprived the American middle class's jobs that have traditionally paid above the average non-professional wages (see Figure 4) and contributes to the stagnation of middle class income. Pensioners and other middle class savers have also experienced lower returns on their savings as foreigners have financed a significant share of the U.S. government's debt, thus lowering the government's borrowing costs. The risks to the credit worthiness of U.S. government's debt (106%) of GDP at the end of 2016 and projected by the U.S. congressional budget office to become unsustainable over the next 30–40 years: "Under current law, the deficit is projected to hold steady as a percentage of GDP through 2018, but rise thereafter") will be explained in detail in the next section.[1]

"When a country wants to boost its exports by making them cheaper using the aforementioned process (artificially

[1] "Congressional Budget Office estimates the deficit will get to 2.7 percent of GDP in 2015, drop to roughly 2.4 percent for the following three years, and then begin to rise. By 2025, debt held by the public is projected to reach 77 percent of GDP." Congressional Budget Office March 9, 2015.

keeping their own currencies at a low level against the U.S. dollar), its central bank accumulates currency from countries that issue reserves. To support this process, these countries suppress their consumption and boost their national savings. Since global accounts must balance, when 'currency accumulators' save more and consume less than they produce, other countries—'currency issuers,' like the United States—must save less and consume more than they produce (i.e., run trade deficits). This means that Americans alone do not determine their rates of savings and consumption." (Bernstein, 2014)

There are obvious correlations among the three lines in Figure 5 and Figure 6. As the world increased its net exports to US and it is holding on U.S. financial assets after the mid-1980s, U.S. interest rates declined systematically along with its inflation rate. Regressing the U.S. personal savings rate on world reserves as a percent of GDP, we found a significant (alpha = 0.05) negative correlation (r = –0.8) between them from 1970 to 2008 (annual observations). While manufacturing jobs kept leaving US in absolute terms after 1970s, its pace increased after 2001, when China entered the World Trade Organization (WTO).

Back in the 1980s and 1990s, after the successful industrialization, Japan was also interested in promoting the internationalization of the *yen.* This goal was undercut by the bursting of Japan's real estate and stock market bubbles and the two decades of economic stagnation that followed. Thus, after 30 years the *yen*'s share of global reserves is around 4% after a peak near 10% in the 1990s. A key factor to this result may be the reluctance of Japanese society to give up its reliance on exports as a source of growth. On the part of the US, the absence of the gold standard's discipline of its fiscal policy led it to finance the Vietnam War with debt. The resulting inflation appreciated its real effective exchange rate against the currencies of its major trading partners (Japan, Germany, UK and France). The Plaza Accord by these countries for correcting this imbalance led to a 50% depreciation of the dollar relative to the *yen*. But Japanese trade restrictions limited the increase in the U.S. exports to Japan, which continued to run a trade surplus. This was incompatible with an increase holding of *yen* in international reserves.

It is our hope that as the U.S. government evaluates its position on the reform of the international monetary system and in particular the use of its currency in international reserve, the negative consequences of de-industrialization will be given greater weight. The return to a hard anchor for the system as we propose in our conclusion would also greatly reduce the finger-pointing at the US by surplus countries of its exploitation of its exorbitant privilege and disregard of the global consequences of its monetary policies and finger-pointing at the surplus countries by the US of their manipulation of their exchange rates to promote their exports at the cost of deficit countries.

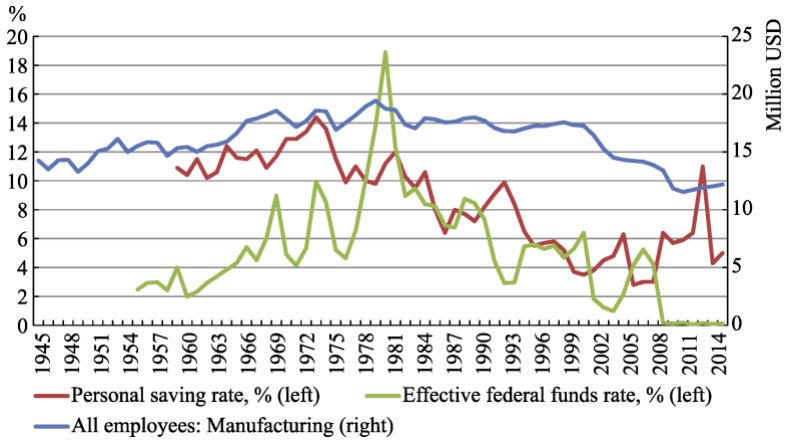


Figure 5 U.S. Saving Rate, FFR, and Manufacturing Employees

Source: US Bureau of Labor Statistics, retrieved from FRED (2015.11.15), Federal Reserve Bank of St. Louis Board of Governors of the Federal Reserve System (US), retrieved from FRED, Federal Reserve Bank of St. Louis; Bureau of Economic Analysis, retrieved from FRED, Federal Reserve Bank of St. Louis.

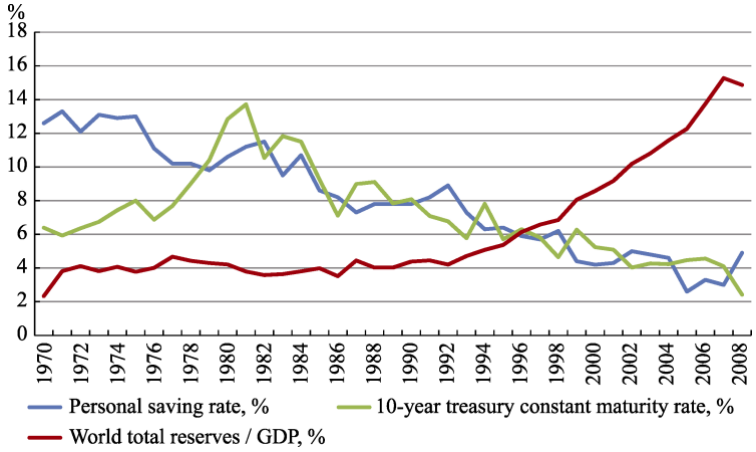


Figure 6 U.S. Saving Rate, 10-Year Treasury Rate, and World Reserves as Share of GDP

Source: IFS, IMF; Board of Governors of the Federal Reserve System (US), retrieved from FRED (2015.11.15), Federal Reserve Bank of St. Louis.

3 The Costs of Floating Rates

Sometime after the establishment of the Bretton Woods system, Belgium Economist Robert Triffin drew attention to a logical dilemma in such a system. If the U.S. dollar, exchangeable for gold at a fixed price (the gold exchange standard), is going to provide liquidity for the whole world, the US must run a balance of payments deficit that will grow over time relatively to the more limited stock of gold. At some point the ratio of dollars to gold would grow so large that foreign holders of dollars, this would come to doubt the American ability to honor its commitment to redeem them for gold. To protect themselves from this risk, some central banks in the 1960s (e.g. Banque de France) began to convert their dollars into gold, which led President Richard Nixon to close the gold window in August 1971. This unilateral suspension of the U.S. obligation of convertibility under the Articles of Agreement of the International Monetary Fund was formally endorsed when "In March 1973, the Group of Ten (G10) approved an arrangement wherein six members of the European Community tied their currencies together and jointly floated against the U.S. dollar, a decision that effectively signaled the abandonment of the Bretton Woods fixed exchange rate system in favor of the current system of floating exchange rates."[2]

This introduced the second feature of the ongoing global currency system: the prices of anchorless currencies float against each other. "Since the dollar no longer had to be backed by gold, the end of the Bretton Woods fixed exchange rate system increased the freedom of the U.S. Federal Reserve to engage in counter-cyclical monetary policy."[3] It became more difficult for firms to anticipate the terms of trade. Fiscal policy was no longer constrained by the need to defend the external value of the dollar (or any other currency).

After more than forty years of floating, we have enough experience to evaluate the new "non-system," as it was called by former IMF Managing Director, Jacques de Larosière. In this section, we examine the shortcomings of floating for monetary and fiscal policy from three aspects. The first is that the anchorless system provided the monetary authorities too much space and power to influence the domestic and global economy in ways that have not always been easy to predict. While this was sometimes used to offset external shocks, it also often contributed to the imbalances that caused them, caused wide swings in exchange rates unrelated to fundamentals, and gave rise to exchange rate manipulation as an additional policy tool or the suspicion of such manipulation. Second, the anchorless system is pro-cyclical and brought huge shocks or even crisis to the developing world, which prompted the latter to accumulate large foreign exchange reserves, and hence contributed to the global imbalance problem. Finally, it reduced the financial pressure on fiscal policy to limit deficits, especially in the US, which has the "privilege" of issuing a global reserve currency.

[2] https://history.state.gov/milestones/1969-1976/nixon-shock visited on May 20, 2015.
[3] http://bancroft.berkeley.edu/ROHO/projects/debt/terminationgolddollar.html visited on May 20, 2015.

4 Exchange Rates and Trade

Initially the case for market determined exchange rates, free floating, was that it was a natural extension of market logic to the sphere of currency, i.e., the competition between supply and demand will maximize the efficiency of resource distribution and the price will stabilize at the appropriate equilibrium level. But, from the point of view of global trade, volatile and difficult to predict terms of trade resulting from unpredictable currency exchange rates is inefficient. For an efficient and open global market, floating exchange rates add a seemingly unnecessary cost and risk to cross border trade.

A currency contributes most to the expansion and efficiency of trade when it provides a trustworthy medium of exchange with a stable and predictable value. These desirable qualities remain important as the domain of trade is expanded beyond national borders. The global currency system should provide a stable, trustworthy and neutral monetary environment so that the global market can find and exploit true comparative advantage. With floating we now have a system of national currencies that change relative values in unpredictable, sometimes arbitrary and sometimes deliberately manipulated ways. Moreover, U.S. monetary policy pursues domestic objectives without much regard for its impact on exchange rates or capital flows in the rest of the world despite the dollar's role as the primary international reserve asset.

As monetary authorities, and especially the Federal Reserve, are taking more and more active roles in their domestic financial markets, the spill over into international markets and exchange rates are becoming more difficult to predict and thus more costly for international trade and investment. Global players must adjust to survive. Therefore, we have witnessed a shift in focus of investment technology from the evaluation of the value (competitiveness) of trade contracts to the prediction of the direction that the monetary authorities and thus interest rate differentials and exchange rates may take. As shown by the Figures 7 and 8,

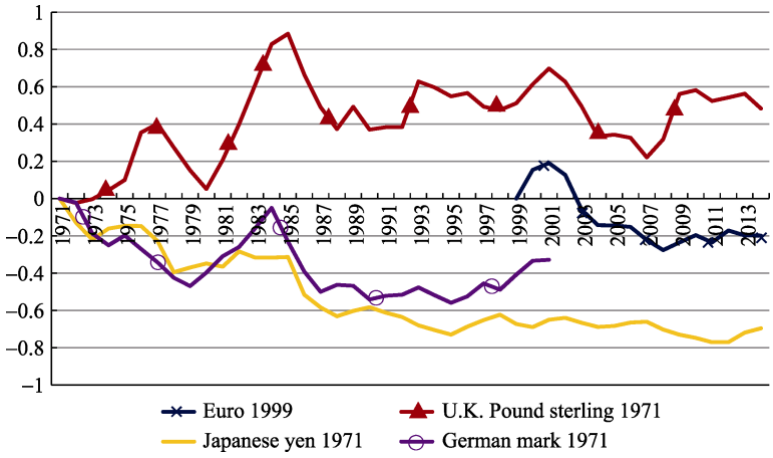
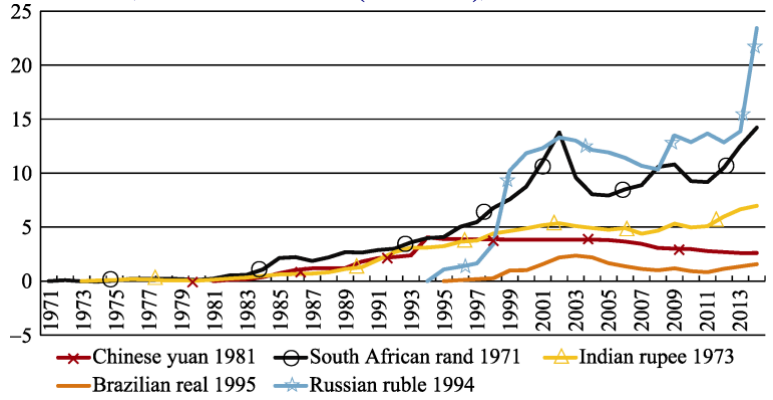


Figure 7 USD Exchange Rates Movement Relative to Developed Economies from Each Base Year

Source: Federal Reserve Bank of St. Louis, retrieved from FRED (2015.11.15), Federal Reserve Bank of St. Louis.



Figures 8 USD Exchange Rates Movement Relative to Currencies of Developing Economies from Each Base Year

Source: Federal Reserve Bank of St. Louis, retrieved from FRED (2015.11.15), Federal Reserve Bank of St. Louis.

the exchange rates of the world major economies, both developed and developing, are very volatile against U.S. dollar. Generally speaking, the currency of a typical developing country may depreciate periodically against the dollar, which makes the annual growth of these economies meaningless for the improvement of the living standard of their people because measured by dollar standard, their income per capital stagnates or even decreases due to the devaluation of currency.

Floating exchange rates increase the risk of international trade and the otherwise unnecessary cost of hedging against it. This cost could be perceived as an extra tax on the real economy. Success in international trade depends on the capacity to understand and predict the currency policy intentions of major monetary authorities as much as producing a better product. Knowledge of politics may be more important than that of economics and business, because the behavior of the monetary authorities is often more the result of political than of economic considerations. Thus in floating exchange rate environments, companies trading internationally must buy insurance for their financial exposure to currency risks. So this behavior increases the costs of trade. The huge growth in financial services in Wall Street, London and Hong Kong, etc., derives largely from this need for spot and forward currency transactions and exchange rate hedges of one sort or another.

Many central banks have sought to keep limited international exchange rate stability by pegging their currencies to the U.S. dollar or some other major trading partner currency. Pegging their currencies to an international one, especially the dollar, can help their own exporters and manufacturers by reducing their business uncertainties, thus encouraging their expansion. However, this strategy increases the risks of sudden, large exchange rate changes. Moreover, pegging to one currency cannot mitigate the exchange risk of the wide swings in other currencies that might also be important. To avoid being caught in a financial crisis like that of 1997–1998, Asian nations adopted ways to control portfolio capital flows and accumulated larger foreign exchange reserves. One of the costs of such policies is undervaluing their currencies enough to build foreign exchange reserve holdings sufficient to defend the value of their currency in international currency markets.

The increased demand for foreign exchange reserves to defend exchange rates has been augmented by the lower cost of holding such reserves. The current system has reduced the cost of holding foreign exchange reserves by replacing gold with U.S. Treasury bonds or similar assets. A portfolio of U.S. Treasury bonds of different terms provides better liquidity, better returns and almost similar safety as holding gold under the former system. This further increases the demand for foreign exchange reserves. World reserve holdings have tripled from USD 1.2 trillion at the beginning of 1995 to USD 4 trillion at the end of 2005 only to triple again to USD 12 trillion in mid-2014.[4] Figure 9 indicates that over one third of these were held by the central banks of China and Japan. This astounding growth in international reserves began at the beginning of the 1970s as the Bretton Woods system collapsed. At the end of 1969 the total world reserve was a mere USD 33 billion.

As noted in the previous section, holdings of foreign exchange reserves by one nation equal the balance of payments debt in US and other international currency issuers. Such cross boarder financing is highly correlated with overall debt, both public and private sector, in reserve currency countries.

Floating exchange rates have also brought big differences to international trade negotiation. Historically, trade negotiations focused on tariffs and their reduction. After decades of such negotiations, tariffs have been significantly reduced. However, along with non-tariff barriers, floating exchange rates

[4] Barry Eichengreen, Ricardo Hausmann, Ugo Panizza, August 2013, http://eml.berkeley.edu/~eichengr/research/ospainaug21-03.pdf and ECB *The Accumulation of Foreign Reserves*, Occasional Paper No 43, February 2006.

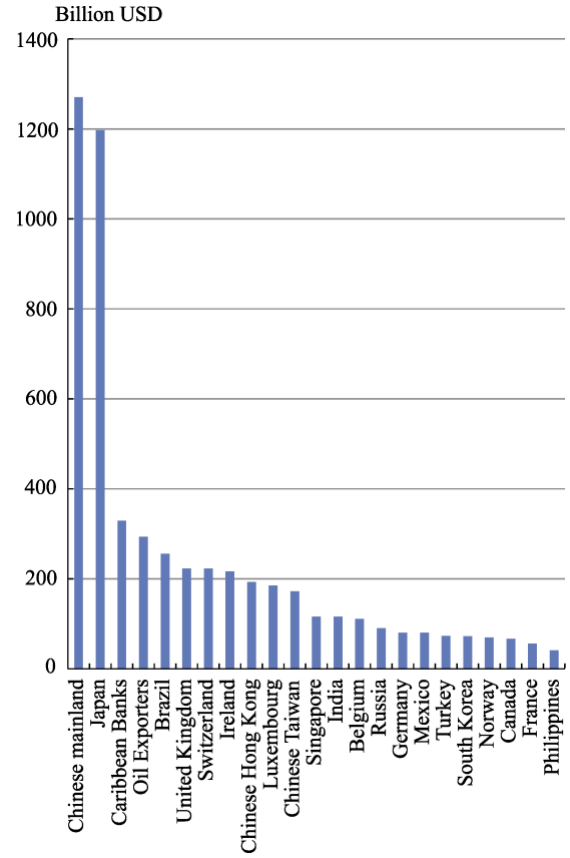


Figure 9 Major Foreign Holders of Treasury Securities (in billions of dollars, as of August 2015)

Source: U.S. Treasury Department, https://www.treasury.gov/resource-center/data-chart-center/ tic/Pages/ticsec2.aspx

introduced currency manipulation as a new tool for seeking trade advantages. By deliberately keeping their own currency's exchange rate low, those governments pursuing a mercantilism growth policy could help their own exporters and restrain imports, thus taking a relatively lager share in the trade deficit that the US provides to the whole world in order to supply its currency to international reserves. Competitive devaluation is a strategy often adopted by developing nations facing international systematic crisis, though the result is often higher inflation and painful adjustments.

The most important change to the global business environment since the 1970s is that monetary and financial policies were added to the factors important for determining winners and losers in international markets. An enterprise, even if its managers work very hard on the quality of their products, on the reduction of costs, and on exploring potential markets, still has a significant chance of going bankrupt in the face of unexpected exchange rate developments or sudden reversals of monetary induced temporary bubbles of demand. During 2008–2009, there were plenty of real cases of this in every corner of the world and every industry.

In the search for counterbalances to the inflationary bias of anchorless monetary policies, the independence of central banks with price stability objectives or inflation targets gained popularity. Indeed, amendments to central banking legislation increasingly established, at least *de jure*, such independence in the 1980s and 1990s, and with its relative success in keeping inflation moderate. With the financial crisis of 2008 and the broadening of the responsibilities of the central banks from preventing inflation and liquidity crisis to more and more ambitious, quasi-fiscal tasks, the anchor of the system is again in doubt.

In our view the anchorless and free floating currency system is not a natural extension of free markets, but rather a hindrance.

5 Floating Is Pro-cyclical, especially for Developing Economies

Floating exchange rates have had a pro-cyclical impact on global balances, increased cyclical shocks to the developing world, and as discussed above encouraged the latter to accumulate large foreign exchange reserves. The

gold standard world and the gold exchange standard of Bretton Woods also had cycles due to a changing pace of gold mine extraction, technical/productivity shocks and all of the other shocks market economies are always adjusting to. However, the hard anchor limited the magnitudes of cyclical swings because of the stronger monetary and fiscal discipline that accompanied it.

The discovery, development, and subsequent export of oil, for example, would attract foreign capital to help finance the increased investment spending, and thus moderate the increase in domestic interest rates that the investment boom would cause. With fixed exchange rates the capital inflow would increase the domestic money supply and price level, which would increase imports. With floating exchange rates the foreign capital would appreciate the recipient country's exchange rate thus increasing imports. In both cases, the real exchange rate would adjust, in one via price level adjustments and in the other via nominal exchange rate adjustments.

However, several features of the floating exchange rate system promote overshooting. To understand this mechanism, we could contrast the reactions to an increase in investment demand in country B between a hard exchange rate peg and floating rates. In the former case the increase in interest rates in country B increases the flow of capital from country A to B. This tightens monetary conditions in A and eases them in B, reducing prices in A and increasing them in B until the balance of payments between them rebalances with an appreciated real exchange rate in B. With floating exchange rates the real appreciation takes the form of an appreciation of the nominal exchange rate. With perfect foresight the two adjustments should be equivalent. However, if the appreciation of the nominal exchange rate creates expectations of further (continued) appreciations, additional capital will be attracted causing overshooting. If country B's central bank resists the increase in interest rates with an easy money policy, which it is free to do with floating exchange rates, it may fuel asset bubbles of the sort experienced in the US in the mid-2000s.

The carry trade of recent years provided examples of this phenomenon. When the U.S. dollar interest rates (sometimes *yen* or Euro) are relatively low, many speculators borrow cheap dollars and exchange them into high return assets in some developing nations. Two aspects of the existing arrangement promote this speculation. One is the higher interest rates on developing or emerging market investments, i.e., the low price of funding in the US and high return on emerging markets investments. The other, which is not present with hard exchange rate pegs, is the expectation of an appreciation of the currency invested in, which reflects the fact that the currency of the economy in which they invest is under appreciation pressure as more and more capital flows in.

Moreover, actual experience has often been that the equilibrating increase in interest rates in country A (the US) is prevented by a loosening monetary policy in country A. This tends to perpetuate the capital outflow. In the case of the United States, monetary easing with floating exchange rates, whether to dampen the interest rate increase from an investment boom or excessive fiscal deficit or to prevent an exchange rate appreciation, tends to be transmitted to the rest of the world as other central banks ease their own monetary conditions in order to avoid an exchange rate effect. Relatively large capital flows into and then out of the emerging market economies have resulted in recent years from such fluctuations in U.S. monetary policy. When the US needs to expand its monetary base, for example, as happened in 2009, the increase tends to get exported to many countries that do not need such an increase. As the Federal Reserve at long last begins to tighten, the emerging markets experience the reverse capital flow. In October 2015, the emerging market countries experienced a net outflow (for the first time in 27 years) of over USD 0.5 trillion, the largest share of which was from China.

These two aspects of cross border capital flows under floating exchange rates are very different as the interest rate gap will narrow when money flows in while the expectation of an exchange rate appreciation will increase. Such a self-fulfilling prophecy and self-reinforcing mechanism creates market bubbles instead of bringing the market to equilibrium. When this tendency reaches its tipping point, often triggered by the raise of interest in the US, these carry traders scramble to unwind their positions, deflating the bubble, collapsing both the capital market and the exchange rate. Obviously, under the hard anchor of a fixed exchange rate regime, the profit of carry trade will be limited to the interest rate differential, which will balance itself automatically and is much less likely to trigger a boom/burst cycle. As we could see from Figure 10, since the 1970s, every time the dollar went into a cycle of rising interest rates, there were always some financial and currency crisis in developing nations.

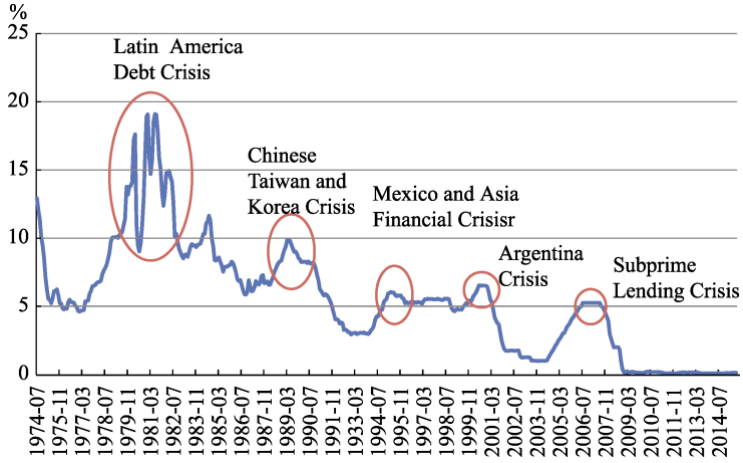


Figure 10 U.S. FFR Hikes and Crises in Developing World

Source: Board of Governors of the Federal Reserve System, retrieved from FRED (2015.11.15), Federal Reserve Bank of St. Louis.

6 Excessive Debt from Loss of Hard Monetary Anchor

Floating exchange rate regimes provide governments with more policy maneuver space. Central banks (or their governments) that want to stimulate employment or lower the cost of the government's deficit financing are no longer constrained by the dictates of defending an exchange rate. In the long run, excessive monetary stimulus produces higher inflation, and redistributes wealth among savers, investors and labors. Many governments in the 1980s chose monetary expansion to solve their fiscal and debt problems when they promised and spent too much, and we can find fresh examples in the case of some leftist governments in Latin America whose currencies have depreciated dramatically recently.

The anchorless currency system relaxed fiscal discipline in the US as well. As shown by Figure 11, since the 1970s, when dollar financial assets replaced gold in international reserves, the U.S. national debt as a percentage of its GDP rose substantially as its external balance of payments deficit needed to supply the growth in the rest of the world's demand for its currency lowered the U.S. government's cost of borrowing.

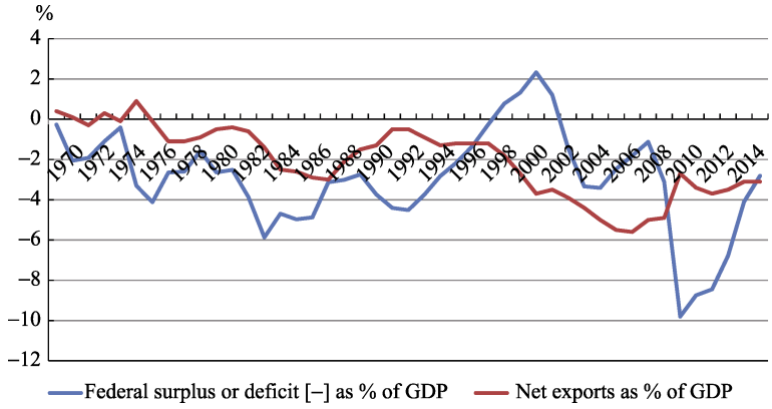


Figure 11 U.S. Trade Deficit and Fiscal Deficit as Share of U.S. GDP (1970–2015)

Source: Federal Reserve Bank of St. Louis and U.S. Office of Management and Budget, retrieved from FRED (2015.11.15), Federal Reserve Bank of St. Louis.

The reserve role of the dollar combined with floating exchange rates led to the infamous twin deficits—trade deficits and fiscal deficits. Fiscal deficits are not an inevitable consequence of being the reserve currency, but the lack of a hard exchange rate anchor removed a fiscal discipline that the US found hard to replace. The U.S. debt grew both because its interest rates were lower and because it no longer needed to defend its exchange rate (or the price of gold). One study estimated that the interest rate on ten-year (US) Treasury bonds was 0.8% lower in 2005 as a result of purchases of the U.S. Treasury bonds by foreigners (Warnock and Warnock, 2009). The European Central Bank's study found that foreign holdings of long-term European Union country bonds during the 2000s reduced their yield by about 1.5% (Carvalho and Fidora, 2015).

As noted by Michael Pettis, for countries like China to accumulate dollars as their reserve currency, they needed to depreciate their own currency (or resist its tendency to appreciate), which hurt the competitiveness of the U.S. exporting enterprises. So the only way to avoid higher unemployment in the US was to increase the domestic demand in non-tradable sectors (Pettis, 2011). The dollar financial assets that foreign governments hold largely consist of the U.S. treasury bonds, but they could also include private sector debt and ownership of the US-based companies and real estate. This foreign financing lowered interest rates in the US, but a large share of it was absorbed by government deficit financing rather than financing private sector investment and consumption.

The rapid growth of China and Japan's international reserves raised several political controversies. Was China over accumulating reserves as a by-product of its export led growth strategy (and an artificially low exchange rate) or was it a by-product of U.S. deficits pushing out dollars in exchange for foreign financing of its excessive fiscal deficits? Some scholars, for example, Professor Daron Acemoglu in his speech in the spring meeting of IMF on April 19, 2015 stated that excessive U.S. deficits reflected a time inconsistency problem in which two groups of stake holders who do not vote, foreigners and future generations are underrepresented in government spending decisions. That is why the politicians prefer to borrow and spend as much as possible and leave the debt burden to the decedents and leave the risks to the foreigners. The gold standard and gold exchange standard had effectively disciplined monetary and fiscal policy and reduced the time inconsistency problem.

Figure 12 indicates that the debt ratio was steadily declining before 1974. Prior to that government borrowing would have increased interest rates. With the closing of the gold window, the money base could be expanded without limitation and interest rates could be kept artificially low until expectations of inflation began to drive them up. Debt could be repaid endlessly with more new debt, and for a while (until inflationary expectations kicked in) the central bank could keep interest rates low by buying it.

The new policy with free hand, however, proved to be an illusion. As the Federal Reserve continued to stimulate via its printing machine, the tradeoff between inflation and unemployment (the Phillips curve) vanished leaving only higher inflation and with higher (nominal) interest rates. Paul Volcker finally stepped on the monetary breaks and restored monetary discipline in the US in 1979–1980.[5]

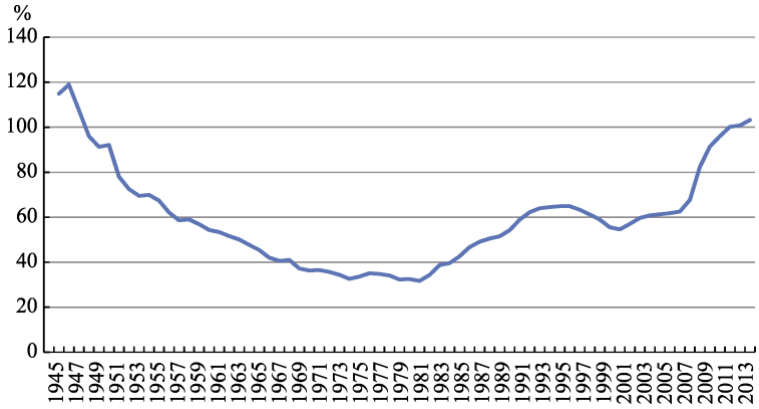


Figure 12 U.S. Gross Federal Debt as % of GDP

Source: Office of Management and Budget, the White House.

In the 1980s, a global consensus emerged that monetary policy discipline and fiscal discipline should be restored in a more fundamental way. On the fiscal side the US has tried, with limited success, tools like a congressionally established debt ceiling. On the monetary side, establishing central bank legal independence with a price stability mandate reduced the ease with which governments could borrow from their central banks. The widespread adoption of central bank independence has significantly reduced inflation in much of the world. However, the financial crisis of 2008 and the continued disruptive volatility of exchange rates dramatically demonstrate the weaknesses of the currency system. To rectify this system, we must go back to a hard anchor and fixed exchange rate currency system.

The following two figures (Figures 13a and 13b) show very clearly how the 1971–1974 reform of the global

[5] Allan H. Meltzer, A History of the Federal Reserve, Vol 2, Book 2, Chapter 8.

currency system, i.e., the disappearance of a hard anchor and advent of floating exchange rates, made substantial differences in the long run inflation rate tendencies in even the developed economies.

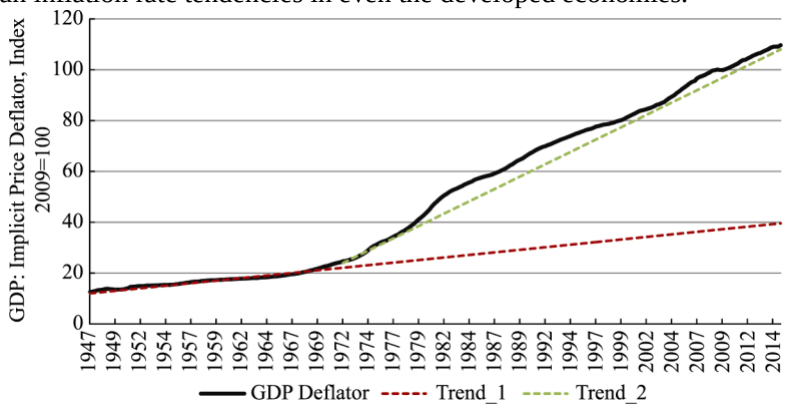


Figure 13a U.S. Inflation Trends before and after 1972

Source: US. Bureau of Economic Analysis, Gross Domestic Product: Implicit Price Deflator [GDPDEF], retrieved from FRED (2015.11.15), Federal Reserve Bank of St. Louis.

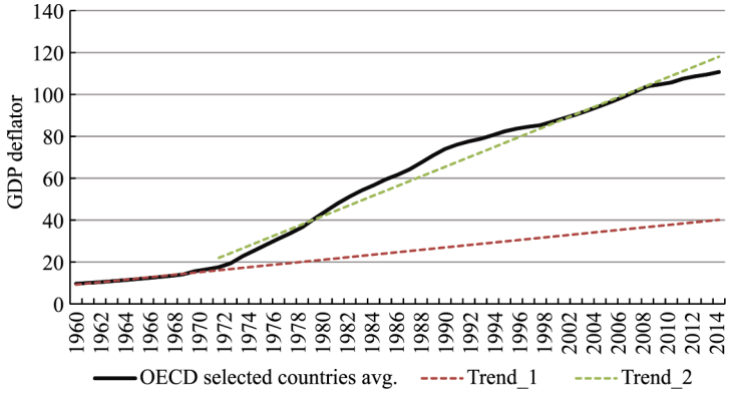


Figure 13b OECD Selected Countries Average Inflation Trends before and after 1972

Source: World Development Indicators, World Bank Note: Based on availability of data, selected countries here include Australia, Canada, Spain, France, UK, Italy and Japan.

7 Conclusion

Since the collapse of the Bretton Woods/Gold standard system, the impressive growth of cross-border trade and finance has been restrained by costly exchange rate volatility. An expensive industry has developed to hedge the related risks. Exchange rate manipulation, if not outright currency war, has created political tensions and produced large international payments imbalances. Given the size of the U.S. economy and the depth and breadth of its financial markets, the use of the dollar has remained and even grown as the world's primary reserve asset. But the continued failure of the U.S. government to address its unfunded liabilities, the traditional lack of concern by the Federal Reserve for the monetary needs of foreign users of the dollar, and faltering American leadership after the World War II world order have increased discontent with and reduced confidence in the current arrangements. While gaining the exorbitant privilege of borrowing abroad in its own currency and the seigniorage from foreign holdings of its currency, the US incurs the cost of deindustrialization caused by the chronic balance of payments deficits needed to supply the world's demand for its currency, and the entire world incurs the cost of weakened monetary and fiscal discipline and hard to predict exchange rates.

A much better system would replace national currencies for pricing and settling cross border transactions with an internationally issued currency, whose value was anchored to a small basket of real goods, and to which the exchange rates of all or most national currencies where firmly fixed. In 1969 the IMF created the SDR to supplement or replace the U.S. dollar in international reserves. Initially its value was fixed to gold but after the closing of the U.S. gold window, its valuation was fixed to a basket of key currencies. The Second Amendment to its Articles of Agreement

obligated Fund members to make the SDR "the principal reserve asset in the international monetary system" (IMF Article XXII).

However, the SDR suffered from several deficiencies and never caught on. The initial failure (since corrected) to charge interest for using SDRs (and to pay interest for holding them) tainted the SDR as a development aid instrument rather than a reserve asset. More importantly, the regulation of the supply of SDRs via the approval of periodic allocations to all members in proportion to their IMF quotas made it very unlikely that their supply would match their demand at their officially fixed value (based on a basket of key currencies). This necessitated administrative rules for their use, which seriously undercut their attractiveness as a reserve asset.

While many simple and practical means can and should be taken to promote the use of the existing SDR as proposed by one of us in many earlier articles and by Governor Zhou in his speech in 2009, we believe (along with Governor Zhou) that the SDR could be made a much better (and less political) unit of account by replacing its valuation basket of currencies with a basket of goods. All of this could be done under the IMF's existing Articles of Agreement. However, with an amendment to the Articles of Agreement that replaced the allocation of SDRs with issuing them under currency board rules, the attractiveness of SDRs could be dramatically increased. Rather than buying and selling SDRs for the items in its valuation basket (as with the gold or other traditional commodity standards), the IMF would sell and redeem these "real SDRs" for the basket indirectly (against government or other AAA-rated financial assets of equivalent value). Such an SDR, with a relatively constant real value, is likely to be adopted as the anchor currency for fixing the exchange rates of many if not most national currencies and to augment or replace the U.S. dollar and Euro in other countries' foreign exchange reserves. The entire existing stock of central bank foreign exchange reserves could be swapped (substituted) for real SDR in one go.

So why have such reforms not been embraced? The US is thought to want to hang on to the seigniorage it earns from supplying its currency to foreign holders while indulging in its exorbitant privilege despite the instability of its exchange rate as capital flows in and out in response to Federal Reserve monetary policy and world developments plus the growing risk a Triffin Dilemma like loss of confidence. We argue here that the US has not given enough weight to the cost of supplying its currency in the form of deindustrialization nor the cost in the form of global financial instability from excess leverage encouraged by unanchored monetary policies.

Borio and Disyatat (2011) argued that the fundamental weaknesses in the international monetary and financial system stemmed from the problem of "excess elasticity": The system lacks sufficiently strong anchors to prevent the build-up of unsustainable booms in credit and asset prices (financial imbalances) which can eventually lead to serious financial strains and derail the world economy. Reducing this elasticity requires that anchors be put in place in the financial and monetary regimes, underpinned by prudent fiscal policies. Our real SDR currency board proposals could remedy this excess elasticity.

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