

In search for Elastic and Scalable Currency

Historical Lessons of the Gold Standard for the Future of Money

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Introduction:

Limited Money Supply was a Perennial Problem for the Gold Standard.

Advocates of the gold standard often regard limited supply of monetary gold as one of the primary merits of the system, an effective check on inflation. In the same analogy, many Bitcoin enthusiasts boast the upper limit of its supply as a merit of the system and often portray Bitcoin as an ideal money of the future¹.

This essay intends to challenge the notion as misapprehension, articulating that limited gold supply was a perennial problem throughout history of the gold standard for a different reason, lack of liquidity/scalability. When the system needed to expand liquidity, it either failed to do so or fundamentally compromised its adjustment mechanism by allowing liquidity substitutes through other means.

Two primary takeaways from this essay are:

- Elastic Currency: A sound monetary system would need to enable central banks to expand and contract money supply depending on their desirable policy responses to prevailing economic conditions. In sum, ***elastic currency***² would be one of necessary conditions for a desirable

¹ (Hajric, 2021)

² Here are three references of Elastic Currency:

- *"To furnish an elastic currency" essentially means that the Federal Reserve is responsible for ensuring that there are sufficient reserves—cash in bank vaults and bank deposits at the Fed—to satisfy the flow of transactions in the American economy.*" (Zaretsky, 1996)
- *"An Act To provide for the establishment of Federal reserve banks, to furnish an elastic currency, to afford means of rediscounting commercial paper, to establish a more effective supervision of banking in the United States, and for other purposes."* (FRB, n.d.)
- *"One way to prevent bank runs is to have a money supply that can expand when money is needed. The term "elastic currency" in the Federal Reserve Act does not just mean the ability to expand the money supply, but also to contract it. Some economic theories have been developed that support the idea of expanding or shrinking a money supply as economic conditions warrant. Elastic currency is*

monetary system³. And the Great Depression exposed the inability of the gold standard to expand money supply in response to the systemic financial crisis. Lack of money supply exacerbated the systemic financial crisis and let the system melt-down.

- **Adequate Scalability:** a sound international monetary system needs to be able to adequately scale liquidity proportionate to the global economy. Limited gold supply, accounting for lack of liquidity-scalability of the gold standard, induced governments to resort to other substitutes to scale-up their reserves/liquidity and compromise the conduct of the gold standard. Lack of scalability triggered a series of undesirable mutations of the gold standard and impaired the adjustment mechanism of the system.

Apart from three basic functions of money—unit of account, medium of exchange, and store of value—this essay focuses on **elastic money** and **liquidity-scalability** and intends to derive historical insights in order to contemplate necessary conditions for the future of money.

Limited Gold Supply exacerbated the Great Depression

First, in order to illustrate the notion, I would like to start with a symbolic example of the Great Depression.

In response to two systemic crises—the Wall Street Crash of 1929 and the European Central Banking Crisis of 1931—the Hoover administration and the Fed, being in defence of the gold standard, were constrained from undertaking aggressive reflationary initiatives. Instead, contracting liquidity in the system and exacerbating debt-deflation deleveraging spiral⁴, the government let the system meltdown. Further deepening of US economic devastation prompted the succeeding Roosevelt administration⁵ to suspend gold convertibility, the cornerstone of the gold standard, in 1933⁶ and to devalue USD in 1934⁷.

defined by the Federal Reserve as: Currency that can, by the actions of the central monetary authority, expand or contract in amount warranted by economic conditions. Monetary policy of the Federal Reserve System is based partially on the theory that it is best overall to expand or contract the money supply as economic conditions change. (Open Textbooks for Hong Kong, n.d.)

³ As a precaution, a desirable monetary system would require multiple necessary conditions and sufficient conditions: elastic currency is only one of them.

⁴ “Until FDR assumed office in March, output continued to fall and unemployment worsened. Banks failed at an alarming rate. The Hoover administration had few options, for the gold standard precluded reflationary initiatives.” (Eichengreen, 2008, p. 84); (Richardson, 2013); (Fisher, 1993)

⁵ “On June 5, a congressional resolution abrogated gold clauses in all contracts, both government and private. Gold clauses guaranteed that contracts would be repaid in gold or in gold’s monetary equivalent, at the value set in 1900. A series of cases in the United States Supreme Court upheld the constitutionality of these actions.” (Richardson, Komai, & Gou, 2013)

⁶ “In 1933 President Roosevelt nationalized gold owned by private citizens and abrogated contracts in which payment was specified in gold.” (Bordo, n.d.)

⁷ Roosevelt “promptly banned gold exports, halted convertibility of paper dollars into gold and ordered US citizens to hand in all their gold. Almost 500 m.t. of gold, mostly coin, worth \$321 million, was handed in for greenbacks. (The prohibition lasted until 31 December 1974.) Such measures, however, did not

In brief, a sound monetary system needs to enable central banks to expand and contract the money supply depending on their desirable policy responses to prevailing economic conditions. In sum, **elastic currency** would be one of necessary conditions, if not the only, for a desirable monetary system. And the narrative of the Great Depression exposed that the gold standard failed to operate **elastic currency**.

What hindered the Hoover administration from expanding liquidity in response to the systemic financial crisis? Why was the gold standard incapable of operating **elastic currency**?

To answer the question, we need to understand how the gold standard operated.

The rules of the Game & Mundell-Fleming Trilemma

John Maynard Keynes rejected an 18th century myth of the gold standard's auto-adjustment mechanism of the balance-of-payments imbalances⁸, which was popularised by **the price-specie flow mechanism**⁹ formulated by David Hume, a prominent intellect of the Scottish Enlightenment of the 18th century. Keynes articulated that it would require an active involvement of central banks' monetary policies to devise an adjustment mechanism in the gold standard. He formulated his arguments based on a stylised hypothetical operating framework

resolve the issue of the money supply, so Washington decided to raise the price of gold arbitrarily. Initially the price was edged up a few cents a day without much effect. Thus, on 31 January 1934 Roosevelt determined on a once-and-for-all rise. The price was set at \$35 per troy ounce (a devaluation of the dollar of 40% in relation to the old price of \$20.67 per ounce). Moreover, the United States decided to go back on a limited gold standard under which the US Assay Office would not only buy all gold offered to it at \$35 an ounce, but sell to any central banks, such as France, Holland, Belgium and Italy, which were still on the gold standard." (Green, 1999, p. 13)

⁸ Regarding the balance-of-payments imbalances (deficits/surpluses), please refer to Høst-Madsen (1966): "In fact, the determination of balance of payments surplus or deficit is far from being a fully objective exercise. It has the clearly normative aspect of providing a guide for economic policy. ... A deficit, then, is a negative balance (or an excess of debits over credits) on account of certain transactions (the items above the line), which will cause trouble if it becomes large and persistent; to prevent this, some adjustment of the balance of payments is called for—and usually some adjustment in the domestic economy as well. A surplus is a positive balance on account of the same transactions. While in a statistical sense a surplus (when used in relation to a given country) is simply the reciprocal of a deficit, it is not a simple reciprocal in terms of the importance attached to it by financial authorities or in terms of policies of adjustment to which it gives rise." (Høst-Madsen, 1966, p. 172); "In defining over-all surplus or deficit (i.e., the total surplus or deficit above the line) the purpose is to determine the selection of transactions that should be in balance over the long run." (Høst-Madsen, 1966, p. 174)

⁹ A country with a trade deficit, the net pay-out would lead to a gold outflow, which causes a contraction of money supply, thus, a decline in the general price level at home. On the other hand, a country with a trade surplus, the net income would lead to a gold inflow, which causes an expansion of money supply, thus, an inflation. At some point, products of the deficit country would improve price competitiveness over imports from the surplus country. The ensuing change in relative prices would reverse the trade direction and adjust the balance-of-payments imbalances. The price-specie flow model had only focus on two factors—the balance-of-payments adjustment; and the fixed exchange rate (the parity for convertibility)—while ignoring two other important factors: government's need to address domestic economic imbalances; and the role of a central bank's monetary policies in managing the Fractional Reserve Banking System.

of the gold standard and coined it as ***the rules of the Game***¹⁰. The rules of the Game states: for a country with the balance-of-payments deficits, in order to avert gold outflows and to adjust external imbalances, the central bank should raise discount rates. It was thought that a rise in discount rates would induce two desirable adjustments:

- The balance-of-payments adjustment: to reduce domestic price level and improve the price competitiveness of the country's products: thus, reduce import.
- Gold reserves adjustment: to attract capital (gold) inflows by providing a higher return.

Nevertheless, the rules of the Game could cause a critical problem for a country under extraordinary economic dislocations. It would trap a government under recession in a dilemma between two diametrically opposite objectives: to raise discount rates to address external deficits in defence of the gold standard, while allowing domestic economy to further contract; or to reduce discount rates to conduct expansionary monetary policy, while letting gold reserves drained. The gold standard, which was once deemed the cause of prosperity among industrialised countries during 1900-1913, no longer functioned properly after WWI because of the post-war economic dislocations in Europe. And, finally, the Great Depression hit the US and further exacerbated the function of the gold standard.

Here echoes a caveat stressed by a former UK prime minister [Benjamin Disraeli](#) of the late 19th century:

*"It is the greatest delusion in the world to attribute the commercial preponderance and prosperity of England to our having a gold standard. Our gold standard is not the cause, but the consequence of our commercial prosperity."*¹¹

The dilemma described above can be explained by ***the impossible trinity*** of ***Mundell-Fleming Trilemma***. It states that it is not possible to achieve simultaneously the following three objectives: a fixed exchange rate, free international capital flow, and monetary policy independence.

Mundell-Fleming Trilemma explains: the rules of the Game, demanding the fixed exchange rate as a prerequisite, gives only one of the remaining two options to governments: domestic policy independence or free international capital flows. This was a critical limitation of the fixed exchange rate system.

In other words, Mundell-Fleming Trilemma explains that the gold standard forces a government under economic distress to make one of the following three sub-par options:

- to defend the gold standard (gold parity: the fixed exchange rate), a government needs either:

¹⁰ The rules of the Game is a hypothetical framework. And in practice it was often violated. It was rather an artefact devised for theoretical arguments. (World Gold Council, N.D.)

¹¹ (Bernstein, 2012, p. 258)

- to finance external imbalances or/and engage in capital and trade restrictions in order to address domestic economic imbalances.
 - Or to sacrifice domestic monetary policy independence in order to preserve open free international trade and capital flows.
- otherwise, governments need to abandon the gold standard to achieve two other objectives.

In a nutshell, due to the impossible trinity, while the Hoover administration and the Fed, being in defence of the gold standard, had been constrained from taking an aggressive reflationary initiatives and let the system melt-down, the Roosevelt administration took the third option to suspend the gold standard to address the domestic economic dislocations. Overall, the gold standard hindered a government under economic distress from expanding money supply.

Lack of Scalability triggered Mutations of the Gold Standard:

As another historical example of its disadvantage, limited gold supply accounted for lack of scalability of the gold standard. Its lack of scalability caused a series of mutations of the gold standard: especially by inducing governments to resort to external means in search for liquidity substitutes. As a result, it gradually destabilised the monetary system by further impairing its presumed balance-of-payments adjustment mechanism and fixed exchange rate mechanism.

Here is a brief overview of the historical development.

Effectively since 1717¹², Britain had been the only country under the gold standard until 1871, when the newly unified German state shifted from its silver standard to the gold standard. A massive German liquidation of silver coins depressed the market price of silver¹³. As a result, it triggered the network externalities of the gold standard. Other industrialised countries followed suit to converge into the gold standard during the rest of the 19th century. What made the convergence feasible was not of course the limited gold supply; but, on the contrary, it was thanks to the almost 10-fold rise in world gold mining production in the second half of the 19th century¹⁴. Without the expansion in gold production, the gold standard would have never been scalable enough to serve as an integrated international monetary system.

Once the convergence completed at the turn of the 20th century, ***the international gold standard*** operated during the prosperous period of an

¹² Britain had effectively been under a de facto gold standard since 1717, “it had only been in Britain that the true gold standard ruled, almost accidentally, since 1717, when gold was slightly overvalued against silver by Sir Isaac Newton as Master of the Mint, and officially since 1816 when the Coinage Act declared the new sovereign, valued at £1, as the sole standard of value and unlimited legal tender. [footnote 1: In practice, this gold standard did not become fully operational until 1821 because ‘cash payments’, by which paper notes could be cashed for gold coin in unlimited amounts at a fixed price, had been suspended since 1797 during the Napoleonic Wars, and were only then reinstated.]” (Green, 1999, p. 3)

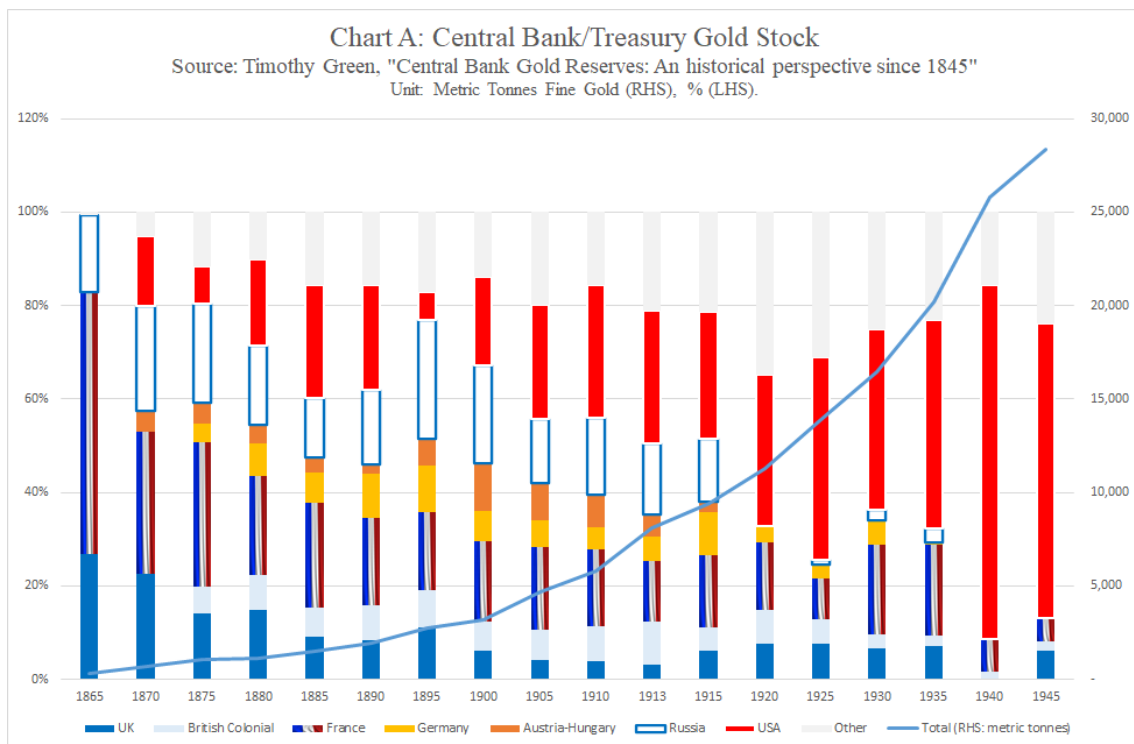
¹³ (Green, 1999, p. 7)

¹⁴ “World gold production from 1800-1850 totalled around 1,200 metric tonnes; from 1851-1900, propelled by the discovery in the United States, Australia and, later, South Africa, it was almost 10,400 m.t. – virtually a ten-fold increase.” (Green, 1999, p. 3)

integrated international trade among industrialised countries between 1900-1913.

The gold standard before the outbreak of WWI might be characterised as **the gold-specie standard** under which gold coins circulated in the market, and, more importantly, bank notes were convertible with gold coins in principle by statute.

Despite increased levels of gold mining productions in the 20th century, monetary gold shortage remained a perennial problem. In hindsight, limited monetary gold supply induced concentration of gold reserves among few predominant countries, especially US and French, and caused chronic structural gold reserve imbalance¹⁵. (Chart A).



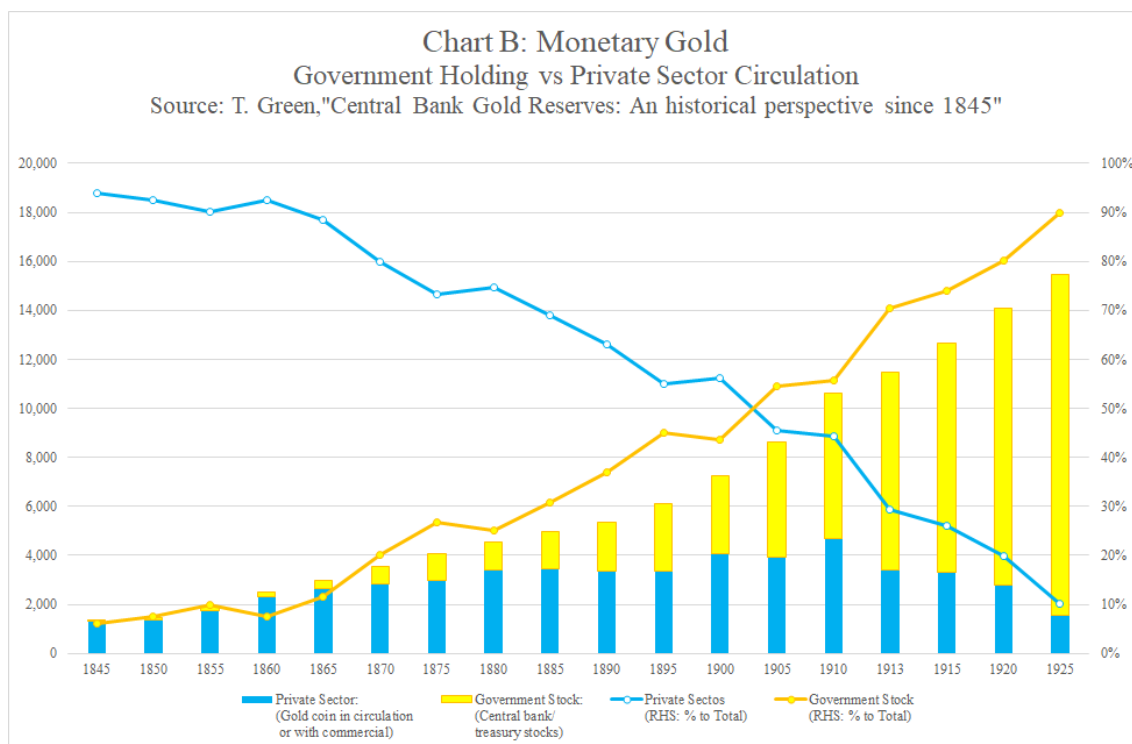
After the disruption of WWI, gold coins started gradually disappearing from market circulations to be held in the vaults of central banks (Chart B). When the UK restored the convertibility in 1925, the gold-specie standard transformed to **the gold-bullion standard**, under which the convertibility was limited to only a large sum of bank notes for gold-bullion bars¹⁶. At the same time, to address chronic gold reserve shortage¹⁷, central banks started substituting foreign

¹⁵ (Green, 1999, p. 12)

¹⁶ "Under the bullion standard, notes could not be redeemed for sovereigns, but only for 400-ounce good delivery bars; a minimum purchase of £1,700." (Green, 1999, p. 11)

¹⁷ "Yet a naive belief persisted among some economists and bankers that a return to the true gold standard was possible. The issue was debated at a conference organised by the new League of Nations in

exchange reserves (FXRs) for gold reserves, predominantly GBP and USD, in order to scale up their reserves. As a result, the succeeding generation of the gold standard further mutated into **the gold-exchange standard**¹⁸ to operate during 1926-1931¹⁹.



The post-war economic dislocations in Europe after WWI trapped governments with overvalued currencies in a dilemma between two diametrically opposite options: to engage in expansionary economic policies at the expense of external balance adjustment; or to address external imbalances at the expense of domestic economic recovery. This dilemma—which can be explained by the combination of **the rules of the Game** and **the Impossible Trinity of Mundell-**

1922. The consensus was that, while a return to the gold standard might be desirable, prices had risen so much due to the war, that there might not be enough gold to finance world trade. A proposal was made that nations 'economise in the monetary use of gold through the maintenance of reserves in the form of balances in foreign currencies'. In practice, this meant that central banks in smaller, poorer nations kept all or part of their reserves in sterling or dollars, which remained interchangeable for gold. This inevitably pushed the centre of gravity of gold stocks into the vaults of a handful of major central banks." (Green, 1999, p. 11)

¹⁸ Under the gold exchange standard during this period, "countries could hold gold or [foreign exchanges, especially USD or GBP] as reserves, except for the United States and the United Kingdom, which held reserves only in gold. This version broke down in 1931 following Britain's departure from gold in the face of massive gold and capital outflows. (Bordo, n.d.)

¹⁹ "If France's stabilization in 1926 is taken to mark the reestablishment of the gold standard and Britain's devaluation of sterling in 1931 its demise, then the interwar gold standard functioned as a global system for less than five years." (Eichengreen, 2008, p. 46)

Fleming Trilemma aforementioned—manifested a primary limitation of the gold standard. In this backdrop, arbitrageurs, increasingly becoming sceptical about the ability of governments to defend the system, started conceiving the third option: to sell-off overvalued currencies to preserve their wealth before governments abandoned the gold standard and addressed domestic and external imbalances.

After the Wall Street Crash of 1929, arbitrageurs started weighing on the third choice. The Central European Banking Crisis of 1931 caused a capital flight and drained gold reserves away from the UK²⁰ and forced GBP to devalue in 1931. The devaluation of GBP, compressing other countries' GBP-reserves valuations, triggered a cascade of devaluations²¹ across other countries and put an end to the interwar gold-exchange standard. In retrospect, FXRs significantly impaired the fixed exchange rate stability of the gold standard. The interwar gold-exchange standard did not effectively survive as an international monetary system beyond the five years between 1926-1931²².

After WWII, overriding political priorities were placed on domestic economic agendas—full employment and economic growth for the post-war reconstruction—over external imbalance adjustment²³ and further compromised the arguably final generation of the gold standard, the Bretton Woods System. The system, in practice, institutionalised supplemental instruments to enable countries to resort to capital controls and external finance to leave the balance-of-payments imbalances unresolved.

The international monetary arrangements during the Bretton Woods period further eroded the conduct of the gold-exchange standard, by institutionalising compromising instruments to allow:

- Adjustable peg
- Controls on capital and trade flows²⁴

²⁰ “... large interdependencies existed within the international financial system on the eve of the Great Depression. These close interconnections had their roots in the credit boom of the late 1920s and in the institutional organization of trade finance, which facilitated the transmission of shocks. The central European panic endangered the liquidity of London merchant banks because these houses had guaranteed large amounts of short-term commercial debt on account of merchants from this region.” (Accominotti, 2009)

²¹ A cascade of devaluations: the US in 1932; Czechoslovakia in 1934; Belgium in 1935; France, the Netherlands, and Switzerland in 1936. (Eichengreen, 2008, p. 48)

²² “If France’s stabilization in 1926 is taken to mark the reestablishment of the gold standard and Britain’s devaluation of sterling in 1931 its demise, then the interwar gold standard functioned as a global system for less than five years.” (Eichengreen, 2008, p. 46)

²³ “The commitment to full employment and growth that was integral to the postwar social compact inhibited the use of expenditure-reducing policies. The deflationary central bank policies that had redressed payments deficits under the gold standard were no longer acceptable politically.” (Eichengreen, 2008, p. 93)

²⁴ A **scarce-currency clause** of the Bretton Woods System authorized “controls on imports from countries that ran persistent payments surpluses and whose currencies became scarce within the Fund.” (Eichengreen, 2008, p. 95)

- External financing for the balance-of-payments deficits²⁵

Adjustable peg made the gold parity, which was supposed to guarantee the fixed exchange rate mechanism, adjustable; capital and trade controls allowed the international trade and capital flows to be restricted; and the external financing made the balance-of-payments imbalances persist. As a whole, the entire system became oxymoron, failing to devise itself any adjustment mechanism at all²⁶.

In addition, the post-war asymmetric distribution of gold reserves—the US accounting for more than 60% of the global gold reserves in 1950²⁷ (Chart C)—caused gold reserve shortages elsewhere and rendered the Bretton Woods System **a de-facto gold-USD standard**²⁸, an extreme variant of the gold-exchange standard. As central banks increased their USD-reserves, that enabled the US to run the balance-of-payments deficits²⁹ in order to scale up USD liquidity that the rest of the world demanded. While USD's convertibility was deemed credible, the system granted the US asymmetric economic profit of seigniorage³⁰ without causing much risk.

²⁵ Outside the Bretton Woods System, European countries operated a regional system called European Payments Union between 1950-1958 to collectively finance the balance-of-payments deficits. In 1969, toward the end of the system, IMF institutionalized the Special Drawing Rights (SDR).

²⁶ Citing William Scammell: 1975, *International Monetary Policy: Bretton Woods and After*, London: Macmillan. (Eichengreen, 2008, p. 93); (Bordo & McCauley, 2017, pp. 6-7)

²⁷ (Green, 1999, p. 17)

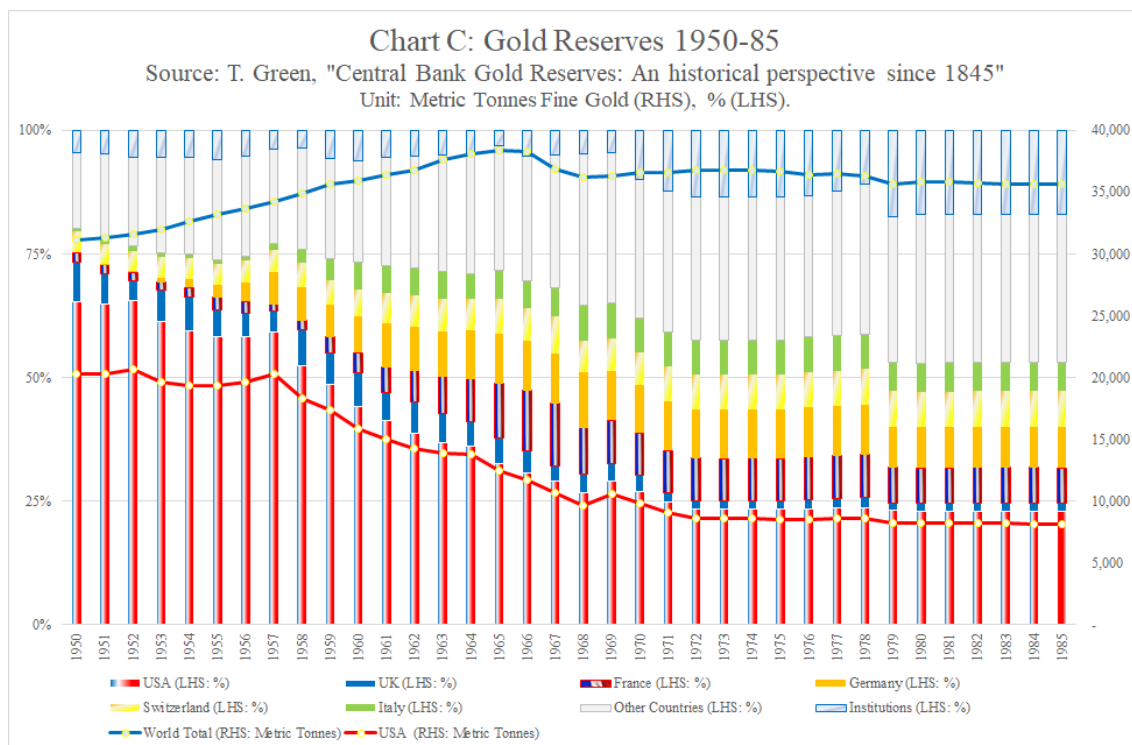
²⁸ In practice, given the gold shortage, countries accumulated USD as a natural choice for their FXRs because of the US predominant position in international trade and finance and its gold reserves. (Eichengreen, 2008, p. 112) I describe the Bretton Woods System as a de-facto gold-USD standard in the sense that USD is the predominant currency convertible to gold: it should not imply that other currencies were inconvertible by statute.

- *“In December 1958 the western European countries declared current account convertibility and the Bretton Woods System started to operate. Under Bretton Woods as it had by then evolved, each member country declared its currency’s par value in terms of US dollars and had to defend this exchange rate (within 2.5% bands) using foreign exchange market intervention. The United States had declared its par value at \$35 per ounce of gold in 1944. ... As the Bretton Woods System evolved in the 1950s, the US dollar became the primary international reserve asset. The system became a gold-dollar system, reminiscent of the interwar period, when sterling and other currency holdings supplemented official gold holdings. The gold-dollar system arose because growth in the global monetary gold stock was inadequate to finance the growth of world trade and output. This in turn resulted from the post-war choice of parities that put a low real price on gold, which restricted gold production. Moreover, the main sources of gold supply at the time, the USSR and South Africa, were unreliable (Gilbert (1966)); Mundell (1996)).”* (Bordo & McCauley, 2017, pp. 3-5)

²⁹ *“The gap between global reserve demand and supply was filled by dollars produced by an accumulation of official short-term claims on the United States from the early 1950s. In contemporary terms, the United States was running US balance of payments deficits under official settlements, as it accumulated liabilities to foreign officials without increasing official assets like gold.”* (Bordo & McCauley, 2017, p. 3)

³⁰ While non-US countries need to produce products and render services and export them to the US in order to earn USD for their liquidity needs, the US can print the equivalent amount of USD at a negligible cost for the payment. The seigniorage can be often seen as the difference between the face value of the

As the world restored economic growth, gold reserves gradually flowed from the US to other growing economies. The US share of the world gold reserves was on a constant decline between 1957-1970³¹. (Chart C)



As the Cold War intensified with the Vietnam Wars, the US government expenditures rose. Once US monetary liabilities exceeded its gold reserves during the first half of the 1960s³², the credibility of USD's gold convertibility gradually eroded over time; thus, the sell-off of USD became a matter of time³³. As the post-war reconstruction effort achieved its objectives, Europe and Japan expanded the size of their economies, while they continued supporting USD's key reserve currency position by purchasing USD. On one hand, their economic successes made some of their currencies undervalued; on the other hand, their demand for USD made USD overvalued. As a compound effect, the rise in the US spending and the post-war reconstruction success both had inflationary

world USD liquidity demand and the cost of printing USD notes of the equivalent value. In other words, the global liquidity demands for USD allows the US to run the balance-of-payments deficits.

³¹ "At the end of 1953 the US still had nearly 20,000 m.t. and continental Western Europe only 4,840 m.t.; ten years later Western Europe had over 15,400 m.t., while in 1967 (the last full year of \$35 gold) Europe's stock was up to 18,640 m.t. The US stock was down to 10,722 m.t. Such was the measure of Europe's post-war recovery, it clearly highlighted the changed balance of gold reserves." (Green, 1999, p. 14)

³² "Taking on board the insight that official dollar foreign exchange reserves can be held outside the United States ... the sum of offshore and onshore official dollar holdings surpassed the value of US gold not in 1964 but rather in 1962." (Bordo & McCauley, 2017, pp. 4-5)

³³ (Eichengreen, 2008, p. 114)

implications. The Bretton Woods' rigid exchange rate arrangement might have played a transmission mechanism of inflation across border.

The system that had benefited the US increasingly became hostile to it. Since earlier days, this instability of the gold-USD link of the de-facto gold-USD standard had been implied by the controversial **Triffin's Dilemma**³⁴. The Nixon Shock in 1971³⁵—US unilateral abrogation of USD's gold convertibility—finally manifested a reckoning. In hindsight, it is ironic to see that it was inflation what imploded from within the Bretton Woods System, arguably the last generation of the gold standard. The gold standard had been materially compromised and no longer possessed its emblematic feature, check on inflation, at the end of its life in 1971.

The gold standard failed to scale up money supply to meet growing global demands for liquidity/reserves. Overall, history suggests that gold supply shortages induced governments to compromise the adjustment mechanism of the gold standard in search for liquidity/reserve substitutes and impaired the stability of the system.

Conclusion

Limited monetary gold supply, despite expansions of world gold mining productions, was a perennial problem for the gold standard throughout history.

During the Great Depression, the inability of the gold standard to expand liquidity during economic distress exacerbated monetary contraction and accounted for the melt-down of the system in the US. A sound monetary system would need to enable central banks to expand and contract the money supply depending on their desirable policy responses to prevailing economic conditions. In sum, **elastic currency** would be one of necessary conditions, if not the only one, for a desirable monetary system. And the narrative of the Great Depression exposed that the gold standard failed to operate **elastic currency**.

In addition, limited monetary gold supply accounted for lack of scalability of the gold standard. Lack of its scalability induced a concentration of gold reserves within a few predominant countries and caused structural gold reserve shortages elsewhere. Monetary gold shortage induced governments to compromise the conduct of the gold standard in search for liquidity/reserve substitutes and impaired the adjustment mechanism of the system. Overall, limited gold supply accounted for a series of mutations of the gold standard and destabilised the system.

Two takeaways from this historical lesson are that elastic currency and adequately scalable liquidity proportional to the global economy are two

³⁴ What makes Triffin's Dilemma controversial is expressed in the following remark: "*If Triffin is remembered for rightly predicting the breakdown of the gold/dollar link well in advance, what Triffin got wrong is not much remembered. He worried about deflation but the world suffered inflation.*" (Bordo & McCauley, 2017)

³⁵ (Ghizoni, 2013)

necessary conditions for a reliable international monetary system. Neither the gold standard nor Bitcoin would meet these conditions.

Now, when we look at our contemporary system. We might see a contrasting picture.

In terms of elastic currency, the Global Financial Crisis of 2008 presents an antithetical case vs the Great Depression. In response to the systemic financial crisis, monetary authorities immediately flooded the system with liquidity, expanding the monetary base to a historic level. As a result, they prevented the system from melt-down. This illustrates that our contemporary fiat money system was more, if not perfectly, effective in operating elastic currency than the gold standard was. On the other hand, the ensuing historic implosion of the monetary base intensified public concerns regarding the sustainability of the contemporary system. Arguably, the current system might be lacking a check and balance mechanism, a sufficient condition for a credible monetary system. Some blame on central banks' easy monetary policies for the prevailing asset price inflation. Nevertheless, given that the general prices and the asset prices demonstrate different behaviours, it would be unrealistic for us to assume that a central bank can address both—the general price inflation and the asset price inflation—simultaneously by monetary policies. Instead, macroprudential regulations could play a specialised role in monitoring and modulating asset price inflation.

In terms of the global liquidity for the international reserves, the current USD-unipolar international monetary system has demonstrated its capability in scaling up liquidity as much as required. It does so by granting to the US asymmetric economic profit of seigniorage. Although discontent with the asymmetric system has built up ever since the beginning of the Bretton Woods System, we have not encountered any alternative that is scalable to meet the global liquidity demand to replace USD yet. The scalability of USD remains predominant today.

Toward the future, we might contemplate whether innovation could achieve technical feasibility to operate an AI-driven scalable liquidity control system that devises a credible check and balance mechanism in regulating elastic currency.

As the third takeaway, we might derive a general insight from a long-term perspective.

In retrospect, once the prosperous globalised economy was disrupted by WWI in 1914, the integrated paradigm of the international gold standard came to an end. Thereafter, the international monetary order had entered a paradigm of gradual disintegration: during the interwar period (1918-1938), a series of unsuccessful experiments were explored in an attempt to restore the legacy regime. Then, followed a paradigm of consolidation: in search for a new order the Bretton Woods System played a significant role in consolidating international monetary order within the free world. Nevertheless, the failure of the Bretton Woods in 1971 arguably put an end to the gold standard in a broader sense. The emergence of a new generation of integrated monetary system had to wait until the turn of the 1980s when Paul Volcker demonstrated

to the world central banks' commitment on price-stability as an operating principle of fiat money regime. And today in 2021, there are intensifying public concerns about the central banks' ability of price stability.

From this historical experience, a general insight might emerge about the forthcoming paradigm of international monetary order: we might be approaching another round of disintegration paradigm, where a series of unsuccessful experiments are explored. Although history won't repeat, we can still derive insights from historical lessons. Thus, it is a legitimate open question at least.

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