International Finance: Lecture 9
Evolution of Global Monetary System

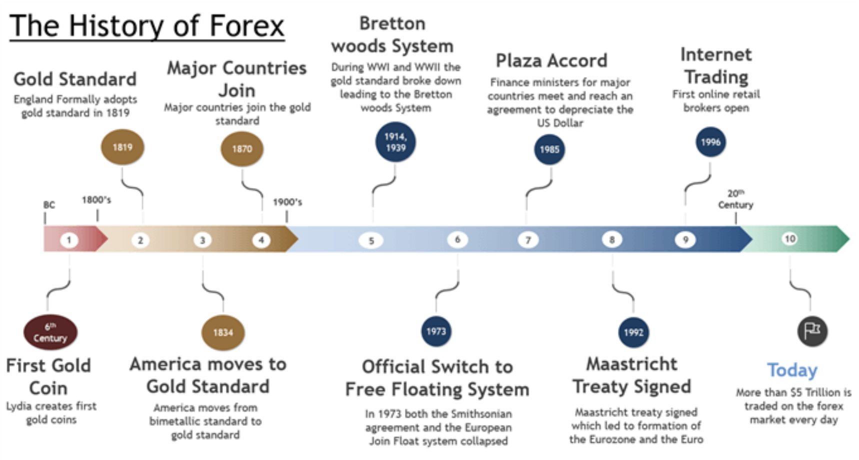
Biwei Chen

Bchen@binghamton.edu

Department of Economics
Harpur College · Binghamton University

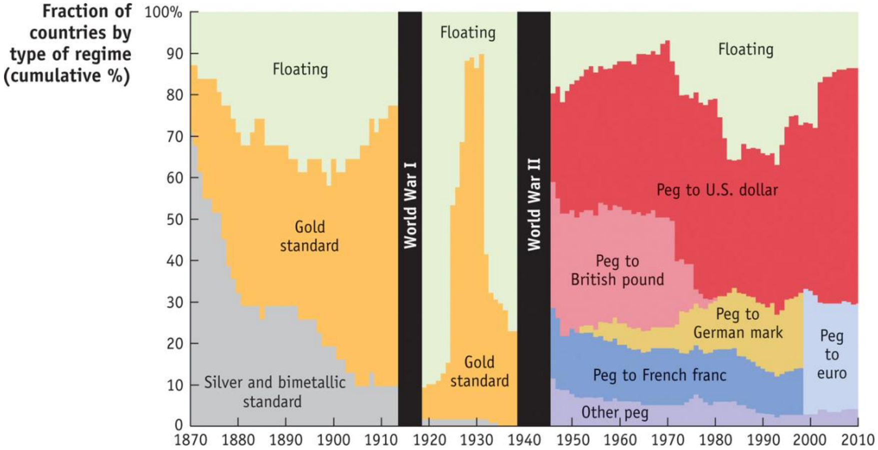
Outline

A Brief History of Foreign Exchange System (w)



Source: DailyFX

Evolution of Global Monetary System, 1870-2010



Source: FT (2017). The shaded regions show the fraction of countries on each type of regime by year.

The History of International Monetary System

The history of international monetary arrangements from 1870 to 1939 was dominated by one story: the rise and fall of the gold standard.

- Gold standard, 1870-1914. The first golden era of globalization with increasingly large flows of trade, capital, and migration between countries.
- The interwar years, 1918-1939: Increased isolationism, economic instability, and political realignments undermined the gold standard.
- The Bretton Woods system, 1944-1973: Preserved one key tenet of the gold standard regime: Countries would peg to the U.S. dollar; the U.S. dollar was, in turn, pegged to gold at a fixed price.
- Post-Bretton Woods. Since 1973 different countries and groups of countries have gone their own way, and exchange rate regimes reflect the sovereign choice of each country.

Evolution of World Currency Regimes

- From 1870 to 1913, the gold standard became the dominant regime. During World War I (1914-1918), most countries suspended the gold standard, and resumptions in the late 1920s were brief.
- After further suspensions in World War II, most countries were fixed or pegged to the U.S. dollar (the pound, franc, and mark).
- Starting in the 1970s, more countries opted to float. In 1999 the euro replaced the franc and the mark as the base currency for many pegs.

https://twitter.com/PIMCO/status/812780489710960640

International Monetary System in the 20th Century

Robert Mundell (1999) A Reconsideration of the 20th Century. Nobel Lecture.

1. 1900-1933: the story of international gold standard, its breakdown during the war, its mismanaged restoration in the 1920's, and its demise in the early 1930's.
2. 1934-1971: starts with the devaluation of the dollar and the establishment of the $35 gold price and ends wen the U.S. took the dollar off gold.
3. 1972-1999: collapses into flexible exchange rates and continues with the subsequent outbreak of massive inflation and stagnation in the 1970's, the blossoming of supply-side economics in the 1980's, and the return to monetary stability and the birth of the euro in the 1990's.

International monetary system depends on the power configuration of the countries that make it up. ... Despite the incredible rise in gold production, Gresham's Law came into play and the dollar elbowed out gold as the principal international money.

GBP/USD Exchange Rate 1870-2016 (w)

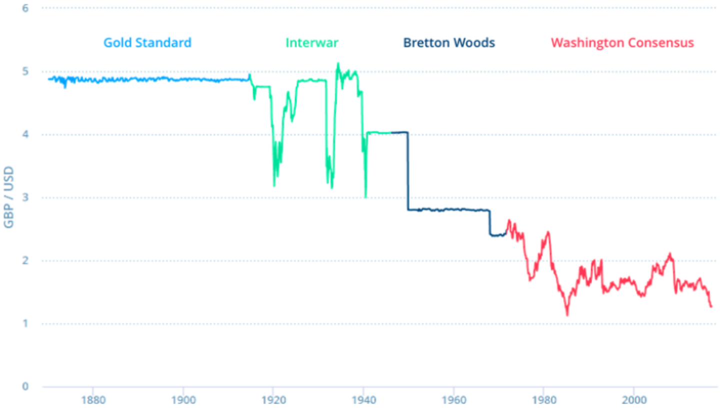
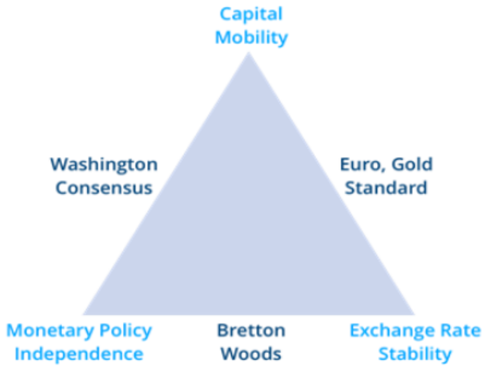


Figure 1. Perhaps the best way to understand the evolution of the international monetary system is to consider a specific currency-pair such as the GBP/USD. Exchange rates were stable for decades under the gold standard, but became unsettled during the interwar period as Britain resumed and then ditched the gold standard. There were two more decades of stability under Bretton Woods (albeit with two steep devaluations) and then volatility after the 1971 Nixon Shock.

https://www.winton.com/longer-view/history-of-modern-international-monetary-system

Global Monetary System: Impossible Trinity (w)



https://www.winton.com/longer-view

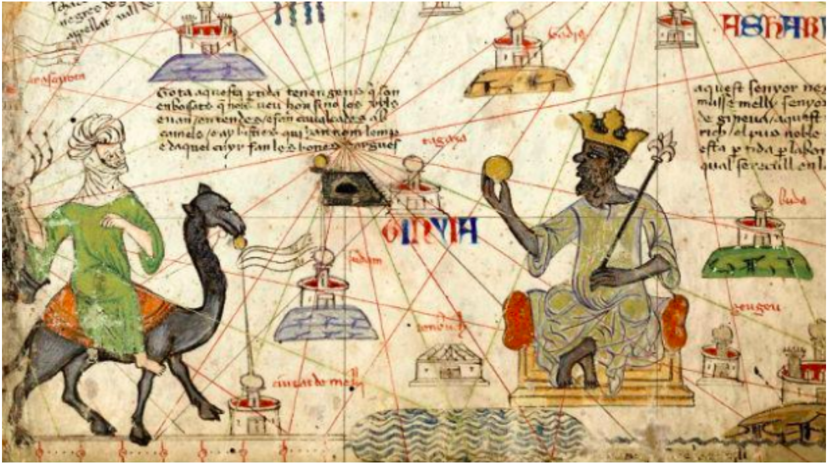
1. The Gold Standard and Euro combined capital mobility and currency stability but sacrificed monetary independence.
2. Bretton Woods married stable exchange rates with central bank autonomy but imposed capital controls so stringent that some travelers resorted to smuggling cash.
3. The Washington Consensus has been marked by free capital flows and monetary policy autonomy but exchange rate instability.

Outline

Myth of Gold

1. Caravans of gold, fragments in time: art, culture and exchange across medieval Saharan Africa. A detail from a map of Medieval trade routes featuring an image of Mansa Musa, the 14th-century emperor of Mali. Musa's kingdom controlled access to one of the most productive gold regions in the world, making him one of the wealthiest people in history.
2. The oldest, most significant gold treasure in the world was revealed in a mass burial ground, the Varna Necropolis, in Bulgaria. Archaeologists found the gravesite near the Black Sea in 1972 and dated it from around 4,600 BCE.
3. Almost 2,000 years later, the tradition of gold devotion was carried on by the Egyptians, a society so enthralled with the beauty and mythology of gold that they decorated everything in a gilded excess. Oddly enough though, they never used it as a currency. It was revered for its beauty and artistic properties only.

Caravans of Gold (w)



https://vimeo.com/307108617

Early Jewels and Gold Treasures (w)

https://auvere.com/journal/the-history-of-gold-part-i/

Buried Treasure Discovered in 2014 (w)

KITCO

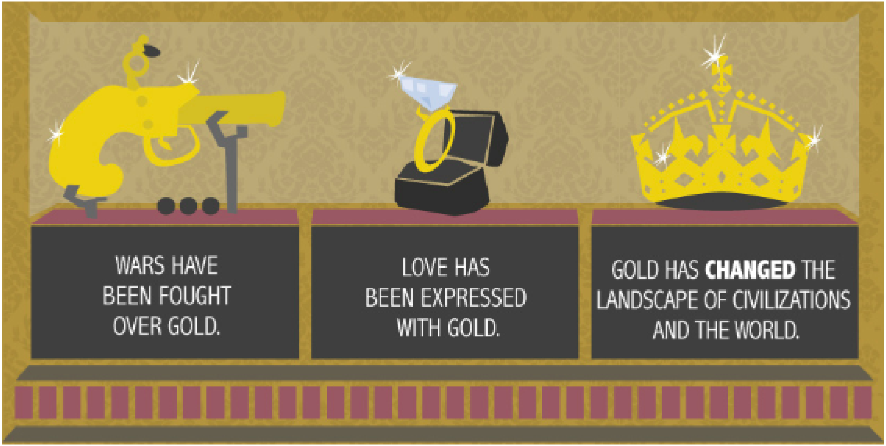
History of Gold: Ancient Times (w)

From 3600 BC to the present day, from deep underground to outer space, gold has been a major factor in the world's development and economy.

1. 3600 BC - First smelting of gold. Egyptian goldsmiths carry out the first melting or fusing of ores in order to separate the metals inside. They use blowpipes made from fire-resistant clay to heat the smelting furnace.
2. 2600 BC - Early gold jewellery. Goldsmiths of ancient Mesopotamia (Iraq) craft one of the earliest pieces of gold jewellery, a burial headdress of lapis and carnelian beads with willow leaf-shaped gold pendants.
3. 1223 BC - Creation of Tutankhamun's funeral mask.
4. 564 BC - First international gold currency created
5. 1300 - Hallmarking practice established
6. 1370 - The Great Bullion Famine begins

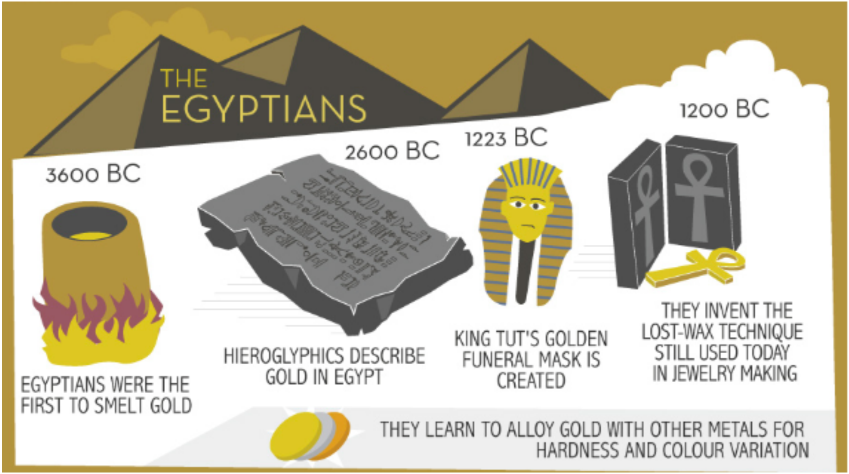
https://www.telegraph.co.uk/finance/newsbysector/industry/mining/8180569/A-history-of-gold.html

What Makes Gold so Great? (w)



https://www.visualcapitalist.com/gold-series-history-gold/

History of Gold: The Egyptians

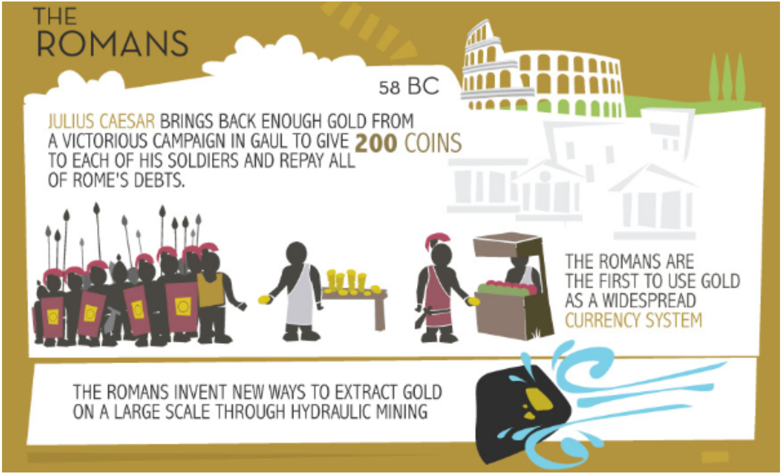


https://www.visualcapitalist.com/gold-series-history-gold/

History of Gold: The Lydians, Chinese, and Greeks

https://www.visualcapitalist.com/gold-series-history-gold/

History of Gold: The Romans



https://www.visualcapitalist.com/gold-series-history-gold/

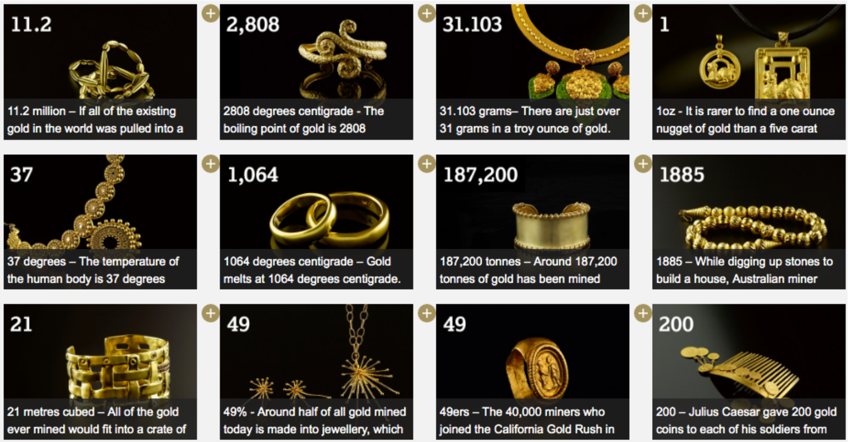
History of Gold: The Spanish

https://www.visualcapitalist.com/gold-series-history-gold/

Gold as Money: A Periodic Perspective (w)

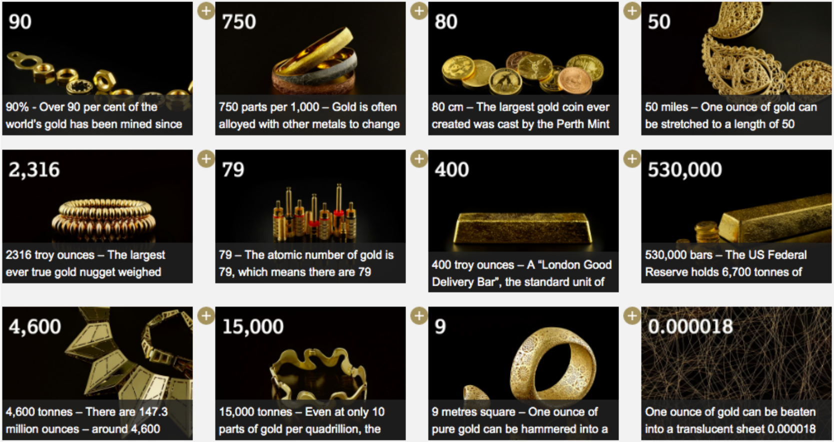
https://www.visualcapitalist.com/why-gold-is-money-a-periodic-perspective/

Gold Numbers and Facts (w)



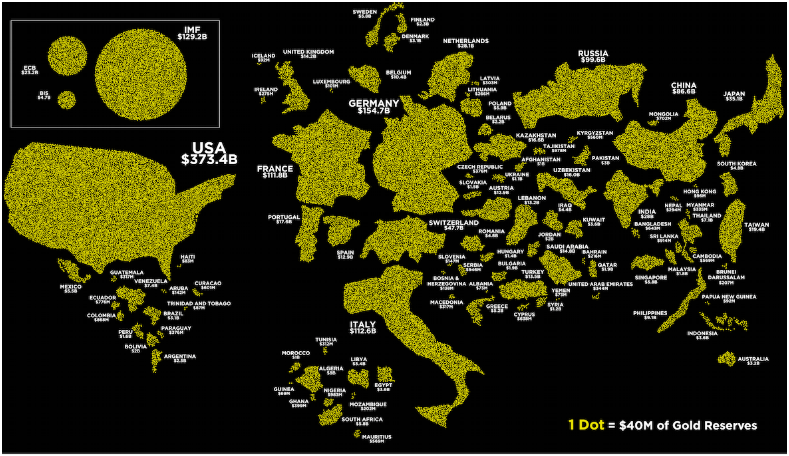
https://www.gold.org/about-gold/gold-facts

Gold Numbers and Facts (w)



https://www.gold.org/about-gold/gold-facts

Global Gold Reserves (w)



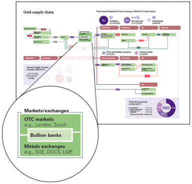
Note: International Monetary Fund (IMF), European Central Bank (ECB) and the Bank of International Settlements (BIS) are holding the gold reserves in values of $129.2B, $23.2B and $4.7B respectively. Gold Price Retrieved on 05/06/20019
How to read this map: Countries appear bigger as their gold reserves are bigger. E.g. United States. Conversely, countries that have smaller reserves of gold appear smaller. E.g. Guinea

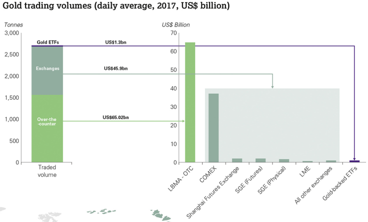
Article & Sources:
https://howmuch.net/articles/gold-reserves-around-the-world | World Gold Council - https://www.gold.org | Yahoo Finance - https://finance.yahoo.com

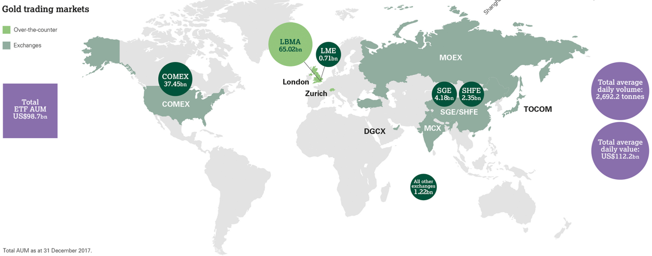
howmuch.net

Outline

Global Gold Market Overview

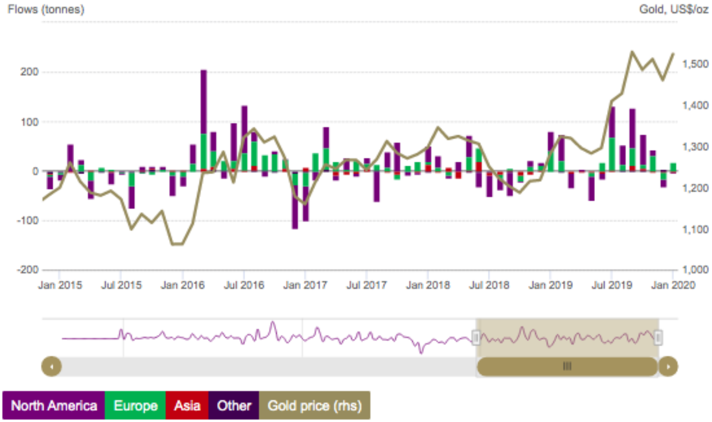






https://www.gold.org/about-gold/market-structure-and-flows

Global Gold-Backed ETFs (w)



Data as of 31 December, 2019

Sources: Bloomberg, Company Filings, ICE Benchmark Administration, World Gold Council; Disclaimer

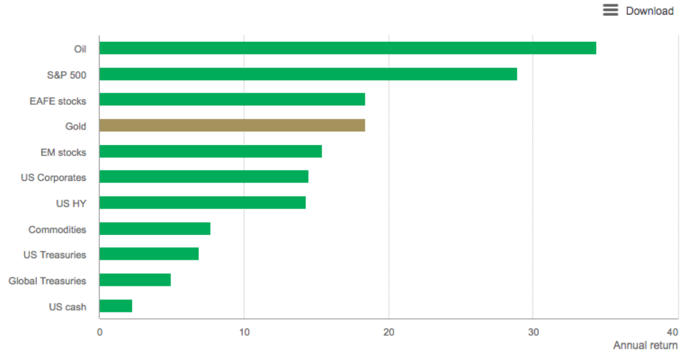
Gold Market Prices 1970-2020 (w)

Data as of 20 August, 2020

Sources: FastMarkets, ICE Benchmark Administration, Thomson Reuters, World Gold Council; Disclaimer

Gold Asset Returns 2019 (w)

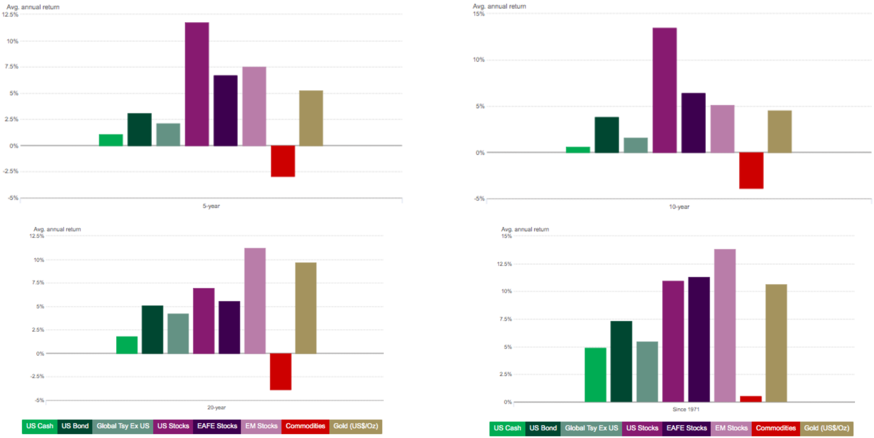
Annual performance of major global assets *



Sources: Bloomberg, ICE Benchmark Administration, World Gold Council; Disclaimer

*As of 31 December 2019. Annual returns based on the LBMA Gold Price, Bloomberg Barclays US Treasury Index and Global Treasury Index ex US, ICE BAML US 3-month Tbill Index, Bloomberg Barclays US Corporate and High Yield Indices, MSCI EM Index, Bloomberg Commodity TR Index, MSCI EAFE Index, S&P 500 Indices, and Bloomberg Oil TR Index.

Global Financial Asset Performance (w)

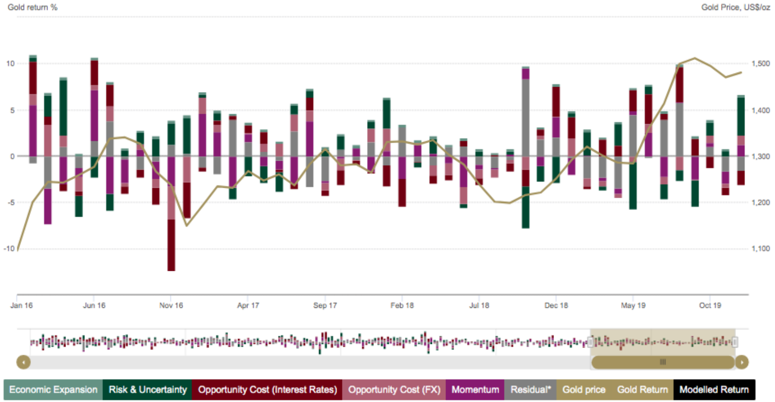


https://www.gold.org/goldhub/data/long-term-gold-price-drivers

Gold Price Factors (w)

1. Economic Expansion: rising income is associated with higher demand for jewellery, technology and long-term savings.
2. Risk and Uncertainty: market downturns often boost investment demand for gold as a safe haven asset. Market risk can be captured by relative equity/bond flows, implied gold volatility, Federal reserve assets, the price of crude and break-even inflation.
3. Opportunity Cost: the perceived relative value of competing assets including bonds (interest rates) and currencies influence investor attitudes towards gold. Three variables capture this theme: nominal 10-year Treasury yields, a developed market currency index and an emerging market currency index.
4. Momentum: asset flows and price trends can intensify or diminish gold's performance. Three variables capture momentum and positioning: the lagged return of gold, ETF flows and COMEX futures positioning.

Gold Price Short Term Drivers (w)



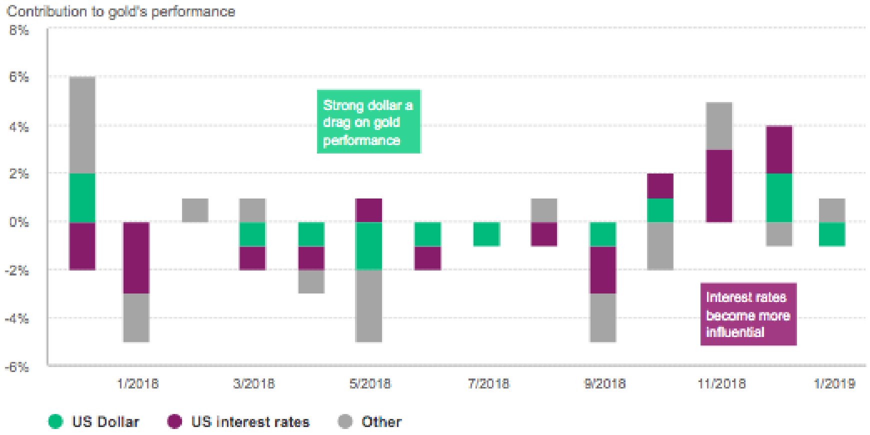
Data as of 31 December, 2019

Sources: Bloomberg, World Gold Council; Disclaimer

* Includes other factors not currently captured by the model.

To understand the gold price return – in the last row of the table - for a given period, sum the component returns above in the appropriate column.

Gold Price and Monetary Policy (w)



Sources: Bloomberg, World Gold Council; Disclaimer

Gold Price and Monetary Policy Cycles (w)

Gold	1999-2001	2004-2007	2015-present
Annualised tightening cycle return	2.2%	20.8%	7.2%
Post-tightening cycle returns			
1m return	-0.6%	7.0%	
3m return	-3.4%	13.1%	
12m return	3.6%	18.8%	

*Based on the performance of the gold spot price.

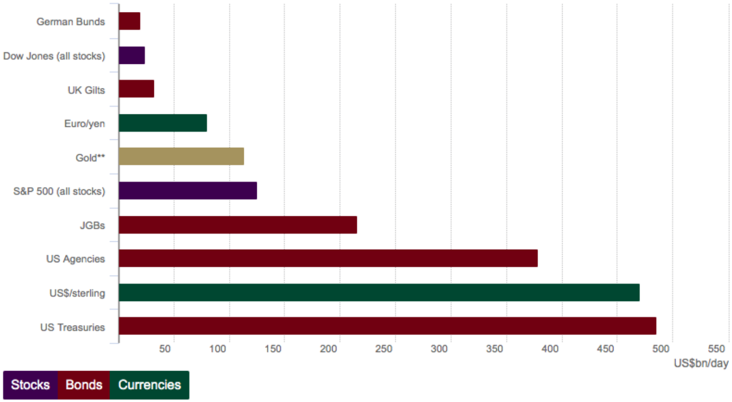
1999 – 2001 represents 30 June 1999 – 2 January 2001

2004 – 2007 represents 30 June 2004 – 17 September 2007

2015 – Present represents 16 December 2015 – 27 February 2019

Source: Bloomberg, World Gold Council

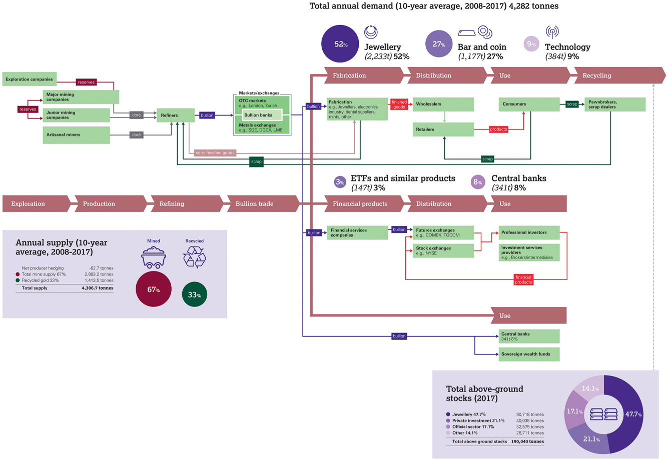
Gold Market Liquidity 2019 (w)



Data as of 31 December, 2018

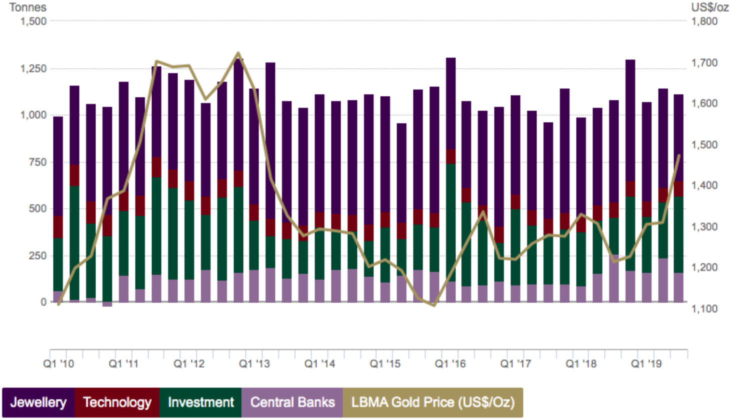
Sources: Bloomberg, Bank for International Settlements, UK Debt Management Office (DMO), Germany Finance Agency, Japan Securities Dealers Association, London Bullion Market Association, World Gold Council; Disclaimer

Gold Market Microstructure



https://www.gold.org/about-gold/market-structure-and-flows

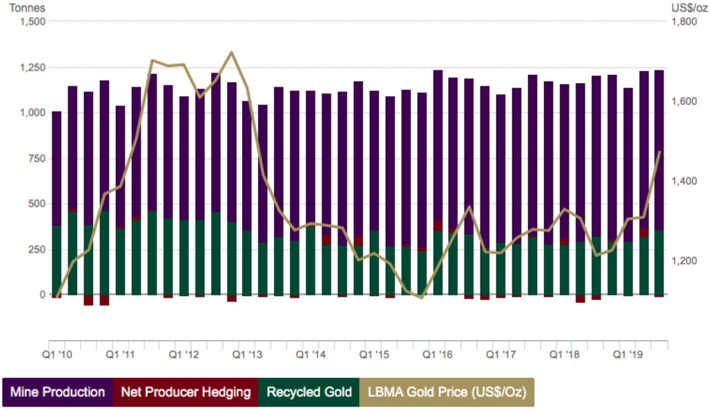
Global Market Demand (w)



Data as of 30 September, 2019

Sources: ICE Benchmark Administration, Metals Focus, Refinitiv GFMS, World Gold Council; Disclaimer

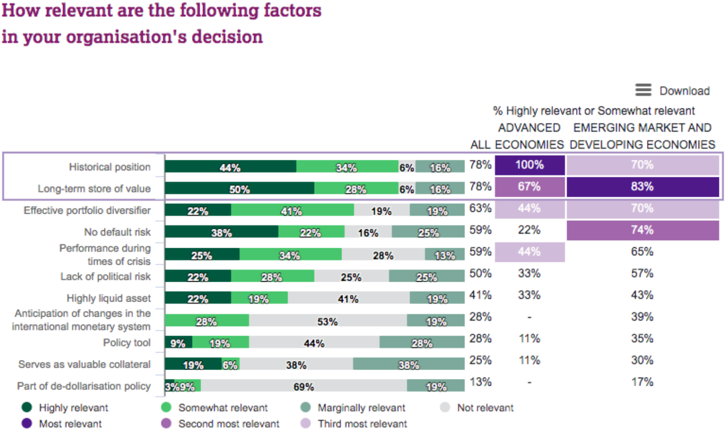
Global Market Supply (w)



Data as of 30 September, 2019

Sources: ICE Benchmark Administration, Metals Focus, Refinitiv GFMS, World Gold Council; Disclaimer

Central Bank Gold Reserve Survey 2019 (w)



Base: All central banks with gold holdings (32); Advanced economies (9); Emerging market and developing economies (23)

https://www.gold.org/goldhub/data/2019-central-bank-gold-reserve-survey

Outline

What was the Gold Standard? (w)

- The gold standard was a commitment by participating countries to fix the prices of their domestic currencies in terms of a specified amount of gold.
- National money and other forms of money (bank deposits and notes) were freely converted into gold at the fixed price.
- England adopted a de facto gold standard in 1717 after the master of the mint, Sir Isaac Newton, overvalued the guinea in terms of silver, and formally adopted the gold standard in 1819.
- Domestic currencies were freely convertible into gold at the fixed price and there was no restriction on the import or export of gold.
- Gold coins circulated as domestic currency alongside coins of other metals and notes, with the composition varying by country.
- As each currency was fixed in terms of gold, exchange rates between participating currencies were also fixed.

Newton and Gold Standard

- Although most famous for discovering the law of gravity, Sir Issac Newton was also a practicing alchemist. He never managed to turn lead into gold, but he did find a way to transmute silver into gold–and in doing so, launched the world economy onto the international gold standard.
- In 1717, New was commissioned to produce a report "On the State of the Gold and Silver Coin." Based on this study, he effectively fixed the value of the guinea at 21 shillings and marked an important step towards the eventual adoption of the world's first formal gold specie standard in 1821, in which money was tied to the value of circulating gold coins.
- Newton, as master of The Royal Mint, set up the new mint ratio that dramatically reduced the amount of silver in circulation, an act which was followed by the introduction of the new gold coin Sovereign.

https://www.worldfinance.com/banking/a-brief-history-of-the-international-gold-standard

Newton and Gold Standard (w)

Money is often considered to be a type of magic, but what kind of alchemy gives currency its value? The gold standard could hold the answers. Thanks to Newton, the pound sterling (named for a pound of silver) switched de facto from a bimetallic standard to a gold standard, which made everything much simpler and remained there for the next 200 years (with wartime interruptions). The gold standard, which Newton inadvertently initiated, was one of the longest-running financial institutions in history.

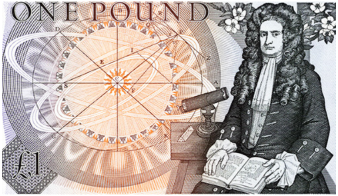
Source: World Finance.

Newton's Contribution (w)

A German stamp honoring Newton singles out his work on optics and includes a mathematical statement of his Second Law of Motion.

The number 21 was like a fundamental constant of nature, which related value to a mass of metal as surely as the law of gravity related mass and gravitational force through the gravitational constant.

The Master of the Mint honored by the U.K. Royal Mint, almost three centuries later after his Gold Standard report.



https://www.uh.edu/engines/epi2380.htm

Mercantilism, Gold Standard, and David Hume (w)

- David Hume (1711-1776), a Scottish philosopher, whose empirical argument against British mercantilism formed a building block for classical economics. His essays on money and international trade published in *Political Discourses* strongly influenced his friend and fellow countryman Adam Smith. https://www.econlib.org/library/Enc/bios/Hume.html
- British mercantilists believed that economic prosperity could be realized by limiting imports and encouraging exports in order to maximize the amount of gold in the home country (a nation's wealth consists of gold).
- The American colonies facilitated this policy by providing raw materials that Britain manufactured into finished goods and reexported back to the colonial consumers in America.
- Before the American Revolution intervened in mercantilistic pursuits, David Hume showed why net exporting in exchange for gold currency, hoarded by Britain, could not enhance wealth.

Price-Specie-Flow Mechanism

- The gold standard contains some powerful automatic mechanisms that contribute to the simultaneous achievement of balance of payments equilibrium by all countries.
- In 1752, Hume described the price-specie-flow mechanism in “Of the balance of trade." He showed that the increase in domestic prices due to the gold inflow would discourage exports and encourage imports, thus automatically limiting the amount of a country’s trade surplus.
- Deficit country $\Rightarrow$ gold outflow $\Rightarrow$ money supply decline $\Rightarrow$ deflation $\Rightarrow$ deficit improves; Surplus country $\Rightarrow$ gold inflow $\Rightarrow$ money supply increase $\Rightarrow$ inflation $\Rightarrow$ surplus declines
- Hume explained that an increased flow of gold into England would not necessarily increase its wealth substantially due to rising domestic prices for exports. Hume’s argument was essentially the quantity theory of money: prices in a country change directly with changes in the money.

Classical Gold Standard: 1870-1914

The classical Gold Standard existed from the 1870s to the outbreak of the First World War in 1914. In the first part of the 19th century, once the turbulence caused by the Napoleonic Wars had subsided, money consisted of either specie (gold, silver or copper coins) or specie-backed bank issue notes.

- 1717, England de facto; 1819, England de jury
- 1854, Portugal; 1871, Germany; 1873, France
- 1879, U.S. de facto; 1990, de jury (1837-1865 Bimetallic standard)
- 1900, all countries apart from China, and some Central American countries, were on a Gold Standard.
- 1914-1918, World War I, broke down
- 1919, U.S. returned; 1933, left; 1934, returned again
- 1925-1931, briefly reinstated as the Gold Exchange Standard

Interwar Gold Standard: 1925-1939 (w)

1. 1925 - Gold standard returns. The UK returns to the gold standard at pre-war parity of $4.86=£1 with sterling convertible to gold at 77sh 10.5d per standard ounce. This follows the country's departure from the gold standard six years previously at the outbreak of the WWI.
2. 1933 - Roosevelt suspends gold. President Roosevelt suspends US dollar convertibility to gold (gold at US$20.67/oz). The export of all transactions in, and the holding of gold by private individuals, is forbidden. Presidential proclamation makes the dollar convertible again in January 1934 at a new price of $35 per troy ounce.
3. 1939 - WWII closes gold market. The London gold market is closed on the outbreak of war, as at the beginning of the Second World War. The world will later return to a fixed system of exchange rates, this time with currencies fixed to the dollar and the dollar convertible into gold.

https://www.telegraph.co.uk/finance/newsbysector/industry/mining/8180569/A-history-of-gold.html

Gold Standard Monetary System: Mechanics (w)

- Domestic standard: regulates the quantity and growth rate of a country's money supply according to it gold reserves. Because new production of gold would add only a small fraction to the accumulated stock, and because the authorities guaranteed free convertibility of gold into nongold money, the gold standard ensured that the money supply, and hence the price level, would not vary much.
- International standard: a fixed domestic price for gold determines the value of a country's currency in terms of other countries' currencies. Because adherents to the standard maintained a fixed price for gold, rates of exchange between currencies tied to gold were necessarily fixed.
- Comovement: Because exchange rates were fixed, the gold standard caused price levels around the world to move together. This occurred mainly through an automatic balance-of-payments adjustment process.

https://www.econlib.org/library/Enc/GoldStandard.html

Gold Standard Monetary System: Rules of the Game (w)

For the gold standard to work fully, central banks, where they existed, were supposed to play by the "rules of the game." The exemplar of central bank behavior was the Bank of England, which played by the rules over much of the period between 1870 and 1914.

1. Whenever Great Britain faced a balance-of-payments deficit and the Bank of England saw its gold reserves declining, it raised its "bank rate."
2. By causing other interest rate in the United Kingdom to rise as well, the rise in the bank rate was supposed to cause the holdings of inventories and other investment expenditures to decrease.
3. These reductions would then cause a reduction in overall domestic spending and a fall in the price level.
4. At the same time, the rise in the bank rate would stem any short-term capital outflow and attract short-term funds from abroad.

https://www.econlib.org/library/Enc/GoldStandard.html

Gold Standard Monetary System: Rules of the Game (w)

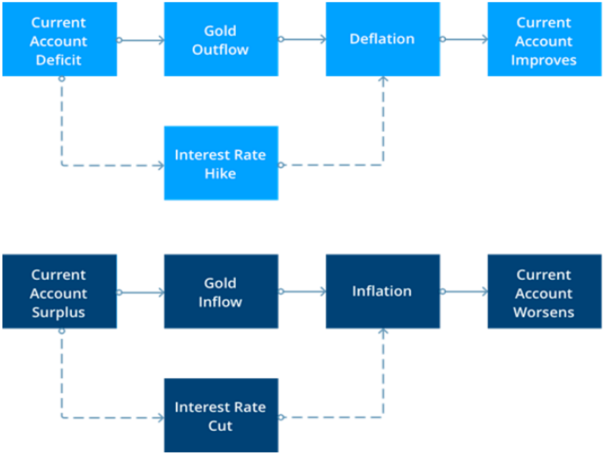
Central banks had two overriding monetary policy functions under the classical Gold Standard. https://www.gold.org/about-gold/history-of-gold/the-gold-standard

1. Maintaining convertibility of fiat currency into gold at the fixed price and defending the exchange rate.
2. Speeding up the adjustment process to a balance of payments imbalance, although this was often violated.

In history, most countries on the gold standard, notably France and Belgium, did not fully follow the rules of the game. They never allowed interest rates to rise enough to decrease the domestic price level. Also, many countries frequently broke the rules by "sterilization"–shielding the domestic money supply from external disequilibrium by buying or selling domestic securities.

https://www.econlib.org/library/Enc/GoldStandard.html

External Adjustment under Gold Standard



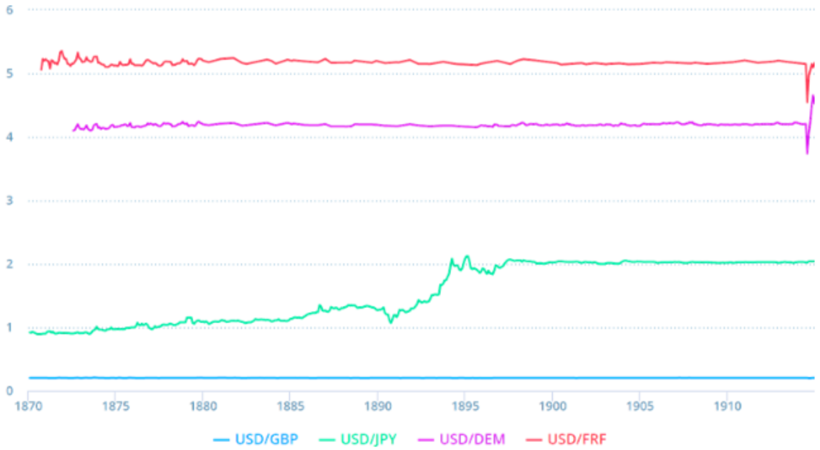
https://www.winton.com/longer-view/history-of-modern-international-monetary-system

Gold Standard Monetary System: Benefits and Costs (w)

- Long-run price stability: The period from 1880 to 1914 is known as the classical gold standard. It was also a period of unprecedented economic growth with relatively free trade in goods, labor, and capital.
- Short-run price fluctuation. Periodic surges in the world's gold stock, such as the gold discoveries in Australia and California around 1850, caused price levels to be very unstable in the short run.
- The fixed exchange rate under the gold standard caused both monetary and nonmonetary (real) shocks to be transmitted via flows of gold and capital between countries. Real output is more variable under the gold standard. Unemployment is higher during the gold standard years.
- The resource cost of producing gold: Milton Friedman estimated the cost of maintaining a full gold coin standard for the United States in 1960 to be more than 2.5 percent of GNP.

https://www.econlib.org/library/Enc/GoldStandard.html

Economic Performance: Exchange Rates



https://www.winton.com/longer-view/history-of-modern-international-monetary-system

Economic Performance: Inflation Rates

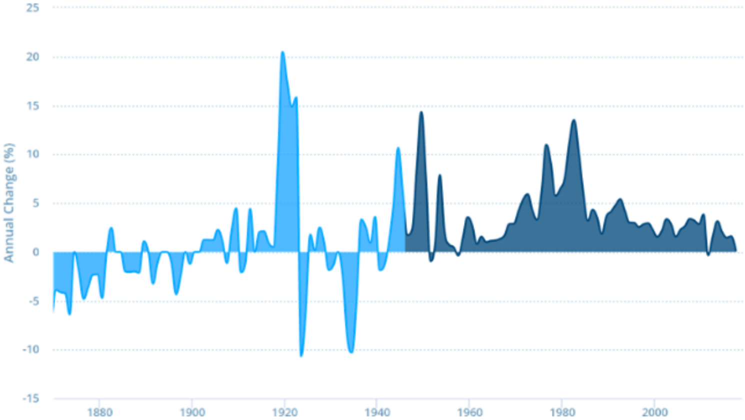


Figure 7. The gold standard era in the US is indicated by the light blue area; Bretton Woods is indicated by the dark blue area. Note how deflation was more prevalent under the gold standard than thereafter.

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Economic Performance: Industrial Production

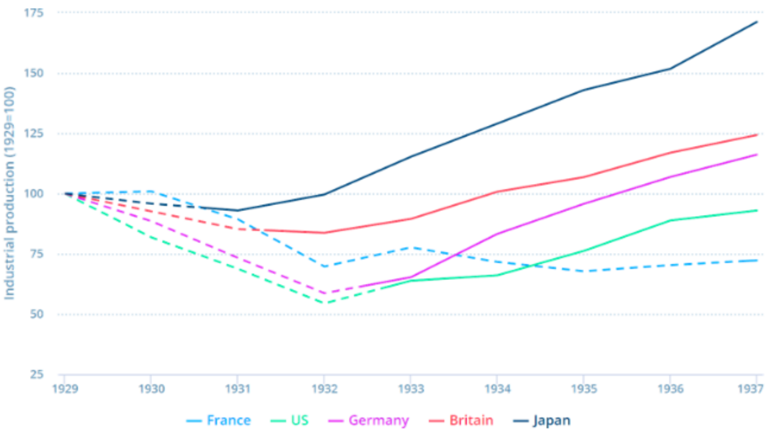

Figure 8. Most industrial countries returned to growth after ditching the gold standard (i.e. when the dashed lines become solid).

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Economic Performance: Real GDP Growth

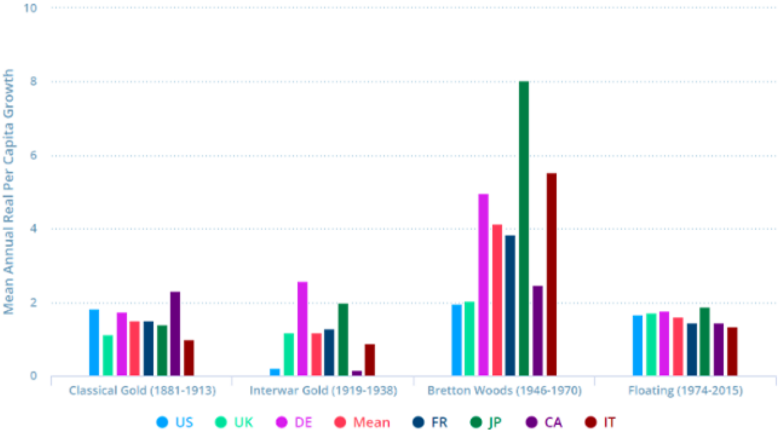

Figure 11. Real per capita growth by monetary regime, G7.

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Outline

The Golden Era (w)

- From the 1870s until World War I, the United Kingdom served as the leading financial and banking center of the world, while gold ruled as the monetary standard of all the major trading countries.
- Each country pegged its currency to gold at a constant and unchanging rate. The international gold standard system ushered in a period of unprecedented stability and prosperity–at least for the middle and upper classes in the industrial countries.
- The gold standard provided monetary discipline. Technological advances in the nineteenth century produced more goods and created more efficient ways of transporting them across national borders.
- Governments increasingly recognized the need for easy and convenient currency convertibility. In the 1870s, Germany and other major trading countries followed its lead and converted to the gold standard.

Source: IMF Exhibit – Money Matters.

Economic Meltdown during the WWI (w)

- World War I marked the end of an economic era. Faced with an urgent need for more liquidity, the combatant countries took their currencies off the stabilizing gold standard and printed more money. This triggered high inflation, which persisted after the war.
- The postwar settlement, known as the Treaty of Versailles, exacerbated tensions and economic instability rather than fostering growth and cooperation. The European allies, especially France and the United Kingdom, felt that the losers should compensate them for the cost of the war by paying reparations.
- In 1921, Germany's reparations alone were fixed at 132 billion gold marks almost twice its prewar national income.
- Governments were forced to stop redeeming their currencies for gold, since they had to print so much paper money to pay for the war.

Source: IMF Exhibit – Money Matters.

Economic Consequence of the WWI

- The defeated countries had no gold to pay their reparations. Their economies were exhausted, and the peace terms offered little hope of earning gold through exports.
- Without the reparations money, the allies could not repay their war loans from the United States. The United States refused to cancel the allies' debts, insisting that the loans represented commercial transactions.
- Finally, the German, Austrian, Hungarian, Polish, and Bulgarian monetary systems collapsed under runaway inflation called hyperinflation.
- The United States loaned money to Germany through the Dawes Plan. This loan, along with private investment, enabled the defeated countries to make scaled-down reparations payments.
- However, the victors collected only a small fraction of the reparations, and the U.S. eventually had to cancel the remaining debts of its allies.

Source: IMF Exhibit – Money Matters.

Heading for the Global Depression (w)

- Normalcy returned with the reestablishment of the gold standard in the mid-1920s, but imbalances plagued the monetary system. The prewar fixed exchange rates no longer reflected the relative economic strengths of the major countries:
- By the end of the 1920s, economic and financial troubles had spread around the world. A decline in prices of primary products devastated the economies of such countries as Argentina, Australia, and Chile.
- Beginning in 1928, Americans cut back on their investments abroad to capitalize on the booming U.S. stock market. The loss of capital hurt first Germany, which counted on US investments to pay its war reparations, and then the European victors, who relied on Germany's reparations to repay their own war debts.
- The 1929 US stock market crash left the United States in financial chaos and accelerated the withdrawal of capital from abroad.

Great Depression and Beggar-Thy-Neighbor Policies (w)

- Trade, production, and employment rates fell throughout the world in a dizzying spiral. The Great Depression had arrived. How would the world respond? Instead of cooperating with one another, countries tried to solve their economic problems unilaterally.
- To protect domestic industry: Governments devalued their currencies to make their exports cheaper for foreign buyers and to make imports more expensive for their own citizens; Governments also raised tariffs to make imports more expensive for their own citizens.
- By selling more and buying less abroad, countries should have created jobs at home and improved their balance of payments positions. But one country's exports are another's imports, so these policies, adopted by many countries at the same time, only succeeded in drastically decreasing world trade and worsening the depression.

Source: IMF Exhibit – Money Matters.

Global Depression and Failed Coordination (w)

- Austria's largest bank, the Vienna Kreditanstalt, collapsed in May 1931. Banking panic spread into Germany and Hungary and eventually forced the United Kingdom off the gold standard. Other countries soon followed in abandoning gold.
- A World Monetary Conference was held in London in the summer of 1933, in hopes that a cooperative effort to restore prosperity might succeed where unilateral attempts had failed.
- The organizers sought agreement on: 1) Restoring the gold standard; 2) Reducing tariffs, import quotas, and other barriers to trade; 3) General international coordination of economic policies.
- Unfortunately, the conference failed. Participants could not come to any significant agreement. The political consequences of the mistakes made after World War I and during the Depression included the rise of totalitarianism and the outbreak of World War II.

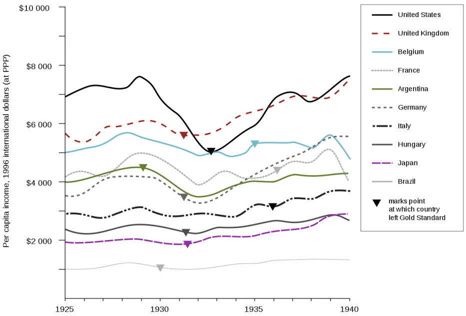
Great Depression: Economic Consequences (w)

The results of the world's failure to cooperate were devastating. Continued unilateral efforts by individual countries only succeeded in deepening and prolonging economic woe.

- World unemployment peaked at nearly 30% in 1932 and remained in double digits through the decade.
- German and US production dropped to 53% of their 1929 levels.
- One nation after another abandoned the gold standard in the 1930s.
- Regional trading blocs and bilateral clearing arrangements replaced multilateral trade, making international trade more difficult.
- Closed currency blocs replaced the international gold standard, further inhibiting trade.
- At its lowest point, total world trade sank to just 35% of its 1929 value.

Gold Standard and Great Depression (w)

Some economic historians, such as Barry Eichengreen, blame the gold standard of the 1920s for prolonging the economic depression which started in 1929 and lasted for about a decade. In the US, adherence to the gold standard prevented the Federal Reserve from expanding the money supply to stimulate the economy, fund insolvent banks and government deficits. Once off, it became free to engage in such money creation. The gold standard limited the flexibility of the central banks' monetary policy.



Source: Wikipedia. Off the gold standard and economic recovery during the Great Depression for selected countries.

Economic Consequence of WWII (w)

- By the end of World War II, much of Europe and Asia, and parts of Africa, lay in ruins. Combat and bombing had flattened cities and towns, destroyed bridges and railroads, and scorched the countryside. The war had also taken a staggering toll in both military and civilian lives.
- Shortages of food, fuel, and all kinds of consumer products persisted and in many cases worsened after peace was declared. War-ravaged Europe and Japan could not produce enough goods for their own people, much less for export.
- In addition to the toll in human lives and suffering, countries spent more money on World War II than in all previous wars put together. By 1945, exhausted countries faced severe economic problems that frustrated reconstruction efforts: 1) Inflation; 2) Debt (mostly owed to the United States); 3) Trade deficits; 4) Balance of payments deficits; 5) Depleted gold and dollar supplies.

Source: IMF Exhibit – Money Matters.

Monetary System Chaos after WWII (w)

- By 1947, the United States had accumulated 70% of the world's gold reserves. The United Kingdom had gone from being the world's greatest creditor to the world's greatest debtor.
- War-scarred countries had sold off most of their gold and dollar reserves, as well as their foreign investments, to pay for the war. Trade deficits meant there was little hope of replenishing remained reserves.
- The devastated countries needed gold or U.S. dollars (the only currency considered to be "as good as gold") to pay for imports and make debt payments. However, both dollars and gold were alarmingly scarce.
- Severe inflation plagued the weakened economies. By 1948, wholesale prices were 200% higher in Austria, 1,820% higher in France, and a massive 10,100% higher in Japan than they had been before the war. In 1948, the French government devalued the franc by 80%, making a 5,000 franc note practically worthless. In some countries like Germany, the monetary system collapsed. People resorted to barter with cigarettes.

Road to Cooperation at Bretton Woods (w)

- The desire for economic cooperation stemmed from fear of repeating the post-World War I mistakes that had led to inflation, financial instability, and the Great Depression.
- Travel to the United States was difficult and treacherous in the midst of the war, but, incredibly, representatives from 44 countries managed to gather for a conference at Bretton Woods in New Hampshire. Their ambitious goal was to design the framework for postwar international economic cooperation.
- While World War II still raged, Allied policy makers debated several plans for international monetary stability: 1) The U.S. proposal by Harry Dexter White; 2) The U.K. proposal by John Maynard Keynes; 3) Proposals from France and Canada.

Source: IMF Exhibit – Money Matters.

Post WWII Design of International Monetary System (w)

Source: IMF Exhibit. At Bretton Woods, Keynes called for an International Currency Union, which would function as a "central bank" for the central banks of each country. White called for a fund to which all member countries would contribute. Both agreed on fixed, but adjustable, exchange rates based on gold.

New Economic World Order after WWII (w)

The Bretton Woods meeting (July 1-22, 1944) resulted in the founding of the IMF and the World Bank, twin intergovernmental pillars supporting the structure of the world's economic and financial order.

1. The International Monetary Fund (IMF) was charged with
   - Helping each country set a fixed, but changeable, exchange rate for its currency based on gold
   - Assisting members that have temporary balance of payments difficulties by providing short and medium term credit
   - Overseeing the international monetary system
2. The World Bank: finances economic development.
3. General Agreement on Trade and Tariffs (GATT).

Soon after, delegates met at Dumbarton Oaks in Washington, D.C., and set up the United Nations.

Source: IMF Exhibit – Money Matters.

Economic Recovery Tested after WWII (w)

- The economic situation looked grim in 1947. Many hoped that the United States would provide economic aid to help resolve the crisis. In contrast to the other combatants, the United States ended the war as the world?s greatest creditor, with most of the world?s gold, a substantial balance of payments surplus, and virtually no physical damage to its own land.
- Desperate countries could gain the dollars they needed only through: 1) Exporting more than they imported (balance of trade surplus); 2) Private investments or loans from the U.S.; 3) U.S. government aid or loans.
- However, the devastation caused by the war eliminated any hope of a trade surplus. Chaos and uncertainty in the European economies discouraged private US investments. It seemed that only additional government aid or loans could work.

Source: IMF Exhibit – Money Matters.

Outline

International Monetary System since Bretton Woods (w)

José Antonio Ocampo, 2017, CH1, Resetting the International Monetary (Non) System. Oxford Online. $DOI: 10.1093/oso/9780198718116.003.0001$

- The 1944 Bretton Woods Conference, which created the International Monetary Fund and the International Bank for Reconstruction and Development, was a major landmark in international cooperation.
- However, the Bretton Woods system came under increasing pressure in the 1960s due to the lack of a reliable adjustment mechanism to manage payment imbalances as well as the persistent asymmetries in the balance-of-payments pressures faced by surplus and deficit countries.
- In 1971 the system effectively collapsed when the US government suspended convertibility of dollars into gold for other central banks–a decision that would prove to be permanent.

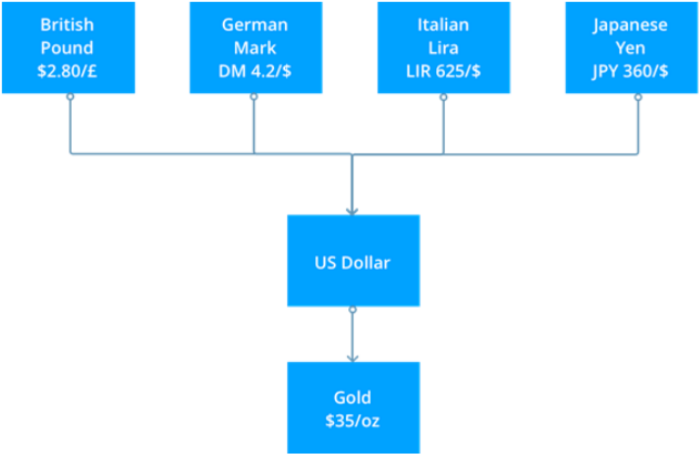
The Bretton Woods System 1944-1971 (w)

Source: DailyFX.

Bretton Woods System: Mechanism (w)

- Under Bretton Woods, countries pegged their currencies to the dollar at specified parities, which in turn was convertible into gold at the official rate of $35/oz. However this only applied to dollars held by central banks and governments and not by private citizens.
- The US provided price stability but did not engage in foreign exchange intervention. Other countries intervene to peg their currency to the dollar.
- These pegs were intended to be adjustable and were accompanied by tight capital controls that were designed to prevent speculative attacks and afford central banks a modicum of policy independence.
- In the event that any balance of payments problems arose, the IMF stood ready to extend credits to the affected nation(s). In sum, the system was intended to marry flexibility and stability, overcoming the inadequacies of the Classical Gold Standard.

Exchange Rate Arrangement under Bretton Woods (w)



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Post WWII Dollar Shortage (w)

- War devastation left most of Europe in need of tremendous amounts of goods for reconstruction. Damage to farms and industries and loss of trained workers made countries unable to produce enough consumer goods to maintain prewar living standards or to restore their exports.
- The United States, along with other American nations which ordinarily require payment in dollars, offered the only productive capacity that could meet Europe's emergency demands.
- The "dollar shortage" results from the demand of countries in the rest of the world for more imports from the U.S. and other dollar area countries than they were able to "earn" by the sale of goods and services for dollars or for gold, which is convertible into dollars.
- Over $9 billion had been spent already on aid to Europe in the immediate postwar period. Still, the U.S. must act for security, humanitarian, and economic reasons.

Source: Dollar Shortage. CQ research archives.

European Recovery and the Marshall Plan (w)

- The Marshall Plan, through its generous provision of grants, was designed to facilitate the European recovery.
- The program helped Europe to 1) Finance its imports and debts without the burden of future repayment; 2) Replace, rebuild and expand both private industry and public infrastructure; 3) Eliminate bottlenecks in production; 4) Restore consumption to a politically acceptable level; 5) Establish and fund the European Payments Union to promote multilateral, rather than bilateral, trade; 6) Eliminate the worldwide dollar shortage.
- Sixteen European countries responded by cooperating on a general reconstruction plan that was accepted by the United States. In the end, a total of $13.6 billion (equivalent to $88 billion in 1997 money) was appropriated to the plan.
- The Marshall Plan was a success. By 1950, the participating countries had returned to, or exceeded, their prewar production levels.

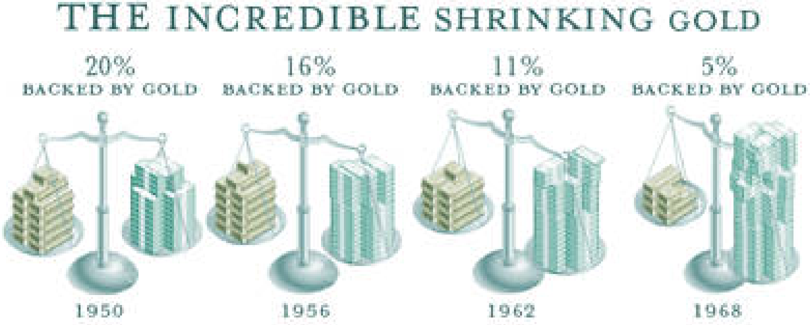
U.S. Dollar Fueling the Economy (w)

- Even after Marshall Plan aid ended, the United States continued to provide economic assistance to other countries. In addition, as the "Cold War" heated up, US military expenditures abroad rose, particularly during the country's involvement in the Korean War (1950-53).
- And even more important, US investment abroad grew substantially after World War II. The outflow of US dollars provided liquidity, which fueled the growing world economy.
- IMF loans: Egypt's 1956 takeover of the Suez Canal provoked an unsuccessful and costly joint U.K.-French military operation. The United Kingdom and France suffered severe financial consequences as a result. They turned to the IMF, which provided them with its largest financial assistance to date ($262 million to France and $1.2 billion to the U.K.).
- The continuous outflow of US dollars helped reduce Europe's balance of payments deficit and the worldwide dollar shortage.

Overflowing Dollar and Shrinking Gold Supply (w)

- While the total number of U.S. dollars circulating in the United States and abroad steadily grew, the U.S. gold reserves backing those dollars steadily dwindled. International financial leaders suspected that the United States would be forced either to devalue the dollar or stop redeeming dollars for gold.
- The dollar problem was particularly troubling because of the mounting number of dollars held by foreign central banks and governments:
- In 1966, foreign central banks and governments held over 14 billion U.S. dollars. The United States had $13.2 billion in gold reserves, but only $3.2 billion of that was available to cover foreign dollar holdings. The rest was needed to cover domestic holdings.
- If governments and foreign central banks tried to convert even a quarter of their holdings at one time, the United States would not be able to honor its obligations.

Source: Dollar Shortage. CQ research archives.



Source: IMF Exhibit - Money Matters.

Post WWII Dollar Glut (w)

- Increasingly, the IMF and the international community realized that the Bretton Woods system - based on the gold standard and using dollars as the main reserve currency - had a serious flaw. The postwar "dollar gap" abroad had become a "dollar glut" by 1960.
- The United States enjoyed the benefits of being able to spend money freely, such as acquiring commodities and consumer products from abroad. In addition, the U.S. foreign-policy goal of containing Communism in the face of the Cold War and decolonization kept the dollars flowing.
- Continuous U.S. balance of payments deficits during the 1950s had provided the world with liquidity, but had also caused dollar reserves to build up in the central banks of Europe and Japan. As the central banks redeemed these dollars for gold, the U.S. gold reserves dipped dangerously low.

Source: IMF Exhibit – Money Matters.

Remedies but not Overhaul (w)

In the early 1960s, the world searched for ways to remedy the flawed Bretton Woods system of a fixed dollar-gold exchange rate:

1. Western Europe and the United States cooperated to try to support the price of gold in the face of strains caused by speculators and hoarders.
2. The U.S. adopted policies aimed at slowing the flow of dollars abroad.
3. The IMF focused on adding liquidity without relying on gold or dollars. A new reserve asset, the SDR, was created to increase the total world money supply.

Could these efforts save the Bretton Woods international monetary system, or were its flaws so fundamental that a complete overhaul was needed?

Source: IMF Exhibit – Money Matters.

Triffin's Dilemma (w)

- Testifying before the U.S. Congress in 1960, economist Robert Triffin exposed a fundamental problem in the international monetary system.
- If the United States stopped running balance of payments deficits, the international community would lose its largest source of additions to reserves. The resulting shortage of liquidity could pull the world economy into a contractionary spiral, leading to instability.
- If U.S. deficits continued, a steady stream of dollars would continue to fuel world economic growth. However, excessive U.S. deficits (dollar glut) would erode confidence in the value of the U.S. dollar.
- Without confidence in the dollar, it would no longer be accepted as the world's reserve currency. The fixed exchange rate system could break down, leading to instability.

Source: IMF Exhibit – Money Matters.

Triffin's Solution (w)

Providing reserves and exchanges for the whole world is too much for one country and one currency to bear.

Henry H. Fowler, Former U.S. Treasury Secretary

- Triffin proposed the creation of new reserve units. These units would not depend on gold or currencies, but would add to the world's total liquidity.
- Creating such a new reserve would allow the United States to reduce its balance of payments deficits, while still allowing for global economic expansion.

A fundamental reform of the international monetary system has long been overdue. Its necessity and urgency are further highlighted today by the imminent threat to the once mighty U.S. dollar.

Robert Triffin, 1960

The Special Drawing Rights (SDR) (w)

- Beginning in 1963, discussions on how to solve the international liquidity problem took place within the IMF and among its member nations.
- The Special Drawing Right (SDR) that was finally adopted in 1968 represented a compromise. It was essentially a new reserve unit, rather than additional credit, but because of certain restrictions, it could not be used as freely as gold. SDRs were to be allocated to all participating IMF members, according to the size of their IMF quotas.
- The additional liquidity provided by the SDR was quickly assimilated into the international monetary system. However, by the time the first SDRs were allocated in 1970, the world did not need more liquidity, since the United States had not reduced its balance of payments deficit.
- In fact, precisely in 1970-72, a big jump in the U.S. deficit caused a tenfold increase in members' currency reserves. The SDR was designed to offset a dollar shortage that never materialized.

Flight from the Dollar (w)

- The efforts to mend the Bretton Woods exchange-rate system were no match for the severe exchange-rate crises of the late 1960s. Continual balance of payments deficits finally forced Britain to devalue the pound in 1967. People speculated that the dollar might soon follow. Private holders rushed to exchange their dollars for gold.
- As a result, in 1968, the United States stopped redeeming privately held dollars for gold. Only central banks could still redeem their dollars at the fixed rate of $35 per ounce. Unable to get gold, private holders now sold their dollars for stronger currencies, such as the German mark, the Japanese yen, the Swiss franc, and the Dutch guilder.
- For a time, many central banks, particularly the West German Bundesbank and the Bank of Japan, bought dollars to defend the U.S. currency and keep their own currencies from appreciating. This ended in May 1971, when the central banks began to redeem their dollar reserves for ever greater quantities of U.S. gold. U.S. gold reserves were vanishing. If dollar redemption continued, they would soon be gone!

Source: IMF Exhibit – Money Matters.

Exchange Rates under Bretton Woods

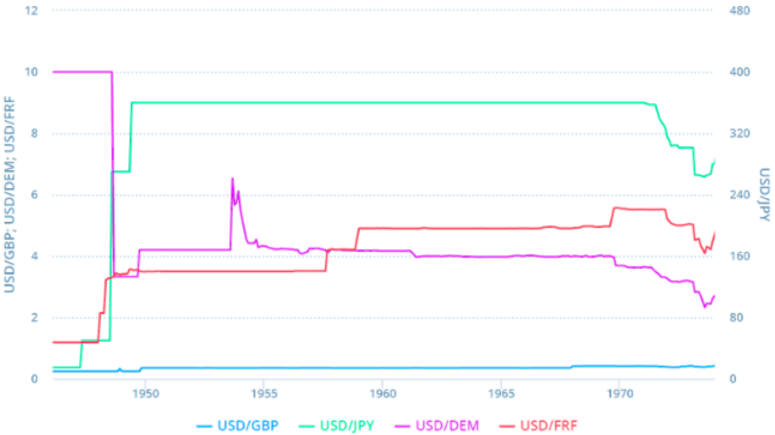


Figure 9. The Pound, Yen, Deutschmark and French Franc against the Dollar

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Real GDP Growth under Bretton Woods

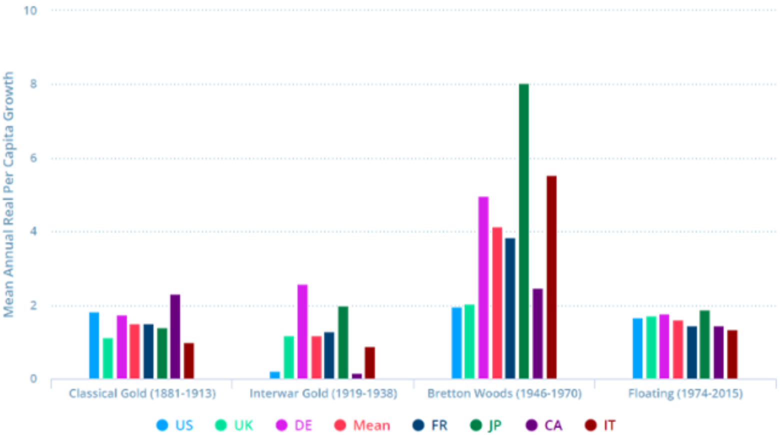

Figure 11. Real per capita growth by monetary regime, G7.

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Federal Reserve Gold Cover Ratio under Bretton Woods (w)

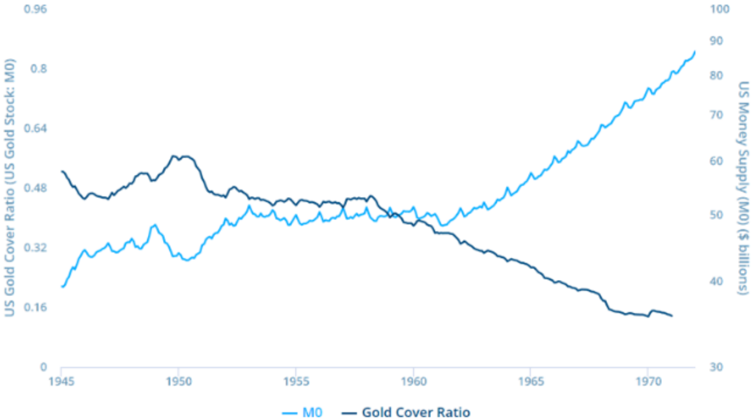

Figure 12. The ratio of dollars to gold held by the Federal Reserve fell during the 1960s, leading to concerns over their supposed convertibility.

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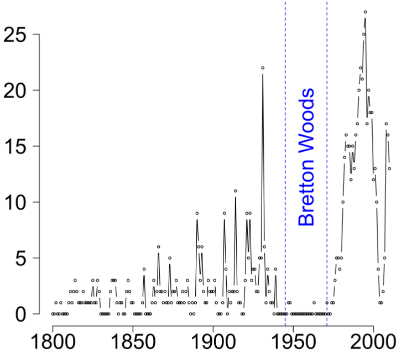
Banking Crisis under Bretton Woods (w)



The graph shows the number of countries having a banking crisis in each year since 1800. The dramatic feature is the virtual absence of banking crises during the period of the Bretton Woods agreement, 1945 to 1971. This analysis is similar in Reinhart and Rogoff (2009).

Source: Wikipedia.

Outline

The Demise of Bretton Woods 1971-73 (w)

- Eventually, in spring 1971, large defections from the dollar to the deutschmark prompted Germany to suspend intervention and allow the mark to float upwards. Once the dollar flight had started, it couldn?t be contained and by mid-August it was reported that France and Britain intended to convert dollars to gold.
- On August 13, President Nixon closed the Fed's gold window, suspending the commitment to provide gold to foreign central banks at $35/oz or any other rate. He also introduced a 10% import surcharge to coerce other countries into revaluing their currencies, so as to avoid the ignominy of devaluing the dollar. These actions are known as the Nixon Shock.
- Thereafter, the dollar's link to gold was severed, dismantling the Bretton Woods system. The financial system that had helped bring a quarter century of prosperity to the industrial world had finally collapsed.

Source: IMF Exhibit – Money Matters.

Bretton Woods System Collapses (w)

- A speculative attack on the sterling forced Britain to float out of its band in 1972, followed by Switzerland in early 1973 and when the dollar was devalued by 10% against the major European currencies in February, dollar flight resumed perforce. Things reached a head in March when the deutschmark and the other EEC currencies floated upwards, delivering the final coup de grace to Bretton Woods.
- During the 1970s, the dollar depreciated as inflation bit and then commenced its dramatic ascent following the 1979-80 Volcker Shock when US interest rates were hiked to unprecedented levels.
- By 1985, the dollar's strength was harming US competitiveness, prompting the US, Japan, Germany, France to sign the Plaza Accord, under which they jointly intervened to lower the dollar. Their intervention was so effective that they had to sign another agreement in 1987 - the Louvre Accord - to stop the further fall of the dollar.

Post Bretton Woods Floating Rate System (w)

In the early 1970s, the international community abandoned the security and discipline of a fixed-rate metal standard. In its place, the world adopted a "floating" system.

1. Free Floating Exchange Rate. The currency's value is determined solely by supply and demand in the market, rather than official policy. Countries generally permit a free float only as a temporary solution, because it could result in excessive fluctuations. Source: IMF Exhibit – Money Matters.
2. Managed Floating Exchange Rate: Similar to a free floating exchange rate, but a government intervenes by buying or selling its own currency to minimize fluctuations. Australia, Canada, Jamaica, Japan, the Philippines, the U.S., and others adopted this type of exchange rate.
3. Currency Peg. Many developing countries pegged their currencies to the SDR or to the currency of an industrial country with which they traded heavily.
4. The European Snake. Each country agreed not to allow its currency to fluctuate more than 1 1/8% up or down from an agreed central exchange rate. The EEC currencies floated jointly against the dollar. The Snake was the forerunner of the European Monetary System, which went into effect in 1979.

Exchange Rates after Washington Consensus (w)

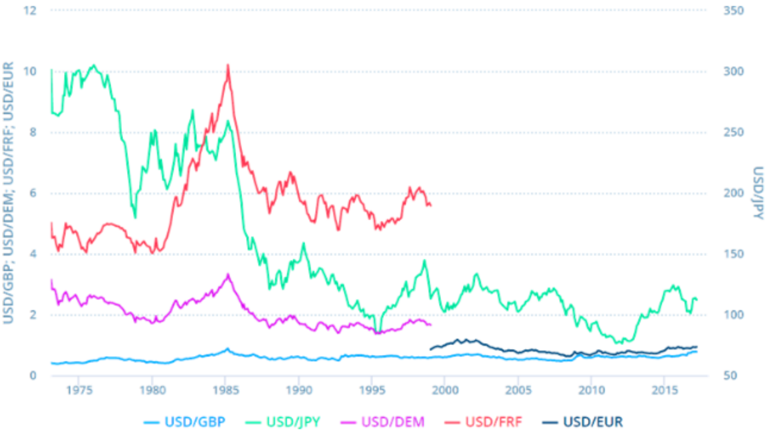


Figure 13. The Pound, Yen, Deutschmark, French Franc and Euro against the Dollar.

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The US Dollar Index after Bretton Woods (w)

Figure 14. US Dollar Index.

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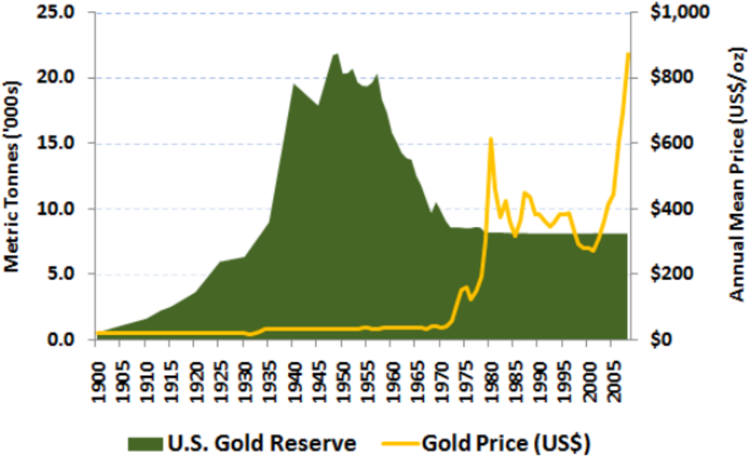
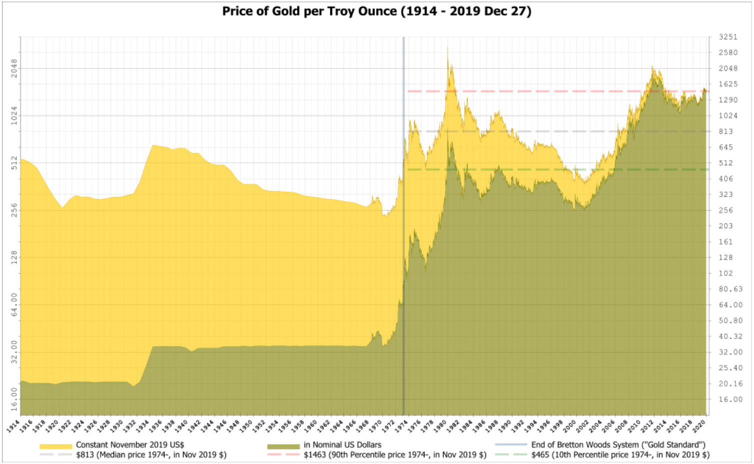
U.S. Gold Reserves 1900-2008 (w)



https://en.wikipedia.org/wiki/Gold-reserve

Gold Prices in the Past Century (w)



Gold prices (US$ per troy ounce) with a line approximately marking the collapse Bretton Woods.

European Monetary System (EMS) 1972-1999

- Seeking exchange rate stability in the wake of the Nixon Shock, Germany and several other European nations created a new system in 1972 dubbed the "Snake in the Tunnel", under which their currencies were kept within 2.25% of each other and a band of 4.5% against the dollar.
- In the absence of an overarching monetary/fiscal authority, strong currency countries such as Germany couldn't be certain that weak currency countries would undertake the necessary policy adjustments to maintain their pegs, so were loath to intervene on their behalf.
- The European Monetary System (EMS) was created by France and Germany in 1979 to resolve these deficiencies.
- In 1991, the EMS members were full of optimism. The EMS had proven resilient to the collapse of the USSR and German reunification. In this spirit, they set out their commitment to monetary union under the Maastricht Treaty.

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European Monetary System (EMS) (w)

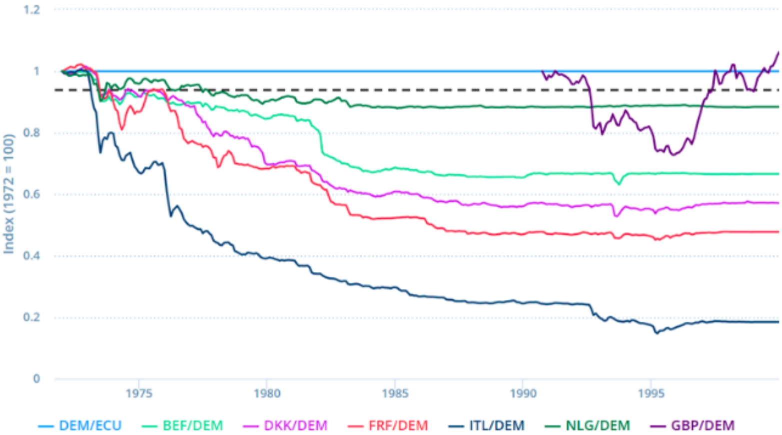

Figure 15. Snake/EMS (1972-99).

https://www.winton.com/longer-view/history-of-modern-international-monetary-system

Launch of Euro and European Interest Rates (w)

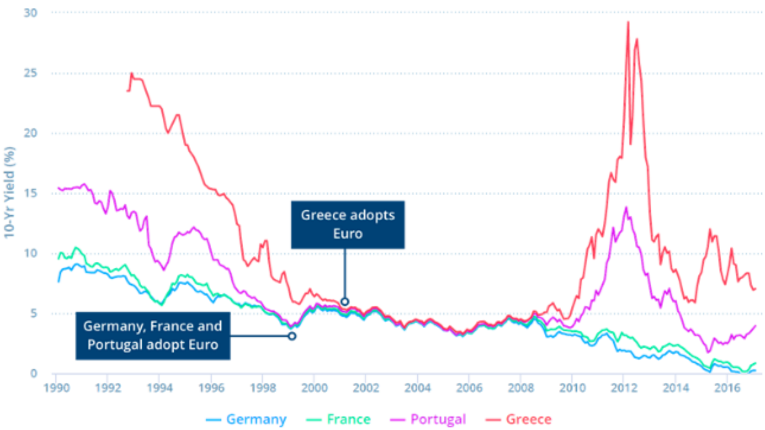

Figure 16. A selection of European long-term interest rates before and after adopting the Euro.

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Bretton Woods II: 2000 - Present (w)

- At the turn of the millennium a new system was emerging, dubbed Bretton Woods II. A savings glut in the Middle East and the Far East was superimposed on a US savings drought, resulting in chronic US current account deficits.
- From the late 1990s, China grew at a phenomenal rate, fuelled by investment of over 40% of GDP. National saving was even higher at 50% of GDP. Middle Eastern oil exporters and other ASEAN countries also had savings gluts.
- The US meanwhile was in the throes of the dot com boom, with investment levels exceeding national savings. The disparity between national investment and savings grew still further when President Bush?s tax cuts reduced US government savings.

https://www.winton.com/longer-view/history-of-modern-international-monetary-system

China Surplus and US Deficit (w)

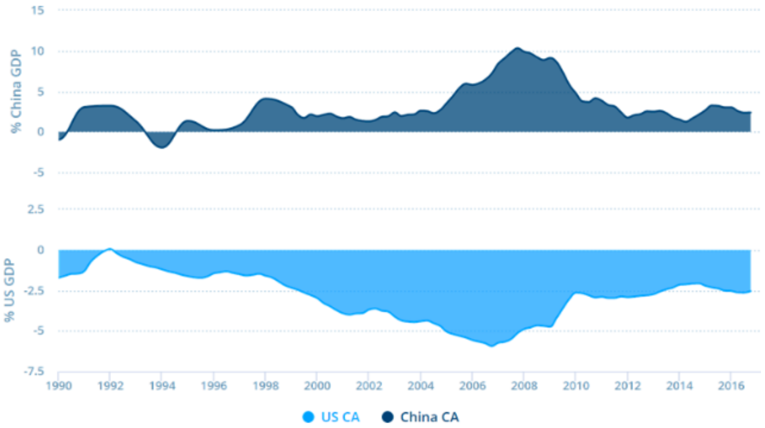

Figure 17. China's current account surpluses cut a stark contrast with the US's deficits.

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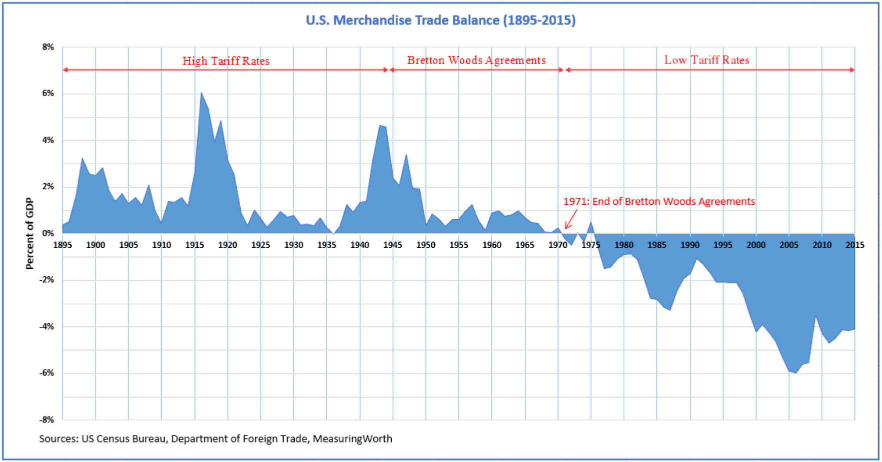
Bretton Woods II: 2000 - Present (w)

- Accordingly, foreign governments parked their excess savings in US assets, chiefly treasuries. This status quo was tolerated by both sides for different reasons.
- Asian export-orientated economies such as China were keen to accumulate dollar reserves to smooth international payments and boost the competitiveness of their manufactured exports by holding down their currencies against the dollar.
- The US on the other hand was able to service its debt more cheaply than would otherwise be the case and its residents were able to live beyond their means, courtesy of the world's developing nations.
- The global imbalances were christened Bretton Woods II in homage the Bretton Woods era when Europe and Japan ran huge surpluses against the US. https://www.winton.com/longer-view/history-of-modern-international-monetary-system

US Trade Balance in the Past Century (w)



The Dollar Hegemon Today

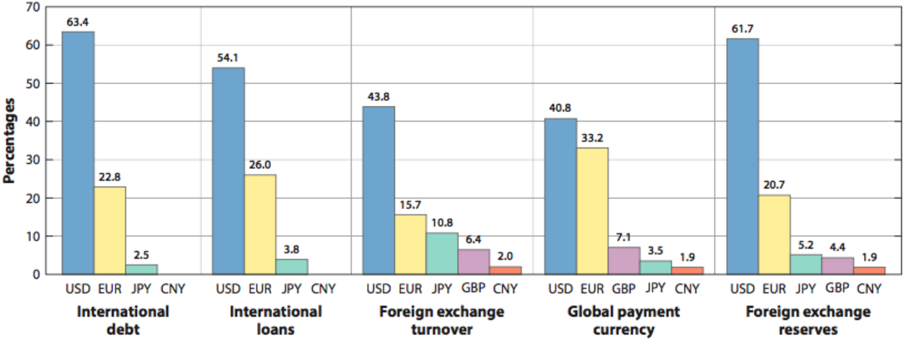
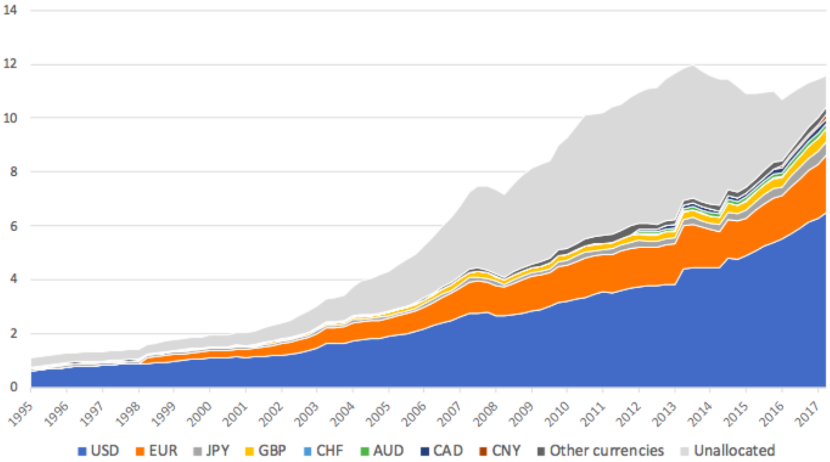


Figure 1

The dominance of the dollar, updated from the European Central Bank (Eur. Cent. Bank 2019, chart 2) and Eichengreen & Xia (2019). Figure constructed using data from BIS, ECB, IMF COFER, and SWIFT.

Source: Pierre-Olivier Gourinchas (2019)

Global Foreign Exchange Reserves (USD in trillions)



Source: Pierre-Olivier Gourinchas (2019)

The Future of Dollar

Richard N. Cooper (2009), The Future of the Dollar. PIIE Policy Brief.

- US dollar is likely to remain the dominant international currency for many years, certainly the next decade and probably longer. Given its initial advantage of wide acceptance, no other currency seems likely to overtake.
- International use of the euro will grow, perhaps even more rapidly than that of the dollar for some years, but...it is not likely to displace the dollar.
- A deliberate international decision to create an alternative global currency could displace the dollar, but that task would confront formidable practical difficulties.
- China is now stuck with its huge amount of dollar holdings for the foreseeable future; there is no low-cost way for China to disgorge them at its own initiative.

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