CHAPTER 13

Metallic Standards

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13.1 Gold Standard

The classical gold standard (which ended in 1914) and the interwar gold standard are examined within the same framework, but their experiences are vastly different.

13.1.1 Types of Gold Standard

All gold standards involve (a) a fixed gold content of the domestic monetary unit, and (b) the monetary authority both buying and selling gold at the mint price (the inverse of the gold content of the monetary unit), whereupon the mint price governs in the marketplace. A 'coin' standard has gold coin circulating as money. Privately owned bullion (gold in form other than domestic coin) is convertible into gold coin, at (approximately) the mint price, at the government mint or central bank. Private parties may melt domestic coin into bullion–the effect is as if coin were sold to the monetary authority for bullion. The authority could sell gold bars directly for coin, saving the cost of coining.

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Under a pure coin standard, gold is the only money. Under a mixed standard, there are also notes issued by the government, central bank, or commercial banks, and possibly demand deposits. Government or central-bank notes (and central-bank deposit liabilities) are directly convertible into gold coin at the fixed price on demand. Commercial-bank notes and demand deposits are convertible into gold or into gold-convertible government or central-bank currency. Gold coin is always exchangeable for paper currency or deposits at the mint price. Two-way transactions again fix the currency price of gold at the mint price.

The coin standard, naturally 'domestic', becomes 'international' with freedom of international gold flows and of foreign-exchange transactions. Then the fixed mint prices of countries on the gold standard imply a fixed exchange rate (mint parity) between their currencies.

A 'bullion' standard is purely international. Gold coin is not money; the monetary authority buys or sells gold bars for its notes. Similarly, a 'gold-exchange' standard involves the monetary authority buying and selling not gold but rather gold-convertible foreign exchange (the currency of a country on a gold coin or bullion standard).

For countries on an international gold standard, costs of importing and exporting gold give rise to 'gold points', and therefore a 'gold-point spread', around the mint parity. If the exchange rate, number of units of domestic per unit of foreign currency, is greater (less) than the gold export (import) point, arbitrageurs sell (purchase) foreign currency at the exchange rate and also obtain (relinquish) foreign currency by exporting (importing) gold. The domestic-currency cost of the transaction per unit of foreign currency is the gold export (import) point; so the 'gold-point arbitrageurs' receive a profit proportional to the exchange-rate/gold-point divergence. However, the arbitrageurs' supply of (demand for) foreign currency returns the exchange rate to below (above) the gold export (import) point. Therefore perfect arbitrage would keep the exchange rate within the gold-point spread. What induces gold-point arbitrage is the profit motive and *the credibility of the monetary-authorities' commitment* to (a) the fixed gold price and (b) freedom of gold and foreign-exchange transactions.

A country can be effectively on a gold standard even though its legal standard is bimetallism. This happens if the gold-silver mint-price ratio is greater than the world price ratio. In contrast, even though a country is legally on a gold standard, its government and banks could 'suspend

specie payments', that is, refuse to convert their notes into gold; so that the country is in fact on a 'paper standard'.

13.1.2 Countries on the Classical Gold Standard

Britain, France, Germany and the United States were the 'core countries' of the gold standard. Britain was the 'center country', indispensable to the spread and functioning of the standard. Legally bimetallic from the mid-thirteenth century, Britain switched to an effective gold standard early in the eighteenth century. The gold standard was formally adopted in 1816, ironically during a paper-standard regime (Bank Restriction Period). The United States was legally bimetallic from 1786 and on an effective gold standard from 1834, with a legal gold standard established in 1873–1874–also during a paper standard (the greenback period). In 1879 the United States went back to gold, and by that year not only the core countries but also some British Dominions and noncore western European countries were on the gold standard. As time went on, a large number of other countries throughout the globe adopted gold; but they (along with the Dominions) were in 'the periphery'–acted on rather than actors–and generally (except for the Dominions) not as committed to the gold standard.

Almost all countries were on a mixed coin standard. Some periphery countries were on a gold-exchange standard, usually because they were colonies or territories of a country on a coin standard.

In 1913, the only countries not on gold were traditional silver-standard countries (Abyssinia, China, French Indochina, Hong Kong, Honduras, Morocco, Persia, Salvador), some Latin American paper-standard countries (Chile, Colombia, Guatemala, Haiti, Paraguay), and Portugal and Italy (which had left gold but 'shadowed' the gold standard, pursuing policies as if they were gold-standard countries, keeping the exchange rate relatively stable).

13.1.3 Elements of Instability in Classical Gold Standard

Three factors made for instability of the classical gold standard. First, the use of foreign exchange as official reserves increased as the gold standard progressed. While by 1913 only Germany among the core countries held any measurable amount of foreign exchange, the percentage for the rest of the world was double that for Germany. If there were a rush to cash

in foreign exchange for gold, reduction of the gold of reserve-currency countries would place the gold standard in jeopardy.

Second, Britain was in a particularly sensitive situation. In 1913, almost half of world foreign-exchange reserves was in sterling, but the Bank of England had only three percent of gold reserves. The Bank of England's 'reserve ratio' (ratio of 'official reserves' to 'liabilities to foreign monetary authorities held in London financial institutions') was only 31%, far lower than those of the monetary authorities of the other core countries. An official run on sterling could force Britain off the gold standard. Private foreigners also held considerable liquid assets in London, and could themselves initiate a run on sterling.

Third, the United States was a source of instability to the gold standard. Its Treasury held a high percentage of world gold reserves (in 1913, more than that of the three other core countries combined). With no central bank and a decentralized banking system, financial crises were more frequent and more severe than in the other core countries. Far from the United States assisting Britain, gold often flowed from the Bank of England to the United States, to satisfy increases in US demand for money. In many years the United States was a net importer rather than exporter of capital to the rest of the world—the opposite of the other core countries. The political power of silver interests and recurrent financial panics led to imperfect credibility in the US commitment to the gold standard. Indeed, runs on banks and on the Treasury gold reserve placed the US gold standard near collapse in the 1890s. The credibility of the Treasury's commitment to the gold standard was shaken; twice the US gold standard was saved only by cooperative action of the Treasury and a bankers' syndicate, which stemmed gold exports.

13.1.4 Automatic Force for Stability: Price Specie-Flow Mechanism

The money supply is the product of the money multiplier and the monetary base. The monetary authority alters the monetary base by changing its gold holdings and domestic assets (loans, discounts, and securities). However, the level of its domestic assets is dependent on its gold reserves, because the authority generates demand liabilities (notes and deposits) by increasing its assets, and convertibility of these liabilities must be supported by a gold reserve. Therefore the gold standard provides a constraint on the level (or growth) of the money supply.

Further, balance-of-payments surpluses (deficits) are settled by gold imports (exports) at the gold import (export) point. The change in the money supply is the product of the money multiplier and the gold flow, providing the monetary authority does not change its domestic assets. For a country on a gold-exchange standard, holdings of foreign exchange (a reserve currency) take the place of gold.

A country experiencing a balance-of-payments deficit loses gold and its money supply decreases *automatically*. Money income contracts and the price level falls, thereby increasing exports and decreasing imports. Similarly, a surplus country gains gold, exports decrease, and imports increase. In each case, balance-of-payments equilibrium is restored via the current account, the 'price specie-flow mechanism'. To the extent that wages and prices are inflexible, movements of real income in the same direction as money income occur; the deficit country suffers unemployment, while the payments imbalance is corrected.

The capital account also acts to restore balance, via interest-rate increases in the deficit country inducing a net inflow of capital. The interest-rate increases also reduce real investment and thence real income and imports. The opposite occurs in the surplus country.

13.1.5 Rules of the Game

Central banks were supposed to reinforce (rather than 'sterilize') the effect of gold flows on the monetary base, thereby enhancing the price specie-flow mechanism. A gold outflow decreases the international assets of the central bank and the money supply. The central-bank's 'proper' response is: (1) decrease lending and sell securities, thereby decreasing domestic assets and the monetary base; (2) raise its 'discount rate', which induces commercial banks to adopt a higher reserves-deposit ratio, thereby reducing the money multiplier. On both counts, the money supply is further decreased. Should the central bank increase its domestic assets when it loses gold, it engages in sterilization of the gold flow, violating the 'rules of the game'. The argument also holds for gold inflow, with sterilization involving the central bank decreasing its domestic assets when it gains gold.

Monetarist theory suggests the 'rules' were inconsequential. Under fixed exchange rates, gold flows adjust money supply to money demand; the money supply is not determined by policy. Also, prices, interest rates, and incomes are determined worldwide. Even core countries can influence

these variables domestically only to the extent that they help determine them in the global marketplace. Therefore the price specie-flow and like mechanisms cannot occur. Historical data support this conclusion: gold flows were too small to be suggestive of these processes; and, at least among the core countries, prices, incomes, and interest rates moved closely in correspondence, contradicting the specie-flow mechanism and rules of the game.

Rather than rule (1), central-bank domestic and international assets moving in the same direction, the opposite behaviour—sterilization—was dominant, both in core and non-core European countries. The Bank of England followed the rule more than any other central bank, but even so violated it more often than not!

The Bank of England did, in effect, manage its discount rate ('Bank Rate') in accordance with rule (2). The Bank's primary objective was to maintain convertibility of its notes into gold, and its principal tool was Bank Rate. When the Bank's 'liquidity ratio' (ratio of gold reserves to outstanding note liabilities) decreased, it usually increased Bank Rate. The increase in Bank Rate carried with it market short-term interest rates, inducing a short-term capital inflow and thereby moving the exchange rate away from the gold-export point. The converse also held, with a rise in the liquidity ratio generating a Bank Rate decrease. The Bank was constantly monitoring its liquidity ratio, and in response altered Bank Rate almost 200 times over 1880–1913.

While the Reichsbank also generally moved its discount rate inversely to its liquidity ratio, other central banks often violated rule (2). Discount-rate changes were of inappropriate direction, or of insufficient magnitude or frequency. The Bank of France kept its discount rate stable, choosing to have large gold reserves, with payments imbalances accommodated by fluctuations in its gold rather than financed by short-term capital flows. The United States, lacking a central bank, had no discount rate to use as a policy instrument.

13.1.6 Reason for Stability: Credible Commitment to Convertibility

From the late 1870s onward, there was absolute private-sector credibility in the commitment to the fixed domestic-currency price of gold on the part of Britain, France, Germany, and other important European countries. For the United States, this absolute credibility applied from about 1900. That commitment had a contingency aspect: convertibility could be

suspended in the event of dire emergency; but, after normal conditions were restored, convertibility and honoring of gold contracts would be re-established at the pre-existing mint price—even if substantial deflation was required to do so. The Bank Restriction and greenback periods were applications of the contingency. From 1879, the 'contingency clause' was exercised by none of these countries.

The absolute credibility in countries' commitment to convertibility at the existing mint price implied that there was zero 'convertibility risk' (Treasury or central-bank notes non-redeemable in gold at the established mint price) and zero 'exchange risk' (alteration of mint parity, institution of exchange control, or prohibition of gold export).

Why was the commitment to credibility so credible?

1. Contracts were expressed in gold; abandonment of convertibility meant violation of contracts—anathema to monetary authorities.
2. Shocks to economies were infrequent and generally mild.
3. The London capital market was the largest, most open, most diversified in the world, and its gold market was also dominant. A high proportion of world trade was financed in sterling, London was the most important reserve-currency center, and payments imbalances were often settled by transferring sterling assets rather than gold. Sterling was an international currency—a boon to other countries, because sterling involved positive interest return, and its transfer costs were much less than those of gold. Advantages to Britain were the charges for services as an international banker, differential interest return on its financial intermediation, and the practice of countries on a sterling (gold-exchange) standard of financing payments surpluses with Britain by piling up short-term sterling assets rather than demanding Bank gold
4. 'Orthodox metallism'–authorities' commitment to an anti-inflation, balanced-budget, stable-money policy—reigned. This ideology implied low government spending, low taxes, and limited monetization of government debt. Therefore, it was not expected that a country's price level would get out of line with that of other countries.
5. Politically, gold had won over paper and silver, and stable-money interests (bankers, manufacturers, merchants, professionals, creditors, urban groups) over inflationary interests (farmers, landowners, miners, debtors, rural groups).

6. There was a competitive environment and freedom from government regulation. Prices and wages were flexible. The core countries had virtually no capital controls, Britain had adopted free trade, and the other core countries had only moderate tariffs. Balance-of-payments financing and adjustment were without serious impediments.
7. With internal balance an unimportant goal of policy, preservation of convertibility of paper currency into gold was the primary policy objective. Sterilization of gold flows, though frequent, was more 'meeting the needs of trade' (passive monetary policy) than fighting unemployment (active monetary policy).
8. The gradual establishment of mint prices over time ensured that mint parities were in line with relative price levels; so countries joined the gold standard with exchange rates in equilibrium.
9. Current-account and capital-account imbalances tended to be offsetting for the core countries. A trade deficit induced a gold loss and a higher interest rate, attracting a capital inflow and reducing capital outflow. The capital-exporting core countries could stop a gold loss simply by reducing lending abroad.

13.1.7 Implications of Credible Commitment

Private parties reduced the need for balance-of- payments adjustment, via both gold-point arbitrage and stabilizing speculation. When the exchange rate was outside the spread, gold-point arbitrage quickly returned it to the spread. Within the spread, as the exchange value of a currency weakened, the exchange rate approaching the gold-export point, speculators had an ever-greater incentive to purchase domestic with foreign currency (a capital inflow). They believed that the exchange rate would move in the opposite direction, enabling reversal of their transaction at a profit. Similarly, a strengthened currency involved a capital outflow. The further the exchange rate moved toward a gold point, the greater the potential profit opportunity in betting on a reversal of direction; for there was a decreased distance to that gold point and an increased distance from the other point. This 'stabilizing speculation' increased the exchange value of depreciating currencies, and thus gold loss could be prevented. Absence of controls meant such private capital flows were highly responsive to exchange-rate changes.

13.1.8 Government Policies that Enhanced Stability

Specific government policies enhanced gold-standard stability. First, by the turn of the twentieth century, South Africa—the main world gold producer—was selling all its gold output in London, either to private parties or to the Bank of England. Thus the Bank had the means to replenish its gold reserves. Second, the orthodox-metallism ideology and the leadership of the Bank of England kept countries' monetary policies disciplined and in harmony. Third, the US Treasury and the central banks of the other core countries manipulated gold points, to stem gold outflow. The cost of exporting gold was artificially increased (for example, by increasing selling prices for bars and foreign coin) and/or the cost of importing gold artificially decreased (for example, by providing interest-free loans to gold importers).

Fourth, central-bank cooperation was forthcoming during financial crises. The precarious liquidity position of the Bank of England meant that it was more often the recipient than the provider of financial assistance. In crises, the Bank would obtain loans from other central banks, and the Bank of France would sometimes purchase sterling to support that currency. When needed, assistance went from the Bank of England to other central banks. Also, private bankers unhesitatingly made loans to central banks in difficulty.

Thus, 'virtuous' interactions were responsible for the stability of the gold standard. The credible commitment to convertibility of paper money at the established mint price, and therefore to fixed mint parities, was both a cause and an effect of the stable environment in which the gold standard operated—the stabilizing behavior of arbitrageurs and speculators, and the responsible policies of the authorities—and these three elements interacted positively among themselves.

13.1.9 Experience of Periphery

An important reason for periphery countries to join and maintain the gold standard was the fostering of access to core-countries' capital markets. Adherence to the gold standard connoted that the peripheral country would follow responsible macroeconomic policies and repay debt. This 'seal of approval', by reducing the risk premium, involved a lower interest rate on the country's bonds sold abroad, and very likely a higher volume of borrowing, thereby enhancing economic development.

However, periphery countries bore the brunt of the burden of adjustment of payments imbalances with the core (and other western European) countries. First, when the gold-exchange-standard periphery countries ran a surplus (deficit), they increased (decreased) their liquid balances in the United Kingdom (or other reserve-currency country) rather than withdraw gold from (lose gold to) the reserve-currency country. The monetary base of the periphery country increased (decreased), but that of the reserve-currency country remained unchanged. Therefore, changes in domestic variables—prices, incomes, interest rates, portfolios—that occurred to correct the imbalance were primarily in the periphery.

Second, when Bank Rate increased, London drew funds from France and Germany, which countries attracted funds from other European countries, which drew capital from the periphery. Also, it was easy for a core country to correct a deficit by reducing lending to, or bringing capital home from, the periphery. While the periphery was better off with access to capital, its welfare gain was reduced by the instability of capital import. Third, periphery-countries' exports were largely primary products, sensitive to world market conditions. This feature made adjustment in the periphery take the form more of real than financial correction.

The experience of adherence to the gold standard differed among periphery groups. The important British Dominions and colonies successfully maintained the gold standard. They paid the price of serving as an economic cushion to the Bank of England's financial situation; but, compared with the rest of the periphery, gained a stable long-term capital inflow. In southern Europe and Latin America, adherence to the gold standard was fragile. The commitment to convertibility lacked credibility, and resort to a paper standard occurred. Many of the reasons for credible commitment that applied to the core countries were absent. There were powerful inflationary interests, strong balance-of-payments shocks, and rudimentary banking sectors. The cost of adhering to the gold standard was apparent: loss of the ability to depreciate the currency to counter reductions in exports. Yet the gain, in terms of a steady capital inflow from the core countries, was not as stable or reliable as for the British Dominions and colonies.

13.1.10 Breakdown of Classical Gold Standard

The classical gold standard was at its height at the end of 1913, ironically just before it came to an end. The proximate cause of the breakdown of

the classical gold standard was the First World War. However, it was the gold-exchange standard and the Bank of England's precarious liquidity position that were the underlying cause. With the outbreak of war, a run on sterling led Britain to impose extreme exchange control–a postponement of both domestic and international payments—making the international gold standard inoperative. Convertibility was not suspended legally; but moral suasion, legalistic action, and regulation had the same effect. The Bank of England commandeered gold imports and applied moral suasion to bankers and bullion brokers to restrict gold exports.

The other gold-standard countries undertook similar policies—the United States not until 1917, when it adopted extra-legal restrictions on convertibility and restricted gold exports. Commercial banks converted their notes and deposits only into currency. Currency inconvertibility made mint parities ineffective; floating exchange rates resulted.

13.1.11 Return to the Gold Standard

After the First World War, a general return to gold occurred; but the interwar gold standard differed institutionally from the classical gold standard. First, the new gold standard was led by the United States, not Britain. The US embargo on gold exports was removed in 1919, and currency convertibility at the pre-war mint price was restored in 1922. The gold value of the dollar rather than pound sterling was the typical reference point around which other currencies were aligned and stabilized. The core now had two center countries, the United Kingdom (which restored gold in 1925) and the United States.

Second, for many countries there was a time lag between stabilizing the currency in the foreign-exchange market (fixing the exchange rate or mint parity) and resuming currency convertibility. The interwar gold standard was at its height at the end of 1928, after all core countries were fully on the standard and before the Great Depression began. The only countries that never joined the interwar gold standard were the USSR, silver-standard countries (China, Hong Kong, Indochina, Persia, Eritrea), and some minor Asian and African countries.

Third, the 'contingency clause' of convertibility conversion, that required restoration of convertibility at the mint price that existed prior to the emergency (the First World War), was *broken* by various countries, and even core countries. While some countries (including the United States and United Kingdom) stabilized their currencies at the

pre-war mint price, others (including France) established a gold content of their currency that was a fraction of the pre-war level: the currency was devalued in terms of gold, the mint price was higher than pre-war. Still others (including Germany) stabilized new currencies adopted after hyperinflation.

Fourth, the gold-coin standard, dominant in the classical period, was far less prevalent in the interwar period. All four core countries had been on coin in the classical gold standard; but only the United States was on coin interwar. The gold-bullion standard, non-existent pre-war, was adopted by the United Kingdom and France. Germany and most non-core countries were on a gold-exchange standard.

13.1.12 Instability of Interwar Gold Standard

The interwar gold standard was replete with forces making for *instability*.

1. The process of establishing fixed exchange rates was piecemeal and haphazard, resulting in disequilibrium exchange rates. Among core countries, the United Kingdom restored convertibility at the pre-war mint price without sufficient deflation, and had an overvalued currency of about ten per cent. France and Germany had undervalued currencies.
2. Wages and prices were less flexible than in the pre-war period.
3. Higher trade barriers than pre-war also restrained adjustment.
4. The gold-exchange standard economized on total world gold via the gold of the United Kingdom and United States in their reserves role for countries on the gold-exchange standard and also for countries on a coin or bullion standard that elected to hold part of their reserves in London or New York. However, the gold-exchange standard was unstable, with a conflict between (a) the expansion of sterling and dollar liabilities to foreign central banks, to expand world liquidity, and (b) the resulting deterioration in the reserve ratio of US and UK authorities.

   This instability was particularly severe, for several reasons. First, France was now a large official holder of sterling, and France was resentful of the United Kingdom. Second, many more countries were on the gold-exchange standard than pre-war. Third, the gold-exchange standard, associated with colonies in the classical period, was considered a system inferior to a coin standard.

5. In the classical period, London was the one dominant financial center; in the interwar period, it was joined by New York and, in the late 1920s, Paris. Private and official holdings of foreign currency could shift among the two or three centers, as interest-rate differentials and confidence levels changed.
6. There was maldistribution of gold. In 1928, official reserve-currency liabilities were much more concentrated than in 1913, British pounds accounting for 77% of world foreign-exchange reserves and French francs less than two per cent (versus 47 and 30% in 1913). Yet the United Kingdom held only seven percent of world official gold and France 13 per cent. France also possessed 39% of world official foreign exchange. The United States held 37% of world official gold.
7. Britain's financial position was even more precarious than in the classical period. In 1928, the gold and dollar reserves of the Bank of England covered only one-third of London's liquid liabilities to official foreigners, a ratio hardly greater than in 1913. UK liquid liabilities were concentrated on stronger countries (France, United States), whereas UK liquid assets were predominantly in weaker countries (Germany). There was ongoing tension with France, which resented the sterling-dominated gold-exchange standard and desired to cash in its sterling holding for gold, to aid its objective of achieving first-class financial status for Paris.
8. Internal balance was an important goal of policy, which hindered balance-of-payments adjustment, and monetary policy was influenced by domestic politics rather than geared to preservation of currency convertibility.
9. Credibility in authorities' commitment to the gold standard was not absolute. Convertibility risk and exchange risk could be high, and currency speculation could be destabilizing rather than stabilizing. When a country's currency approached or reached its gold-export point, speculators might anticipate that currency convertibility would not be maintained and that the currency would be devalued.
10. The 'rules of the game' were violated even more often than in the classical gold standard. Sterilization of gold inflows by the Bank of England can be viewed as an attempt to correct the overvalued pound by means of deflation. However, the US and French sterilization of their persistent gold inflows reflected exclusive concern

for the domestic economy and placed the burden of adjustment (deflation) on other countries.

11. The Bank of England did not provide a leadership role in any important way, and central-bank cooperation was insufficient to establish credibility in the commitment to currency convertibility. The Federal Reserve had three targets for its discount-rate policy: strengthen the pound, combat speculation in the New York stock market, and achieve internal balance—and the first target was of lowest priority. Although, for the sake of external balance, the Bank of England kept Bank Rate higher than internal considerations would dictate, it was understandably reluctant to abdicate Bank Rate policy entirely to the balance of payments, with little help from the Federal Reserve. To keep the pound strong, substantial international cooperation was required, but was not forthcoming.

13.1.13 Breakdown of Interwar Gold Standard

The Great Depression triggered the unravelling of the gold standard. The depression began in the periphery. Low export prices and debt-service requirements created insurmountable balance-of-payments difficulties for gold-standard commodity producers. However, US monetary policy was an important catalyst. In 1927 the Federal Reserve favored easy money, which supported foreign currencies but also fed the New York stock-market boom. Reversing policy to tame the boom, higher interest rates attracted monies to New York, weakening sterling in particular. The crash of October 1929, while helping sterling, was followed by the US depression.

This spread worldwide, with declines in US trade and lending. In 1929 and 1930 a number of periphery countries—both Dominions and Latin American countries—either formally suspended currency convertibility or restricted it so that currencies violated the gold-export point.

It was destabilizing speculation, emanating from lack of confidence in authorities' commitment to currency convertibility, which ended the interwar gold standard. In May 1931 there was a run on Austria's largest commercial bank, and the bank failed. The run spread to other eastern European countries and to Germany, where an important bank also collapsed. The countries' central banks lost substantial reserves; international financial assistance was too late; and in July 1931 Germany adopted

exchange control, followed by Austria in October. These countries were definitively off the gold standard.

The Austrian and German experiences, as well as British budgetary and political difficulties, were among the factors that destroyed confidence in sterling, which occurred in mid-July 1931. Runs on sterling ensued, and the Bank of England lost much of its reserves. Loans from abroad were insufficient, and in any event taken as a sign of weakness. The gold standard was abandoned in September, and the pound quickly and sharply depreciated on the foreign-exchange market, as overvaluation of the pound would imply.

Following the UK abandonment of the gold standard, many countries followed, some to maintain their competitiveness via currency devaluation, others in response to destabilizing capital flows. The United States held on until 1933, when both domestic and foreign demands for gold, manifested in runs on US commercial banks, became intolerable. 'Gold bloc' countries (France, Belgium, Netherlands, Switzerland, Italy, Poland), with their currencies now overvalued and susceptible to destabilizing speculation, succumbed to the inevitable by the end of 1936.

The Great Depression was worsened by the gold standard: gold-standard countries hesitated to inflate their economies, for fear of suffering loss of gold and foreign-exchange reserves, and being forced to abandon convertibility or the gold parity. The gold standard involved 'golden fetters', which inhibited monetary and fiscal policy to fight the Depression. As countries left the gold standard, removal of monetary and fiscal policy from their 'gold fetters' enabled their use in expanding real output, providing the political will existed.

In contrast to the interwar gold standard, the classical gold standard functioned well because of a confluence of 'virtuous' interactions, involving government policies, credible commitment to the standard, private arbitrage and speculation, and fostering economic and political environment. We will not see its like again.

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13.2 Silver Standard

The silver standard, the dominant monetary system for many centuries, lost much importance with the advent of the classical gold standard; and, due to US policy, residual monetary use of silver was virtually eliminated in the 1930s.

13.2.1 Definition of Silver Standard

A silver standard involves (a) a fixed silver content of the monetary unit, (b) 'free coinage' of silver, that is, privately owned silver in form other than domestic coin convertible into domestic silver coin at, or approximately at, the mint price (the inverse of the silver content of the monetary unit), (c) no restrictions on private parties (i) melting domestic coin into bullion, or (ii) importing or exporting silver in any form, and (d) full legal-tender status for domestic silver coin.

Other forms of money may exist, but silver is the primary money. Foreign silver coin may be given equal legal-tender status with domestic coin. Gold coin may be in circulation, but its value is in terms of the silver monetary unit and may fluctuate by weight, varying with the market gold-silver price ratio. Paper currency and deposits may exist, but, as liabilities of the issuer or bank, are payable in legal tender, that is, silver coin (or silver-convertible government or central-bank currency).

If silver (whether domestic or foreign coin, or both) constitutes the only money, then, even absent free coinage, the economy is clearly on a silver standard. This conclusion holds with gold coin circulating as well, providing it is circulating by weight or is a minor part of the money supply.

A silver standard might be effective even though the monetary system is legally bimetallic. If the coinage gold-silver price ratio is sufficiently below the market ratio, then gold, undervalued at the mint, will be sold on the world market (even in the form of melted domestic coin), while silver, overvalued, will be imported and coined. Ultimately, an effective silver standard may result.

Depreciation of the silver coinage involves an increased ratio of the legal (face) value of coins relative to silver content, usually by debasement (reducing the silver content, whether weight or fineness, of given-denomination coins) rather than by increasing the denomination of existing (given-weight-and-fineness) coins. In England, the penny (of sterling, 11/12th fineness) was steadily reduced in size from 24 grains in the eighth century to less than 1/3 that weight in 1601.

A silver standard, just as the gold standard, provides a constraint on the money stock. Depreciation of silver coinage was a way of escaping that constraint, even though the authority's objective typically was to increase government revenue (in the form of seigniorage) and/or to change the coinage ratio (under legal bimetallism).

13.2.2 Countries on Silver Standard to 1870

A silver standard first occurred in ancient Greece. Notwithstanding generally legal bimetallism, silver was everywhere the effective metallic standard—or at least the far-more-important coined metal in the money stock—well into the eighteenth century. Because of its relative scarcity and high density, gold was always much more valuable than silver on a per-ounce basis: coinage and market ratios were far above unity. So, with most transactions of low value compared with the unit of account, silver was better suited than gold to serve as a medium of exchange. In US history, 'one dollar' was both the smallest gold piece and the largest silver piece ever coined.

In England, from the Anglo-Saxon period until the late thirteenth century, the only coin in existence (with rare exceptions) was the silver penny, with 240 pence coined ideally from one pound of silver and

later constituting one pound sterling (where 'sterling,' of course, denotes silver). This was a silver standard by default. With coinage of gold, in 1257, there was legal bimetallism; but the practice of denominating gold coins in (silver) shillings and pence was implicit recognition of an effective silver standard. Even the popular, consistently coined, (gold) guinea, first issued in 1663, was left to find its own market value in shillings and pence. However, by the turn of the eighteenth century, foreign gold-silver price ratios had been falling and, having been increased greatly in 1696, the British coinage ratio was not subsequently reduced enough to compensate. England went briefly on a bimetallic standard, and then on an effective gold standard, legalized in 1774 and 1816.

In the United States, since colonial times a silver standard was in effect, based on the Spanish dollar, the primary circulating silver coin, which varied much in weight and fineness. Yet the dollar was accepted everywhere at face-value in terms of local (individual-state) pound-shilling-pence units of account. Gold coins were rated in dollars according to fine-metal content. The Coinage Act of 1792 placed the United States on a legal bimetallic standard; but the coinage ratio soon fell below the (increasing) world-market ratio. An effective silver standard resulted, until the coinage ratio was corrected in 1834.

In 1870, just before Germany united and established the gold standard (using as financing the French indemnity, emanating from the Franco-Prussian War), Netherlands, Denmark, Norway, Sweden, India, China, Straits Settlements, Hong Kong, Dutch East Indies, Mexico and some German states were on a silver standard. In the 1870s these European countries (and Dutch East Indies) abandoned silver in favor of gold. By 1885 almost all of western Europe—along with the United States, Britain, its Dominions and various colonies—was on gold.

13.2.3 Asian Abandonment of Silver Standard Prior to World War I

Traditionally, Asian countries preferred silver to gold for both monetary and nonmonetary use, and the low market ratios in the Far East reflected that fact. The silver standard continued after 1885 in the Asian countries listed above. Further, in the 1880s the Philippines and Japan went on de facto silver.

Until 1873, bimetallic France kept the world-market gold-silver price ratio around a narrow band centered on the French coinage ratio of 15½.

When France ended bimetallism in 1873, the market ratio lost its anchor and escalated tremendously. The exchange rates between silver-standard and gold-standard currencies also lost their anchor. Following the market gold-silver price ratio, silver currencies depreciated greatly with respect to gold currencies. Exports were enhanced, imports were more expensive, debt and other obligations stated in terms of gold or gold currencies increased greatly in domestic currency, domestic inflation increased, and foreign investment was discouraged due to exchange-rate instability.

The problem of a depreciating currency was especially acute for India, which had the obligation of substantial recurring sterling-denominated 'home charges' to Britain (for debt service, pensions, military and other equipment, and so forth). In 1893 India abandoned the silver standard, and in 1898 went on the gold-exchange standard, pegging the (silver) rupee against the pound sterling.

In 1897 Japan switched from a de facto silver standard under legal bimetallism to a monometallic gold-coin standard, using as financing the indemnity received from defeated China in the Sino-Japanese War. In 1903 the Philippines adopted a gold-exchange standard, with the (silver) peso pegged to the US (gold) dollar. The impetus was transfer of the country from Spain to the United States, thanks to US victory in the Spanish-American War.

Mexico, a large silver producer, with both commodity exporters and silver producers in favor of a continued silver standard, finally adopted a gold-coin standard in 1905. At the beginning of the First World War, the silver standard encompassed only China, Hong Kong, and a few minor countries.

13.2.4 Termination of Silver Standard

The final blow to the silver standard was delivered by the United States, ironically after it left the gold standard. In December 1933, when the (fluctuating) market price of silver was 44 cents per ounce, President Roosevelt proclaimed that US mints should purchase all new domestically produced silver at a net price (to the depositor, or seller) of 64.65 cents per ounce (half the official, but inoperative, mint price of silver). In 1934 this policy was reinforced by the Silver Purchase Act, which directed the Treasury to purchase silver at home and abroad as long as (a) the Treasury stock of gold constituted less than one-quarter its total monetary stock,

and (b) the market price did not exceed the US official mint price. Subsequently, the president ordered that all silver (with minor exceptions) then situated in the continental United States was to be delivered to US mints, at a net price of 50.01 cents per ounce. In 1935, in response to a higher foreign market price of silver (largely due to the US silver-purchase policy itself!), the president increased the net price for newly produced domestic silver to 71.11 cents.

The reason for the US silver-purchase policy was to provide a subsidy to the (politically powerful) domestic silver producers. Inadvertently, the policy effectively destroyed what remained of the silver standard. The last major country on the silver standard was China. As the gold-standard world suffered monetary and real deflation in 1929–30, the price of silver fell. The Chinese, silver-based, currency (yuan) therefore depreciated against the, gold-based, currencies of important trading partners (Britain, India, Japan). The enhanced competitiveness of export and import-competing industries, and resulting balance-of-payments surplus, prevented deflation. China lost some 'silver protection' in 1931, after Britain, India and Japan left the gold standard, as the yuan appreciated against the pound, rupee and yen; but the United States was still on the gold standard, and the yuan continued to fall, slightly, against the dollar. After the United States abandoned the gold standard, in 1933, the yuan appreciated against all four currencies.

While China had lost its 'silver protection' from the world depression, it nevertheless retained the silver standard and probably suffered less economically than its main trading partners. Disaster struck with the US silver policy of 1933–1934. The huge increase in the US and market price of silver involved a corresponding appreciation of the yuan. Loss of competitiveness, balance-of-payments deficit, export of silver (and gold) to finance the deficit, and deflation followed. China had no choice but to leave the silver standard, effectively in 1934, and legally in 1935.

Other silver-standard, as well as silver-using, countries were also adversely affected by the US policy. Hong Kong followed China, and left the gold standard in 1935. Though not on the silver standard, various Latin American countries had a large silver coinage. These were token coins (face-value higher than metallic-content value). Nevertheless, the high US price for silver encouraged the melting and export of these coins. The affected countries resorted to debasement and re-coining in order to retain their silver coinage.

Mexico was a special case. Silver coins constituted a high proportion of its money supply; but, as the world's largest producer of silver, Mexico benefited from a higher price for a major export. However, as other countries left the silver standard, the price of silver began to fall, and this advantage was reduced. Mexico prohibited melting or export of silver coins in 1935, and replaced the coins with paper money. Later, re-coinage occurred, and melting and export were again permitted. Yet the damage had been done, and Mexico was now on a 'managed paper standard', having lost the discipline provided by metallic money. In sum, in the 1930s, a US domestic-oriented policy reduced considerably such monetary use of silver as remained.

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13.3 Bimetallism

A bimetallic monetary standard is a combination of two metallic standards, each of which could in principle stand alone, and often evolved into de facto monometallism.

13.3.1 The Nature of Bimetallism

Bimetallic metals are usually gold and silver, but there are exceptions. Ancient Rome was temporarily on a silver-bronze standard; in the eighteenth century, Sweden and Russia experienced a silver-copper standard.

Under bimetallism, both gold and silver coins are full legal tender. The unit of account (dollar, franc, and so on) is defined in terms of a fixed weight both of pure gold and of pure silver. So there is a fixed legal (mint, coinage) gold-silver price ratio: number of grains or ounces of silver per grain or ounce of gold. Both gold and silver enjoy free coinage (the government prepared to coin bars of either metal deposited by any party) and are full-bodied (have legal or face-value equal to metallic value). Token subsidiary (always silver) coins can exist. Subsidiary coins are fractions of (have face-value less than) the unit of account; token coins have face-value less than metallic (inherent) value, and invariably have restricted legal-tender power. Token coins were not adopted by bimetallic countries until late in their experience with bimetallism, and in conjunction with the process of terminating that standard.

Private parties may melt, import, and export coins (domestic or foreign) of either metal. There is no restriction on non-monetary uses of the monetary metals. Paper currency and deposits may exist; they are convertible into legal-tender coins, either directly or via government-issued paper currency (itself directly convertible into coin). Both private parties and the government may choose the metallic coin, or mixture of coins, in which to discharge debt (including paper currency). However, a private party does not have the right to a direct governmental exchange of gold for silver, or silver for gold. Logically, though, domestic gold and silver coin would exchange privately at the mint ratio.

13.3.2 Advantages and Disadvantages of Bimetallism

Bimetallism has four advantages. First, it embodies two sets of coins–one from a metal with a high value-weight ratio (gold), the other from a metal with a low ratio (silver). These provide a medium of exchange for a wide range of economic transactions. The range can be extended in both directions: upper, via paper currency and deposits; lower, via token subsidiary coins. Neither is incompatible with a bimetallic standard. Second, as does a monometallic standard, the bimetallic standard provides a constraint on the money supply and therefore on inflation; for the legal-tender coins constitute the monetary base (given government-issued legal-tender paper, perhaps the 'super monetary base'), and the government must acquire one or the other metal to increase the base. Because there is coinage on demand, there is also a check on reduction to the monetary base, and on deflation. Third, a bimetallic country or bloc of countries accommodates shocks, so that resulting effects on monometallic-countries' money supplies are dampened. This is done by stabilizing the gold-silver price ratio ('market ratio') on the world market, the bullion market, where non-monetary gold and silver (generally bars) are traded either among themselves or individually for some important currency. Fourth, in stabilizing the market gold-silver price ratio, the bimetallic country or bloc also stabilizes the exchange rates between 'gold currencies' and 'silver currencies'. Otherwise, these exchange rates would fluctuate, defeating one of the usual purposes of metallic standards.

The alleged disadvantage of bimetallism (relative to monometallism) is that it is unstable. Suppose the bimetallic-country's mint ratio initially is in the neighborhood of the market ratio. A shock in the world supply of one metal can change the market ratio so that the mint ratio is now outside its neighborhood. If the resulting market ratio is above (below) the mint ratio, then silver (gold) is 'bad' money, overvalued at the mint; domestic payments will tend to be made in that, relatively cheaper, coin rather than gold (silver), the 'good' money, undervalued at the mint and relatively expensive in the market. Good money will tend to be exported to settle balance-of-payments surpluses, bad money imported to finance balance-of-payments deficits. If the divergence between the market and mint ratio is large, 'bimetallic arbitrage' occurs, whereby good money is melted and traded on the bullion market for the bad metal, and the bad metal imported to be coined. In both situations, Gresham's law is operative: bad money drives out good.

Given sustained payments imbalances and/or a large and persistent divergence between the market and mint ratio, bad-money monometallism results. (The good money may be eliminated from the money supply, or circulate at a market-determined value—available only at a premium.) To avoid this, the mint ratio could be altered to remain in conformity with the market ratio. If the mint ratio is under-corrected, monometallism is not stemmed; if the mint ratio is over-corrected, monometallism in the opposite metal can occur. Successive changes in the market ratio can lead to alternating effective gold monometallism and silver monometallism, under the rubric of legal bimetallism. There are costs to such an alternating monetary standard; there are also costs in periodically altering the mint ratio.

13.3.3 Theories of Bimetallic Stabilization

Stabilizing bimetallic arbitrage happens as follows. Suppose a shock occurs, new gold discoveries, that decrease the market ratio: the market price of non-monetary gold falls relative to silver. The market ratio now is below the mint ratio, so gold is 'bad' (overvalued) and silver 'good' (undervalued) money. Silver leaves the monetary system to be sold in the world (bullion) market, with gold purchased with the proceeds and coined. First, the arbitrageurs make a profit: the value of the gold coins they obtain is greater than the value of the silver coins they initially sold. Second, there is increased supply of silver (the appreciated metal) and increased demand for gold (the depreciated metal) in the bullion market—the two transactions constituting one arbitrage transaction. The result is an increase in the market ratio, which rises toward the mint ratio. Thus, the incentive for the arbitrage is eliminated. Third, the composition of the money supply of the bimetallic country changed, with a higher proportion of gold to silver. The bimetallic country stabilized the market ratio (and incidentally the exchange rates between gold and silver currencies), via the endogenous gold-silver composition of its money supply.

This mechanism is effective only to the extent that the bimetallic country has sufficient stock of the undervalued metal to return the market ratio close to the mint ratio, so that the incentive to arbitrage vanishes before monometallism in the overvalued metal results. However, the situation is not so dire, because costs of arbitrage imply 'gold-silver price-ratio' points that define a band for the market ratio within which

the ratio can fluctuate without triggering bimetallic arbitrage. If the bimetallic-country's commitment to its mint ratio is absolutely credible, then stabilizing speculation exists within the bimetallic-arbitrage band, such that the market ratio turns away from its nearest bound and towards the mint ratio. The situation is analogous to stabilizing speculation within gold-point spreads, under the international gold standard.

Two other forces making for bimetallic stability have been suggested by Marc Flandreau. The first is 'metal-specific arbitrage' between the bullion and monetary markets. If a metal depreciates on the bullion market by more than coinage and associated costs, then owners of bars in that metal will coin them in lieu of supplying them to the bullion market. If a metal appreciates by more than melting and associated costs of bringing that coined metal to the market, then holders of coin of that metal will melt them and supply them to the market. The reduced supply of the depreciated metal and increased supply of the appreciated metal act to return the market ratio towards the mint ratio. Unlike bimetallic arbitrage, these are independent transactions. Therefore the costs of metal-specific arbitrage are below the costs of bimetallic arbitrage, and the former provide a 'metal-specific band' located within the 'bimetallic arbitrage band.' So metal-specific arbitrage is a stabilizing mechanism that becomes operative before bimetallic arbitrage.

The second force involves the bimetallic country (France) transacting with a gold-currency country (England) and a silver-currency country (Germany). There are franc-sterling gold points, and franc-mark silver points. Expressing exchange rates as percentage deviations from parity and specie points in percentage terms, the franc/sterling - franc/mark exchange-rate differential (via triangular arbitrage) proxies the mark/sterling exchange rate. Also, implicit mark-sterling parity (via franc bilateral parities) corresponds to the mint ratio. On the assumption of no bilateral specie-point violations, the mark-sterling exchange rate has as upper (lower) bound the sum (negative *sum*) of the franc-sterling export (import) point and the franc-mark import (export) point. Now, the mark-sterling exchange rate is itself a good representation of the gold-silver market price ratio, because the Bank of England (Bank of Hamburg) supports, within a narrow band, a fixed sterling (mark) price of gold (silver). For the market ratio above the mint ratio (parity), so that silver is overvalued, the upper bound correctly involves exporting gold (sterling) and importing silver (marks). The gold-silver market price ratio has a bimetallic-arbitrage band that is approximately double the width of the

franc-sterling and franc-mark bilateral specie-point spreads. Hence specie flows to settle and adjust payments imbalances occur prior to bimetallic arbitrage.

Suppose that a bimetallic country has lost all its undervalued ('good') metal, so it has become monometallic in its overvalued coinage. Nevertheless, Oppers (2000) shows that a bimetallic-arbitrage band could exist, given that there is a second bimetallic country with a different mint ratio. The two-countries' mint ratios each constitute a bound to the market ratio, with, as usual, a market ratio beyond a bound giving rise to arbitrage that returns the market ratio to the band. For this mechanism to operate, both countries must actually or potentially have large amounts of both coined metals in their money stock, where 'large' means relative to shocks in the bullion market.

13.3.4 Bimetallism Prior to the 19th Century

The Persian Empire had the first bimetallic standard, with a mint ratio of 13½ to 1 (all known mint ratios are in favor of gold) for a long time. This ratio undervalued silver relative to the ratio elsewhere, and presumably merchants took advantage of the price-ratio discrepancies in their regular dealings. The Roman Empire was often gold-silver bimetallic, but periodically debased the coinage. The likely reason was to increase seigniorage rather than to realign the mint ratio in conformity with the market ratio or the mint ratio in other lands. Until the mid-nineteenth century, bimetallism was the legal standard in Europe (including England), though the mint ratio was often altered. Traditionally, the gold-silver price ratio was lower in China and India than in Europe.

England was legally on a bimetallic standard from the mid-thirteenth century, when gold was first coined. The mint ratio was often changed. England was effectively on a silver standard until late in the seventeenth century, because the British mint ratio was generally below European gold-silver price ratios. Gold coins passed at a market price (in terms of the silver shilling) rather than face-value, again indicative of a silver standard. In 1663 the (gold) guinea was coined, with a legal value of 20 (silver) shillings. The silver coins in circulation were in horrible condition, due in part to past debasement, in part to private clipping and sweating of the coins. So the market price of the guinea increased above 20 shillings—to as much as 30 shillings—implying a gold-silver price ratio that effectively overvalued gold relative to Continental ratios. England

was in process of switching from an effective silver to an effective gold standard.

In 1696 silver was recoined, so the coins became full-bodied again, and a ceiling (periodically reduced) was placed on the market price of the guinea. The result was that, for a brief period at the turn of the eighteenth century, England had effective bimetallism, with full-bodied coins of both metals in circulation. However, gold continued to be overvalued and silver undervalued; silver was exported, gold imported; and a de facto gold standard resulted. It became a de jure standard, via legislations restricting the legal-tender power of silver (1774) and effectively ending free coinage of silver (1816).

The Coinage Act of 1792 placed the United States on a legal bimetallic standard. The mint ratio (15 to 1)—selected because it was approximately the market ratio at the time—turned out to overvalue silver, because the market ratio increased. By 1823 gold had virtually gone from circulation, and an effective silver standard resulted. In 1834 Congress increased the ratio to 16.0022 (in 1837, revised slightly, to 15.9884). From 1834 to 1873, the world gold-silver price ratio was consistently below 16, so the new ratio overvalued gold, and an effective gold standard resulted. However, the export of full-bodied Mexican (silver) dollars and US subsidiary silver protected the circulation of underweight foreign silver pieces, which circulated at face-value; so in a sense effective bimetallism continued. Only in the early 1850s, when the market gold-silver price ratio fell (due to gold discoveries and new production), did the United States begin to lose its remaining silver coins. In 1853, to retain the silver, Congress reduced subsidiary coins (below a dollar) to token status, with limited legal-tender power. The United States now was on a de facto gold standard. Legal bimetallism remained until 1873, when coinage of the silver dollar was terminated. One year later, silver was virtually demonetized; all silver coins (including the dollar) were restricted to maximum legal tender of five dollars in any payment.

13.3.5 Bimetallic France in the 19th Century

In 1803 France made the franc the monetary unit, and solidified and made effective the mint ratio of 15½ that had been established in 1785. From the end of the Napoleonic Wars until 1873, while France retained that bimetallism, the market gold-silver price ratio remained in the neighborhood of 15½. (Also, exchange rates among gold, silver, and bimetallic

countries were stable.) The stability of the market ratio was remarkable, in the face of severe shocks to the bullion market. In the 1850s gold production increased tremendously due to gold discoveries in California and Australia, putting strong downward pressure on the market price ratio. In the 1860s gold production stopped increasing, and exploitation of Nevada silver discoveries put strong upward pressure on the ratio.

The steady market gold-silver price ratio was due primarily to the continued bimetallism of France, which acted as a buffer to shocks and thus stabilized the gold-silver market price ratio. What gave France this power was its large economic size, the substantial amounts of both gold and silver coins in its circulation, and its credible commitment to bimetallism at an unchanged mint ratio. Therefore, French bimetallic arbitrage operated—in the 1850s and early 1860s via gold imported and coined and silver melted and exported, in the later 1860s via the opposite activities. Stabilizing speculation within the bimetallic-arbitrage band, stabilizing bilateral specie flows, and metal-specific arbitrage were also elements in the French stabilization service. In 1865 the French stabilizing force was enhanced by formation of the Latin Monetary Union (LMU), in which France, Belgium, Switzerland, and Italy adopted a common bimetallism.

Some scholars, especially Oppers (1995, 2000), believe, rather, that France underwent serial monometallism, with bimetallism transformed to a de facto silver standard in the 1830s and 1840s, and the latter yielding to a de facto gold standard in the 1860s. Yet a parity band (with stabilizing speculation within the band) existed, with the French mint ratio the lower bound and the US mint ratio the upper bound in 1834–1861, followed subsequently by the French ratio the upper bound and the Russian ratio the lower bound. This interpretation of history is doubtful, for the strong propensity to use both metallic currencies was characteristic only of France. Also, Russia's mint ratio was inoperative at the time, as the country had an inconvertible paper currency.

In the early 1860s the future LMU countries, if not on a de facto gold standard, were certainly moving towards it. With the market ratio below the mint ratio, silver was being lost. To protect silver circulation, the individual countries made subsidiary coins token currency; while in 1866 the LMU came into effect, mandating reduction of the silver content and restriction of the legal-tender power of all silver coins except the largest, that is, the five-franc piece, which remained full-bodied.

French, LMU, and world bimetallism ended in the 1870s. The proximate cause was Germany's move to a gold standard, financed by the

French indemnity that resulted from the Franco-Prussian War. Germany's release of silver put upward pressure on the gold-silver market price ratio. France was not prepared to accept the gold loss and silver inflow that would result from continued adherence to bimetallism. France (and Belgium) limited silver coinage in 1873, followed by the LMU mandating limits on coinage of the five-franc silver piece in 1874–1876. In 1878 coinage of that piece was terminated. The existing five-franc coins retained full legal-tender power. France, along with Belgium and Switzerland, went on a 'limping' gold standard, redeeming government-issued paper money in either gold or silver at the discretion of the authority.

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