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The Geography of the Gold Standard

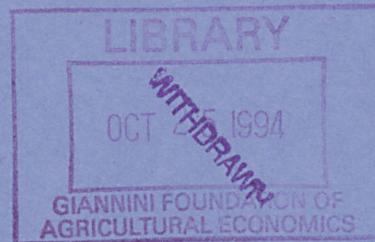
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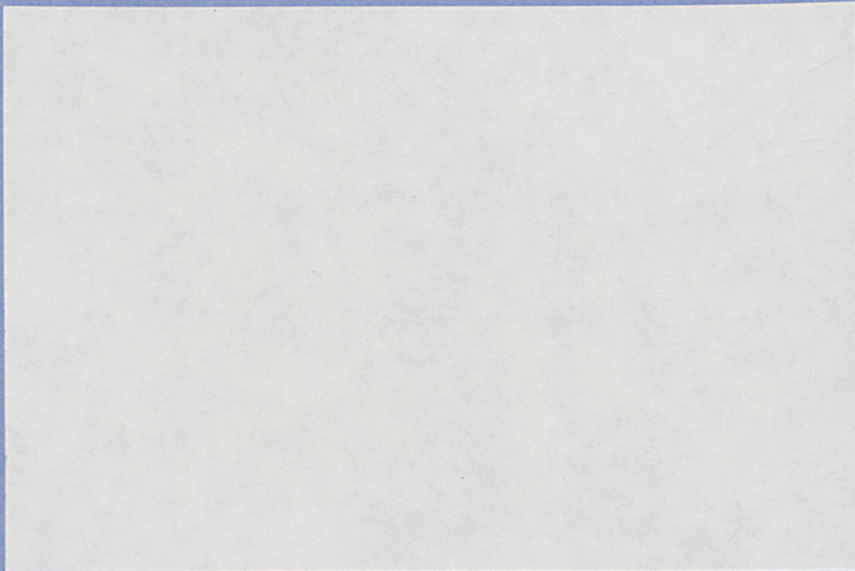
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JEL Classification: N0, F0

Abstract

In this paper we chart the geography of the gold standard. We highlight the late date of the move to gold and the variety of transition strategies. Whether a country with a currency convertible into specie operated a gold, silver, or bimetallic standard at mid-century depended not so much on whether it was rich or poor as on the monetary standard of the foreign country or countries to which its transactions were linked. When it came to the distinction between specie convertibility and inconvertibility, however, domestic economic conditions came into play. In particular, there was a strong correlation between economic development, as proxied by the level of per capital incomes, and possession of a convertible currency.

Most countries went onto the gold standard between the 1870s and the first decade of the 20th century. We enumerate the factors propelling this transition and analyze variations in its timing. Factors shaping the course of this transition include the level of economic development, the magnitude of reserves relative to world specie markets, whether reserves were concentrated at the central bank, and the presence or absence of imperial ties.

The Geography of the Gold Standard*

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Revised, September 1994

I. Introduction

For a subject that has garnered such attention, the geography of the gold standard remains strangely uncharted. Monetary systems in which gold coin and assets convertible into gold provided the basis for the domestic circulation are commonly portrayed as the normal state of affairs prior to 1913. England, in this view, was on the gold standard for nearly two centuries, ever since Sir Isaac Newton, in his role as Master of the Mint, set a high silver price for the gold guinea in 1717, driving full-bodied silver coins out of circulation. Portugal, which relied heavily on the British market for exports and on British industry for imported manufactures, adopted gold in 1854. Germany's accession to the gold standard dated from her Bismarckian unification. In conventional accounts, virtually the entire world was on some form of gold standard during the final part of the 19th century.

These "conventional accounts" serve us, admittedly, in the capacity of straw men. Scholars like Bloomfield (1959) have been careful to note that not all gold standards were alike, distinguishing gold coin standards from gold bullion standards, coin and bullion standards from gold-exchange standards,

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and full gold standards from limping gold standards. But by focusing on the experience of Western Europe and North America, most of their studies run the risk of distorting the geography of the monetary system and hence of misrepresenting its evolution.¹

A better rounded portrait reveals a situation in which gold was the basis for the domestic circulation in only a limited number of countries. In many places, especially outside Europe, gold convertibility was first established only in the final years preceding World War I. Fathoming the operation of the international monetary system thus requires comprehending how it worked prior to the completion of these transitions. Tracing its evolution requires understanding the timing and nature of these monetary regime transformations.

Some studies have acknowledged the limited domain of the 19th century gold standard, emphasizing the distinction between gold and silver convertibility. Gold, it is said, was the basis for the circulation in advanced countries at the core of the international system, while lower-income countries at the periphery utilized the less valuable metal, silver. We reject this view. In the 1860s, the start of the period we consider, whether countries operated gold, silver or bimetallic standards depended not so much

¹ Late-19th century monetary experience outside the gold standard's European core is not entirely terra incognita. There exist studies of particular countries in Eastern Europe, Asia and Latin America. At the same time, a number of national cases remain virtually unremarked upon. And there exists only a handful of attempts to link the experience of countries at the core of the international monetary system with other parts of the world. The few pioneering studies that succeed in doing so are limited in scope. Thus, Ford (1962) focuses on the interaction of two countries, Britain and Argentina. De Cecco (1974) concentrates on the interaction of the gold standard world with large trading partners and bullion suppliers like Russia and India. See also Hawtrey (1934), Foreman-Peck (1983) and Kindleberger (1984) for further efforts along these lines.

on whether they were rich or poor as on the foreign country or region with which their transactions were linked and on monetary standard of that trading partner or partners.² The countries of the "British Area" (Britain, Portugal, Canada, Australia and Egypt) were essentially alone on the gold standard, the monetary regime on which, to exaggerate the point, Newton had incidentally placed them. The "French Area" (France, Belgium, Italy and Switzerland) was bimetallic. The "German Area" (the German States, Scandinavia, the Netherlands and Austria) was on silver, along with much of Asia.

But for most of the 19th century the important distinction was not between gold and silver but between metallic convertibility and inconvertibility. Countries whose currencies were convertible, whether into gold, silver or both metals, enjoyed relatively stable exchange rates, while countries with inconvertible currencies might see their exchange rates fluctuate widely. There was only a weak correlation between the level of economic development and the choice of convertible monetary standard but a strong correlation between the level of development and convertibility or inconvertibility.³ In our view, it is the distinction between convertibility and inconvertibility at least as much as that between gold and silver on which analysis should focus.

Our goal in this paper is suggest how such an analysis might be

² Here "trade" is short-hand for the entire range of commercial and financial transactions that we consider below.

³ Indeed, within each of the "areas" identified above, the convertibility-inconvertibility distinction was reproduced. In the French Area, for example, Italy was unable to maintain full convertibility for much of the period. The same is true of Austria in the German Area. In the British Area, Portuguese and Brazilian convertibility was fragile. In Asia, China had been forced to suspend convertibility earlier in the 19th century.

undertaken.⁴ Sections II and III present snap-shots of international monetary arrangements in 1868 and 1908. The information is not new, but assembling it in one place allows us to flesh out the portrait of international monetary arrangements. Section IV reconstructs the movements that connected the snap-shots. It maps the routes that led countries to gold convertibility and offers hypotheses to explain their transitions. Section V draws out the implications for research on the history of the international monetary system.

II. Monetary Arrangements in 1868

Table 1 summarizes the state of the international monetary system two-thirds of the way through the 19th century.⁵ The term "standard" as used in Table 1 refers to the asset that was legal tender in unlimited amounts and could be freely coined. Countries that we classify as on the gold standard may have had some silver in circulation but limited the value of the transactions for which it could be used. Countries classified as on silver may have had some gold circulation, but the value of silver coins in terms of the national unit of account could change with market conditions. Countries

⁴ In referring to this system as "the gold standard" in our title, we follow common parlance, not to mention Ford and de Cecco, both of whose titles refer to the gold standard despite the fact that they devote attention to silver or inconvertible paper. Given the "currency" of the gold-standard label, alternatives may do more to confuse than clarify. It is also worth emphasizing the distinction between a monetary standard and a monetary system. The latter typically connotes the existence of a number of institutions (a mint, a central bank, a government concerned to guarantee the enforcement of private contracts) that did not always exist in the 19th century.

⁵ We choose 1868 because it coincides with the publication of Seyd's Bullion and Foreign Exchanges, a rich source of information on monetary arrangements and financial transactions.

Tables

Table 1: Monetary Systems of the World (1868)*

Country	Standard	Convertibility
Europe:		
United Kingdom	Gold	Yes
France	Bimetallic	Yes
Belgium	Bimetallic	Yes
Switzerland	Bimetallic	Yes
Italy	Bimetallic	No
German States		
North, South and Hanse	Silver	Yes
Towns		
Bremen	Gold	Yes
Netherlands	Silver	Yes
Denmark	Silver	Yes
Norway	Silver	Yes
Sweden	Silver	Yes
Austria	Silver	No
Russia	Bimetallic	No
Greece	Bimetallic	No
Spain	Bimetallic	No
Portugal	Gold	No
Roumania	Bimetallic	No
North America:		
United States	Bimetallic	No
Canada	Gold	Yes
Central America:		
Mexico	Silver	No
Nicaragua	Bimetallic	Yes
Guatemala	Bimetallic	no date of issue
Honduras	no specific system	no date of issue
Salvador	no specific system	no date of issue
Costa Rica	Bimetallic	Yes
South America:		
Peru	Bimetallic	No
Chile	Gold	Yes
Brazil	Gold	No
Venezuela	Bimetallic	No
Argentina	Bimetallic	No
Asia and Pacific:		
India	Silver	Yes
China	Silver	Yes
Indonesia	Silver	Yes
Japan	Silver	No
Siam	Silver	no date of issue
Philippines	Bimetallic	no date of issue
Australia	Gold	Yes
Middle East:		
Ottoman Empire	Gold	No
Egypt	Gold	Yes
Persia	Bimetallic	No

* Although a seemingly simple exercise, establishing a rigorous classification of the various monetary systems during the 19th century turns out to be a very delicate undertaking: we give the following tables *cum grano salis*, especially for non-European countries whose monetary systems varied a lot and sometimes did not fit very well into the standard categories. Our classification usually represents what we felt was the effective regime, as it appeared from a careful analysis of Seyd's (1868) informations regarding international transactions.

labeled bimetallic conferred legal tender status on both metals.⁶

The term "convertibility" refers to legal provisions affecting paper money. A convertible-currency country was one in which issuing banks were obligated to redeem their notes for specie. This distinction had important implications for the exchange rate. If the currency was inconvertible, additional issues could produce a premium on specie, as in e.g., Austria, Russia, Italy, and the Ottoman Empire.

A conspicuous feature of Table 1 (which is depicted geographically in Map 1) is that as of 1868 only two European countries, Britain and Portugal, were on the gold standard in the sense that their currencies were unconditionally and exclusively convertible into gold.⁷ Gold convertibility was also maintained in in the German State of Bremen and in Canada, Chile, Egypt and Australia. Other countries officially adhered to monetary standards based partially or wholly on silver.⁸

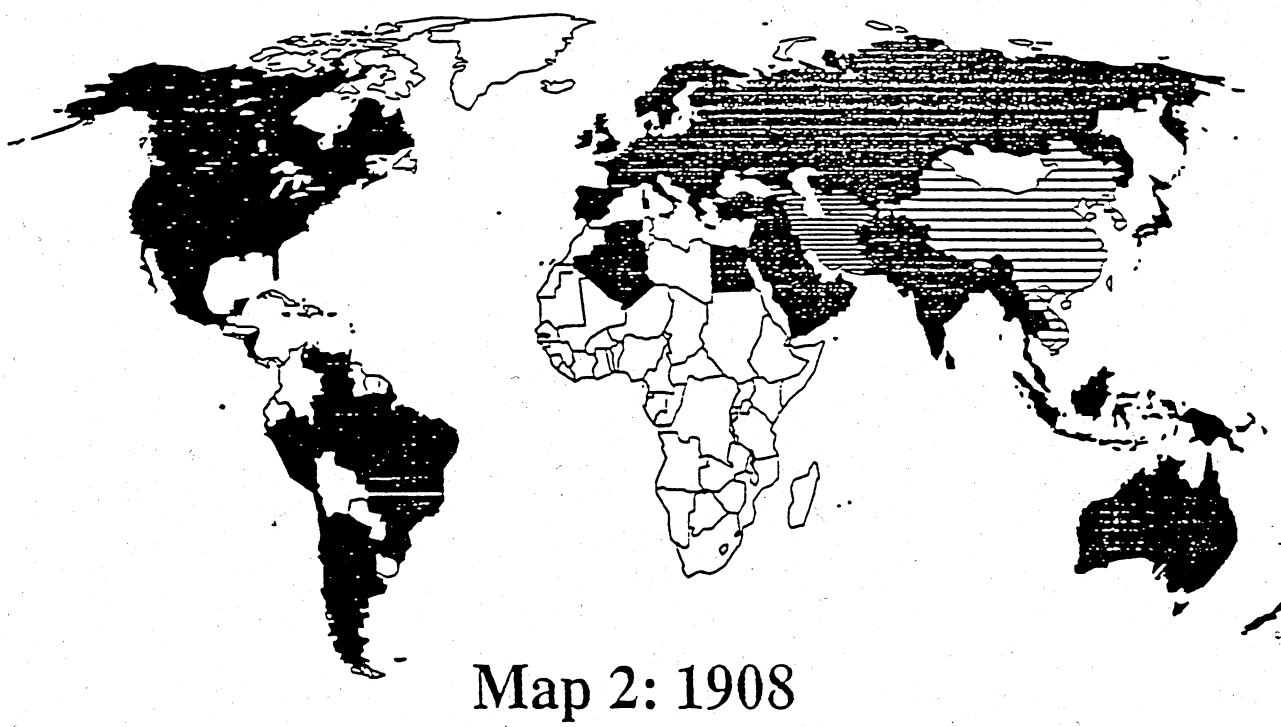
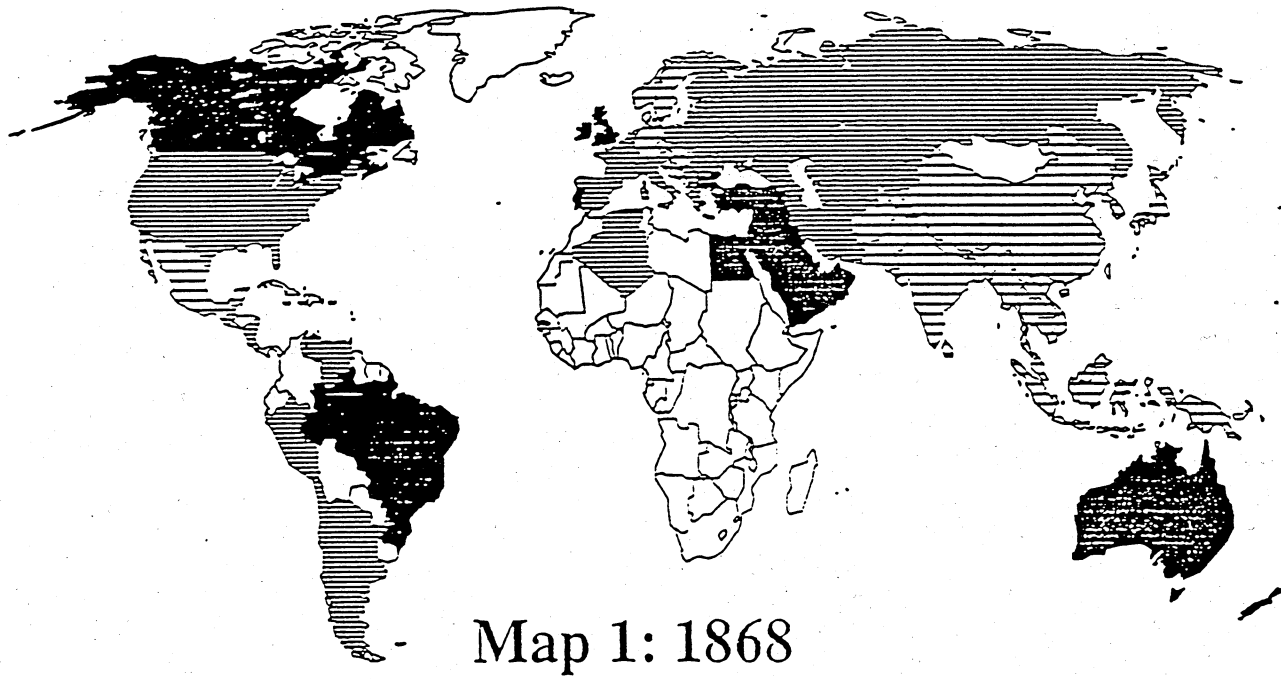
Also evident in Table 1 is the fact that the tripartite distinction between gold, silver and bimetallicism incompletely captures the reality of 19th century monetary arrangements. Many countries whose currencies were officially convertible allowed their obligation to convert domestic currency into specie to lapse and permitted inconvertible paper to circulate alongside

⁶ Although Switzerland, for example, was on a dual standard, it did not grant free coinage to private parties. It did however give legal tender status to French coins, which were freely coined in France, implying that Switzerland was de facto fully bimetallic.

⁷ Portugal raised its bimetallic ratio in 1847 and adopted gold convertibility in 1854. Martin (1977), pp.654-655.

⁸ Even in Britain, the Bank of England had taken silver for the reserve of the Issue Department until the mid-century rise in the metal's relative price made it prohibitively expensive. The practice was abolished in 1848. Cottrell (1992), p.223.

The Geography of the Gold Standard:
1868 and 1908.



■ Gold ▨ Bimetallism ▧ Silver

silver and gold.

The distribution of countries among these categories was related to the timing and pace of their economic development, as suggested by Figure 1. Early participants in the Industrial Revolution (Britain, France, Belgium, Switzerland and the German States, for example) were more likely to possess a convertible currency, while those on the periphery of the industrializing world (Spain and Italy, for example) were more likely to utilize inconvertible paper.⁹ The pattern suggests that bullion, not yet "a barbarous relic," was rather "an expensive luxury" that mainly high-income countries could afford.¹⁰ Within Europe at least, as also shown in Figure 1, there was no analogous correlation between the level of income per capita and the metal into which the currency was convertible.

The presence or absence of a convertible currency was correlated not just with per capita incomes but with the state of the public finances.¹¹ Many countries that operated de facto paper standards experienced persistent fiscal problems and utilized seigniorage as their revenue source of last

⁹ That a late industrializer like Portugal had adopted gold convertibility while an earlier industrializer like Austria remained on inconvertible paper indicates that other factors, to which we turn momentarily, also influenced the choice.

¹⁰ The two quotes are from Keynes (1925) and Young (1925).

¹¹ It should be noted that the two explanatory variables -- the level of economic development and the condition of the public finances -- were correlated with one another, with more advanced countries often having more highly developed and reliable budgetary systems. The connection is less than tight: some middle-income countries, in Scandinavia for example, had solvent governments and maintained specie convertibility, while Austria-Hungary, Russia and the Ottoman Empire, whose incomes per capita were not dramatically different from those of Scandinavia at this early date, had more serious public-finance problems, which can be characterized as symptoms of the "decaying empire" syndrome. Although these correlations are loose, one might argue that the same political obstacles that delayed industrialization in decaying empires also gave rise to public finance problems that led to currency inconvertibility.

resort. This tendency was most obvious in periods of military conflict and insurrection. In Austria-Hungary, the National Bank was forced to suspend convertibility in 1848 following a revolution in Hungary and the military expense of its suppression.¹² Until 1858 the exchanges were at a discount relative to the bimetallic parity, when an attempt to restore convertibility at the statutory par collapsed after seven months due to the outbreak of war with Italy and the havoc it wreaked with the budget. A second attempt to reform the public finances and restore convertibility in 1865-66 was again undermined by war, this time with Germany and Italy.¹³ Greece was forced to suspend bimetallic convertibility in 1868 in response to the Crete Revolution and the consequent increase in military spending. Bimetallic convertibility was restored in 1871 but suspended again in 1877 due to the outbreak of war with Turkey.¹⁴ In the case of Italy, the bimetallic Piedmontese system adopted following unification gave way to inconvertibility following the outbreak of war with Austria in 1866, since France opposed Italy's campaign and prevented borrowing in Paris.¹⁵ The convertibility of the U.S. dollar was suspended with the outbreak of its Civil War; nearly two decades were required for its official restoration. Gold and silver were driven from circulation in Russia and the paper ruble depreciated in the wake of the

¹² Conant (1915), pp.225-226.

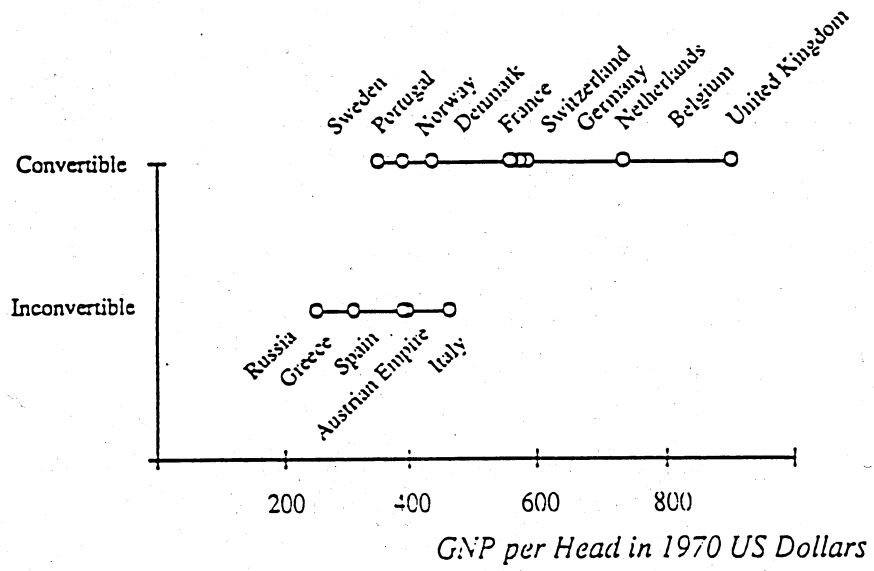
¹³ The government resorted to paper issued backed by the revenues of the salt mines of Gmund, Hallein and Aussee. See Willis (1899a) and Conant (1915). The gulden continued to fluctuate until 1892. In 1879, the world market price of silver had fallen to the point where the paper gulden was again worth as much as its statutory silver content. The Austro-Hungarian authorities then suspended the free coinage of silver on private account to prevent silver inflation. See Yeager (1969).

¹⁴ See Lazaretou (1992).

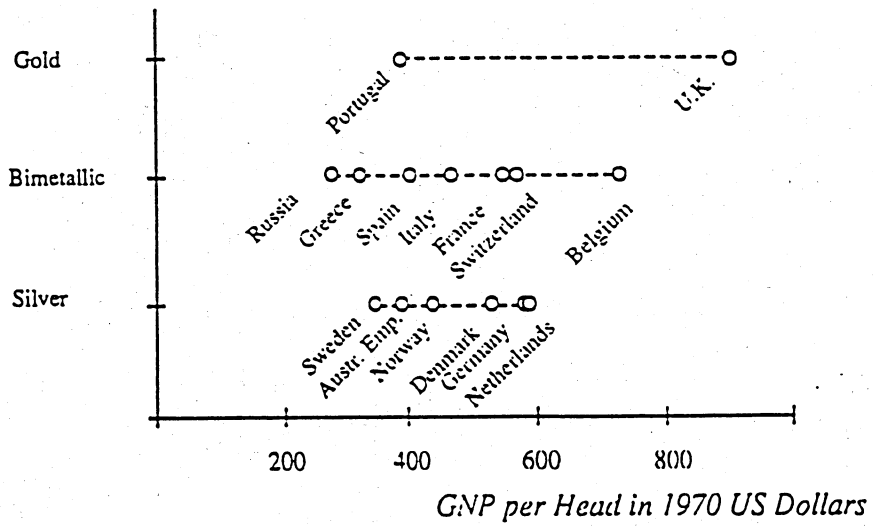
¹⁵ For details on the Italian case, see Fratianni and Spinelli (1984).

FIGURE 1

Income and Convertibility in 1868

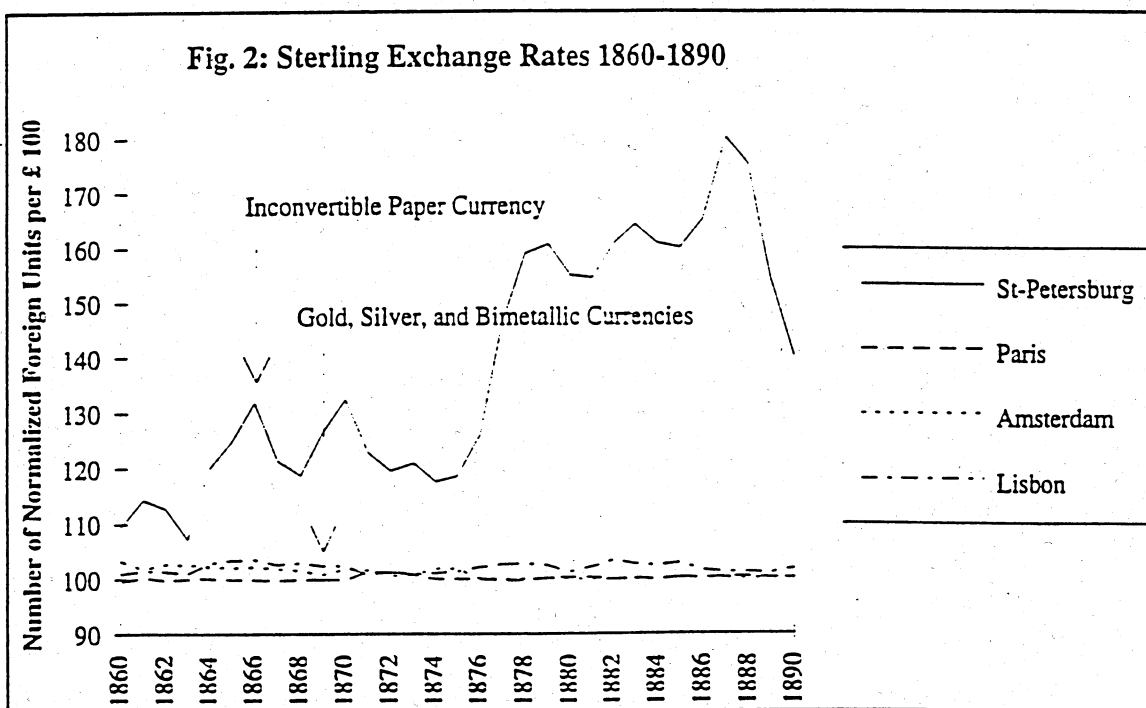


Income and Monetary Standard in 1868



Source: Crafts [1984]

Fig. 2: Sterling Exchange Rates 1860-1890



Crimean War.¹⁶ Japan's attempt to adopt gold convertibility in 1871 was frustrated by the expense of suppressing internal rebellions.¹⁷ Spain's efforts to stabilize its currency were disrupted by the outbreak of the Spanish-American War.

Figure 2 shows that exchange rates between gold, silver and bimetallic currencies were remarkably stable vis-a-vis one another until the 1870s. In contrast, the exchange rates of countries with inconvertible currencies could fluctuate widely against countries maintaining convertibility. The distinction circa 1868 with implications for exchange-rate behavior, in other words, was between convertibility and inconvertibility, not between gold and silver or gold and bimetallism.¹⁸

The mechanism responsible for the pre-1873 stability of the gold-silver exchange rate was the passive buffer-stock role of the bimetallic bloc, which adjusted its gold and silver circulation to accommodate global bullion market conditions. Following the discovery of new supplies of one of these metals (say, gold), the abundant metal flowed toward the bimetallic bloc, supplanting the scarcer metal (say, silver), which was exported to the rest of the world, thereby stabilizing relative supplies of gold and silver. Through the operation of this buffer-stock mechanism, stable exchange rates between gold and silver standard countries were successfully maintained.¹⁹ In the 1870s,

¹⁶ Redemption was first discouraged and then refused starting in 1857. Willis (1899b), p.86.

¹⁷ Uchida (1900), p.19.

¹⁸ Collins (1986) reports coefficients of variations for a number of sterling exchange rates. These show that the stability of exchange rates between countries with convertible currencies was almost impressive before the gold standard as under it.

¹⁹ See Flandreau (1994a).

Table 2: Monetary Systems of the World (1908)*

Country	Standard	Convertibility
Europe:		
United Kingdom	Gold	Yes
France	Gold	Yes
Belgium	Gold	Yes
Switzerland	Gold	Yes
Italy	Gold	No, but stable currency
Germany	Gold	Yes
Netherlands	Gold	Yes
Denmark	Gold	Yes
Norway	Gold	Yes
Sweden	Gold	Yes
Austria	Gold	No, but stable currency
Russia	Gold	Yes
Greece	Gold	No until 1910
Spain	Gold (no silver coinage)	No
Portugal	Gold	No
Roumania	Gold	Yes
North America:		
United States	Gold	Yes
Canada	Gold	Yes
Central America:		
Mexico	Gold	Yes
Nicaragua	Gold Exchange Standard	No
Guatemala	Silver (bullion movements limited)	No
Honduras	Silver	Yes
Salvador	Silver	Yes
Costa Rica	Gold	Yes
South America:		
Peru	Gold	No
Chile	Gold	No
Brazil	Gold	No
Venezuela	Gold	No
Argentina	Gold	Yes
Asia and Pacific:		
India	Gold Exchange Standard	Yes
China	Silver	Yes
Indonesia	Gold Exchange Standard	Yes
Japan	Gold Exchange Standard	Yes
Siam	Gold Exchange Standard	Yes
Philippines	Gold Exchange Standard	Yes
Australia	Gold	Yes
Middle East:		
Ottoman Empire	Gold Exchange Standard	Yes
Egypt	Gold	Yes
Persia	Bimetallic/Silver	Yes

* In this table, we have introduced a new category, namely Gold Exchange Standard (G.E.S.) nations. By this we mean systems where contracts are paid in an asset which a central bank accepts to exchange against a gold convertible currency (Florin, Pound Sterling etc...). Some authors have tended to broaden the definition, so that a G.E.S. would be any regime where the central bank keeps some reserves in foreign (gold convertible) currencies (see text). From that viewpoint, most of the regimes of the early 20th century could be defined as G.E.S. Of course, the key question is to determine the relative proportions of gold and foreign exchange in banks' reserves. Since data availability does not allow such a distinction, we prefer here to stick to a narrower definition. Any country which does not exclusively rely on foreign exchange will be considered as a gold standard nation.

this mechanism began to break down. With the failure to negotiate arrangements based on international bimetallism and the departure of France and the rest of the Latin Union from the bimetallic standard, the relative price of silver and gold began to vary. Exchange rates between currencies convertible into the two metals began to fluctuate, and the choice between gold and silver convertibility attained new importance. The consequences are the subject of the next section.

III. Monetary Arrangements in 1908

Table 2 (and Map 2) tabulate monetary arrangements circa 1908. Virtually all of Europe had joined Britain and Portugal on the gold standard. The only exceptions were Greece, which was formally on gold but where an extended period of inconvertibility ended in 1910, and Spain, which remained on paper, albeit with a relatively stable exchange rate (at least compared to its own previous record). Much of the non-European world had also gone over to gold; exceptions included China, still on silver, portions of Latin America on silver and bimetallic standards (Honduras and El Salvador remained on silver), and bimetallic Persia.

Why were so many more countries on gold in 1908 than four decades earlier? As already noted, until the 1870s gold, silver and bimetallism all provided exchange rate stability, rendering the choice of standard a matter of relative indifference. This is not to deny that the maintenance of different monetary standards in different countries imposed transactions costs on individuals doing business across national borders. Merchants in silver standard countries importing from the gold standard world had to exchange their silver for gold in order to pay for their purchases, for example. Given

Britain's growing importance in world trade, the gold standard hence became an increasingly attractive option for many countries. The more countries shifted to gold, the more appealing the option became for the remainder.

Once the bimetallic countries whose buffer-stock function had stabilized the exchange rates between silver- and gold-based currencies defected to the gold standard, currencies convertible into silver experienced wide fluctuations. Exchange risk grew, discouraging international transactions. In 1886, for example, the Hong Kong Bank committed uncovered silver funds to finance tea exports from Hankow. When the Hong Kong/London exchange rate quickly moved by 8.8 per cent, it suffered very substantial losses. Such experiences led the Hong Kong Bank to attempt to hedge its exchange risk by holding gold deposits in London. Similarly, Mexican officials blamed silver-induced exchange rate variability for discouraging foreign investment. Indian commentators argued likewise.²⁰

With the spread of industrialization came a shift in the balance of power between groups favoring monetary standards with inflationary and deflationary biases. With the advent of modern economic growth, the silver-mining interests and agricultural debtors who formed natural constituencies for the more inflationary silver standard lost clout to new industrial and financial elites. Such trends cannot explain the shift toward gold in parts of the world where economic growth remained slow, but they operated powerfully in Western Europe and in the United States. As de Cecco (1986) puts it, industrialization "went pari-passu with monetary

²⁰ Conant (1915), pp.486-487; Ambedkar (1923), chapter 3.

stabilization, leading to the establishment of gold-based monetary systems."²¹

Throughout the period, convertibility had important credibility effects. It signalled a government's commitment to sound budgets, balanced external payments, and sustainable volumes of foreign borrowing. Gold convertibility was particularly effective in this regard. The gold premium was a ready indicator of whether the debtor was keeping its part of the bargain. Foreign banks were particularly inclined to lend to governments that had staked their reputations on the maintenance of gold convertibility.²² A convertible currency thus promised to enhance a country's access to international capital markets. Given that the principal lenders -- Britain, France, Germany, the Netherlands, Belgium and Switzerland -- were all early members of the gold standard club, gold convertibility came to be seen as the logical arrangement for aspiring borrowers.

None of this is to deny that there was a strong element of serendipity in the spread of the gold standard. Industrialization, expanding trade, and capital flows all may have encouraged the "standardization of the standards," but impetus was also provided by the desire to restore the exchange rate stability that had prevailed before 1873. Stability could have been obtained on a number of bases. That Britain, the leading trading and lending nation, was already on gold encouraged countries to coordinate on one of those equilibria. To this extent, convergence on the gold standard (instead of the

²¹ de Cecco (1986), p.373. He has in mind specifically the second wave of industrializers such as France, Italy, Austria-Hungary, Russia and Japan.

²² See Fishlow (1989). As Fishlow's comment in this volume reminds us, convertibility was neither necessary nor sufficient to insure access to foreign funds. But other variables like the decision to hold foreign exchange reserves in a foreign financial center could have a reinforcing effect (Lindert, 1969).

silver standard) was in a part a matter of historical happenstance.

IV. Transitional Dynamics

While all of the factors enumerated above encouraged countries to move from silver, bimetallism and inconvertible paper to gold, different countries followed different routes from the de facto silver and inconvertible-paper standards of the 1860s to the international gold standard of the 1900s. Is it possible to generalize about their paths?

Moving from silver or bimetallism to gold required transforming the metallic basis of the circulation and augmenting the gold reserves of the authority responsible for the convertibility of paper money and token coins. While it was not necessary to replace the entire silver stock with gold, the establishment and maintenance of gold convertibility required that gold reserves exceed some minimum share of domestic monetary liabilities.²³ Meeting this condition entailed exchanging silver for gold where holdings of the former were ample and accumulating additional reserves in gold where they were not.

Countries seeking to complete this task followed one of three routes. Some moved from silver or bimetallism to gold at an early date and without suffering an interlude of exchange rate instability. This was true of Germany, which limited silver coinage in 1871 and implemented gold convertibility within two years. A similar path was followed by the

²³ Many countries which went onto the gold standard in the final decades of the 19th century continued to hold significant quantities of silver. The Reichsbank's silver holdings remained larger than its gold holdings until the mid-1880s, those of the Bank of France until 1890, those of the Austro-Hungarian Bank until 1894, those of the Netherlands Bank until 1904. Bloomfield (1959), p.16.

Netherlands, which did not establish gold convertibility immediately but still managed to stabilize its exchange rate vis-a-vis the gold standard world (see Figure 3). Other examples include Belgium, France, Switzerland, and the Scandinavian states.

A second group of countries (Austria, Russia, and some Latin American nations) moved to the gold standard but after a delay that involved an extended period of inconvertibility. Many of these countries' monetary standards were formally bimetallic but effectively inconvertible. As the price of silver fell, their silver parities declined to the point where paper was no longer depreciated in terms of silver. (Figures 4 and 5 illustrate these dynamics for India and Austria.) This forced them to choose between restoring the silver standard and changing their monetary constitutions. Austria suspended silver coinage and allowed its exchange rate to float in the neighborhood of a new devalued gold parity: it finally stabilized after 1899. Russia, when faced with this situation, stabilized more quickly, completing the task before the end of 1893.

Still another group of countries followed a third route. Members of this group operated silver standards. They tended to be poorer economies with formal or informal imperial ties to the industrial core. They saw their silver-based currencies depreciate against those of the gold standard world and often experienced bouts of inconvertibility. At some point, usually after 1890, they limited the coinage of silver and moved to the gold standard. (Figure 6 illustrates the experience of India, one member of this group.) But the form of their gold standards differed; they adopted gold-exchange standards rather than traditional gold standards.

We now consider factors that can help to account for countries' choice

Fig. 3: Exchange Rate Between London and Amsterdam

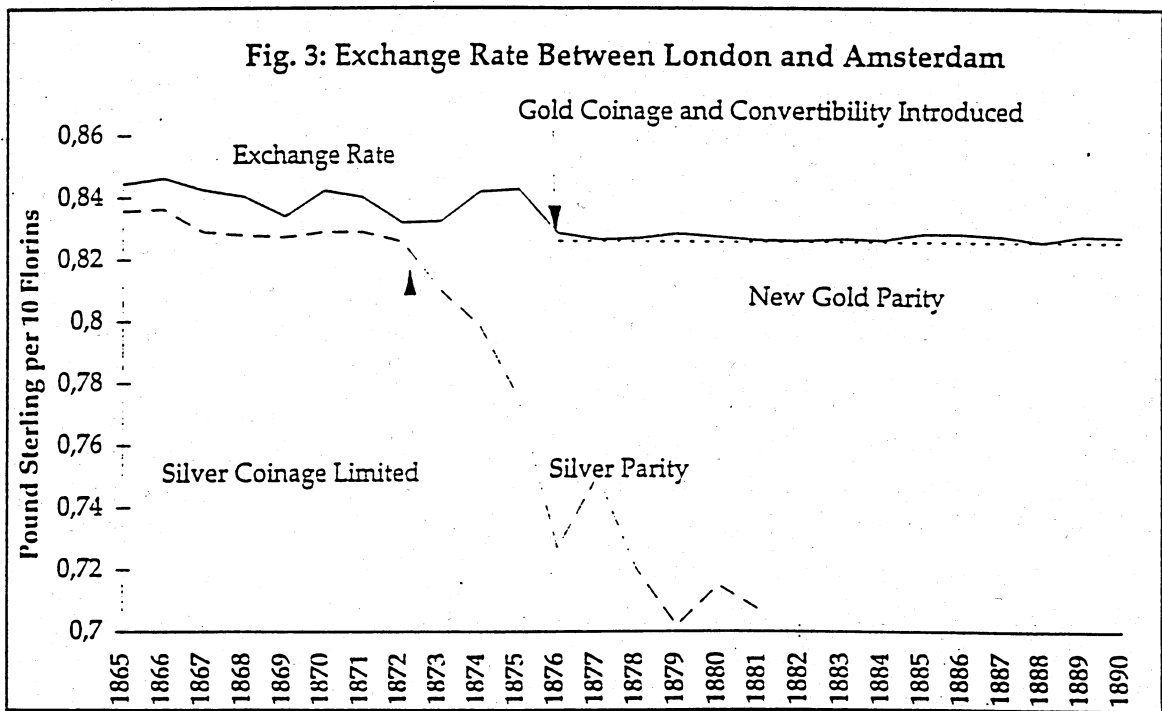
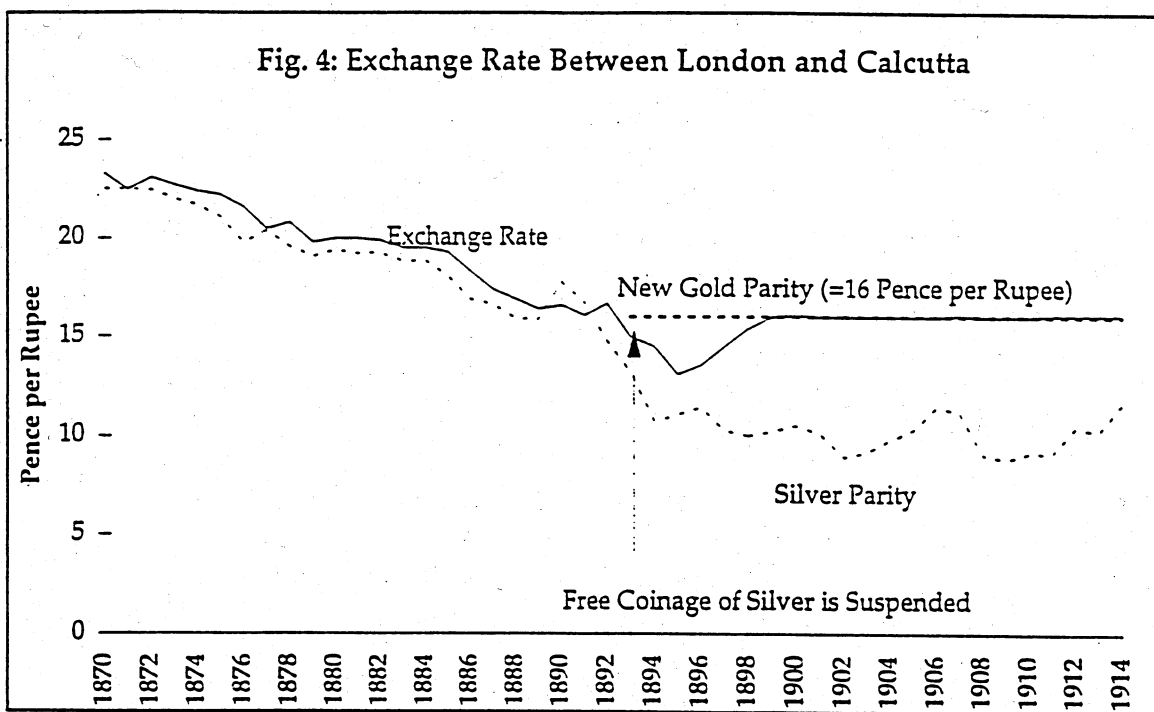


Fig. 4: Exchange Rate Between London and Calcutta



of path.²⁴

A. National Income. How countries completed the transition to gold depended in part on their levels of income and economic development. High-income countries initiated the transition early and completed it quickly, typically without experiencing inconvertibility. Low-income countries for whom the acquisition of gold reserves was more difficult navigated a more circuitous route.

In the first category were early industrializers (Germany, France and other members of the Latin Union) that moved from de facto silver standards to gold convertibility in the 1870s. On the eve of the transition their reserves were composed of a melange of gold and silver. By trading silver for gold on world markets, they sought to amass the specie necessary for the operation of a gold standard. Their possession of relatively ample reserves allowed them to move directly to gold.

In the second category were countries that industrialized later, that navigated the transition more slowly, and that followed an indirect route along which their silver-based monetary systems first gave way to inconvertible paper and only later were replaced by gold. Russia, Japan and Austria all moved from bimetallic standards based primarily on silver first to inconvertible paper and then to gold. They suspended silver coinage, devalued their currencies, and gradually augmented their gold reserves before establishing gold convertibility. These countries lacked the financial and economic resources of their richer counterparts and required more time to

²⁴ The role of each of the factors we describe below should be thought of as holding other determinants of the transition constant. This is analogous to a multiple regression framework in which the dependent variable is the length of time required to complete the transition and a number of independent variables, starting with the level of national income, are considered in turn.

Fig. 5: Exchange rate Between London and Vienna

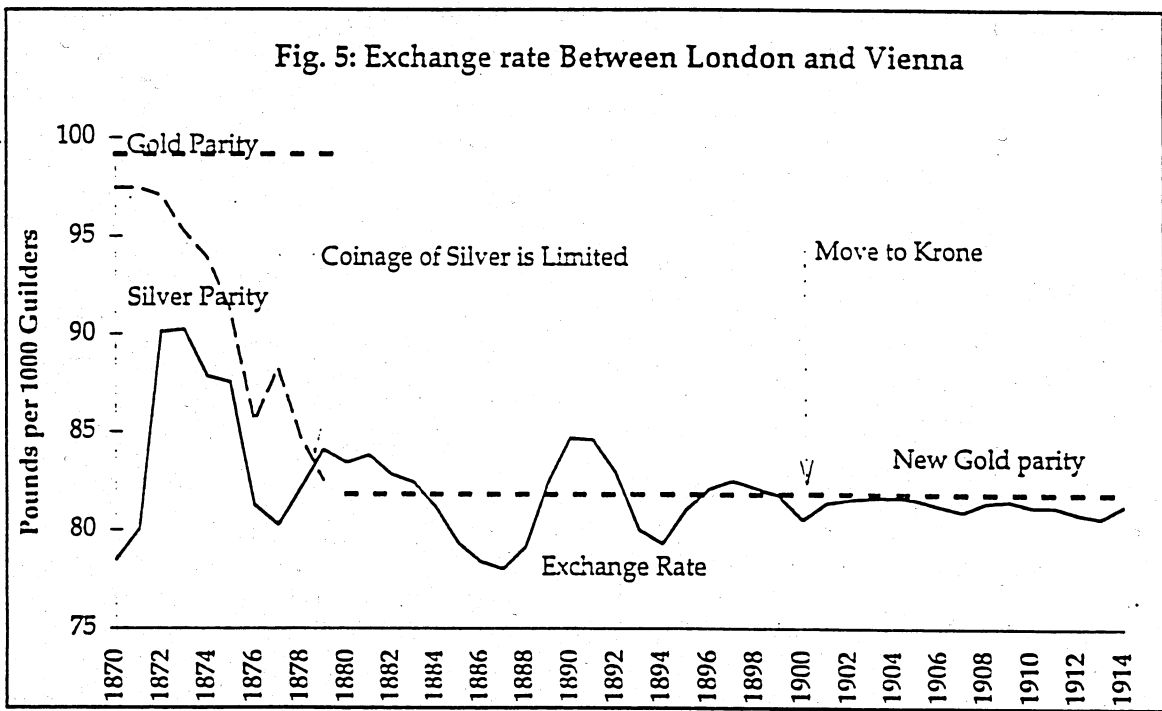


Fig. 6: Exchange Rate Between London and Saint-Petersburg

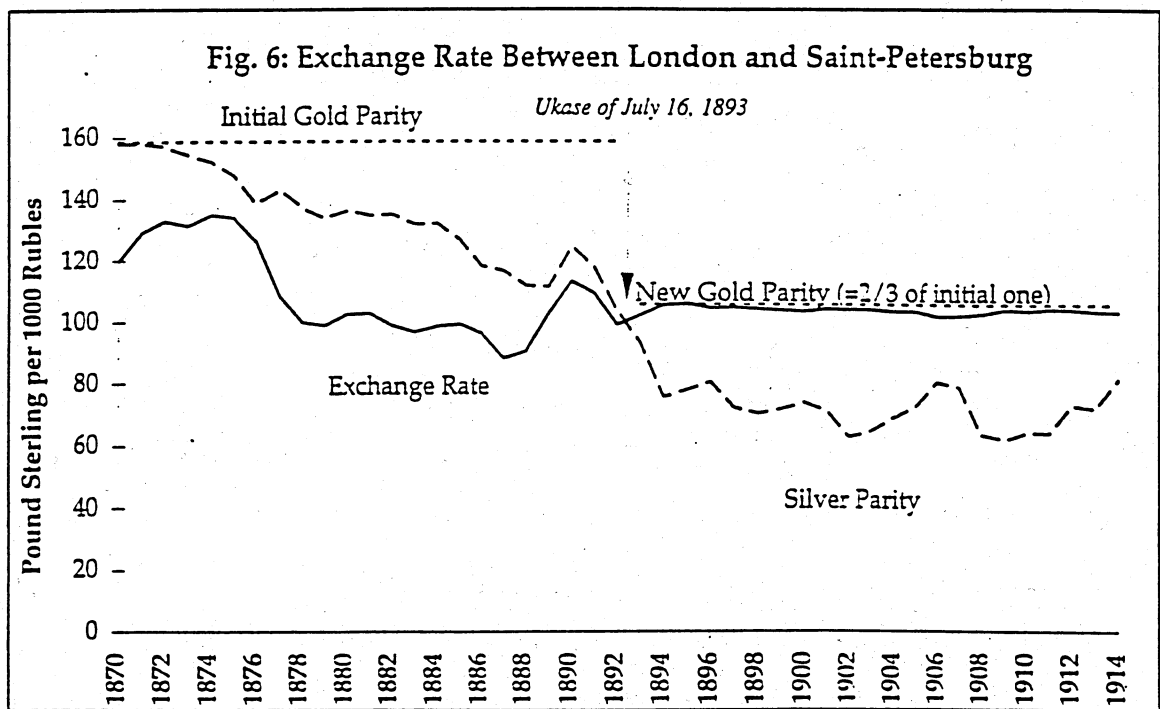
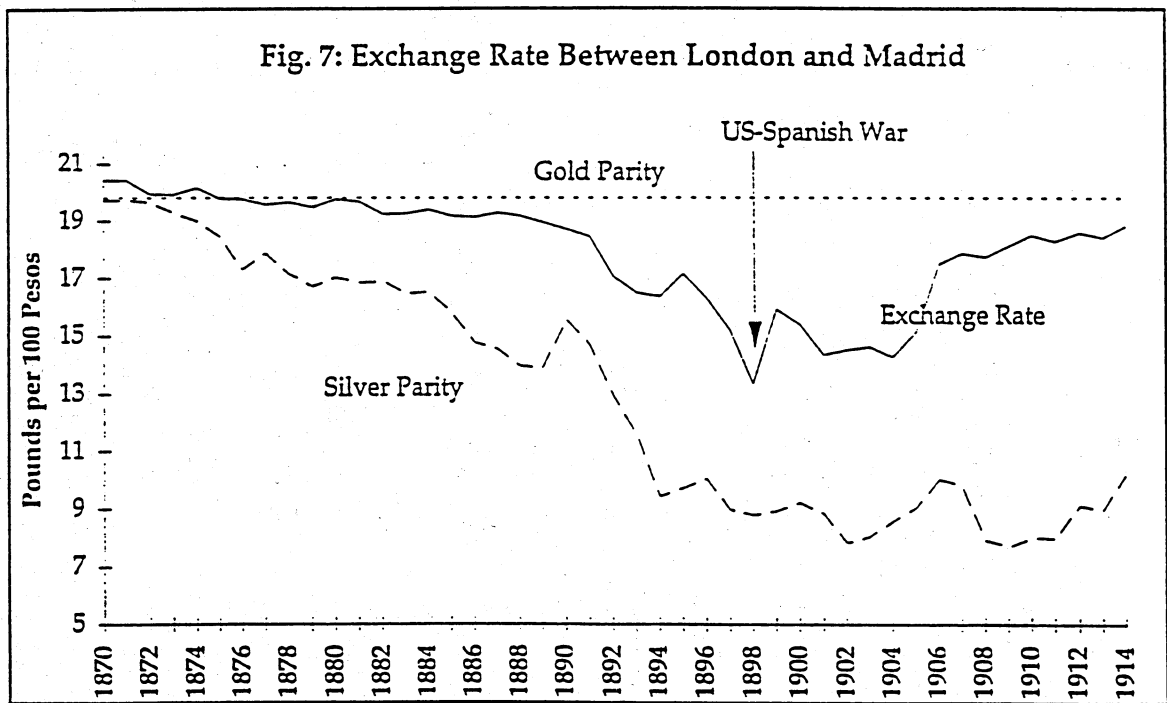


Fig. 7: Exchange Rate Between London and Madrid



accumulate the reserves needed for the operation of a gold standard. While there was some scope for augmenting their gold reserves by borrowing abroad, as in the case of Greece in the 1880s, their debt-bearing capacity was limited, restricting the amount of external debt they could accumulate to finance the introduction of the gold standard.²⁵

National incomes per capita were also associated with the type of gold standard that countries ultimately adopted. A pure gold standard was a costly way of stabilizing the exchange rate because it entailed the acquisition and maintenance of large amounts of bullion. A gold exchange standard, in contrast, allowed the central bank or government to hold its reserves in the form of interest-bearing assets that were convertible into gold, such as foreign bills deposited in a financial center like London, Paris, New York or Berlin. This was a cheap way to augment limited reserves, albeit at some loss of control of those assets. Poorer countries, for whom the budget constraint bound, were most likely to adopt the gold exchange standard.²⁶

The connections between low per capita incomes (as an index of economic development) and the adoption of a gold-exchange standard suggest a monetary version of Gerschenkron's "backwardness" hypothesis. In many early industrializers, it was only necessary for the government to swap silver for gold on the world market and to revise the statute governing convertibility. Such countries already possessed smoothly-functioning financial markets and well-established central banks with which to manage the transition to gold.

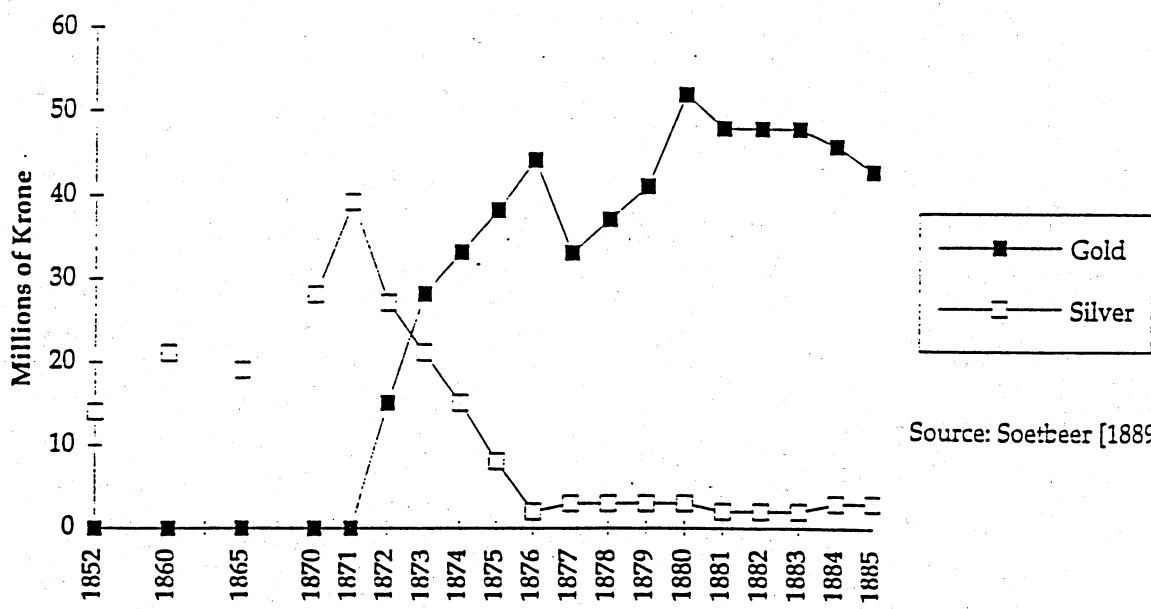
²⁵ Lazaretou (1992), p.296.

²⁶ Note that Keynes (1913) classifies Russia, Austria-Hungary and Japan as possessing gold-exchange standards. Bloomfield (1959) mentions in addition Canada, South Africa, Australia, New Zealand, the Netherlands and most of Scandinavia. See below.

Late industrializers, by contrast, required more extensive government intervention to complete the transition. For those with inconvertible currencies whose the inherited reserves were inadequate to support the operation of a gold standard, the authorities had to launch an extended campaign in order to acquire them. This process often required the cooperation of a reserve-center country and complex intergovernmental negotiations.

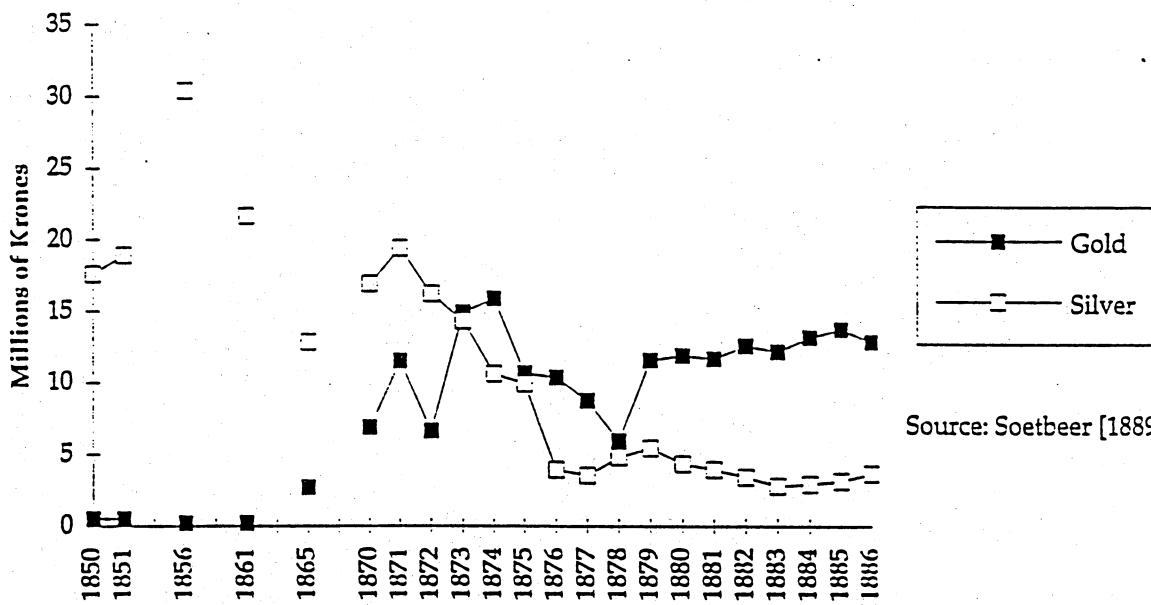
B. Concentration of the Metallic Base at the Central Bank. The transition could be completed more quickly if the metallic basis of the circulation was concentrated at the central bank. When the nation's metallic circulation was concentrated there, it was possible for that one entity to undertake the transaction that transformed the metallic basis of the national reserve. Thus, the Scandinavian countries, responding to the announcement by their major trading partner, Germany, that the latter intended to move to the gold standard, could beat their larger partner to the punch because their silver holdings were concentrated at their central banks, which could exchange them for gold at will. (See Figures 8-10.) In countries where silver circulated internally, in contrast, it was necessary to induce individuals to exchange their silver for gold. This the central bank or government could accomplish by suspending its offer to purchase silver at a fixed price and allowing the internal price of silver to decline relative to world levels. Individuals would respond by exporting silver and importing gold, on which the authorities might bestow legal-tender status or stand ready to coin in unlimited amounts. But this process would take time, especially in countries

Figure 8: Reserves of the Bank of Denmark



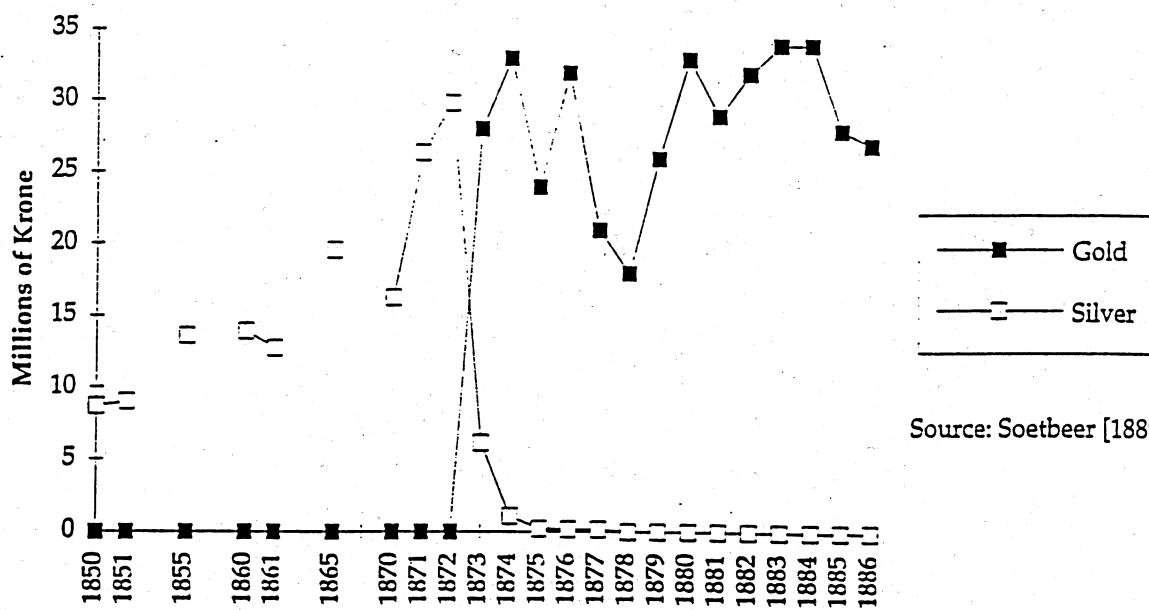
Source: Soetbeer [1889]

Figure 9: Reserves of the Swedish State Bank



Source: Soetbeer [1889]

Figure 10: Reserves of the Bank of Norway



Source: Soetbeer [1889]

where financial information flowed slowly.²⁷

The Indian case illustrates the resulting dynamics. India was on the silver standard, the silver rupee having been established as the standard coin for British India in 1835.²⁸ The post-1870 depreciation of Indian silver coin and notes against the monies of the gold standard led to the above-mentioned complaints about exchange-rate instability and created pressure for monetary reform. Free coinage of silver was suspended in 1893, and the Indian government started issuing paper rupees. Although one could obtain rupees in exchange for gold, the reverse operation was not yet possible.²⁹ When the Government used Council Bills (technically claims on India) to finance its expenses, thereby monetizing its short-term debt, the exchange rate depreciated. Moreover, the transformation of the circulation required time. When Council Bills were issued, augmenting domestic liquidity, gold inflows

²⁷ Even in financially sophisticated economies like the Netherlands, this process could be time consuming. In addition, in countries with convertible currencies in which paper money (convertible into specie at par) circulated widely, it was necessary to obtain only gold sufficient to back some 40 or 50 per cent of the circulation. Where the circulation took the form of gold and silver coin, in contrast, it was necessary to obtain the gold needed to inject the additional gold coin. Since, by the final third of the 19th century, few countries relied heavily on the internal circulation of gold, differences across countries in this propensity affected only modestly the difficulty of completing the transition. Gold coin formed an important part of the internal circulation only in Britain, France, Germany, the United States, post-1897 Russia, Australia, South Africa and Egypt.

²⁸ This act also authorized the coinage of gold mohurs. The gold mohur and the silver rupee being of identical weight and fineness, this effectively established a ratio between gold and silver of 15 to 1. When Australian gold discoveries led to a flood of silver, gold's legal tender status was revoked and the Government treasuries stopped accepting it. (In fact, gold had ceased being legal tender in transactions between private persons in 1835; in 1853 the Government stopped accepting it.) This put India on the silver standard, where it remained until 1893. Details on India may be found in Ambedkar (1923) and Spalding (1924).

²⁹ Mertens (1944) p. 296 calls this a "one way gold standard." In target zone vernacular, this type of arrangement is known as a "reflecting barrier."

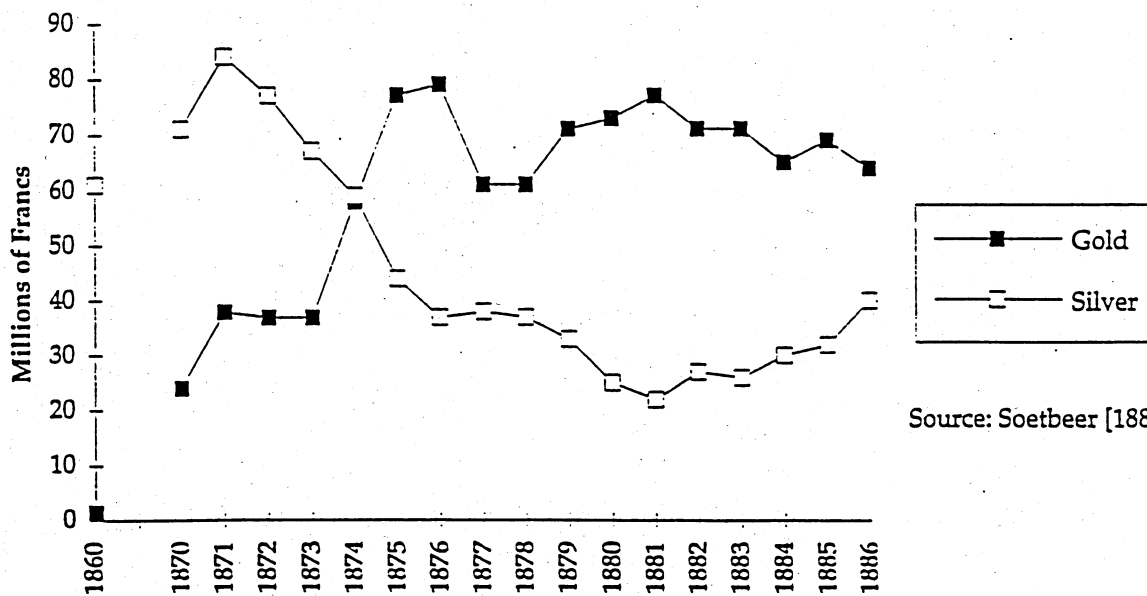
slowed. Only after 1896, following fiscal retrenchment, did large amounts of gold begin to flow into the government's coffers. In 1899 the British sovereign was made legal tender in India, and the government established a reserve in London. Even then, however, there was no statutory requirement that the government intervene to support the rupee. Following long discussions and substantial improvement in the reserves of the Indian Government, the system was completed in 1901-1902 by the introduction of a policy of paying gold for rupees. The credibility of the new regime was fostered by the creation of the Gold Reserve Fund, on which gold claims could be drawn. Institutional innovation thus was used to launch the gold standard without withdrawing a penny from the silver circulation.³⁰

C. Size. Small countries were more likely than large ones to move from silver or bimetallism directly to gold. Completing this transition, as explained above, required exchanging silver for gold on world markets. Small countries could do so without worrying about the implications of their transition for the relative price of the two metals. Large countries, in contrast, had to worry that their silver sales would destabilize existing bimetallic or silver standards and depress the value of the asset they were attempting to liquidate.

Thus, the Scandinavian countries, whose silver stocks were small, could exchange them for gold without disturbing global markets. Larger countries like France and Germany had a more complicated task. In the early 1870s they

³⁰ Another interesting illustration of backwardness forcing institutional creativity was the accumulation by the Bank of Spain of a portfolio of foreign bills (principally on Paris) in order to implement an active exchange rate policy (while other countries merely pegged to gold). Thus, although Spain did not rejoin the gold standard, it was one of the first countries to adopt modern methods of exchange rate management. For details, see Root (1898) and Nogaro (1910).

Figure 11: Reserves of the Bank of Belgium



Source: Soetbeer [1889]

held the equivalent of 3 billion French francs worth of silver, or six to ten times the annual flow supply. Dumping these reserves on world markets would drive down the price of silver, frustrating efforts to accumulate a gold stock adequate to support monometallic convertibility. This encouraged larger countries to undertake the transition more gradually and to rely on cooperative monetary arrangements which might support the price of the metal that was undergoing liquidation.

D. Cooperative Monetary Arrangements. Belgium and Switzerland had the advantage that, as members of the Latin Union, France was committed to purchasing their silver coins at a fixed price.³¹ This permitted them to unload silver without depressing its market price (Figure 11).³² Hence, the Bank of Belgium could move directly in 1874 from bimetallism to paying out only gold for its notes.³³ As late as the eve of World War I, the Bank of France held half of all five-franc Belgian silver coins extant.³⁴ Similarly, the 1874 Amendment to the Latin Union Treaty obligated the Bank of France to accept Switzerland's silver coins at a fixed price. This made it easier for Switzerland to transform the metallic basis of its circulation and follow its

³¹ In fact, this guarantee had only been obtained in January 1874, through a special agreement, not in 1865 when the Latin Union was formed. See Flandreau (1993).

³² Belgium had weathered a series of stormy changes in its monetary legislation which contrasted with the dull stability of its exchanges. It operated a silver standard until March 1847, when it turned to bimetallism. In 1850, in response to the decline in the price of gold, it re-implemented the silver standard. Gold coins were demonetized in 1854, but their legal tender status was restored in 1861. See Perlman (1992).

³³ See Luzzatti (1884) and Kauch (1950).

³⁴ Conant (1915), p.283

neighbors onto gold.³⁵

The Dutch case serves to illustrate the more complicated task facing countries which did not enjoy the support of a benevolent neighbor. The Netherlands moved from silver to gold in the 1870s.³⁶ In 1872, the government decided to limit silver coinage. In May of the next year, when Germany's intention of adopting gold convertibility was clear, the suspension of silver coinage was made permanent.³⁷ On June 6th, 1875, the government authorized the free coinage of gold florins, officially placing Holland on the gold standard.³⁸

Figure 12 shows how the Netherlands altered the composition of its gold and silver reserves.³⁹ This process did not result in the immediate and total dominance of gold, since to liquidate the country's silver stocks threatened to depress the metal's price on world markets. Though silver was no longer coined, it remained legal tender, and much silver circulated internally, in contrast to the situation in Scandinavia. For a considerable

³⁵ On the Swiss case, see Weber (1992).

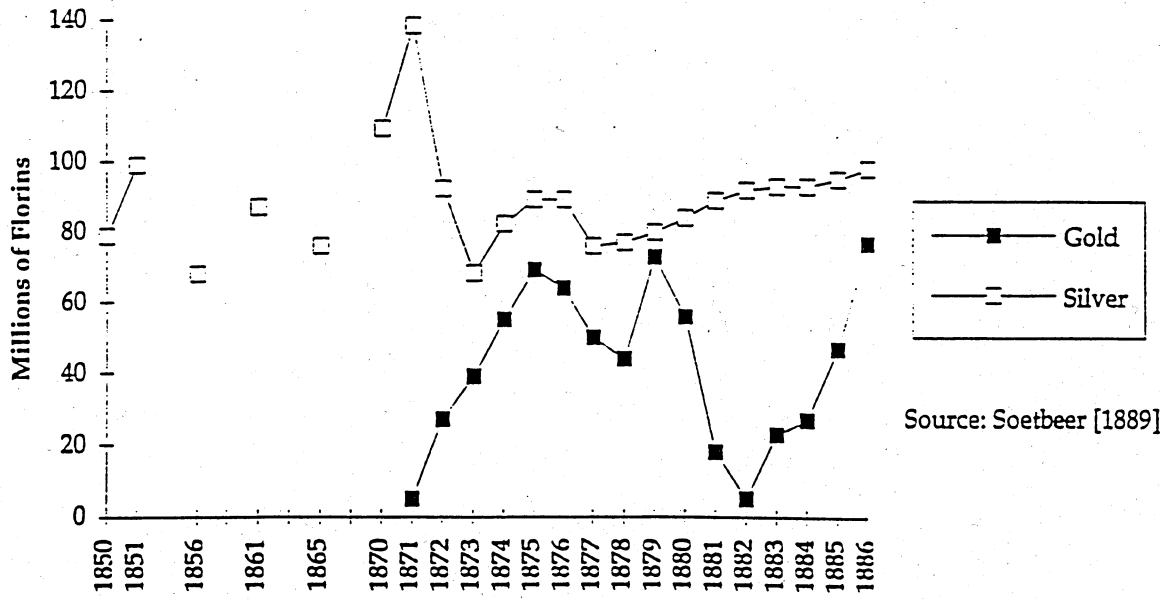
³⁶ It had switched from bimetallism to silver mono-metallism at mid-century, when the decline in the relative price of gold threatened inflation due to free gold coinage.

³⁷ Because of peculiar features of the Dutch system, the exchange rate displayed a tendency to strengthen. Silver coins remained legal tender. Although they could not be struck, they could still be melted. Excess demands for Dutch currency, due to payments surpluses, for example, were met by an appreciation of the florin relative to its intrinsic value. In contrast, excess supplies were met by melting down coins.

³⁸ The new gold florins were slightly devalued relative to the previous gold-silver parity.

³⁹ It also reveals that this expanded gold reserve was needed to meet the economic fluctuations of the 1880s.

Figure 12: Reserves of the Bank of the Netherlands



Source: Soetbeer [1889]

period, gold and silver continued to circulate side by side. This caused considerable difficulties for the Bank of Holland, which constantly ran the risk of being drained of gold and flooded with silver.⁴⁰

Like Belgium and Switzerland, Germany hoped to trade its silver for gold via the French bimetallic system.⁴¹ No sooner did it begin doing so, however, than France limited silver coinage. The German government was forced to reduce its silver sales: in 1879, when these sales were suspended, Germany had disposed of only a third of its initial stock. In effect, the two countries' diplomatic sparring delayed Germany's efforts to complete the transition while pushing France toward a de facto gold standard.⁴²

E. Imperial Ties. If they possessed a colonial tie or were willing to cede control over their reserves to a foreign financial center, countries seeking to join the gold standard might accumulate not gold bullion but interest-bearing exchange reserves. Doing so might speed the accumulation of international reserves. Imperial ties could be overt, as with India and the Straits Settlements which held sterling balances in London and Indonesia which held exchange reserves in Amsterdam. They could be covert, as with the dollar

⁴⁰ See Luzzatti (1884). This strategy of suspending silver coinage and authorizing the coinage of gold was an attempt to passively transform the monetary standard, in anticipation of the technique followed by India some two decades later. The suspension of free silver coinage made currency relatively scarce, creating pressure for gold coinage and thereby working to endogenously alter the metallic basis of the circulation. A number of other countries, including Spain in the 1870s, pursued this same quantity-theory-inspired strategy.

⁴¹ Flandreau (1993) shows that France in fact possessed sufficient gold to accommodate Germany's monetary reform without destabilizing the gold-silver exchange rate.

⁴² Similar difficulties arose a century later, when the U.S. government attempted to dispose of some of its gold reserves following President Nixon's closure of the gold window. See Salant and Henderson (1978).

balances of the Philippines and Nicaragua, which adopted gold-exchange standards following military intervention by the United States.⁴³ Thus, the Philippines went onto the gold standard following the American occupation of 1898. A special investigation under the authority of the U.S. War Department, prompted by the depreciation of the peso, led to an Act of 1903 establishing the gold exchange standard. Much of the country's reserve was held as gold deposits in New York. Similarly, Korea went onto the gold standard following an agreement of August 1904 which confirmed the Japanese protection of the country. It agreed to accept a Japanese financial adviser, to withdraw its depreciated coins, and to adopt the Japanese system of gold and token coinage.⁴⁴

The Brazilian case is worth considering in some detail, since although Brazil had been independent since 1824 its dependence on London for capital imports gave its monetary affairs an imperial flavor. Initially, the country had some success in operating a gold standard. An official parity was established in 1833 and adjusted in 1844, and the paper circulation was maintained close to par for extended periods.⁴⁵ The abolition of slavery in 1888, establishment of the Republic in 1889, and civil war in the south inaugurated a period of monetary instability.⁴⁶ Not only did these events

⁴³ A more extreme case was that of Puerto Rico, which had maintained a variety of different circulations under Spanish rule, although most coin was based on Spanish silver; its circulation was integrated with the U.S. monetary standard following American acquisition of the colony due to the Spanish-American War. See Kemmerer (1916).

⁴⁴ Conant (1915), pp.567-568.

⁴⁵ There were also extended periods of depreciation and exchange-rate fluctuation, as Conant (1915, p.500) notes.

⁴⁶ The discussion that follows draws on Topik (1987).

place financial demands on the government, but Rui Barbosa, the first Republican Finance Minister, attempted to secure the support of leading bankers, investors and merchants by creating three regional banks of issue, under the financial elite's control, with the power to issue notes backed by Treasury bonds equal to three times the total currency in circulation. The milreis depreciated as a consequence and plummeted dramatically when a new civil war broke out in 1893. Financial scandals then caused the finance minister to be replaced, and his successors, free of the demands of a civil war, were better positioned to pursue balanced budgets, free trade and ultimately, gold convertibility. The regional banks were reorganized, strengthening state control. While the planter class that supported these governments benefited from the stimulus to exports provided by a depreciated exchange rate, it suffered from the impediment it represented to obtaining capital imports. London demanded the restoration of gold convertibility as a precondition for lending, regarding it as a signal of the country's commitment to responsible finance.⁴⁷ Moreover, the Rothschilds warned the Brazilians that a failure to put their financial house in order might threaten their very sovereignty, in the extreme provoking a foreign invasion.⁴⁸

This constraint proved crucial. The Paulista Governments that ruled from 1894 attached priority to withdrawing from circulation the inconvertible paper currency issued by their predecessors. But acquiring the reserves needed to reestablish convertibility was costly for an economy subject to violent export fluctuations. Coffee prices weakened in the mid-1890s; budget deficits soared and the milreis reached its nadir in 1898. That year the

⁴⁷ See Fishlow (1989).

⁴⁸ Topik (1987), p.36.

Treasury finally reacquired the monopoly of the note issue. For a Funding Loan from the Rothschilds in London, the government pledged the revenues of the Rio customs house. It agreed to withdraw from circulation a sufficient quantity of inconvertible notes to offset any additional debt it issued and gave the foreign banks authority to oversee the Treasury's operations. Provision was made for accumulating a gold reserve in London. Helped by these measures and by strengthening coffee and rubber prices, the milreis recovered.

Reform was solidified in 1906 by exchange rate stabilization and the establishment of the Caixa de Conversao, essentially a currency board authorized to issue convertible paper notes backed by foreign exchange reserves (mainly pounds sterling). Despite the retirement of part of the inconvertible circulation as a consequence of the agreement with the foreign bankers and despite the Caixa's issue of convertible notes, only 40 per cent of the note issue was convertible as late as 1912. While the exchange rate had been stabilized, full return to the gold standard had not yet been effected.

F. The Catalytic Role of War. War could accelerate the transition of both the victors and the vanquished. For the former it could make available reparations in assets convertible into gold and provide the reserves needed to establish convertibility. For the latter it could provide discipline and constraints and thereby lead to the accretion of the requisite gold.

The German case is the classic example of a battlefield triumph supplying the impetus and resources for a transition to gold.⁴⁹ The indemnity provided the collateral that the government required to draw the

⁴⁹ In fact, it has been argued that the Franco-German rivalry played a central role in the very emergence of the gold standard. See Flandreau (1994b).

proceeds of bills of exchange on London and Paris in order to acquire gold in both centers. Germany obtained about 1 billion of marks in this manner.⁵⁰

The Japanese case also illustrates the role of battlefield victory. Not only was Japan a low-income country by European standards, but a turbulent political environment disrupted the state finances. Hence, Japan required nearly three decades to complete the transition from silver to gold, a journey that was marked by experiments with bimetallism and an extended period of inconvertibility.

The coinage in circulation in 1868, the year of the Meiji Restoration, was based on a system that dated to 1600. As in much of the rest of Asia, the standard was silver based.⁵¹ Successive debasements and the general disorganization of the monetary system led the imperial government to promulgate a new coinage law in 1871. It authorized the issuance of both gold and silver coins (though the silver trade dollar was given legal tender status only in 1878).⁵² However, the wars solidifying the Meiji Restoration, the need to suppress a rebellion in the southern provinces, and the abolition of feudalism all entailed financial demands on the government that were met

⁵⁰ The Government kept an account with the London Joint-Stock bank believed to have a balance as large as \$20 million, which it used to purchase gold at propitious moments. Conant (1915), p.198. It is important to note that the war indemnity was not meant to facilitate the move to gold but rather to weaken French political influence in Europe. Bismarck had imposed indemnities before on defeated rivals (as with Denmark in 1864) without using the proceeds to underwrite a transition to gold. See Mertens (1944) and Kindleberger (1993).

⁵¹ The Tokugawa Governments had minted both gold and silver coin (as well as some copper); at the time Japan was opened to commerce with the Western Powers (1854-59), the ratio of their prices was eight to one, compared to 16 to one in the outside world. Naturally, gold flowed out, silver in. Masayoshi (1899), pp.179-180.

⁵² Details in this paragraph are drawn from Masayoshi (1899), who was finance minister from 1881.

through issues of inconvertible paper currency.

Once these disturbances passed, financial reforms could proceed. Convertibility was restored in 1886. By this time, Japan was a de facto silver standard country. Although the finance minister strove to accumulate a reserve sufficient to support convertibility, the task was expensive and progress slow. As in Germany two decades before, a critical event in the country's transition to the gold standard was a battlefield victory, in this case over China. The Shimonoseki Peace Treaty negotiated by the diplomats in 1895 specified that Japan was to receive her indemnity in silver taels. Japanese financial officials, concerned about the depreciation of silver, asked that the treaty be modified to provide for an indemnity to be paid in pounds sterling and raised by China through the negotiation of gold loans in Europe. These funds, deposited with the Bank of England, provided the resources to back Japan's currency in gold and prompted the Diet's passage of a gold standard law in 1897.

War could also influence the monetary standard of the vanquished. France's defeat in the Franco-Prussian War, for example, encouraged its government to adopt an early version of the "franc fort" strategy: officials feared that a depreciating exchange rate would make it difficult to float on international capital markets the bonds (or Rente Thiers) needed to finance the indemnity. The importance of the Rente Thiers thus reinforced the weight they attached to stabilizing the French exchanges against Britain and Germany, a goal which could be accomplished by pegging to gold.

Greece provides yet another example. The country was defeated in the Greco-Turkish war that erupted in the spring of 1897. Forced to pay an indemnity in funds convertible into gold and having been in default on her

foreign debt since 1893, Greece opened discussions with her creditors in the hope of consolidating and funding the debt. Negotiations led to the establishment of an International Committee for Greek Debt Management. The Committee set as a condition for the provision of new funds the passage of a law prohibiting money creation as a means of financing budget deficits. The same article required the government to retire at least 2 million drachmas in banknotes each year until its domestic debt was reduced to 40 million drachmas. The peace treaty assigned a portion of the tax revenues to servicing the external debt. In return, a 150 million French franc gold loan was provided to fund the war indemnity. With a binding constraint on the note circulation, increases in the demand for currency could be met only by importing gold. A decade of gold inflows provided the resources needed to establish gold convertibility in 1910.

G. Historical Contingencies. The economist's inclination is to search for systematic factors that can explain the timing of the gold standard's adoption. Fully accounting for this timing, however, requires introducing a role for historical contingencies. In Argentina, for instance, favorable harvests and a surge in British lending facilitated the transition to gold in 1900. Unusually good harvests and large wheat exports in 1898 first strengthened the exchange rate. Following the passage of laws in November 1899 providing for the creation of a conversion fund and mandating that paper pesos be converted into gold at a rate of 44 gold centavos, another good harvest resulted in a surge of exports and a gold inflow. These events raised the gold backing to 59 per cent of the note circulation.⁵³ Argentina's subsequent success in maintaining gold convertibility was at least partially

⁵³ For example, Ford (1962) and Fishlow (1989).

attributable to capital inflows from Britain, made available by favorable conditions on the London market.⁵⁴

The transition could be eased if discoveries of precious metals or changes in their prices fortuitously increased the value of reserves. Mexico, for example, was a significant producer of both gold and silver, but most of the precious metal it produced had long since circulated outside the country. It was able to move quickly from silver to gold between 1905 and 1908. The transition was eased by a rise in the world price of silver, the metal in whose liquidation the government was engaged, due to silver purchases by Italy and increasing global gold production.⁵⁵ With the world market price of silver temporarily above its legal tender value in Mexico, large amounts of Mexican silver were exported to the United States and other countries in return for gold. Between 1905 and 1908 Mexico was able to transform its internal circulation from one based almost entirely on silver to one based primarily on gold without depressing the price of the metal it was selling. It held a significant portion of its reserve as interest-bearing assets in the United States.⁵⁶

⁵⁴ Conant (1915), pp.510-511. One might argue that the Argentine Government's policies of financial reform were responsible for it being on the receiving end of these flows. But reform, though necessary, was not sufficient; in other decades, London was largely unwilling to lend independent of policies in the debtor countries. After 1900, in contrast, large quantities of British capital flowed to Argentina and the other regions of regional settlement. The experience drives home the point that the movement onto the gold standard by Argentina, Mexico and other latecomers was facilitated by the state of the international capital market, whose general condition was largely independent of their own national policies.

⁵⁵ Kemmerer (1916), pp.538, 547.

⁵⁶ Keynes (1913), p.35. The role of gold production in the transition is also evident in Russia. Upon resumption in the 1890s, the gold reserves of the State Treasury and the State Bank amounted to approximately 50 per cent of the note issue. (Other domestic liabilities were backed by convertible foreign

VI. Implications for Research in International Monetary History

In this paper we have sought to chart the geography of the gold standard. Our account has highlighted the late date of the move to gold and the variety of transition strategies. Whether a country with a currency convertible into specie operated a gold, silver or bimetallic standard at mid-century depended not so much on whether it was rich or poor as on the monetary standard of the foreign country or countries to which its transactions were linked. When it came to the distinction between specie convertibility and inconvertibility, however, domestic economic conditions came into play. In particular, there was a strong correlation between economic development, as proxied by the level of per capita incomes, and possession of a convertible currency.

Most countries went onto the gold standard between the 1870s and the first decade of the 20th century. We have enumerated the factors propelling this transition and analyzed variations in its timing. Factors shaping the course of this transition include the afore-mentioned level of economic development, the magnitude of reserves relative to world specie markets, whether reserves were concentrated at the central bank, and the presence or absence of imperial ties. International politics, evident especially but not

exchange reserves.) Nearly half was accumulated in the first half of the 1890s. Two thirds of this total accumulated simply as a result of domestic production. This is not to minimize the importance of the policies that caused that gold to stay at home: these included steps to rein in the budget deficit by increasing revenues from the state railways and forests and to encourage agricultural modernization as a way of stimulating cereal exports. Fiscal and economic reform also encouraged lending by French and other foreign investors, which raised the Russian debt from 11 billion to 16 billion French francs between 1887 and 1900. This led Conant (1915, p.265) to conclude that "Substantially, the [Russian] gold standard was financed by means of borrowed capital." Without these ancillary measures, domestic gold production would not have sufficed. For further details on the Russian transition, see Willis (1899b).

exclusively in times of war, had important consequences for the transition.

These observations point to several directions for research. We conclude by mentioning two. Our analysis suggests, in contrast to most earlier core-periphery distinctions, that the prewar system had several cores and several peripheries. The classical gold standard did not revolve simply around the City of London; it evolved out of the British, French and German zones of economic influence and consequently had several centers -- London, Paris and Berlin -- corresponding to several peripheries. While the capital imports that allowed countries at the periphery to acquire the reserves needed to establish convertibility did not flow from any one financial center, they nonetheless tended to follow geographic channels that had been established earlier in the century.⁵⁷ Better understanding the operation of these monetary-cum-financial blocs should be a priority for research.

Finally, it is possible to argue on the basis of the evidence presented here that the gold standard was less a dramatic departure from the status quo ante than an attempt to restore the monetary stability that had prevailed before 1870. It was a way to solve problems, including exchange-rate instability and disruptions to international capital markets, caused by the collapse of the bimetallic system. It was a response to the failure of countries to agree on steps to sustain international bimetallism. Better understanding how countries cooperated in the operation of the international gold standard thus requires understanding how they failed to cooperate in the maintenance of its bimetallic predecessor.

⁵⁷ For a congruent view, see Fishlow (1985).

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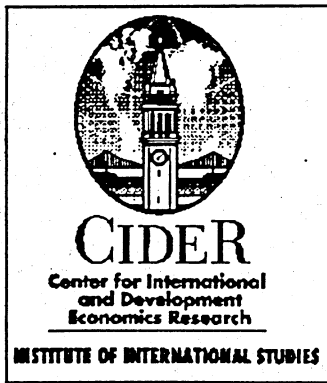
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