INTRODUCTION

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In March 1995 a workshop on "Monetary Standards and Exchange Rates" took place in Perugia, Italy. The workshop was organized by Maria Cristina Marcuzzo and Annalisa Rosselli, two of the editors of this volume, and was financed by a research grant provided by the Italian National Research Council in collaboration with the Research Division of the Bank of Italy. A distinguished group of economists and economic historians from Europe and the United States attended the workshop.

After the conference, the two organizers met with a third participant, Lawrence Officer, to discuss producing a book based on the theme of the conference: understanding the workings of monetary regimes based on metallic standards. It was decided to include a selection of papers from the workshop, constituting most of the volume, and, in addition, to invite a few other researchers to provide chapters, the better to ensure a comprehensive treatment of the topic. The result is this volume, which has the same title as the workshop that began it all.

The term "monetary standard" has both a domestic and international connotation. Domestically, the monetary standard pertains to the basis of the currency and the backing of the money supply. Here a commodity standard is contrasted with a paper standard or fiat money. Metallic standards, a subset of commodity standards, involve gold and/or silver (the "precious metals") as the standard; and metallic standards are the focus of this volume. Internationally, a metallic standard at home and abroad is associated with a "fixed" exchange rate, meaning an exchange rate bounded by specie points.

However, the distinction between a metallic and paper standard (or, to put the matter simply, a country "on" or "off" gold) is not clear-cut. For analytical purposes, a floating rate can be converted to the corresponding rate that would occur under a specie standard, as is done by Officer (Chapter 8 in this volume). Empirically, the legal and actual standards can diverge. A country can be nominally on a metallic standard but actually on a paper standard. Examples are the United Kingdom and United States during World War I. The opposite is also true: a metallic standard might be
in effect without a legal basis. An example is the Italian "Shadowing of the gold standard," discussed by Tattara and Volpe (Chapter 9).

This book is concerned with the economic history of metallic standards and fixed exchange rates, whereas the present system around the world is a paper standard and largely floating exchange rates. As recently as the early 1970s, most countries were on a fixed exchange-rate system. It is quite possible that this situation might recur. Indeed, the European Union has such a system as an explicit goal. Further, discussion of a movement to the domestic gold standard has a tendency to reappear in the popular press and political debate. The lessons of economic history should not be forgotten, so that informed decisions can be made by policy-makers (or at least informed evaluations of these decisions can be made by scholars).

Metallic regimes are characterized by the fact that the anchor of the monetary system is provided by one or both of the precious metals. The currency unit is fixed and equal to a given weight of gold and/or silver of specified fineness. It follows that the behavior of the monetary system is intertwined with the conditions of demand and supply of the metal or metals chosen as the standard. This is in contrast to the case of a pure fiat monetary regime, in which monetary authorities and market behavior are not subject to this constraint.

The chapters in Part I are concerned with the evaluation of monetary systems. How well do metallic regimes perform compared with the other monetary systems that human history has experienced? Criteria such as growth, inflation, and general economic stability are utilized by the authors.

Robert Mundell (Chapter 1) offers a broad overview of international monetary systems from the end of the Napoleonic Wars through the present to a predicted future. He faces at the outset the question of how to classify international monetary regimes. His taxonomy rests on a double classification: the chosen monetary standard (for example, gold, bimetallism, the dollar) and the degree of flexibility of the exchange rate (fixed, adjustable, fixed, floating). For Mundell, there is a correlation between the two arrangements: whenever a monetary standard existed, the system worked as a fixed exchange-rate regime, providing price stability and growth. However, he maintains that the converse is not true. A fixed exchange-rate system, to be effective, must contain a mechanism to discipline the center country, in particular, to allow the peripheral countries to influence the inflation rate selected by the center country. This is precisely what a metallic regime does.

In fact, Mundell shows that, compared with the experience of flexible exchange rates or fixed exchange rates unanchored to a monetary standard, metallic regimes have a good historical record. While the desirability of fixed exchange-rate systems for economic stability is demonstrated, Mundell is careful to note that the exchange-rate levels must be correctly chosen. As for the future, both past anchors of such a system (gold, silver, national currencies) and a world currency are viewed as unrealistic—eventhough the experienced anchored dollar system was a relative success. The predicted outcome for the near future is regionalism, although a multilateral system based on a world currency would be preferable.

Mundell pays scant attention to bimetallism, viewing it as simply a way station on the road to the international gold standard. He notes that bimetallism is the least understood system, a reason why the whole of Part II is devoted to bimetallism. Also, nothing is said regarding pre-1815 standards, the subject of Rostagno's contribution in Part II.

Though the volume does not emphasize floating rates, one might comment that Mundell's castigation of the 1970s experience with floating rates does not distinguish between a free and managed float. That experience was decided in the latter category. In early history, floating rates were genuinely free and they often only temporarily detriated a monetary standard—for example, the Bank Restriction Period, discussed by de Cecco.

Chapter 2, by Richard Cooper, was originally published in 1989 but is not widely known. Yet it is extremely relevant to the theme of the book and so appears here (in slightly revised form). Cooper has broadly comparable views to Mundell on the need for an anchor for exchange rates, but is more skeptical about its functioning. Indeed, he challenges the possibilities of an anchor—given not only by a monetary standard but alternatively by a physical commodity or a basket of commodities—in maintaining price and (real and nominal) exchange-rate stability.

Cooper's argument is twofold. First, he argues that in order to stabilize the price level, the price of the standard (the chosen metal or basket of commodities) must be adjusted any time that a change occurs in the terms of trade between the monetized commodity and the other goods and services—a very likely event. In fact, changes in technology and productivity are never of the same magnitude, nor do they occur at the same time, in the industry producing the monetized commodity and in the industries producing all the commodities. Conversely, if the price of the standard is kept fixed, oscillations in the price level are bound to occur. Cooper notes that during the gold-standard era there were long periods of price decline as well as long periods of rises in prices.

Second, he distinguishes two cases: (a) two or more countries choose the same monetary standard linked to the same commodity, (b) the countries choose different standards. In case (a) the source of instability of the exchange rate, both real and nominal, lies in the rate of change of the ratio between the price of tradable goods and the price of nontradable goods. Because changes in productivity occur at different rates in different countries, the terms of trade between tradables and nontradables change at different rates in the two countries. Moreover, the price level in each country is not affected in the same way by changes in the tradable/nontradable price ratio, because the weight of the tradable sector in the
Indeed, de Cecco views the classical gold standard as beset with forces making for instability. The United States is interpreted as a prime destabilizing element. The United States suffered recurrent crises and lacked a central bank; it also had destabilizing government policy. Unlike France, India, and South Africa, the United States was helped by the Bank of England rather than helping the Bank. The domestic financial structure within Britain was also destabilizing.

We observe that good indicators of the instability of an international monetary regime based on a metallic standard are either how long such a regime can be maintained before the standard itself has to be abandoned or how many times the system is forced off the chosen exchange rate. The experiences of the center, not peripheral, countries are pertinent in this respect. Also, metallic regimes, even when in effect, are not synonymous with fixed exchange-rate systems, and fluctuations in exchange rates within, and occasionally even outside, specie-point bounds are an observed feature of international monetary regimes based on monometallic and bimetallic standards.

In Part II the behavior of exchange rates under the metallic regimes as we know them from history is looked at in detail. Maria Cristina Marcuzzo and Annalisa Rosselli (Chapter 4) discuss and compare two-country cases in which (a) the same metal is adopted as standard in each country, (b) different metals are used as standard in the countries, and (c) a bimetallic standard reigns in each country. In each case a different definition of the "official exchange rate," or "official parity," is required.

Deviations of the market rate of exchange from the official parity reflected both the conditions prevailing in the market for bills of exchange — which in turn reflected the conditions of the balance of payments — and the conditions prevailing in the market for gold and silver, the latter being influenced by the employment of the two metals in monetary and non-monetary uses.

Marcuzzo and Rosselli present a framework to distinguish between these two components. Taking the London—Paris exchange rate from 1821 to 1870 as an empirical case, they compute a measure — the deviation of the exchange rate from real (commercial) par — that indicates whether the balance of payments (market for foreign exchange) is favorable or unfavorable for the domestic currency and therefore whether an inflow or outflow of bullion is likely to occur. Left for future research is testing the indicator empirically, that is, correlating their indicator measure with England's gold flow.

Although Marcuzzo and Rosselli do not state explicitly, what they do is to systematize and extend the concepts of the English bullionists writing during the Bank Restriction Period — the floating pound of 1797–1821 — an episode discussed in de Cecco's Chapter 3.

The issue of the stability of the exchange rate when two different
standards are involved requires consideration of additional constraints on the rate, which is the subject of Chapter 5 in Part II. Marie-Thérèse Boyer-Xambeu, Ghislain Deleplace, and Lucien Gillard construct a "bimetallic snake" for the London–Paris exchange rate for the first three-quarters of the nineteenth century, and claim that this was the pertinent constraint on the rate. Their constraint is in contrast to the conventional gold-point spread or even the gold-point snake. Their innovations are the use of market rates for bullion (gold and silver) and the explicit inclusion of both metals in their modeling, incorporating the silver market in London even though this metal was demonetized.

To the general discussion of the characteristics of commodity-standard regimes, Boyer-Xambeu, Deleplace, and Gillard introduce the point that these regimes cannot possibly be classified in the fixed-exchange-rate category, since what matters is not the fixed legal par of exchange but the variable market par of exchange, which reflected the changing prices of gold and silver in the London and Paris markets.

The authors' empirical result is that the exchange was favorable to the pound during most of the period after the resumption of convertibility (subsequent to the Bank Restriction Period). The use of data on bullion flows in testing their model is commendable.

Their study can be compared with that of Marc Flandreau (Chapter 6), who adopts a different methodology to examine bimetallism within France. The focus of Flandreau's contribution is to challenge two conventional wisdoms associated with bimetallism: the idea that the system is unstable, and the role in it of gold–silver arbitrage. According to the traditional view, bimetallism is intrinsically unstable, because the gold–silver price ratio is market determined and therefore bound to change as the conditions of demand and supply of gold and silver change. Attempts by government to fix a legal price ratio are ineffective. Whenever there is a slight divergence between the legal and market ratio, the public uses the overvalued metal as money to discharge debt, while arbitrageurs buy the undervalued with the overvalued metal at the legal ratio and sell the latter at the market ratio at a profit. Thus the undervalued metal disappears from circulation and is withdrawn from monetary use. It follows that bimetallism as such cannot exist, and what we have instead is an alternation of de facto gold and silver standards, with the other metal disappearing from circulation.

Flandreau challenges the traditional view on two grounds, theoretically and empirically. The first criticism is that the demand for gold and silver is composed of the demand for monetary and for nonmonetary uses; so that there results a degree of flexibility in relative prices compatible with a given legal price ratio. Second, the traditional view ignores the costs involved in gold and silver arbitrage. Flandreau produces evidence that these costs were relatively high, so there was in fact around the legal ratio a wide interval within which the market ratio could vary without making the buying and selling of one metal against the other profitable. Given these high arbitrage costs, according to Flandreau, the stabilizing role of gold–silver arbitrage has been overstressed in the literature.

His conclusion is that France-led bimetallism was extremely stable during the period 1851–70, with the market gold–silver price ratio always within the gold–silver arbitrage points. In principle, arbitrage activity diverts the overvalued metal from nonmonetary to monetary uses, raising its market price and narrowing the gap between the market and legal ratio. In practice, Flandreau concludes, metal-specific arbitrage in the same metal between coin and bullion was less costly and more efficient than arbitrage between gold and silver in stabilizing the gold–silver market price ratio within the gold–silver points.

However, bimetallism need not be interpreted as represented solely by the classical gold–silver regime of the French type. There is the case explored by Massimo Rostagno (Chapter 7) in his modeling of pre-Napoleonic (Ancien Régime) monetary systems in Europe. In this regime there are two types of money within the economy. One money is for the wealthy (nobles and merchants), and it is composed of essentially full-weight gold and silver coins. The other is for the poor, and it consists of copper and debased gold or silver coins. The dichotomy of the monetary system was a reflection of the separation of the internal sector (mainly consumption at subsistence level) from the external sector of the economy (international trade engaged in by merchants), and was efficient in insulating the former from the perturbations arising in the latter.

This peculiar type of bimetallism was asymmetric, as convertibility between the higher and lower order of the metallic circulation worked mainly down the scale (for example, from gold to copper) and hardly upward. This is explained by the different level of seigniorage (reflected in the degree of fineness of the metal embodied in coin) that the two types of money could bear. The discipline imposed on the sovereign in the case of money used in international transactions was much tighter than in the case of money used only for internal circulation. The latter performed only the role of medium of exchange and it was never hoarded, because the public knew that its face-value could be altered by decree at sovereign will. Thus seigniorage was also a way of conducting monetary policy.

The monetary system of the Ancien Régime, Rostagno argues, was able both to economize the costs of the currency and to provide a certain amount of flexibility, two goals that the gold standard achieved much later, through the introduction of paper money and discretionary monetary policy. Though the other authors in the volume concentrate on the post-Napoleonic period, it should be noted that the regime considered by Rostagno lasted a long time—a thousand years—so it warrants attention.

Part III of the volume examines an important aspect of metallic regimes, the different behavior of the system at center and at periphery.
Lawrence Officer (Chapter 8) investigates the extent to which the American foreign-exchange market was integrated (the degree of perfection of the market) over a long time span— from 1791 to 1931. The existing literature on the issue of exchange-market integration under a metallic standard has two strands. The first approach is to compute the amount of variation of the exchange rate, and observe how the magnitude of the variation changes over time. The second approach looks at the gold-point spread. What Officer does is to present a formal model by means of which the two approaches are integrated. Also, his model distinguishes between the external and internal components of integration.

Although the time span examined includes periods in which the United States and Britain were off the gold standard, an adjustment is made so that it can be pretended that the countries were on the gold standard, as long as a free gold market was in operation. Officer's computations show how the integration of the American foreign-exchange market varied over time, especially the trend improvement.

At the other extreme of the spectrum are the peripheral countries, which often were unable to maintain convertibility. Giuseppe Tattara and Mario Volpe (Chapter 9) argue that Italy, from 1861 to 1913, was on the gold standard more informally than formally, as convertibility of banknotes was enforced only initially, for a five-year period. However, during the whole period under scrutiny Italy maintained a remarkably stable exchange rate and stable prices, effectively "shadowing" the gold standard. In other words, the Italian real exchange rate was stationary over time.

This is different from Officer's examination of the American case, in which the paper standards of the United States and Britain did not "shadow" the gold (or silver) standard but rather were genuine periods of inconvertibility. In Italy monetary circulation was expanded, and yet stability was achieved. Tattara and Volpe explain the puzzle by arguing that the increase in the money supply was required by the remarkable growth in output throughout the period.

The authors maintain that the gold standard worked mainly through capital movements in an integrated financial market, so that an excess demand for money in one country led to a portfolio adjustment, which was largely independent of relative price levels and commodity flows. In emphasizing the role of international capital mobility in permitting Italy to adhere essentially to the gold standard, they denigrate the traditional price-specie flow mechanism. Their time-series analysis confirms that the Italian "shadowing" of the gold standard was a genuine phenomenon.

Agustin Lloa Rodriguez (Chapter 10) deals with the experiences of Portugal and Spain, two "dependent economies," to provide an explanation of the difficulties of these peripheral countries in maintaining the gold standard in the nineteenth century. His argument is that there were three sources of such difficulties. The first is the variability and volatility of the terms of trade, due to the structure of the "dependent economy," the exports of which are chiefly primary products and the imports manufactured goods, prices of primary products being more subject to fluctuations. The second source of difficulties is the rigidity of prices in the nontradable sector.

These two elements constitute an obstacle to maintenance of convertibility, because variable terms of trade make the balance of trade unstable, and in order to keep the economy in equilibrium, prices of nontradables should be as flexible as those of tradables—a rare occurrence. However, according to Lloa Rodriguez, Portuguese adherence to the gold standard from 1854 to 1891 was made possible not by flexibility in domestic prices but by capital inflows and surpluses in the invisible balance due to remittances from Portuguese emigrants.

Capital inflows helped Portugal to remain on the gold standard for a long period, but capital movements also forced Portugal to abandon it. In order to remain on the gold standard, the peripheral countries had to adjust their interest rates on the basis of the interest rate ruling in the center country (Britain). This was a third source of difficulties: a sudden rise in Bank rate in London could draw gold from anywhere in the world, depriving poorer countries of their gold.

Spain was a different case. It never officially adopted the gold standard. In the years before 1868 the country was on a bimetallic standard, then switched to a de facto silver standard until 1883, when convertibility was abandoned. Spain experienced large variability and volatility in its terms of trade and therefore high fluctuations in its real exchange rate. Lloa Rodriguez's main point is that although the real exchange rate in each country did not behave as required to remain within a commodity-standard regime (or, more generally, any fixed-exchange-rate system) as a peripheral country, inconvertibility did produce stability in the real exchange rate and favored some export growth, although the price paid was a deterioration in the terms of trade.

Returning to the volume at large, its title, Monetary Standards and Exchange Rates, manages to convey the idea that by monetary standard or regime is meant something more than just the system of exchange rates. A monetary regime is strongly characterized by what nineteenth-century economists called the "standard" and in modern language we refer to as "international reserves."

Contrary to a commonly held view, monetary regimes where the standard was gold and/or silver—"metallic regimes" for short—were characterized by a certain amount of flexibility in the exchange rate and occasionally were able to overcome the quantity constraint on their reserves by relying on the stock of the metal which was standard in other countries. Moreover, suspension of convertibility of banknotes into gold or silver, as long as coins remained in circulation, can be interpreted as not sudden abandonment of the regime but rather a temporary widening of the interval of
variation of the exchange rate. With the anchor gone, the system became less stable, but more flexible in its ability to accommodate fiscal or monetary expansions and real shocks. Certainly in the center countries, convertibility would invariably be restored, and at the former parity.

The discipline of the gold standard was circumvented in all the circumstances in which it threatened the pursuit of more urgent policy objectives. Metallic regimes are no more immune to discretionary intervention and change of priorities than are monetary regimes in which the reserve money is simply the debt of the hegemonic country. Such experience shatters the myth of the discipline of the commodity anchor. Historically, gold and silver indeed exercised some restraint, as a reserve which is not the debt of a single country always does. This discipline worked, however, only so long as the regime was believed to be everlasting or at least only temporarily abandoned. As for all myths once shattered, it will never be trusted again.

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