A golden opportunity:
India's failed transition from the silver rupee to a gold currency in the 1860s

Sashi Sivramkrishna
Narsee Monjee Institute for Management Studies (Bangalore)
&
Foundation to Aid Industrial Recovery
sashi.sivramkrishna@gmail.com

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Sashi Sivramkrishna
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Abstract

Perhaps the most significant event in the monetary history of the nineteenth century was the decline of bimetallism and shift of many European countries from a silver or bimetallic standard to a monometallic gold currency. Apart from England which had been the first country to adopt the gold standard in 1821, the wave of European changeovers began with Portugal in 1854, followed by a few smaller states in 1867, but gathered a more compelling momentum only after 1872. Outside of Europe, Japan made a transition to gold in 1897 while the United States officially converted to gold in 1900. De facto transition to gold in these countries had, however, begun in the mid-nineteenth century soon after gold discoveries had lowered the market price of gold relative to silver. Many recent studies have sought to develop a sound understanding of this transition; here, as appropriately articulated by one historian, it is particularly useful to distinguish emergence theories from diffusion theories that seek to provide an explanation for this phenomenon. *It is with respect to the former that we consider a study of India's (failed) attempt* to make a transition from monometallic silver to a gold currency in the 1860s, alongside the movement in Europe, to be imperative. Beginning with a contextualization of the movement for a gold currency within the larger macroeconomic context of that period, our paper attempts to find answers to several questions, which simultaneously demarcates the scope of this study; what were the arguments made for and against a gold currency in India? What was the quantum of precious metal flows into India? Who lobbied for the shift? What was the stand of the British-Indian government? What were the schemes proposed for the transition? What led to failure of the scheme? Drawing primarily from archival sources we find many of the reasons advanced in more recent emergence theories clearly articulated in the Indian context at that time, ex ante. Even though the sovereign and half sovereign were finally accepted at the Treasuries, the scheme failed for an obvious but often repeated practice; the legal ratio of the sovereign and rupee was not set in accordance with the market price ratio of their bullion content. While recent studies have sought to find reasons for the switch to gold in Europe and elsewhere, the Indian case stands out as peculiar; why was the government attempt so half-hearted in spite of benefits to trade and capital flows that would accrue to both, Britain and India? Was India in some sense purposefully kept away from gold? After all, *Britain's other major colonies, Australia and Canada had already* adopted a gold standard as early as 1852 and 1853 respectively. What could have been the reasons for this resistance to a gold currency for India? Records and contemporary studies from that period point to a few possible reasons; while Britain may have been a major trading partner for India the reverse may not have been the case, the apprehension over India absorbing and hoarding precious metals *including gold and the adverse impact that this could have on the world's money markets, the growing consensus in the West that gold was the appropriate metal for currency amongst the 'civilized' nations of* the world and the convenience of India remaining *on the rupee as it would act as a sink for Europe's excess silver* (when it transited to gold) thereby preventing destabilization of other currencies that remained on a silver standard. *This leads us to impudently open the door to "counterfactual history"*; would transition to the gold standard in many parts of the world still have taken place if the Indian initiative for gold had indeed succeeded? Would Europe have found a convenient drain for its silver and abandoned bimetallism if India had moved on to gold? In raising these questions, our objective is to re-*evaluate the relative importance of India's (failed) attempt in transiting to a* gold currency in the recent gold standard narrative, which has otherwise been rather tentative.

Introduction

Many recent studies in monetary history have sought to find reasons for the emergence of the classical gold standard (c.1870-1914). The question historians pose is a rather simple one; what led countries to shift to a gold currency from a silver or bimetallic standard? Surveys of the different viewpoints put forth can be found in the works of Meissner (2002), Redish (2006) and Morys (2012). The one commonality amongst these perspectives is their almost exclusive focus on the adoption of the gold standard in Europe.[1] Japan and the United States do figure in the discussion occasionally, their official transition to gold happening only later, i.e. 1897 and 1900 respectively. Surprisingly, almost all these recent studies overlook a movement that began in India at about the same time, if not earlier to Europe's shift to gold although with one significant difference; it failed or rather, was allowed to fail. Given that many of the benefits delineated by recent historians as to why gold was a superior metal to silver for currency were also made by the Indian gold lobbyists at that time, the question that arises is a paradoxical one; why was the British-Indian government ambivalent in their decision about a gold currency for India in spite of the benefits that could accrue to both, India and Britain from moving to gold being clearly articulated, ex ante? It was a search for an answer to this question that led to this study.

Although India figured prominently in contemporary discussions and reports, this is not the case with recent literature. We, therefore, briefly familiarize readers to the Indian currency system at that time followed by the macroeconomic context in which appeals for a gold currency arose. On reviewing the ex ante benefits claimed by the Indian gold lobby c. 1860 we find that many of the arguments made by them are similar to those found in the current research on why Europe adopted the gold standard. There are, however, some benefits which were unique to the Indian situation. Any debate has more than one point of view and just like in the West, there was also strong opposition to a gold currency for India. A monetary system with silver and paper was considered the best for the country. Even so, the pro-gold lobby's reasoning was ultimately compelling enough so that in 1864 the British Indian government conceded to their demand and accepted (gold) sovereigns and half-sovereigns at their treasuries. At this point a critical decision

[1] Even the adoption of a gold currency in Australia and Canada in 1852 and 1853 respectively has been sparsely studied.

had to be made on the scheme to move from silver to gold; should it be an all-at-once attempt? Or would a transitional phase of a parallel standard or bimetallism be a more suitable choice? While the majority ruled in favour of bimetallism as a temporary necessity, it (as usual) entailed the fundamental problem of setting the legal ratio of gold:silver in accordance with the market rate. When the government undervalued gold legally vis-à-vis silver, Gresham's Law repeated itself so that gold never really came into circulation. Why was this allowed to happen in India when Europe had just about decided in favour of a monometallic gold currency and Britain's colonies, Australia and Canada, had by then adopted gold currencies? In the concluding section of this paper, some counterfactual questions are raised on the linkage between India's failed attempt and Europe's transition to gold.

The Indian Currency System: 1835-1853

By Act XVII of 1835 of the Imperial Government a common currency was introduced for the whole of British India, a silver rupee weighing 180 grains troy and containing 165 grains fine as the sole legal tender. The Indian mints were opened to the free coinage of silver in quantities of not less than 1,000 tolas[2] (of 180 grains each). The coinage charge was 2% (in addition to 1% melting charges) for silver of the Indian standard (91.6 per mille, i.e. parts per thousand). Copper coins were accepted as legal tender but only for fractions of a rupee. The year 1835 marked the culminating-point of a long and arduous process of monetary reform that had begun soon after the rise of the East India Company as merchant-ruler, placing India on a silver monometallic basis with the rupee as legal tender and standard coin.

Gold coins were demonetized and no longer accepted as legal tender. However, the government continued coining of gold mohurs and even allowed them to circulate but at a rate that was to be fixed from time to time by the governor-general in council and announced in the Calcutta Gazette. They would be received and issued at public treasuries in lieu of silver rupees. At that time the rate was fixed at 15 rupees to a gold mohur. By a subsequent proclamation on 13th January 1841, the treasuries were instructed to accept freely the gold coins struck under the

[2] A tola is approximately 11.6666 gms.

above Act of 1835. But this inconsistent and impractical policy of issuing coins, accepting them in discharge of claims of the government but, at the same time, not accepting it as legal tender, could apparently create a serious problem for the government. If the market price of gold exceeded its legal value, i.e. gold was undervalued as coin, then no gold would be received into the treasury at all. On the other hand, if the market price of gold was lower than the legal ratio, the government would end up receiving all its dues in gold while it would not be able to re-issue it in discharge of its own liabilities as it was not legal tender.

Why then was gold at all received by the Government? In fact, in 1844, there is evidence that the government even encouraged the coinage of gold in Madras and Bombay as it reduced seigniorage on gold to 1% while it continued to be 2% on silver (Nolan, c.1878, p.380). The reason for this policy is really not surprising because between 1840 and 1850, the market gold-silver ratio remained above the legal ratio of 1:15; in fact, in 1840 it was 1:15.62 whereas in 1850 gold increased to 1:15.70 (Statistical Abstract, 1955, p.432); gold had appreciated a few basis points. In spite of this undervaluation of gold legally (which should have been a disincentive to make payments in gold), there were instances when treasuries received locally available (gold) currency; silver coins were sometimes in short supply and the rates charged by local moneychangers exorbitant. This could have been a reason why treasuries accepted gold coins.

Tremors that shook confidence in the fixity of the par rate between gold and silver began with the gold discoveries in California in the late 1840s. However, the full impact of these disturbances in the market for precious metals reached India with the news of gold discoveries in New South Wales, Australia. A supply shock if followed by a fall in the silver price of gold would mean its overvaluation as coin (at the statutory rate of 15:1). Going by the proclamation of 1841, an inflow of gold into the government's coffers would have become inevitable, a fearsome situation for the government;

> …we have reason to believe that speculations are already in progress for forming connexions with Australia for the express purpose of bringing up gold when the direct line of steam communication is open next year, in order to take advantage of the Government proclamation of 1841, by which gold is still

> receivable at 15 rupees to the so-called gold piece; and in this case we run the risk of being seriously inconvenienced by an excessive stock of this metal (Copy of Financial Letter, 1852, p.46)

The government clarified that the proclamation of 1841 was not understood by the Indian treasuries correctly. Their policy was not to receive gold when it was overvalued as coin relative to its market value thereby giving undue profit to the merchant at the expense of the State. It is true that the government of the Company could have used some of its gold reserves to meet its requirements back in Britain; however, the accumulation of gold reserves would take place not in adjustment of balance of trade but only because it was no use as coin in India. This, the Council considered, was an unsound argument in favour of allowing gold currency as legal tender.

Ultimately on January 1, 1853, Lord Dalhousie, Governor General of India in Council, withdrew and cancelled the amendment made in the proclamation of 1841, the Act of 1835 was reinstituted; although gold would continue to be minted by the government, the gold mohur was demonetized and no longer accepted in discharge of the public's liabilities in the Indian territories of the East India Company. India had followed in the footsteps of Holland, which had suspended the circulation of gold Guillaumes in 1850 out of the same fear that a fall in the silver price of gold would lead to an overvaluation of gold coin and settlement of government dues in this lower valued coin. By the end of the first half of 1851 some £5 million equivalent of gold coins had flowed into the bullion markets of France, Germany and Britain from Holland (Faucher, 1853, p.37). The action of Holland was soon followed by Belgium. Other countries including Portugal, Russia and Spain followed suit by prohibiting the export of silver.

India had transited from silver to a bimetallic and back to a monometallic silver standard in the beginning of the second half of the nineteenth century; copper coins circulated in denominations of only less than a rupee.[3] Gold had been demonetized and was no longer accepted at the treasuries, although the Government continued the coinage of gold brought to mint.

[3] Note that the amount of copper to be coined was regulated by Government. No private individual could bring copper to the Mint and demand copper coin in exchange; otherwise the country could have been inundated with copper money. Moreover, copper coins were issued at a much higher money value than their actual weight would warrant (Ballard, p.14).

India's increased currency needs in the 1860s: the macroeconomic context

The movement for a gold currency in India originated from the coincidence of two important events; first, the gold supply shocks which were triggered off by gold discoveries in California (United States) and New South Wales (Australia) in the mid-1800s and second, the growth in India's internal and external commerce on account of the cotton trade in the late 1850s-early 1860s. Let us begin with the latter. As can be seen from Figure 1, there was a steep increase in Indian imports of cloth from the Lancashire cotton mills in 1857-58 and then a few years later an export boom of raw cotton from India on account of the Cotton Famine that arose with the outbreak of the American Civil War, which cut off Lancashire's main source of raw material. These events led to an enormous growth in the overall external trade of India within a period of just a decade and a half from approximately £28 million in 1849 to almost £100 million in 1865 (DSAL). The currency requirements of domestic trade and commerce in turn increased significantly in order to enable a larger volume of circulation of goods and services. The import of bullion and the coinage of silver rupees at the mints of the Presidencies show the growing currency needs of the Indian economy at that time (Figure 2).

Insert Figure 1

Insert Figure 2

The demonetization of gold in 1853 meant that silver was the only metal available for coinage. This happened at a time when gold inflows were substantial and available abundantly in India. The silver inflow by itself was inadequate in meeting the growing requirements of trade, leading to an acute scarcity of coins in circulation. Ad hoc arrangements were soon adopted. The Bombay Chamber of Commerce (1864, p.5) reported that gold bars stamped by the Bombay Banks were circulating in the market. In another instance, Cassels (1864, p.15) reported that in north-west India, people were exchanging "mysteriously sealed bags" each supposedly containing 1000 rupees each and upon the faith of the merchants. In Ambala, the government found counterfeit gold coins having extensive circulation (Trevelyan, 1864, p.77) and the more trusted Jaipur gold mohurs were acknowledged to have widespread acceptance in many parts of the country (ibid, p. 77). In south India silver had become so scarce in 1858 that the government had (once again like in the past) to accept gold sovereigns coming from Ceylon and Australia in settlement of taxes. The simultaneous increase in currency needs and inability to utilize the abundant metal for coinage set off a movement for a gold currency.

It can be argued that the general shortage of currency should have resulted in deflation; a fall in the general price level. Prices, however, held steady. The paradox was explained by Cassels (1864, p.14); according to him many traders instead of parting with goods for a smaller quantity of the circulating medium (silver), preferred to hold on to their stocks of goods. Business was therefore almost entirely suspended in lieu of falling prices. The shortage of currency was, however, more evident in money markets where bank rates of interest rose up to 24%. Government securities were trading at just Rs.83 (par Rs.100) simply because everyone wanted to sell for cash (demand for money was high) and there were few takers for bonds (Trevelyan, 1864, p.73). Those who sourced their capital from England did so at a rate of 2s.3d. six months forward per rupee against the par rate 2s. per rupee. Meanwhile, by 1863-64 the average uncoined bullion accumulated in the mints was almost £3 million (ibid, p.75-6). This was simply because the working powers of the mint were insufficient for the job. This also coincided with the period when coin was in greatest demand to make purchases of cotton for shipment to English mills. The use of gold would have surely alleviated the situation at the overworked mints as the value of a gold coin was many fold that of silver.

A gold currency for India: ex-ante reasons articulated in favour of its adoption

It is important to be clear, at the very outset, whether one is speaking about emergence of the gold standard or its diffusion (Morys, 2012, p.6). The Indian case, however, does not decisively fit into either category. Prior to the Indian movement for a gold currency in the beginning of the 1860s, only five countries had actually adopted the gold standard; Australia in 1852, Canada 1853, Portugal 1854, Argentina and Uruguay 1863 (Meissner, 2002). In chronological terms, therefore, the Indian movement might be seen as a part of the emergence phenomenon. At the same time, a significant portion of India's trade and investment being inextricably linked to Britain (see Table 1) meant that adoption of a gold currency is akin to the "diffusion" of a common currency between a country and bloc of several others (for India, in that period, Britain was equivalent to such a bloc) already on a gold standard. Although the conceptual boundaries between emergence and diffusion theories are blurred in the Indian case we nonetheless consider it important in furthering the debate on the historical origins of the gold standard.

Insert Table 1

One of the earliest amongst the recent studies on the origins of the gold standard was by Bordo and Rockoff (1996) in which they argued that it was the possibility to access capital on better terms by providing “the good housekeeping seal” that motivated countries in the periphery (net capital importers) to change to gold. Convertibility of the currency into a fixed amount of gold signaled to the world that prudent fiscal and monetary policies would henceforth be followed thereby minimizing currency risks that could emanate from inflation. This explanation is supported by Sussman and Yafeh (2000) in their study of Japan where the gold standard acted as a symbol of “sound economic policy and creditworthiness” (p.465), lowering Japanese borrowing costs in London. They argued that in spite of Japan’s debt increasing, adoption of the gold standard served to keep yields on government bonds low.

India, as a colony of Britain, did not need such a “seal of approval”. Nonetheless, the adoption of gold was seen as favourable to enhancing capital flows. With political rule passing from the East India Company to the Crown in 1858 after the sepoy mutiny, India attracted a massive amount of British capital to fund the building of the railways, irrigation works and the telegraph (Figure 3 shows India’s growing debt in England). Between 1856 and 1862, the railways alone absorbed British capital of some £50 million (Lees, 1864, p.49). With silver production slowing down at that time, along with the relative abundance of gold, expectations were that the gold price of silver would increase. Given its relative scarcity then, silver would not only be an “inconvenient” currency (Naoroji, 1870, p.13) but more importantly an appreciation of silver could dampen capital inflows into India. At the same time, moving on to gold would bring down the costs of raising loans for India, enabling it to raise a greater amount of capital for its developmental needs. The process was succinctly described by Hendriks (1870);

> "It would be a means of consolidating, to some extent, the funded debt of India, and very probably of reducing the interest on future loans … The interest on the latter (Guaranteed railway debt) is paid in sterling, half-yearly in London, whilst, although a power is given to the holders of Indian registered debt to have it enfaced for registration at the Bank of England, in London, the practical result is, that when the holder goes to receive the interest, it is not in sterling, but in the shape of a bill on the Treasury in India for so many silver rupees. This has to be sold to a bank or dealer in bills, at the fluctuating exchange of the day. The element of uncertainty is thus introduced. The recipient of interest has to face the inconvenience of the exchange market, the details and secrets of which he is quite unacquainted with, and wherein his loss is the buyer of the bill's gain on the transaction. Under these circumstances, it is not surprising that, out of the total of 628¼ millions of rupees of registered Indian debt, on 31st December, 1868, only 157½ millions of rupees were held in England. A much larger amount would be thus held, to the eventual advantage of the finances of India, if gold were made the standard in India, and 10 rupees made equal to one sovereign, either of its present weight, or of the weight of 25 francs, or 5 dollars of international coinage. On such a footing, interest might easily be arranged to be paid in sterling, or in rupees, ten to the pound, half-yearly in London or in India, just as the interest on many loans to the colonies is made payable there or in London. The result would be an increased holding of Indian registered debt in London, and the loss arising from the fluctuating, and, on the average, losing price of the interest bills, and from the liability to have the capital of the loan repaid in silver rupees, which, to the holder here, are bullion only, and not money, would be avoided." (p.18)

Insert Figure 3

In quite the same vein as capital flows, common gold standard based currencies were also expected to bring down the transactions costs on trade, particularly hedging costs; this aspect as a reason for switching to gold in the 1870s has been examined in a cross-country study by Meissner (2002) in which he found that "countries converted to gold when trade with other gold standard countries made up a large proportion of national income and when they traded relatively little with countries on other commodity standards." (p.33). This logic applies unequivocally to India and Britain; as evident from Table 1 above, India's chief trading partner by far was Britain and a common currency like the sovereign would eliminate the uncertainties of fluctuations in gold-silver parity.

Fluctuations in the rupee-sterling exchange rate[4] in spite of a relatively stable gold:silver par rate must be understood. The intrinsic par rate based on the value of metal contained in each coin was no doubt stable but the commercial exchange rate could actually be volatile on account of seigniorage; a variable component between coin and country. Silver when taken from India to England had to be sold in the bullion market (the British mint would not accept it), exchanged for gold and then minted into sovereigns. Gold mohurs could be taken from India to England and would yield a fixed number of sovereigns; however, the silver price of gold (how many rupees would have to be melted for gold) in India was not definite and depended on the bullion market. These fluctuations and costs were taken into account in the usage of bills of exchange. The exchange rate between the rupee and sovereign had indeed exhibited such fluctuations; at times the rupee had appreciated to 2s.2d. while at others it had sunk to 1s.10d. This amounted to a swing of around 16%. The adoption of a common gold currency, it was argued, would have restricted these fluctuations to a maximum of 1% (Smith, 1870, p.10).

There was another advantage that supporters of a gold currency drew attention to; the convenient and cheaper access to gold from Australia. While Figure 4(a) shows the flow of goods and coin between Britain, India and Australia as it existed; Figure 4(b) indicates the possible streamlining in the flow of goods and money if India adopted a gold currency, in particular sovereigns and half-sovereigns that were already (since the early 1850s) being minted in Australia.

Insert Figures 4(a) and 4(b)

The adoption of a uniform currency between India and Australia would have further induced opening up of trade between the countries, which had until then been negligible. Cotton cloth which had to reach Australia from England could be manufactured in India and shipped to Australia at much lower costs, apart from the significant savings on transport. Mr. Samuel Laing, successor to James Wilson, while introducing the Currency Act of 1861 sharply pointed out the reason why India's international trade was constrained on account of its silver standard;

[4] The exchange rates were twofold; for silver it was usually expressed as rupees in shillings and pence and for gold as price of sovereigns in rupees (Nolan, p. 378).

> "It seemed to him a pity to enact that, for all time to come, in transactions between countries such as Australia and India, an Australian merchant should not be able to pay for a cargo of Indian rice without resorting to the roundabout and expensive process of sending his Australian gold to London, thence to France or Germany, to buy silver, and finally send that silver overland or round the Cape to India." (quoted from Cassels, 1864, p.17)

These "network externalities" of larger capital and trade flows emanating from a common currency are now considered an important reason for the adoption of the gold standard in Europe (Flandreau, 2004). Two important questions have been raised regarding such explanations on the emergence of the gold standard. First, doubts have been raised by Mitchener et al (2009, p.3) on whether advocates of gold at that time believed ex-ante that it would bring such network externalities or whether it is an ex-post correlation observed by recent researchers. The archival extracts presented above clearly show that some possible network externalities from adoption of a common currency were explicitly conceived of by the pro-gold supporters in India ex-ante. Second, it has been argued that network externalities are more useful to explain diffusion of the gold standard in the 1870s; they are not satisfactory when it comes to explaining emergence of the gold standard (Morys, 2012, p.6). This is because when applied to trade flows between the first adopters of the gold standard and the United Kingdom, the results are not convincing. In fact, the only country with whom the UK had a significant trade share was the Netherlands; however, it is paradoxical that Netherlands was the only country at the International Monetary Conference of 1867 that did not vote in favour of gold monometallism (ibid, p.8-9). As mentioned above, the line between emergence and diffusion is fuzzy in the Indian case.

One of the principal advantages of gold was its higher density as compared with that of silver by which it packed in more value for a given weight. The pro-gold lobby in India categorically claimed that costs of transporting, handling and even counting silver rupees made it an inefficient currency. Rupees at that time worth £100,000 weighed about 11 tons whereas in gold it was just about 700 kg. Not only were the costs of transporting silver more but it also meant a greater amount of time expended in counting, weighing and examining large number of coins; this was akin to doing large business transactions with small change rather than high denomination notes. The protection of government treasure during transport entailed the employment of some 30,000 troops (Cassels, 1869, p.102). There was another important impact of this inconvenience with silver; the government often retained large and unprofitable balances in its various treasuries (to avoid the cost of frequent transportation) resulting in a loss of interest as well as restricting business operations. In Europe, the increasing volumes of trade along with the simultaneous increase in the value of transactions lent support to the calls for gold as a more appropriate currency. Although the average value of transactions in India may have been much lower than Europe, the commercial centers of Bombay, Madras and Calcutta witnessed rapid growth in the latter half of the nineteenth century. This obviously would have made them eager to replace silver with gold.

In his critique of Mr. Wilson's[5] scheme to introduce paper currency for India, Lt. General Sir W. Mansfield (1864) drew attention to another important, though an often neglected reason for the transition to gold; the decrease of wastage and economy in mintage of gold coins. Circulating coins are subject to constant wear and tear of the metal amounting to a loss in national capital. Given equal mechanical properties of both gold and silver, it would seem that the loss of value of a coin (or the degree of wastage in percentage terms) would be the same for coins of either of the metals. This, Mansfield pointed out, was erroneous; coins of higher value are not subject to the same turnover as smaller coins and therefore escapes the same degree of wear and tear. Moreover, given a fixed cost of assaying and minting a coin of either metal, it is obvious that it would have been cheaper to mint a sovereign than a rupee. The production cost of coin was therefore in inverse ratio to the value of the coined medium. While both these factors gave gold a cost advantage, it was only half the story. As a means of transacting business, each metal as coin provided different degree of benefits. Ultimately, these benefits had to be provided at the lowest possible cost. If both gold and silver were allowed to circulate as legal tender then the metal with a lower net benefit would be driven out of circulation. As Mansfield explained,

> "Even acute thinkers are thus apt to forget the important circumstances which have been stated to overlook the mechanical economy of using one metal (gold), as compared with another metal (silver). Nevertheless other conditions of relative value being preserved, this very mechanical economy would be quite sufficient to drive the lower metal generally out of circulation, were circulation allowed to adjust itself without the intervention of State laws or other restrictions." (p.14)

[5] James Wilson, a remarkable financier and an influential economist was sent to India in 1859 on a mission to tackle the financial condition of the Government.

The gold lobby also believed that the adoption of a gold currency would dissuade people from hoarding precious metals; a habit which Indians were customarily "infamous" for. Gold could be obtained at a much lower cost directly from Australia rather than being shipped half way across the world to England where it had then to be converted into silver before being shipped back to India in settlement of claims [see Figure 4(b)]. This made silver received in India so expensive that it was unable to find a market elsewhere when re-exported. Indians were in a sense being forced to hoard silver. Transiting to gold would therefore not only have meant a significant saving in transport costs but also a fundamental change in India's position as a recipient of precious metals; as aptly put by the Bombay Chamber of Commerce (1864) in their memorandum to the Viceroy and Governor-General of India in Council,

> "Instead of being the last recipients and absorbers of silver, we (India) might become the first importers and the distributors of gold." (p.8)

As first importers of gold from Australia and given the possible gains from its exportation there would have been little incentive in hoarding it. India would be "placed on the highway by which gold would travel to Europe" (Cassels, 1864, p.18) giving it the opportunity to become the largest distributors of gold, which at the same time would release vast amounts of its hoardings for productive use.

The proponents of gold in India were (ex-ante) anticipating that the relative scarcity of silver would be reflected in the rise of silver prices (ibid, p.16) or, in other words, a fall in the silver price of gold. As Morys (2012, p.11) asserts, gold in the 1850s, was considered inflationary on account of its abundant supply and low price (silver was feared as deflationary in India). In spite of this, gold was preferred for currency. This is actually quite the opposite of the argument made by de Cecco (1974) on the preference for gold post-1873; to the latter, preference for gold by the bourgeoisie[6] was because silver was the inflationary metal (its price was expected to fall). This line of reasoning cannot be applied to the Indian situation in the 1860s; the gold lobby clearly

[6] The bourgeoisie (industrial class) were apprehensive of currency depreciation (silver) making imports more expensive and the inflationary metal (silver) eroding their wealth held in stocks and bonds. Gold was their preferred metal for currency. On the other hand, the agricultural class was pro-silver because its depreciation would make exports more competitive.

favoured the inflationary metal (gold) and not the deflationary one (silver). While Indian exports would have benefited from a depreciation of exchange rate, a gold currency would have raised the price level in India, adversely affecting export competitiveness. This is especially surprising when we consider that most of the petitions to the government were made by Anglo-Indian traders and members of the Bengal, Bombay and Madras Chambers of Commerce. In fact, in a report of the Commission set up in 1868 to examine the operation of Act XIX of 1861 (Mansfield, 1866, p.6), a series of questions were addressed to several governments, administrations, commissions, collectorates and banking establishments throughout India. Each and every question on the acceptance of gold currency by the Indian community, be it merchants and/or the public was answered in the affirmative indicating that availability of currency was a greater priority than concerns over inflation.

Silver and paper for India: ex-ante arguments against a gold currency

Perhaps the most important anti-gold (the pro-silver) voices[7] consisted of government servants (British in India) who received their salaries in silver. Appreciating silver meant that each rupee would fetch them a greater number of sovereigns back home. However, the arguments raised against gold went beyond this purely selfish motive and were sound and logical in their own right. Giving them due consideration provides a more complete understanding of the transition to gold standard, in particular, the arguments that had to be contended in this process.

The anti-gold commentators strongly contended that the masses of India were neither in favour of gold nor would its high value be suitable for the needs of a poor country. Gold may have circulated in ancient and medieval India but it was the metal preferred by the aristocracy. In spite of evidence to the contrary, this belief was strong; Barclay (1894), for instance, remarked that "the Eastern races in their internal transactions, in all the small channels of trade, and in the numerous bazaars throughout the East, know nothing of gold as money[8]." (p.106) In medieval India, it was the copper daam which circulated widely in day-to-day transactions. Later

[7]Unlike the pro-gold lobby (particularly the Chambers of Commerce) there was no anti-gold lobby per se. These were more like independent voices of various political and economic commentators.
[8] Italics my own for emphasis.

experiments to introduce gold by the Company's government in late 18th century had failed which learnt the hard way that silver was the "natural selection" of the people. Moreover, in a country where cowrie shells still circulated at the rate of 6000: Re.1, it was argued that silver was more commensurate with the prevalent wage levels, price of goods, and general standard of living. While a currency shortage developed in the 1860s mainly on account of the capacity of the mint, (Boycott, 1870, p.212) concerns were raised as to whether this was adequate reason for a change in the currency standard itself.

An argument against a change in currency standard which attracted intense debate was the breach of faith that it would entail against public creditors. The monetization of gold (and the fall in demand for silver as currency) would have raised the silver price of gold (or reduced the gold price of silver). The British Government had accumulated a large amount of debt and repaying its creditors with depreciated silver (for debt contracted in silver) would mean the repayment of debt in a relatively cheaper metal. However, the pro-gold lobby argued that if public creditors were to be protected from a repayment of debt in a cheaper currency, the government and the public at-large would have to be protected from the repayment of debt in a currency of greatly appreciated value (i.e. repayment in silver that had appreciated relative to gold). One suggestion was that the government raise new loans in gold, purchase silver and payoff their existing silver debt (Cassels, 1869, p.4); in effect this would mean a conversion of all their silver debt into gold, absorbing the loss at one go rather than "cramp the commerce of the country by an altogether inadequate currency." (Cassels, 1864, p.19) Another alternative proposed by Naoroji (1870, p.14) was to announce that silver debt would be converted to gold at a rate to be decided by the government and acceptable to creditors. Objections to this rate could be received within a stipulated time period of, say, one year. Although such a recommendation was made, many within the pro-gold lobby insisted that these measures were uncalled for; that there was really no breach of faith in the first place. It was perfectly just that the government adopt a different currency in the larger interests of the country and its progress.

In quite the same line of thought, the opponents of gold also argued that re-monetizing gold would go against the interests of the poor, in particular the ryots (cultivators). Mansfield (1864) dismissed this claim. Once again, without re-monetization of gold, the price of silver (in terms of all other goods) had in effect risen so that people who took leases, mortgages and public debt prior to the de-monetization of gold would have to pay back in (relatively) appreciated silver rupees (p.55-6). Similarly, ryots paying a tax to their landlords would actually end up being burdened by the rise in the price of silver. Making an overall assessment of the breach of faith argument, Mansfield reasoned out that the State as debtor lost on account of the appreciating rupee but gained as collector of taxes. The wealthy ryot and tenants who had hoarded significant sums of rupees would have gained on these hoardings but lost in payment of taxes in appreciating rupees. But it was the impoverished ryot, who had no hoardings of rupees, who faced the brunt of the de-monetizing of gold and appreciated rupee.

While acknowledging the inconvenience of silver (due to low density as compared to gold), it was felt that paper (backed by/convertible to silver) would be the appropriate alternative; in other words, the ideal currency system for India was silver and paper. According to Knafo (2003), adoption of the gold standard 'was the attempt to institutionalize the creation of fiduciary money by enforcing the convertibility of bank notes …" (p.5) This, however, does not seem to be the case in India. The gold lobby realizing that "paper currency was a dangerous rival to gold" (Cowasjee, 1930, p. 19) made a concerted effort to convince the government that paper was inadequate in making up the currency shortage.

Apart from these arguments, several other criticisms against a change in monetary standard can be found in contemporary discussions. More than currency shortage some commentators believed that there may well have been a glut of currency in India at that time. A true indicator of this fact was the price level; the silver price of gold was actually increasing and even the general silver price of all other commodities showed an upward trend; this clearly indicated that the precious metals were abundant and cheap in India (Trevelyan, 1864, p.73-4). The imports of silver (and gold) were not indicative of a dearth of currency but only on account of the preference of the people of India for these metals. There was little demand for other goods manufactured in the West. As far as stability in the exchange rate between India and Britain under a gold standard was concerned, this was considered to be inadequate in scope. Trade with other countries did matter. China, which was on a silver standard, was a case in point accounting for about 10% of India's foreign trade (in tonnage terms - see Table 1 above). It was even pointed out that the effects were not just monetary; “the established reputation of the tola weight must not be done away with, if we wish to keep up our reputation as honest traders.” (Boycott, 1870, p.212) Objections against the costs of exchange fluctuations were also dismissed for in fact, these not only generated activity and intelligence but also gave jobs to many people. This point may have actually been one of the key factors for the banking sector in Europe to resist the transition to a gold standard (Russell, 1898, p. 43; Einaudi, 2000, p.294). Even the more mundane contentions against silver like the cost of escorting silver during transport were considered flawed; “if the mass in one case had been lighter to carry, it would also have been lighter for robbers to carry off.” (Campbell, 1870, p.12) Finally, many contemporary authorities felt that a change of this kind in currency matters could prove disruptive especially if silver was driven out of circulation too abruptly. The poor whose savings were predominantly held in silver would have faced an erosion of their capital on account of a fall in its price. The British Indian government was still struggling for political legitimacy in India and was concerned that a breakdown in the monetary system of the country could have dangerous political implications. On the other hand, silver was available in abundance and people were used to it. Paper was also beginning to gain acceptance in India, although slowly. All-in-all, the benefits of a gold currency did not unequivocally outweigh the potential costs of transition.

A gold currency in India: proposed strategy for its introduction

In spite of the opposition from the anti-gold lobby, by 1864 it seemed that the need for a gold currency in India was overwhelming; not just amongst the urban Anglo-Indian community but also “from every part of India” (Ballard, 1868, p.3). The only questions that remained to be resolved pertained to when and how. India had a large quantum of accumulated gold but it was hoarded and could not be productively used as a medium of exchange. Moreover, the problem was not a technical one; as Ballard who as Master of the Mint in Bombay pointed out, “the mints exist, - it is only the mint rules which require alteration …” (ibid, p.5) Calcutta could mint about 500,000 coins/day and Bombay about 300,000; this was together roughly half the capacity of the Royal Mint.

Even the pro-gold lobby was against any attempt to impose a sudden change in the currency of India. If gold were made legal tender while silver was de-monetized, the shortage of gold coins would drive up its price with a severe deflationary impact on the economy. Sufficient time would be required for the mints to gear up in India to meet the demand. Moreover, the people's choice of currency would have to be respected for which both, gold and silver would have to be allowed to circulate at a relative price determined by their demand and supply. Given this necessity, the gold lobby was against the adoption of silver as token coinage. The latter was required when silver was in short supply or had been exported out of the country. With India having large stocks of silver there was no real necessity of a silver token coinage. In fact, bank notes were likened to a silver token coinage; neither of them would find general acceptability in India amongst the masses. It was therefore felt that the transition to gold could only be made after a transitory period of a parallel standard with gold and silver as legal tender, their exchange rate varying with the market rate. But a parallel standard without a single unit of account would have meant utter confusion as the gold-silver ratio would be inherently unstable.[9] Nascent expansion in India's trade and commerce would have been disrupted. This was unacceptable and the only option then was bimetallism.

The past experience of the Company in the late eighteenth century with bimetallism had been unfavorable. A deviation of the legal rate from the market rate could have led to the exodus of the undervalued currency (especially if were silver) with potentially disastrous consequences as explained above. Nevertheless, an intermediate phase of bimetallism seemed indispensible in the transition to gold. Interestingly, this scheme of transition proposed for India even found mention in the proceedings of the International Monetary Conference of 1867;

> "The same opinion was expressed by Lt. General Mansfield, on the subject of the monetary system in India, where the silver standard prevails, which should be supplied by the double standard (bimetallism) till the exclusive gold standard could be reached." (Index, 1868, p.43)

The critical issue that now remained to be settled was the legal ratio between gold (sovereign) and silver (rupee). Many proposals were submitted, many rates proposed but the constantly

[9] This is explained in our model below.

fluctuating exchange rate between gold and silver made them redundant even before they were given serious thought. Finally, the scheme proposed by Charles Trevelyan (Finance Member) in 1864 was accepted by the Secretary of State for India; gold would not be made legal tender but accepted at the treasuries of the British Indian government. This was a return to the situation that prevailed before Dalhousie's directive in 1853. But Trevelyan made an error of judgment on the people's willingness to switch to gold. He fixed the legal ratio of the sovereign at Rs.10 when it could not be laid down in Bombay from Australia for less than Rs.10-2a-9p[10]. But why? Trevelyan felt the discount on sovereigns would be acceptable to people transacting (especially) large sums of money (given the inconvenience of silver) and also assumed that Australia would reduce export duties to meet the Indian demand. Neither of these happened. Almost no payments were made in gold, only silver flowed into the treasury. The small amount of gold that accumulated in the government's treasury was either used as a reserve against the issue of notes or sent out to England; very little, if at all, came into circulation in India. Without possessing adequate reserves to push gold into circulation the government should have instead overvalued gold legally (at say Rs.10-4a). In 1866, Mansfield did alter the rate from Rs.10 to Rs.10-4a. But by then the market rate for gold was Rs.10-7a. Once again, the same question can be asked; why this deviation in legal and market rates? Mansfield had observed the rate for gold had been falling steadily from Rs.10-12a to Rs.10-7a. He simply assumed that it would fall further and touch the proposed legal rate of Rs.10-4a. The fear of overvaluing gold and driving out silver led Mansfield to be conservative in fixing the legal rate. Unfortunately, the market rate never reached the legal rate and gold never entered circulation. Meanwhile, the demand for money in India slowly abated with the end of the US Civil War and decline in cotton exports.

Even before the gold discoveries, England had been weary of a gold currency for India. The situation which developed in the 1860s had an uncanny resemblance to what had happened twenty five years earlier and what would once again repeat itself towards the end of the nineteenth century. In 1835 the reason for adoption of silver (and not gold) had often been attributed to being without an ulterior motive; silver was available in relatively greater abundance than gold (silver production was double that of gold in this period) and the Government was not in favour of bimetallism after they had failed in their earlier attempts.

[10] There were 16 anaas (a) in a rupee (Rs.), 4 pice in an anaa and 3 pies (p) in a pice. Therefore, Re.1 = 192 pies.

According to Naoroji these may not have been the only reasons; “an artificial increased demand was created for silver by the Act of the Indian government which prohibited gold as legal tender, and by the demand for China.” (Naoroji, 1870, p.16) Silver worth some £75 million had been exported between 1847 and 1867 by Britain alone to India and an additional £41 million had gone to China. Although gold was not accepted as legal tender it was allowed to circulate. But in 1853, India had virtually been prohibited from using gold as currency on account of Dalhousie’s proclamation. Had gold been allowed to circulate freely along with silver, its lower price (overvaluation as coin) would have driven silver out of circulation, just as it had happened in France and the United States.

These prior experiences along with a review of India’s attempts to transit to a gold currency in the 1860s gives rise to an uneasy feeling that the Government clearly seemed disinterested in and even “unprepared for success”.

> “Notwithstanding the unanimous decisions of the repeated commissions of inquiry in India, in favour of the speediest practicable introduction of a gold currency (referring to the reports of 1864, 1866 and 1869) … the questions has, more or less persistently, been put upon the shelf. It has, apparently, been placed aside for the advent of some more auspicious occasion, as was formerly the case with the well-conceived intentions in favour of a gold currency … No more seems likely to come of it than reference to the Secretary of State for India in Council, who, in turn, may probably relegate it again to India, and thus the matter may, for an indefinite term, be handed backwards and forwards, until the pressure of circumstances brings itself to bear upon it in England as well as in India.” (Hendriks, 1869, p.103)

> “But the proportion of 15 to 1 which that government has used in its calculation is unreal, imaginary, and infected with error at the outset[11] … instead of having been 15 to 1, it may be clearly shown to have been, and still to be, in the practical working, 15.15306 silver to 1 gold …” (ibid, p.105)

But why would Britain be against what seemed a mutually beneficial proposal, clearly articulated and reasoned out ex-ante by the Indian pro-gold lobby? We make some conjectural propositions as an answer to this question.

[11] Italics my own for emphasis.

India's failed transition: Europe's changeover gathers momentum

Britain's most direct concern would have been the quantum and rate at which India was absorbing precious metals. Cassels (1864) drew attention over a possible inadequacy of gold; in 1864 even when the annual production of gold was some £25 million "the present large production of gold would not[12] be more than sufficient for the wants of the world, if Indian demand drew from it, as it now does of silver, so large a portion as £12,000,000 sterling." (p.17) Figure 5 illustrates the narrowing gap between world output and India's growing imports of silver and gold. More interestingly, Figure 6 has been constructed to show the inadequacy of gold output (in spite of its increased production) if India were to substitute silver entirely with gold.

Insert Figure 5

Insert Figure 6

It was not merely the Indian import of precious metals that was the issue. The problem was that gold and silver once imported was hardly exported back or put into circulation; they were literally "consumed" (Faucher, 1853, p.99) in India. In a world that was experiencing rapid economic growth, there was obviously the danger of an inadequate supply of coin dampening the trend. Even the issue of paper currency required adequate backing of precious metals. If we consider Kanfo's (2003) viewpoint, then adequate reserves of gold were imperative for the development of fiduciary money. India's demand for gold was particularly worrisome for two reasons; its growing trade and hoarding propensity that turned it into a "fathomless abyss" (Wilson, 1868, p. 168). Historically, India had been considered as a sink of precious metals. An article that appeared in the Westminster Review of 1864 unequivocally reiterated this apprehension;

> "In spite of our troubles in India, and a state of chronic warfare in China, the increase of our trade with the East during the last ten years has been enormous. This, too, may be looked upon as only the beginning of a commerce that must grow to proportions which cannot be estimated. The most important feature, too, of eastern trade, is the manner in which it absorbs the precious metals … the East must ever remain a perfect

[12] Italics my own for emphasis.

> sink for the precious metals. What amount of money would be sufficient to saturate the hoarding propensities of these hundreds of millions of men?" (Invararity, 1864, p.11)

At about the same time, a well cited work by Lees (1864) reiterated this fear in quantitative terms. While the accumulated hoarding of precious metals was estimated at a whopping £300-400 million (p.12), Lees believed that India, given the rate at which it was growing since the early 1860s, would require another £400-500 million to meet its currency needs[13] (p.45). It is not surprising then that India moving on to gold (and hoarding it) would have had a major impact "in the money markets of Europe, if a large quantity of gold were suddenly required to carry out such a change."[14] (Wood, 1864, p.4) Britain obviously, being on a gold standard, would have been most weary of this fact.

> "The gold remains in the Bank of England until the Indian demand sets in, and then it is suddenly withdrawn to sweep the Continent of silver for transmission to India. In order to protect themselves, the Banks of England and France raise their rates of discount, and by their so doing, and by the violent oscillations on the foreign exchanges, every description of business is deranged." (Trevelyan, 1870, p.74)

Meanwhile, just as the Indian transition episode was ending, a new chapter in monetary history was just about unfolding in Europe. In France, the increase in supply of gold had caused the silver: gold market exchange ratio to fall from nearly 16:1 till 1850 to less than 15.5:1 in 1851 (while the legal ratio in France was fixed at 15.5:1). As predicted by Gresham's Law, with gold overvalued legally silver francs disappeared from circulation. They were replaced by silver coins with a lower fineness from Italy and Switzerland. To prevent a "race to the bottom", the Latin Monetary Union was conceived. Meanwhile, the surplus gold from the United States filled the vacuum caused by export of silver to the east. Addressing the problem with their silver coinage was only one part of the agenda in the LMU; its members, including France, were already contemplating transition to a monometallic gold standard.

> "… the delegates of the Belgian, Italian, and Swiss governments unanimously and earnestly expressed the desire that the principle of the gold standard should exclusively prevail in the formation of the union. Because France opposed the change at the time, it has been assumed to be another instance of her heroic

[13] By which year this amount of currency would be required is not mentioned by Lees.
[14] Italics my own for emphasis.

devotion to and defence of the double standard. As a matter of fact, France did not defend the principle of the double standard at all on this occasion … it was premature in Napoleon's programme. He preferred to let matters wait till he had assembled all the nations in a monetary conference, and then, in the face of a probable demand for the gold standard, seem to yield the double standard in consideration of the adoption of the French coinage as a basis for monetary unity. One prerequisite of success in negotiations is to have something to yield … The French delegates were at heart partisans of the gold standard. Parieu was one of the strongest gold monometallists that France ever had, and, as has been said, was the diplomatic manager of Napoleon's programme." (Russell, 1898, p.30)

In 1866, the Latin Monetary Union (LMU) came into effect as silver outflows from Europe to the East reached their peak. In 1867, although the demand for Indian exports abated and with it outflows of silver too, representatives from Europe and the United States overwhelming voted in favour of moving towards gold monometallism at the International Monetary Conference held in Paris. The West had overtly planted the seeds of a gold standard. This, however, was possible only because Europe (France, in particular) by then had drained off its excess silver to India. In other words, India's absorption of silver had been a necessary condition for France's and the US's de facto transition to gold. Could Britain have purposefully preferred India to remain on silver to smoothen the transition to gold in the West? After all, given that their European market was relatively more important than India, a common gold currency in Europe would have been more beneficial for their trade and investment flows (Table 2).

Insert Table 2

But these events may be seen as a small part of something larger happening at that time; a economic and political crystallization in Europe as enunciated by Einaudi (2000);

"The French proposal that all 'civilized nations' should adopt a common coinage cannot be dismissed as merely a form of political expansionism, even if it was partly that. The initiative was also the result of purely economic factors, linked to free trade and to the embryonic development of European federalist ideas.[15]" (p.285)

[15] Italics my own for emphasis.

Although this line of thinking seems to pertain to continental Europe, there is evidence that there were many in Britain who supported this movement; "in the earlier agitation of this subject at the international statistical congress, at Berlin, in 1863 … a large and influential delegation from Great Britain" was also present (Index, 1868, p.16-17). Gold was the chosen metal for a common coinage. This may have been decided upon for several economic reasons including its efficiency in higher value transactions, the abundant availability of gold that could meet the demands of their growing economies, the modernization of European industry and growing volumes of internal trade, and the success of Britain. But there was an ideological angle too. As can be noted in Einaudi's remark above, gold was considered as the currency of superior or civilized nations. These "civilized nations" were not restricted to Europe. They included the United States, South America and even perhaps Australia and Canada (though not explicitly stated). The lines of demarcation for monetary standards were drawn not only in economic terms; the International Monetary Conference of 1867 contains several pointers that gold should be the monetary standard of the West/ rich/civilized/Christian nations while silver belonged to the East/poor/barbaric[16]/pagan world. An extract from a letter by Mr. Ruggles (Index, 1868), Vice-President of the United States Commission at the Universal Exposition at Paris, written in July, 1867, exemplifies this;

> "Wisely limited by its own organic law to one common coinage between the two great oceans, the world needs only the assent of our own continental republic to give to the gold dollar and its multiples a free, unchallenged circulation, meeting no money changer or other impediment through the whole breadth of Christendom. The United States may alone complete the golden chain binding in one common monetary civilization the outspread lands and waters of America and Europe, stretching from the "Golden Gate" of the Pacific over the auriferous "Oberlands" of the wide interior, and across Christian Europe to the western bounds of the Ottoman Empire. To widen and extend still further this majestic belt, to embrace in the same great measure of civilization the residue of Europe with the wide extent of Asiatic Russia has been among the leading aims of the international monetary conference."[17] (p.17)

> "speaking the languages of Spain and Portugal, these 'Latin' races of the two Americas approach, to say the least, in general culture and intelligence, the Teutonic and Sclavonic races represented in the Conference (p.89)… above all let us never forget that the two Americas are Christian members of the great

[16] This term was commonly used, although it is not found in the literature referenced here.
[17] All italics in this para are my own for emphasis.

> family of nations, and that unification of money may be close akin to other and higher objects of Christian concord ..”[18] (ibid, p.94)

One would not expect the description of Asia as pagan in monetary discourse, but it was used purposefully to emphasize their unfamiliarity with monetary systems.

> “It appears that, in ignorance of the actual relative values of the two metals in our Atlantic world (of 15 or 16 to 1)… these pagan Asiatics had fixed the ratio at only 4 to 1 … the partial correction of the mistake by 1860 … shows an advance of intelligence in this distant region, inspiring the hope that, in due time, at least a portion of eastern Asia may be brought within a world-embracing and world-protecting belt of monetary unification.”[19] (ibid, p.87-88)

The East was then clearly demarcated as the “other”, distinct from the civilized Christian West; the following extract describes the deliberateness in the choice of monetary standards across nations.

> “The world is divided in its monetary relation into two considerable and very distinct groups: on the one side the western states, where gold tends more and more to prevail; on the other, the countries of the extreme east, where silver continues to predominate.” (ibid, p.40)

Keeping the east and India in particular away from gold also served another important purpose; ensuring that it remained on silver.

The drain of silver to India: a necessary condition for the emergence of the gold standard

To Morys (2012) the movement for a gold standard in Europe began for rather straightforward, almost trivial reasons; first, its density whereby gold “allowed to encapsulate more value in the same volume than silver” (p.7) and second, the increased inflow of gold into Europe after the Californian and Australian discoveries along with the outflow of silver on an unprecedented

[18] All italics in this para are my own for emphasis.
[19] Italics in the extracts are my own for emphasis.

scale.[20] While the abundance of gold was one of the factors which influenced Europe's preference for this metal as coin, the acute scarcity of silver also played a part in moving to gold.

> "In our view, everything started with the gold supply shock of the 1850s: The immense gold findings in California (1848) and Australia (1851) brought, for the first time ever, gold to Europe in amounts large enough to actually contemplate the transition to gold for a large number of countries. European silver holdings, by contrast, had been dwindling rapidly since the early 1850s as a result of species re-composition in the bimetallic countries. Both factors combined gave rise to a discussion of the monetary standard, with gold, silver and bimetallism as options. The 1860s monetary debates, we argue, were not about following the English example or not. Instead, they were all about adaptive strategies: How to choose the best monetary standard given that Europe had recently experienced gold inflows (and silver outflows)[21] on an unprecedented scale?" (ibid, p.3)

But where was France's (and Europe's) silver going if their own silver standard countries were not absorbing the excess supply?[22] India; the answer though commonly known has not been explicitly highlighted in recent research as a fundamental trigger and a necessary condition for the emergence of "a pan-European movement in favour of gold monometallism." (ibid, p.2) Contemporary literature saw this inter-linkage between India and Europe in the transition to a gold standard as a matter of fact. It was this massive drain of silver reserves to India had put the United States and France on a de facto gold standard by 1864.

> "In the last nine years (prior to 1864) the silver imported into India alone, after deducting re-exports, has amounted to £89,638,792, or within half a million of the entire estimated production of the whole world for the same period. There were two great reserves of silver, the currencies of the United States and France. Both these reserves have been exhausted. The United States has been avowedly placed on upon the basis of a gold standard with a subsidiary silver token currency. In France, although the law remains unchanged, gold has been coined in vast quantities, and the only silver coins remaining in circulation are those which by wear and tear have become depreciated." (Levi, 1864, p.403)

But it was not just silver but also the absorption of gold by India; this concern was even expressed at the International Monetary Conference of 1867.

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[20] Italics my own for emphasis.
[21] Italics my own for emphasis.
[22] Morys (2012, p.29) points out that the German states (on a silver standard) "were swamped with French gold coin" in 1867.

> "some men think that gold will continue to rise, because its extraction is daily becoming more expensive, and because of its great dispersion by its introduction into the monetary system of India." (Index, 1868, p.52)

Between 1856 and 1862 India "consumed" 15% more than world production of silver. As seen in Figure 5 above this increased to almost 50% more than world production by 1863. India was draining Europe of its "excess" silver.[23] The global demand-supply gap was even greater; the total demand was approximately three times the supply (annual net production). India absorbing silver may have been a necessary condition for the movement of Europe on to gold; however, it was also causing its own share of problems. A severe dearth in small token silver coins developed across Europe. Britain too came under threat.

> "The rise in the value of this metal (silver) has already nearly swept away the whole of French silver currency to the East. French coin contains more silver than our subsidiary English currency, and it has been more advantageous to export it as bullion than to use it as money. The only silver coin now remaining in France, in fact, is that which, by wear and tear, has become depreciated. A further advance, by no means improbable, if the present demand be considered, would affect English silver coin precisely in the same way, and we may yet have to melt down the silver currency of England to replenish that of India." (Cassels, 1864, p. 16)

Even smaller monomentallic silver standard countries like Netherlands which had chosen to abandon gold (in 1850) faced the adverse consequences on their coinage from the spurt in Indian demand for silver;

> "This par equality between the two florins in the Netherlands is caused by the large exportation of silver to India, the silver diminishing so fast it is necessary to coin it continually." (Index, 1868, p.48)

[23] "A banker or bullion-dealer in London desires to send a hundred thousand pounds to India, or China, or Holland, or any country where silver circulates. Silver we will suppose is dear in London, so he sends a hundred thousand pounds worth of gold to his Paris agent, who has it coined and exchanged for five-franc silver pieces, which are then exported to their destination. The French Mint is set to work, and the French coinage is changed to the extent of £100,000, for no purpose whatever but to minister to the gain of a foreign banker." (Ballard, p.23)

At a more basic level, India's demand for silver had arisen from the phenomenal increase of its cotton trade with Britain. If trade with India were to continue at the same rate, and with it the absorption of silver, then there was only one option remaining; a dire one.

> "That India annually imports and absorbs more silver than the whole world annually produces, and that this excessive drain must inevitably lead to serious embarrassment both to India and the rest of the world … that the continued drain of silver for India must derange, if not eventually destroy, the silver currency of all other nations." (Bombay Chamber of Commerce, 1864, p. 5, 7)

The Indian gold lobby, sensing the imminent danger for Europe, cited it as an urgent reason for moving to gold. This would have had a stabilizing influence on the gold-silver parity by increasing the demand for gold and dampening that of silver. But the world was not listening. Like we mentioned above, silver had to be drained off the system and there was no country better than India to do that. At the same time, as seen in Figure 6 above, the inadequacy of gold would have become critical if India had moved onto a gold currency.

Parallel standard, bimetallism and international bimetallism: a simple economic model

Using Fisher's articulation of gold and silver money as "substitutes without a ratio of substitution", I have tried to illustrate these currency systems graphically using a simple demand-supply model. While supply of money is considered fixed at a point of time, the demand curves will typically be downward sloping. This is because as price of one metal falls with respect of the other it will be substituted for the other at least in the arts (non-monetary usages). Whether it will also be substituted for the other as money depends on whether a parallel standard or bimetallism is in existence. Consider Country C_P on a parallel standard where both gold and silver circulate as money at an exchange rate determined by the market. The gold and silver bullion markets are at equilibrium with (say) G/S = 15 or S/G = 1/15 as shown in Figure 7(a) and 7(b) respectively. Suppose gold supply increases from S_G to S_G'. This would put pressure on the silver price of gold to fall from 15 towards (say) 14 as the excess supply gets absorbed for non-monetary purposes. But will substitution of silver money by the cheaper gold take place? Suppose a cup of tea had cost 1G = 15S before gold prices fell to 14S. If gold is the accepted unit of account, then the price of tea remains at 1G so that you pay either 1G or 14S for it. If instead silver is the unit of account, the tea price remains at 15S so you must pay either 15S or 1.07G (as per the new rate of 1G=14S) for it. Gold will not replace silver as coin. However, as shown in Figure 7(a) the demand curve for gold would still be downward sloping with an increase in quantity demanded of gold from G_0 to G_1 on account of its use in the arts (non-monetary usage).

At the same time, as the silver price of gold falls towards 14, the gold price of silver increases from 1/15 to 1/14. What happens to the demand for gold and silver? As seen from Figure 7(b) there may simultaneously be some decline in the demand for silver for use in the arts as it becomes more expensive than its substitute, gold. The demand curves for gold and silver, although downward sloping, may not be highly elastic given that a change in relative price does not lead to a withdrawal of either metal from circulation.

The cheaper gold absorbed in the arts automatically means that there will be some excess supply of costlier silver in the market shown as X_S in Figure 7(b). The equilibrium e_0 is therefore an unstable one; an increase in gold supplies will cause a downward pressure on gold prices and consequently an upward movement in silver prices. This leads to an excess supply of silver that induces silver prices to fall or gold prices to rise. The situation will therefore be reversed; silver prices drift towards 1/15 and gold prices rise back to 15. This would then leave Country C_P with an excess supply in gold, X_G and a new bout of price fluctuations.

It is possible for the markets to reach equilibrium at G/S = 14 or S/G = 1/14 if there is an increase in the demand for silver (from within the country or from exports), shown as a shift in the demand curve form D_S to D_S' in Figure 7(b). Other possibilities exist too; however, any equilibrium ratio will mean either an increase in demand for either gold or silver or both. Meanwhile, the instability in the price ratio set off by changes in supply hinders exchange and trade by increasing the cost of obtaining information or procuring the services of a moneychanger.

Insert Figure 7

A fixed price ratio between the two metals or bimetallism, with both gold and silver as legal tender, is therefore considered a superior alternative as the risk and uncertainty over not knowing the precise market ratio is eliminated. But can bimetallism ensure this?

Since the ratio between the coins of the two metals is fixed, declared and known to everyone, the elasticity of demand for them will now be close to infinity over the range of the monetary requirements of the economy. A small deviation in the market price from the legal ratio would cause a significant change in the quantity demanded of either metal for monetary purposes as people substitute the legally undervalued coin with the overvalued one. Let me graphically illustrate how bimetallism works. With an increase in supply of gold, the market rate deviates from the legal ratio. The substitution of silver will commence as soon as the costs of switching are covered; these costs include "seigniorage charge, the cost of melting coins, delays and associated loss of interest, insurance fees, and so on." (Friedman, 1989, p.8) Moreover, there could once again be uncertainty and risk associated with knowing the "exact" market ratio (it could also fluctuate) so that people might defer their decision to melt silver until the gap between the legal ratio and market ratio is substantial and unequivocal. When this point is reached, large volumes of gold will be coined and silver melted. But just as in the case of a parallel standard, the excess silver has to be drained from the system. If not the market ratio will oscillate between (say) 14.8S=1G to 15=1G in Figure 8(a). Once again the economy can reach an equilibrium at 14.8S = 1G (or 1S = 1/14.8G) if the demand for silver increases (say as exports) so that the new demand curve (D_S') intersects S_S at this ratio [Figure 8(b)]. What is critical in the determination of the equilibrium market ratio is the need for an increase in either the demand for gold or silver or both. The knife-edge characteristic of bimetallism is also evident in this model; small changes in supply could cause significant volumes of silver coins to be substituted by gold coins.

Insert Figure 8

Let us finally consider the case of international bimetallism. Consider three countries, one on a monometallic gold (C_G), another on a monometallic silver (C_S) and the third on bimetallic standard (C_B) where the legal ratio is once again set at (say) 1G=15S. Suppose now there is an increase in supply of gold in C_G from S_G to S_G'. Gold prices begin to fall towards 1G=14S

[Figure 9(a)]. But price of gold will not fall below 1G=14.8S as it is exported to C_B where gold prices are determined by the legal ratio of 1G=15S. As the gold flows into C_B, silver coins are taken out of circulation (in C_B) and replaced by gold as a small deviation in the market price from the legal ratio would cause a significant change in the quantity demanded of either metal. As seen in Figure 8(a) and 8(b), the substitution of silver will commence as soon as the costs of switching are covered.[24] Moreover, there could once again be uncertainty and risk associated with knowing the "exact" market ratio (it could also change) so that people might defer their decision to melt silver until the gap between the legal ratio and market ratio is substantial and unequivocal. When this point is reached, large volumes of gold will be coined and silver melted. As silver prices increase to 1/14.8 an excess supply of silver [X_{SB} in Figure 9(c)] is generated in the market on account of the melted coins. With the price of silver at 1/14.8, an excess supply of silver is also generated in C_S [X_S in Figure 9(d)]. This cannot be an equilibrium situation and price of silver must fall; the exchange ratio will therefore oscillate between 1:15 and 1:14.8 without reaching a stable equilibrium. One possibility of reaching an equilibrium of 1G=14.8S is if there is an increase in demand for silver in C_S from S_S to S_S' (=X_{SB} + X_S) in Figure 9(d).

For the silver of France and Europe to drain out, gold had to be continuously overvalued as coin, i.e. the legal ratio of 15S = 1G > market ratio of (say) 14.8S = 1G. This could happen if the D_S shifted out significantly so that price of silver was sustained above the legal ratio (1/14.8 > 1/15). The Indian demand for silver did this job efficiently for the West in the 1860s so that it was able to move to a de facto gold standard.

> "Had the Indian government not adopted the course of making silver the only legal tender in 1835, the currency would have very probably by this time settled itself, or been in the course of settling itself to gold, just as it did in England, France, and America. In these countries the demand of silver for India and China accelerated the process. When double currency prevails, the debtors and creditors discount its effect by taking it into consideration. The real effect of the double currency is that the dearer metal soon goes off to other countries where there may be greater demand for it, as silver left France and the United States because a demand arose for it in India[25]." (Naoroji, 1870, p.16)

[24] These costs include "seigniorage charge, the cost of melting coins, delays and associated loss of interest, insurance fees, and so on." (Friedman, 1989, p.8)
[25] Italics my own for emphasis.

If this had not happened, the excess supply of silver would have pushed silver (gold) prices down (up) so that silver would have once again come back into circulation. There is also a possibility for the market rate to return to the legal ratio of 1G:15S. This would happen if for instance the D_G and D_{GB} were to shift upwards and intersect S_G' and S_{GB}' respectively at G/S=15.

Insert Figure 9

Although an econometric analysis would throw better results, we observed some important fluctuations in the gold-silver ratio that lend support to our graphical model. Referring to Figure 10 and Table 3 below, in 1858-59, a sudden spike in gold-silver ratio from 15.30 up to 15.51 is seen. This coincides with the increase in India's gold imports by some £2 million with a simultaneous decline in silver imports by more than £8 million. This would mean an outward shift in the D_{GB} and inward shift in D_S. In 1861 we once again observe a spurt in gold prices; a correlation with the sharp decline in India's silver imports is once again noted. In 1864 as India opened the doors to a gold currency, albeit cautiously and in a rather ad hoc manner, the trend in the falling silver price of gold was broken and instead the price of silver began to fall. "It so happened that the (Latin) union was formed at the very beginning of silver's great decline, the initial cause of which must be laid at the doors of British India, which, late in 1864, took a step towards the gold basis." (Russell, 1898, p.33) From 1867, the price of silver began to show signs of falling steadily. Why did this happen when production of silver had not increased? The answer lies in India's absorption of silver, which declined dramatically from 1866 onwards on account of the slowdown in cotton exports and capital inflows. And when silver outflows to India further slowed down, almost immediately the minting of silver coins began returning to their old levels in France. While France minted only about 40,000 5-franc silver pieces in 1866, it minted 10 million in 1867 and 18 million in 1868 (ibid, p.32). Bimetallism had not yet lost its relevance. Nonetheless, the seeds of a gold standard were planted at a period when silver outflows from Europe to India were massive.

Insert Figure 10

Insert Table 3

Counterfactual history: conclusion or questions

Post-1866, India's absorption of silver declined while that of gold continued at its prior levels. The sharp decline in silver imports was on account of the declining stocks in the West. If India's overall exports had to continue at their earlier levels, India would have been compelled to move on to gold; but the trend in exports did not continue and showed a sharp decline after 1866. R.B. Chapman, Financial Secretary of the Government of India noted;

> "It may be admitted that if it (the abnormal trade condition) had continued, India would have been very soon driven to take much more gold than silver in payment for her exports. Silver, in fact, would not have been forthcoming for remittance to the East at the same rate, and a gold currency would here very likely have become a necessity." (Cowasjee, 1930, p.30)

Capital imports also showed a sharp decline. The demand for money slowly abated with India's exports stabilizing at lower levels.

The answer to this question opens the door to counterfactual history; if India had successfully shifted to gold and if India's growth had sustained, the story may well have unfolded differently in Europe, with perhaps a different ending too. Gold prices would have remained high, silver exports would not have taken place and the transition to a de facto gold standard in Europe and the US in the 1860s may never have taken place. Figure 6 starkly illustrated that simple fact; if India had substituted its silver imports with gold, there may well have been inadequate gold for the rest of the world to move to a gold standard.

While the answers to such conjectural hypothesis are difficult to "prove" we have nonetheless raised them with the objective that the Indian experience and its failed transition to gold are at least (re)drawn into the recent[26] bimetallism-gold standard narrative, which has otherwise been rather tentative in discussing this significant episode in international monetary history.

[26] It is important to mention that this has been especially so in the recent literature; however, if one goes back to contemporary debates, India finds a prominent place in the discussion.

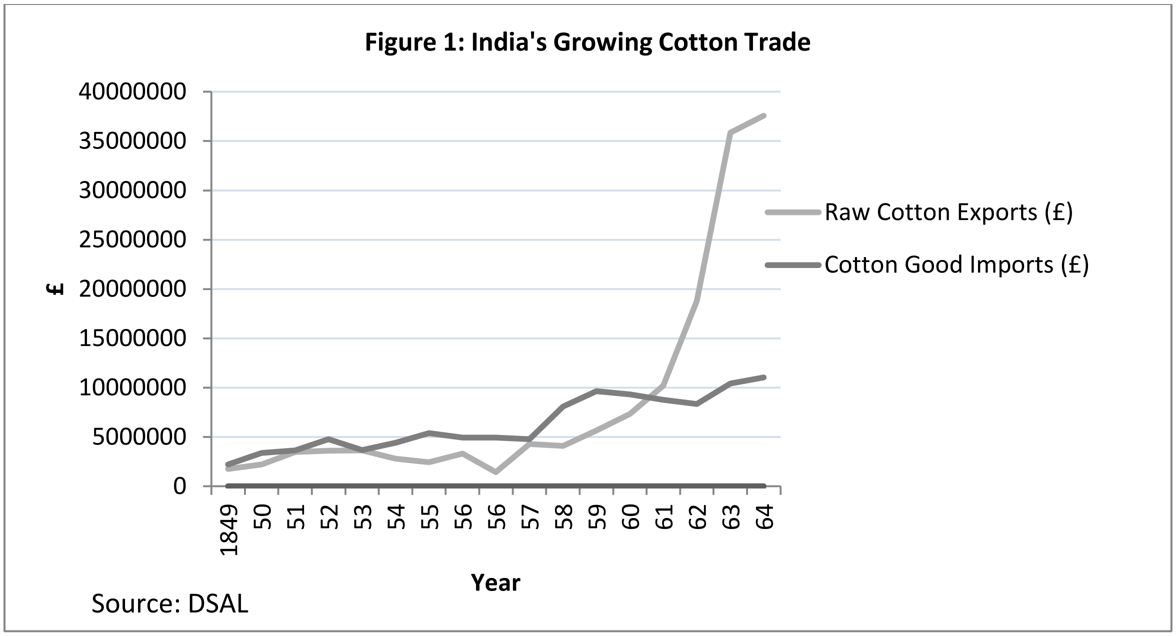


Figure 1: India's Growing Cotton Trade
40000000
35000000
30000000
25000000
20000000
15000000
10000000
5000000
0
£
1849
50
51
52
53
54
55
56
56
57
58
59
60
61
62
63
64
Year
Raw Cotton Exports (£)
Cotton Good Imports (£)
Source: DSAL

Figure 2: Coinage of silver (£)

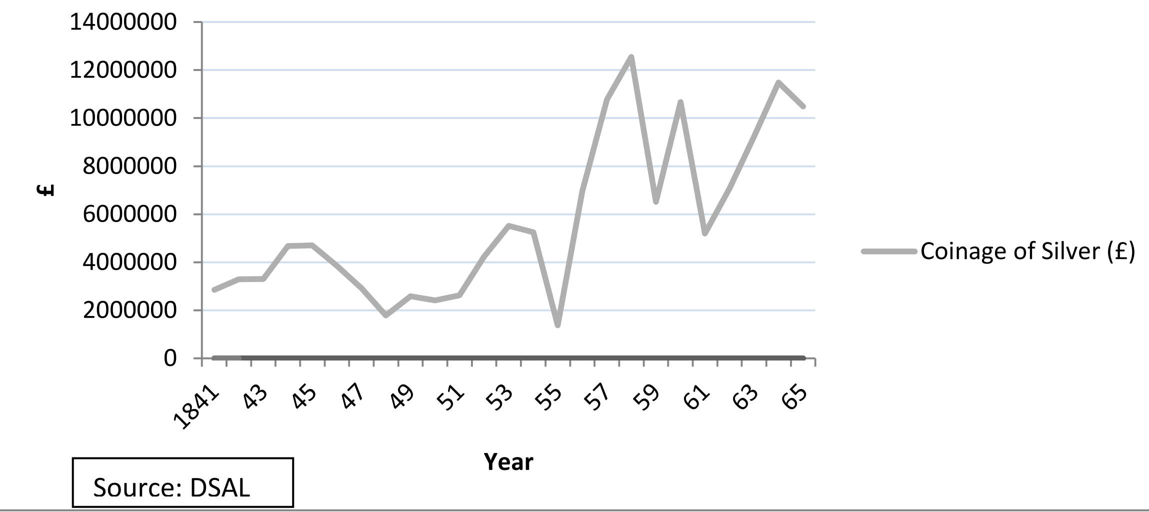


Figure 3: India's Debt in England

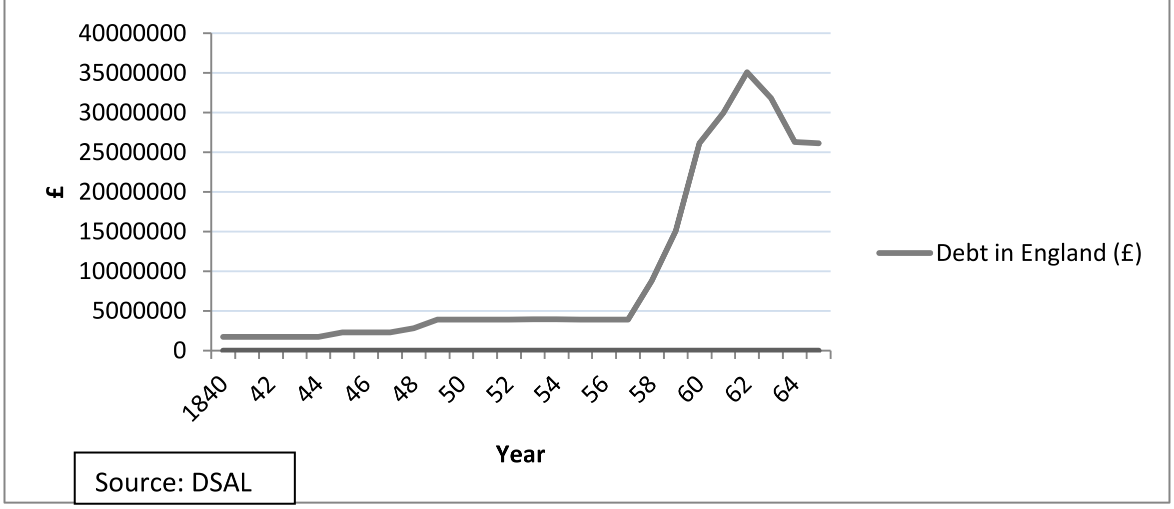


Figure 4(a): Goods and money flows between England, India and Australia with India on a silver currency

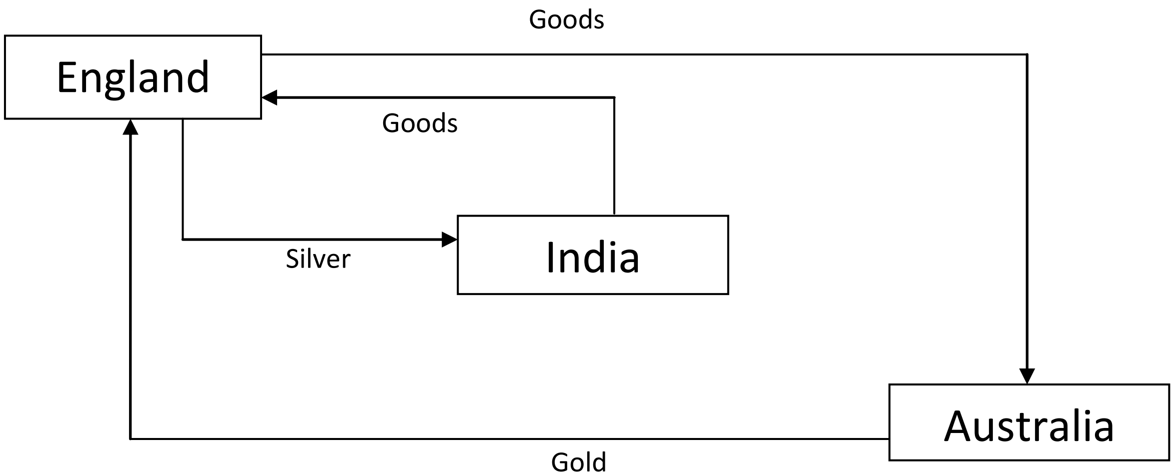


Figure 4(b): Goods and money flows between England, India and Australia with India on a gold currency

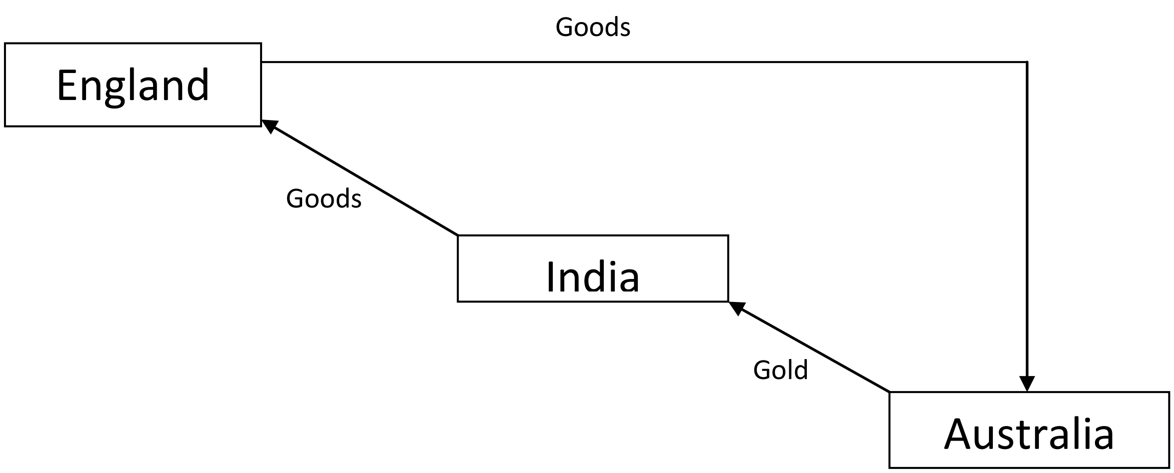
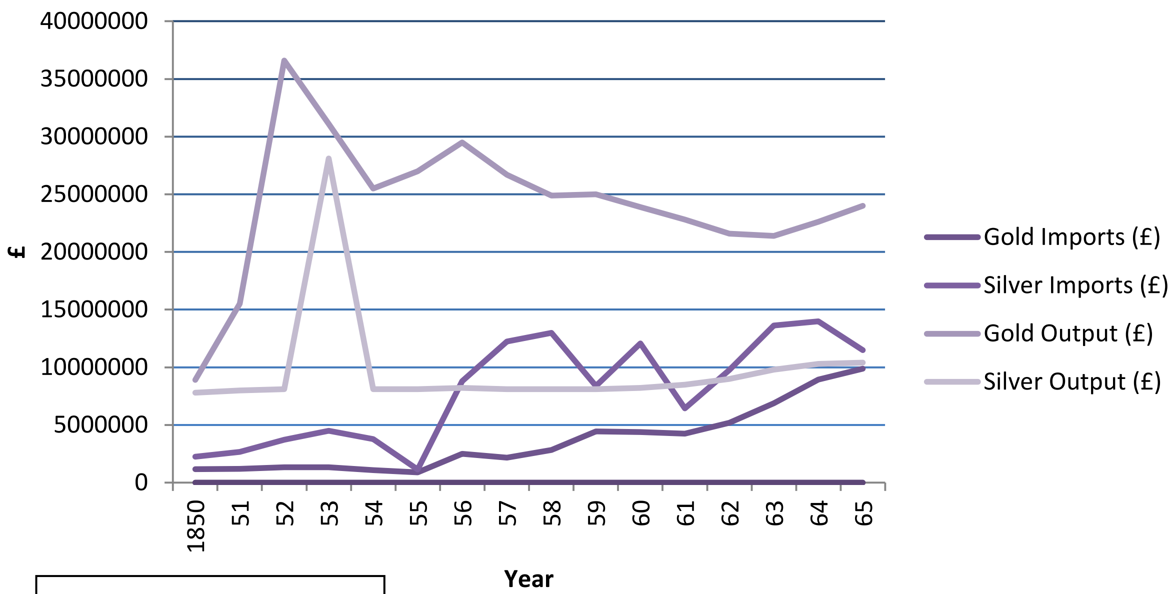
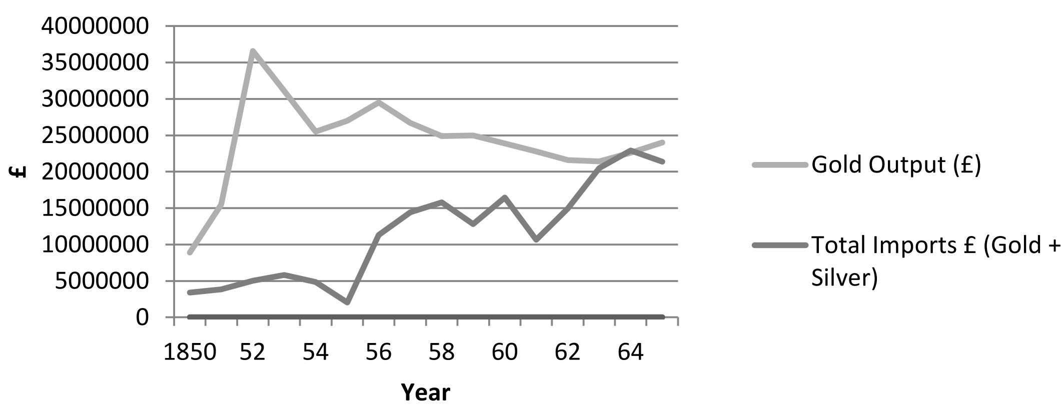


Figure 5: World output and Indian Imports of Gold and Silver



Source: DSAL, Ambedkar

Figure 6: World output of gold and total Indian imports of gold and silver



Source: DSAL, Ambedkar

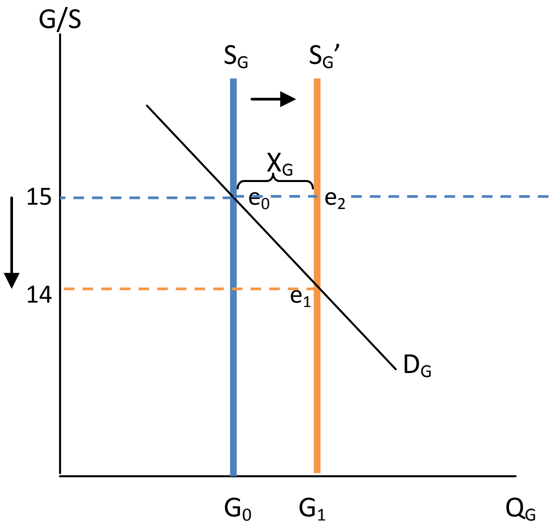


Figure 7(a): The gold market

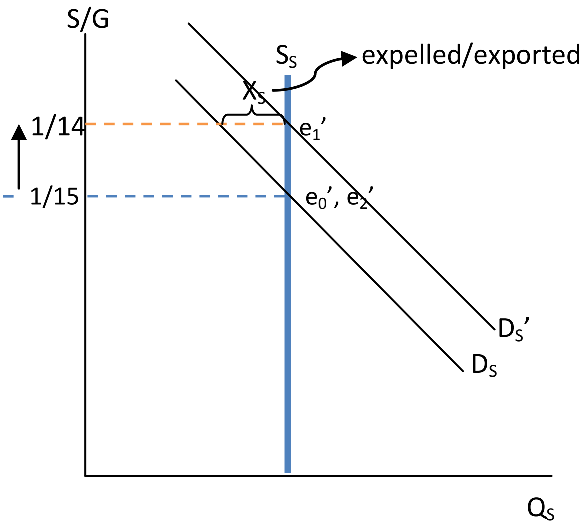


Figure 7(b): The silver market

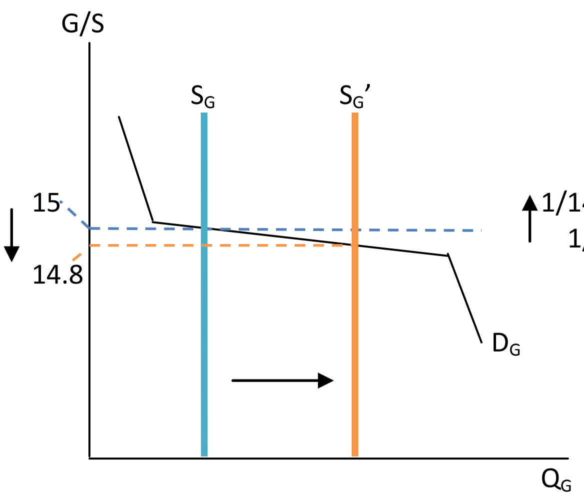


Figure 8(a): The gold market (bimetallism)

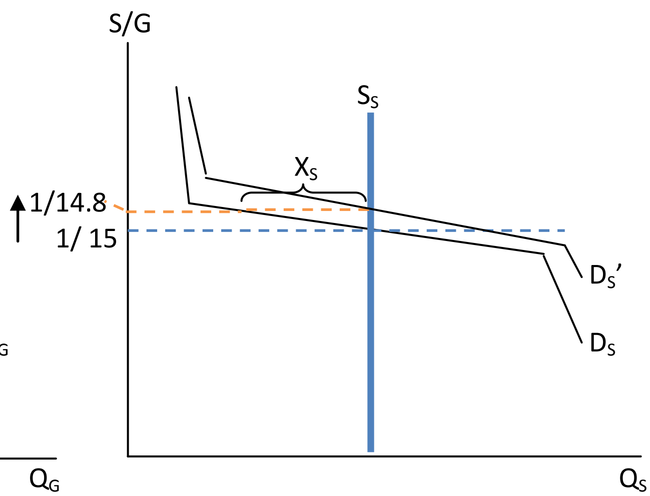
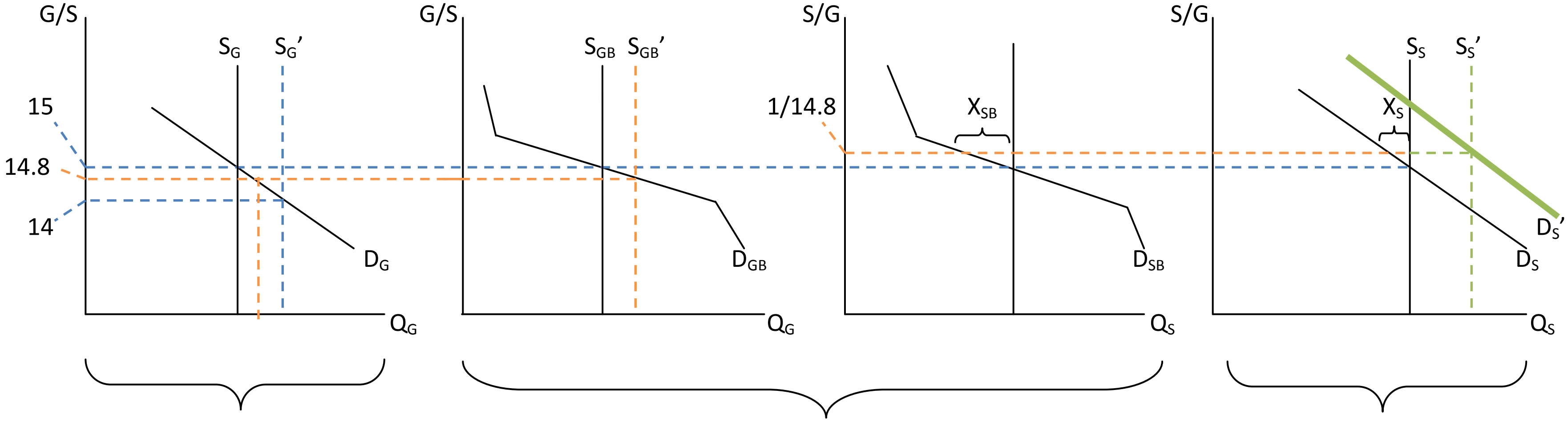


Figure 8(b): The silver market (bimetallism)



Gold Monometallic

Bimetallic

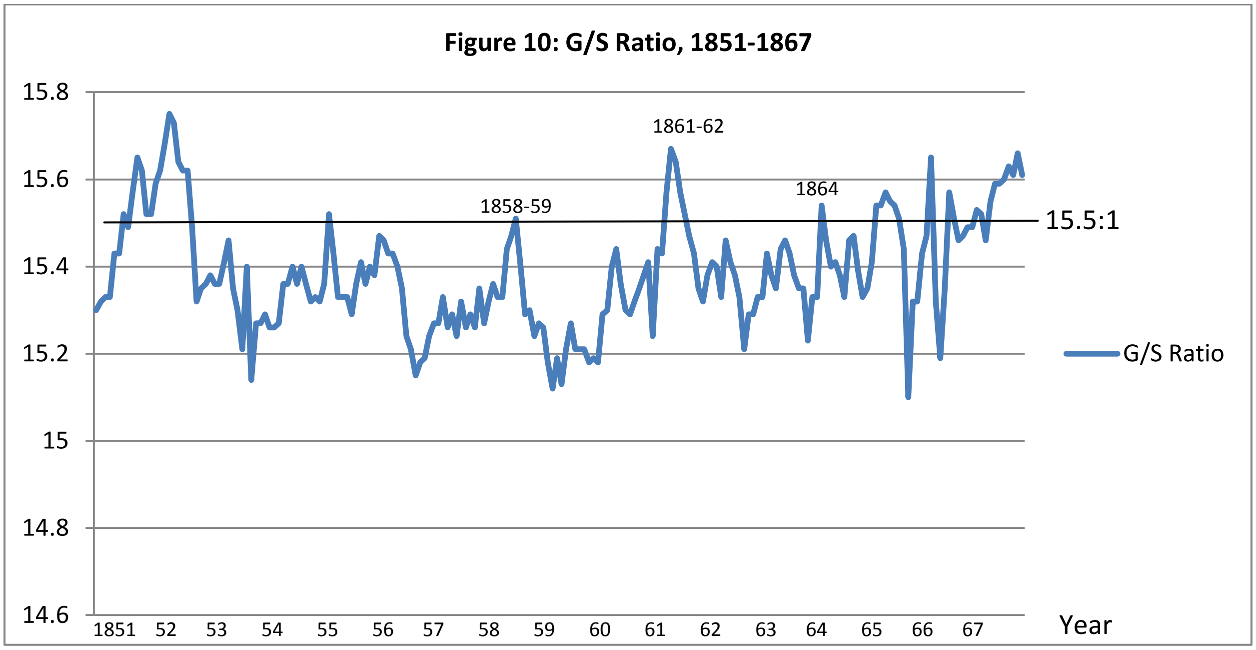
Silver Monometallic

Fig.9(a)

Fig. 9(b)

Fig.9(c)

Fig.9(d)



Source: J.L. Laughlin, The History of Bimetallism in the United States, 4th ed., New York, 1897, p.294.

Table 1: Country-wise tonnage shares of imports and exports		
Country	**% share of imports**	**% share of exports**
United Kingdom	36	43
Ceylon	15	16
China	7	11
Straits Settlements	11	8
Mauritius and Bourbon	5	6
Arabian & Persian Gulfs	5	5
France	2	3
Suez	3	3
Others	11	6
Total tonnage	2,117,371	2,151,295
Source: DSAL		

Table 2: Pattern of British foreign trade, destinations and origins.

Imports

	1794/6	1854/6	1913
Europe	44	36	41
Asia	22	14	16
North America	7	24	23
West-Indies	25	6	1
Other	2	20	20

Exports + re-exports

	1794/6	1854/6	1913
Europe	38	40	37
Asia	13	11	23
North America	28	21	14
West-Indies	18	3	1
Other	3	24	25

Source: P. Deane and W.A. Cole, British economic growth 1688-1959. Trends and structure (Cambridge 1962) 33; R. Davis, The industrial revolution and British overseas trade (Leicester 1979) 88-93; B.R. Mitchell and P. Deane, Abstract of British historical statistics (Cambridge 1962) 309-324 reprinted in Great Britain, the Industrial Revolution and the world economy, 1780-1914 Jurriën de Jong, www.leidschrift.nl/nl/archief/182...**britain**...**world**.../download

Table 3: India's gold and silver imports (£), 1850-65		
Year	Gold Imports (£)	Silver Imports (£)
1850	1,159,548	2,235,792
1851	1,205,310	2,656,548
1852	1,338,778	3,713,280
1853	1,332,106	4,490,227
1854	1,078,708	3,770,643
1855	882,721	1,145,137
1856	2,508,353	8,792,793
1857	2,176,002	12,237,695
1858	2,823,484	12,985,332
1859	4,437,339	8,379,692
1860	4,378,037	12,068,926
1861	4,242,441	6,434,636
1862	5,190,432	9,761,545
1863	6,881,569	13,627,400
1864	8,920,440	13,974,400
1865	9,875,032	11,488,320

Source: DSAL

References:

Ambedkar, B.R. (1947), History of Indian Currency & Banking, Bombay.

Ballard, Colonel R.E. (1868), Remarks on a Gold Currency for India, Bombay.

Barclay, Robert (1894), The Silver Question and the Gold Question, London.

Bombay Chamber of Commerce (1864), Memorandum to the Right Honourable Sir John Lawrence, Viceroy and Governor General of India in Council dated 8 February 1864, Accounts and Papers: Twenty-Nine Volumes, Session 7 February – 6 July 1865, Volume XXXIX, 1865, pp.5-9.

Bordo, Michael D. and Hugh Rockoff (1996), The Gold Standard as a "Good Housekeeping Seal of Approval", The Journal of Economic History, Vol. 56, No. 2, pp. 389-428.

Boycott, Dr. (1870), Untitled Report, Journal of the Society of Arts, February 4, 1870, pp.211-213.

Campbell, George (1870), Untitled Report, Journal of the Society of Arts, February 4, 1870, pp.213-214.

Cassels, W.R. (1864), Letter to His Excellency Sir Bartle Frere, K.C.B., Governor of Bombay, &c. &c. &c.; dated 1 January 1864, Accounts and Papers: Twenty-Nine Volumes, Session 7 February – 6 July 1865, Volume XXXIX, 1865, pp. 11-21.

Cassels, Andrew (1869), On a Gold Currency for India, Journal of the Society for Arts, December 24, 1869, pp. 101-03.

Copy of Financial Letter from India, dated 2d July 1852, No.36 (1852), Accounts and Papers: Thirty-Five Volumes East India, Home Accounts; Banks; Finances (India); Public Debt; Revenue; Income Tax, Session 24, January-28 August 1860, Volume XLIX, 1860.

Cowasjee, J.C. (1930), The Indian Currency System: 1835-1926, Madras.

de Cecco, M. (1974), Money and Empire: The International Gold Standard, 1890-1914 Oxford: Blackwell.

DSAL, Digital South Asia Library (nd), Statistical Abstracts relating to British India from 1840 to 1865, First Number, http://dsal.uchicago.edu/

Einaudi, Luca L. (2000), From the Franc to the 'Europe': The Attempted Transformation of the Latin Monetary Union into a European Monetary Union, 1865-1873, The Economic History Review, New Series, Vol. 53, No. 2 (May, 2000), pp. 284-308.

Faucher, Leon (1853), Remarks on the Production of the Precious Metals and on the Demonetization of Gold in Several Countries in Europe, Second Edition, 1853.

Flandreau, M. (2004), The Glitter of Gold: France, Bimetallism and the Emergence of the International Gold Standard 1848-1873 , trans. O. Leeming, Oxford University Press, Oxford.

Friedman, Milton (1989), Bimetallism Revisited, Working Papers in Economics E-89-24, The Hoover Institute, Stanford University, August.

Hendriks, Frederick (1870), Untitled remarks, Society for the Encouragement of Arts, Manufactures and Commerce (ed.), A Gold Currency for India: Report of Conferences held by the India Committee of the Society of Arts, London, pp.16-23.

Hendriks, Frederick (1869), Untitled remarks, Journal of Society for Arts, December 24, 1869.

Index to the Executive Documents No.14 (1868), Printed by the Order of the Senate for the Second Session of the Fortieth Congress of the United States of America, pp. 1-110, Washington, 1868.

Invararity, J.D. (1864), Minute by the Honourable J.D. Invararity, Bombay, dated 29 February, 1864, Accounts and Papers: Twenty-nine Volumes East India, Home Accounts; Banks; Finances (India); Public Debt; Revenue; Income Tax, Session 10, February 7- July 6, 1865, Volume XXXIX, 1865, pp.10-11.

Knafo, Samuel (2003), The Gold Standard and the Origins of the Modern International Monetary System, Cahier de Recherche-CEIM 03-01, University of Quebec, Montreal, pp.1-30.

Lees, Nassau W. (1864), The Drain of Silver to the East and the Currency of India, WH. Allen & Co., London.

Levi, Leone (1864), Resolution 1325 Government of India (Financial Department) on a Gold Currency for India, Simla, Annals of British Legislation, New Series, Volume 1, pp. 395-418.

Mansfield, W.R. (1864), On the Introduction of a Gold Currency into India, London.

Mansfield, W.R. (1866), Report of the Commission to inquire into the Operation of Act XIX, 1861, Home Accounts of the Government of India, East India (Home Accounts), 1868, pp.3-11.

Meissner, Christopher M. (2002), A New World Order: Explaining the Emergence of the Classical Gold Standard, NBER Working Paper Series, Working Paper 9233, pp. 1-41.

Mitchener, Kris James, Masato Shizume and Marc D. Weidenmier (2009), Why did Countries Adopt the Gold Standard? Lessons from Japan, Working Paper 15195, National Bureau of Economic Research, Cambridge, pp.1-46, http://www.nber.org/papers/w15195 (accessed October 5, 2012).

Morys, Matthias (2012), The emergence of the Classical Gold Standard, Centre for Historical Economics and Related Research at York, CHERRY Discussion Paper Series, CHERRY DP 12/01, pp.1-55.

Naoroji, Dadabhai (1870), Untitled remarks, Society for the Encouragement of Arts, Manufactures and Commerce (ed.), A Gold Currency for India: Report of Conferences held by the India Committee of the Society of Arts, London, pp.13-16.

Nolan, E.H. (c. 1878), The Illustrated History of the British Empire in India and the East, Volume I.

Redish, Angela (2006), Recent contributions to the history of monetary and international financial systems, European Review of Economic History, Vol. 10, No. 2, pp. 231-248.

Russell, Henry B. (1898), International Monetary Conferences: Their Purposes, Character, and Results, New York & London.

Smith, Colonel (1870), Untitled remarks, Society for the Encouragement of Arts, Manufactures and Commerce (ed.), A Gold Currency for India: Report of Conferences held by the India Committee of the Society of Arts, London, pp.9-10.

Statistical Abstract of the United States (1955), 76th Annual Edition, U.S. Department of Commerce, Washington DC.

Sussman, Nathan and Yishay Yafeh (2000), Institutions, Reforms, and Country Risk: Lessons from Japanese Government Debt in the Meiji Era, The Journal of Economic History, Vol. 60, No. 2, pp. 442-467.

Trevelyan, C.E. (1864), Minute of a Gold Currency for India, Chambers of Commerce and native associations of Calcutta and Bombay (1864), Accounts and Papers: Twenty-Nine Volumes, Session 7 February – 6 July 1865, Volume XXXIX, 1865, pp. 70-90.

Wilson, Jos S. (1868), Report of the Commissioner of General Land Office for the Year 1868, Washington.

Wood, H.W.J. (1864), Letter to E.H. Lushington, Secretary to the Government of India, Financial Department, dated 19 February, 1864, Accounts and Papers: Twenty-Nine Volumes, Session 7 February – 6 July 1865, Volume XXXIX, 1865, p.4.