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Dr Matthias Morys  
University of York (UK)  
Department of Economics  
[matthias.morys@york.ac.uk](mailto:matthias.morys@york.ac.uk)

**Politics or Precious Metal Production?  
The Emergence of the Classical Gold Standard, 1867-1896**

Was the Classical Gold Standard (1870s-1914) the result of politics or of relative scarcity of gold and silver? We challenge two strands of literature: a US strand arguing that resumption in 1879 in gold and silver would have avoided the 1880s and 1890s global price deflation (Friedman 1990, Drake 1985); and a European one arguing that France would have been able to stabilise bimetallism despite rising silver production but chose not to do so for political reasons, sacrificing exchange-rate stability between gold and silver standard countries in the process (Flandreau 1996, Oppers 1996). Based on a model centred on world gold and silver supplies and specie stocks, we show that the late 19th century silver glut was such neither France nor the US were able to stabilise bimetallism individually; only collectively could they have done so, but political coordination was unlikely given prolonged US inconvertibility after the Civil War. In sum, we argue that the world was doomed to end up on the gold standard as a result of gold and silver supply fundamentals.

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## 1. Introduction

The Classical Gold Standard (1870s – 1914) was the first system of fixed exchange rates to span the entire globe. By the outbreak of World War I, virtually all countries followed the gold standard: either they had made their currencies convertible into gold or they had, at least, stabilised their exchange-rates with respect to convertible currencies.<sup>1</sup>

Given the vast research on a large number of aspects of the Classical Gold Standard, it is surprising how little attention has been devoted to the historical origins of this unique monetary system. Why did the Classical Gold Standard emerge in the first place? Was the emergence of the Classical Gold Standard the logical outcome of 19<sup>th</sup> century monetary history or could there have been equally well the advent of a global silver standard? To be sure: We are not concerned here with the timing and the reasons why *individual* countries tied their currencies to gold once the Classical Gold Standard contained a suitable number of powerful trading and capital exporting countries. This tipping point was reached in autumn 1873, when Germany and France joined England in following the gold standard. After 1873, network externalities – i.e. boosting trade by reducing transaction costs and importing capital at lower cost – explain well the diffusion of the Classical Gold Standard.<sup>2</sup>

This paper is primarily concerned with the time span 1860 – 1873: While virtually all European countries (except for the UK and Portugal) were either on a silver or a bimetallic standard, we witness a pan-European movement in favour of gold that translated slowly but surely into gold monometallic legislation: Romania (1867), Austria-Hungary (1867), Sweden (1872), Norway (1872), Denmark (1872), Germany (1873), the Netherlands (1873), Belgium (1873), France (1873) and Switzerland (1874). Two issues can be inferred from this chronology. First, given the large number and importance of countries switching to gold in 1873, it seems sensible to see 1873 as the year that marks the emergence of the Classical Gold Standard (as does most of the literature). Second, this movement can hardly be explained on the ground of network externalities alone, despite the size and the importance of the UK economy at the time (cf. table 1). In the early 1860s, when the whole

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<sup>1</sup> B. Eichengreen and M. Flandreau, "The Geography of the Gold Standard," in *Currency Convertibility: The Gold Standard and Beyond*, ed. J. Braga de Macedo, B. Eichengreen, and J. Reis, *Routledge Explorations in Economic History* (London, New York: Routledge, 1996). C. M. Meissner, "A New World Order: Explaining the International Diffusion of the Gold Standard, 1870-1913," *Journal of International Economics* 66 (2005).

<sup>2</sup> Meissner, "A New World Order: Explaining the International Diffusion of the Gold Standard, 1870-1913."

of continental Europe (except for Portugal) was on a silver or a bimetallic standard, network externalities would have hardly militated in favour of gold monometallism.

The absence of a straightforward economic rationale might have led scholars to focus on the shift to gold by Germany, who was the first *large* (though not the first, cf. below) continental European country to adopt gold in July 1873. Once the idiosyncrasies of the German case were explained, it was thought, understanding the emergence of the Classical Gold Standard as a whole could again be based on economic reasoning. With the UK and Germany on gold, network externalities would now militate in favour of gold monometallism. As for the German decision to adopt gold, different authors have stressed different factors, but they all argue that non-economic factors played a crucial role. Gallarotti<sup>3</sup>, Milward<sup>4</sup> and Eichengreen<sup>5</sup> have stressed that Germany's decision was largely motivated by its desire to emulate the English economic model of which it saw the currency as an important cornerstone. Friedman<sup>6</sup>, by contrast, saw the Franco-Prussian war (1870) and the war indemnity imposed upon France as crucial.

We argue, by contrast, that focussing on the decision of Germany alone entails two major risks. First and most obvious, such an approach cannot explain why a number of European countries (i.e., the Scandinavian countries in 1871 and 1872) adopted the gold standard slightly ahead of Germany. Second, if everything is reduced to the decision of only one country, the emergence of the Classical Gold Standard is likely to appear as a rather idiosyncratic event or, as Flandreau put it, as an "accident of history"<sup>7</sup>. Such an approach misses what was, arguably, the most important feature of the 1860s and the early 1870s: a pan-European movement in favour of gold monometallism. Drawing on legislation, monetary commissions and chambers of commerce meetings from 13 European countries from 1860 to 1874 as well as on two international monetary conferences – the 1865 Latin Monetary Union conference and the 1867 International Monetary Conference, both held in Paris – , we show that gold monometallism had won over both bimetalism and

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<sup>3</sup> G. M. Gallarotti, "The Scramble for Gold: Monetary Regime Transformation in the 1870s," in *Monetary Regimes in Transition*, ed. M. D. Bordo and F. H. Capie (Cambridge: Cambridge University Press, 1993).

<sup>4</sup> A. S. Milward, "The Origins of the Gold Standard," in *Currency Convertibility: The Gold Standard and Beyond*, ed. J. Braga de Macedo, B. Eichengreen, and J. Reis, *Routledge Explorations in Economic History* (London, New York: Routledge, 1996).

<sup>5</sup> B. Eichengreen, *Globalizing Capital: A History of the International Monetary System* (Princeton: Princeton University Press, 1996).

<sup>6</sup> M. Friedman, "Bimetallism Revisited," *Journal of Economic Perspectives* 4 (1990).

<sup>7</sup> M. Flandreau, "The French Crime of 1873: An Essay on the Emergence of the International Gold Standard, 1870-1880," *Journal of Economic History* 56 (1996): p. 863.

silver monometallism on a pan-European scale much earlier than 1873. As early as 1867, as evidenced by the International Monetary Conference held in Paris that year (cf. section 4.3), the world monetary system was heading towards gold monometallism. Of equal importance, the early English example in following the gold standard was far less important than is commonly assumed. The emergence of the Classical Gold Standard was imminent in the late 1860s; which European country would move first – which happened to be the Scandinavian countries, to be followed by Germany – is of secondary importance.

What then explains the pan-European movement in favour of gold monometallism that is at the heart of this paper? Our argument is based on the availability of gold and silver in the European monetary system in the 1860s and on matters of coin convenience. While we might be “disappointed” that contemporaries had arguments as trivial as these on their minds, the argument put forward in this paper has the clear advantage that similar considerations were found to be of decisive importance when the gold standard had been introduced in England<sup>8</sup> (1717/1816) and Portugal<sup>9</sup> (1854). 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 bimetalism 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) on an unprecedented scale? With the notable exception of France, bimetalism never found anything close to widespread support in any of the countries; but even in France support for bimetalism dwindled away in the late 1860s. This left legislators and monetary commissions to choose between gold and silver. The monetary commissions show that the growing sentiment in favour of gold was motivated by matters of coin convenience. Gold was readily available in sufficient quantities, and it allowed to encapsulate more value in the same volume than silver. This was a major advantage at a time of rapidly increasing

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<sup>8</sup> F. W. Fetter and D. Gregory, *Monetary and Financial Policy* (Dublin: Irish University Press, 1973), p. 16.

<sup>9</sup> J. Reis, "First to Join the Gold Standard, 1854," in *Currency Convertibility: The Gold Standard and Beyond*, ed. J. Braga de Macedo, B. Eichengreen, and J. Reis, *Routledge Explorations in Economic History* (London, New York: Routledge, 1996).

trade, substantial parts of which were still settled in coin. Last but not least, taking full advantage of gold no longer implied dispensing with silver for smaller payments, as silver token coinage had become widely accepted as a result of the monetary disturbances of the 1850s.

It follows from this that we attach far less importance to the silver supply shock of the early 1870s than most accounts of the Classical Gold Standard. Yet while the decision in favour of gold dates back to the second half of the 1860s, bimetallism remained economically viable thereafter in the „revisionist“ view associated with Flandreau (1996) and Oppers (1996). We challenge this view: Based on a model centred on world gold and silver supplies and specie stocks, we show that the late 19<sup>th</sup> century silver glut was such neither France nor the US were able to stabilise bimetallism individually; only collectively could they have done so, but political coordination was unlikely given prolonged US inconvertibility after the Civil War. In sum, we argue that the world was doomed to end up on the gold standard as a result of gold and silver supply fundamentals.

The remainder of the paper is structured as follows: In the second chapter, we will critically review different theories on the emergence of the Classical Gold Standard. In the third chapter, we will explain the monetary standard in Europe before 1850 and how it changed until 1865 under the impact of the gold supply shock. Chapter four then analyses how these changes slowly but surely translated into pro-gold sentiment and, eventually, pro-gold legislation in all European countries, irrespective of whether they were on a silver or a bimetallic standard at the time. Last but not least, chapter five turns to the silver supply shock of the 1870s which turned out to be the nail in the coffin of the silver and bimetallic standards.

## 2. Theories on the emergence of the Classical Gold Standard

Explaining and discussing some theories on the emergence of the Classical Gold Standard in this chapter serves a double purpose. First, it helps avoid confusion between two very different kind of questions: the *emergence* of the Classical Gold Standard versus the *diffusion* of the Classical Gold Standard. The question of *diffusion* is concerned with the timing and the reasons why a *particular* country was interested in joining the Classical Gold Standard after 1873. The question of *emergence*, by contrast, is concerned with why a sizeable bloc of gold countries came into existence in the first place. Disentangling the two questions from each other will show that the theories presented speak more, if not exclusively, to the second question and not the first one which we are interested in in this paper. Second, discussing currently held views in the literature will prepare us for just how different the debate on the monetary standard in the 1860s and early 1870s actually was from what we have come to think about it conventionally.

### 2.1 Macroeconomic theories based on network externalities

This school of thought argues that countries joined the gold standard in order to improve their macroeconomic performance. Two sub-schools can be distinguished, either highlighting improved conditions for capital imports or the prospect of increased trade with other gold standard countries. In both cases the argument is one of network externalities: countries are attracted to gold because a large number of other countries are (already) operating under this system.

The idea that adherence to the gold standard would improve access to international capital markets has been advanced most prominently by Bordo and Rockoff.<sup>10</sup> The economic rationale is straightforward: as the major capital exporting countries – the UK, France, and Germany – were all on gold, the capital importing countries would benefit from being on the same monetary system. Controlling for a large number of variables, Bordo and Rockoff show that countries on gold enjoyed lower sovereign bond yields than countries

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<sup>10</sup> M. D. Bordo and H. Rockoff, "The Gold Standard as a 'Good Housekeeping Seal of Approval'," *Journal of Economic History* 56 (1996). Cf. also M. Obstfeld and A. M. Taylor, "Sovereign Risk, Credibility and the Gold Standard, 1870-1913 versus 1925-1931," *Economic Journal* 113 (2003).



off gold.<sup>11</sup> As for the importance of trade, Meissner finds in a recent cross-country study that the prospect of increased trade was one of the main motivations to join the gold standard after 1870.<sup>12</sup>

The macroeconomic theory comes with an important caveat. As the key argument is based on network externalities, this theory does not claim to explain the emergence of the Classical Gold Standard; even though this is often erroneously inferred. The macroeconomic theory attempts to explain the *diffusion* of the Classical Gold Standard and explicitly limits itself to the period after 1870.<sup>13</sup>

If we wanted to extend the macroeconomic theory to prior 1870, we would need to show that either trade with gold standard countries or gold denominated capital imports played a major role for countries that desired to switch to gold in the 1860s. In other words, that the UK – the only major country on gold at that time – had such a dominant position in the 1860s that it alone could generate network externalities. While some authors have argued along these lines,<sup>14</sup> the quantitative evidence does not seem to support such claims. To begin with: While the UK was certainly the richest country at that time in terms of GDP per capita, it was outnumbered by far by the bimetallic bloc and the silver bloc in terms of population and aggregate GDP. Table 1 shows these key variables for the three currency blocs in 1870.

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<sup>11</sup> For a different assessment cf. M. Flandreau and F. Zumer, *The Making of Global Finance. 1880 - 1913* (Paris: 2004).

<sup>12</sup> Meissner, "A New World Order: Explaining the International Diffusion of the Gold Standard, 1870-1913."

<sup>13</sup> Bordo and Rockoff, "The Gold Standard as a 'Good Housekeeping Seal of Approval'," pp. 389, 96, Meissner, "A New World Order: Explaining the International Diffusion of the Gold Standard, 1870-1913."

<sup>14</sup> Eichengreen, *Globalizing Capital: A History of the International Monetary System*, pp. 17-18. Flandreau, "The French Crime of 1873: An Essay on the Emergence of the International Gold Standard, 1870-1880," p. 880.

**Table 1: GDP per capita, population and GDP in European countries in 1867**

	<b>GDP per capita (1990 US dollar)</b>	<b>Population (million)</b>	<b>GDP (1990 billion US dollar)</b>
<b>Gold</b>			
UK	2968	30.9	90.7
Portugal	941	4.3	4.0
<b>Total Gold</b>		<b>35.2</b>	<b>94.7</b>
<b>Bimetallic</b>			
France	1813	38.2	69.3
Italy	1421	27.4	39.0
Belgium	2497	5.0	12.5
Switzerland	1431	2.6	4.5
<b>Total Bimetallic</b>		<b>73.2</b>	<b>125.3</b>
<b>Silver</b>			
“Germany”	1766	38.4	67.9
Austria-Hungary			
Netherlands	2660	3.5	9.3
Sweden	1431	4.2	6.0
Denmark	2003	1.8	3.4
Norway	1402	1.7	2.4
<b>Total Silver (without Austria- Hungary)</b>		<b>49.6</b>	<b>89.0</b>

Source: A. Maddison, *The World Economy. Historical Statistics*, Paris 2003.

Much more relevant in this context is obviously trade data. Table 2 shows import shares for five countries that figure prominently in this paper: France, Belgium, the Zollverein, Austria-Hungary and the Netherlands. To our knowledge, the data by Pfister, Burhop and Lampe – which have been collected only recently and might still undergo minor changes – are currently the most reliable, as they have successfully overcome a large number of problems typically associated with late 19<sup>th</sup> century trade statistics.<sup>15</sup>

<sup>15</sup> The single most important correction carried out by Pfister, Burhop and Lampe is to adjust for imports into country A that *physically* come from country B but actually come from country C. A good example might be imports from the UK into Austria-Hungary. Virtually all imports into Austria-Hungary went via Germany, as sea-borne trade between the UK and Austria-Hungary was limited to the port of Trieste. As a result, the Austro-Hungarian trade statistics classify most of the English imports into Austria-Hungary erroneously as German imports into Austria-Hungary, as these products physically enter Austria-Hungary at the German-

**Table 2: Import shares of European countries in 1867**

	<b>France</b>	<b>Belgium</b>	<b>Zollverein</b>	<b>Austria-Hungary</b>	<b>Netherlands</b>
<b>UK</b>	10.0%	10.4%	12.5%	26.3%	43.6%
<b>France</b>		29.6%	7.0%	15.6%	7.8%
<b>Italy</b>	11.1%	0.2%	0.1%	9.3%	0.1%
<b>Belgium</b>	2.7%		4.2%	1.5%	6.2%
<b>Switzerland</b>	4.5%	1.0%	7.0%	2.5%	0.0%
<b>Zollverein</b>	8.6%	13.9%		28.7%	23.1%
<b>Austria-H.</b>	1.2%	0.3%	29.9%		0.3%
<b>Netherlands</b>	3.2%	2.2%	6.0%	0.5%	
<b>Scandinavia</b>	5.3%	2.9%	0.4%	0.1%	3.3%
<b>Russia</b>	9.4%	6.3%	17.4%	2.6%	8.6%

Source : Pfister, Burhop and Lampe (2007).

What the data show is that in the late 1860s, network externalities based on trade did not militate in favor of gold monometallism. Imports of the UK to France, Belgium and the Zollverein constitute only 10.0%, 10.4% and 12.5%, respectively, of total imports of these three countries. In the French case, trade with the other LMU countries (Italy, Switzerland, Belgium) was almost twice as large (18.3%) as with the UK (10.0%), while trade with the German states (8.7%) had roughly the same importance as trade with the UK (10.0%). For Belgium, trade with France (29.6%) alone was three times as sizeable as with the UK (10.4%) and trade with Germany (13.9%) was considerably more important than with the UK. Turning to Germany, we see that there was roughly 50% more trade with the bimetallic LMU countries (18.4%) than with the UK (12.5%), not to mention the sizeable trade with Austria-Hungary (30.0%) and Russia (17.4%) (in both countries silver had been the monetary standard before the currencies were declared inconvertible). The case of Austria-Hungary equally fails to show network externalities operating as early as the 1860s. The silver-based German states outweighed slightly trade with the UK (28.7% versus 26.3%).

The only country where the English trade share was truly high was the Netherlands, where 43.5% of its imports came from the UK. It is worth noting, however, that the

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Austrian border. With the help of a specifically designed algorithm and by drawing on a large number of trade statistics from different countries Pfister, Buerhop and Lampe have been able to overcome this bias. In the case of UK imports into Austria-Hungary, for instance, the number increases from 0.5% to 26.3% after the correction. – It is worth pointing out that the calculations are based not on total imports but on a rather large sample of individual items. This might introduce a certain bias towards intra-European trade (which would not matter in the present context).

Netherlands was the only country among 20 countries present at the 1867 International Monetary Conference that *did not* vote in favour of gold monometallism (cf. section 4.3) – which again shows that the monetary dynamics of the 1860s cannot be understood on the basis of network externalities.

If trade patterns did not suggest the emergence of the gold standard, might network externalities based on capital exports give another picture? It might be argued that adherence to gold became increasingly attractive as London was the financial capital of the world. We are on less safe grounds here, but the available data again suggest that we need to keep the fundamental watershed of the 1870s in mind. A recent analysis of the Austrian sovereign bond market has shown that the first issue of a gold bond by Austria-Hungary dates from as late as 1876. All governments bonds issued prior to that date had been in silver or in paper (none of which circulated in the UK to a considerable extent).<sup>16</sup> If the same were true for other countries, we could safely conclude that neither trade patterns nor facilitating capital exports can explain the emergence of the Classical Gold Standard.

## **2.2 The Classical Gold Standard as the result of a political economy of metallic choice**

In the case of this theory, there is a need to differentiate between the original theory, first proposed by de Cecco<sup>17</sup>, and its subsequent interpretations and enlargements, most recently connected to Gallarotti<sup>18</sup>. We shall refer to them as “mild” version and the “strong” version, respectively.

The “mild version” speaks to the diffusion of the Classical Gold Standard rather than its emergence. Drawing heavily on the exchange-rate dynamics between gold standard and silver standard countries after 1873, de Cecco attempts to explain why the industrial class preferred gold and why the landed interests favoured silver as a monetary standard. As silver depreciated with respect to gold starting in late 1873 (figure 3), silver standard countries gained an export advantage (and an import disadvantage) compared to gold standard countries. This theory claims that such a development was in the interest of the agricultural class: imports were of little practical concern to agricultural producers, but the

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<sup>16</sup> M. Morys, "The Classical Gold Standard in the European Periphery: A Case Study of Austria-Hungary and Italy, 1870-1913" (PhD thesis London School of Economics and Political Science, 2006).

<sup>17</sup> M. de Cecco, *Money and Empire: The International Gold Standard, 1890-1914* (Oxford: Blackwell, 1974).

<sup>18</sup> G. M. Gallarotti, *The Anatomy of an International Monetary Order: The Classical Gold Standard, 1880-1914* (Oxford: Oxford University Press, 1995).

export advantages were highly welcome; especially, as a mildly depreciating exchange rate with respect to gold standard countries was likely to counteract the secular price decline in agricultural commodities starting in the 1870s due to the American grain invasion.<sup>19</sup> The bourgeoisie, by contrast, is seen as a natural supporter of the gold standard for two reasons: first, industrialisation required imports from abroad, which meant that the industrial class would feel the import disadvantage of a silver standard much more than the agricultural class. Second, a corollary of the depreciation of silver with respect to gold was that silver standard countries would enjoy higher inflation than gold standard countries. The bourgeoisie would hold most of its wealth in bonds and stocks, thereby being much more prone to inflation than landed interests. Thus, silver was the choice of the agricultural class, while gold was the preferred metal of the industrial class.

The other key ingredient of this theory is that 19<sup>th</sup> century history is seen as a conflict between a rising bourgeoisie and an agricultural class in decline. Once the bourgeoisie got the upper hand, it abandoned the inflation prone silver standard in favour of the hard money gold standard. Hence, the choice of the metallic standard is interpreted as reflecting the status of economic development. In de Cecco's view, this explains why backward countries such as Russia joined the gold standard so late.

As pointed out, there is also a "strong" version of this theory. De Cecco does not claim to explain why countries such as England, Germany, and France joined the gold standard; he exclusively refers to the years after 1873, trying to explain why countries such as Russia joined the Classical Gold Standard so late. In that sense, the "mild" theory does not even come in conflict with what we are discussing in this paper.<sup>20</sup>

By contrast, Gallarotti has taken de Cecco's argument much further, ignoring the 1873 watershed and, instead, trying to explain 19<sup>th</sup> century discussions on the monetary standard as a whole:

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<sup>20</sup> It is worth pointing out that recent research has been sceptical towards de Cecco's hypothesis. For a cross-country study cf. Meissner, "A New World Order: Explaining the International Diffusion of the Gold Standard, 1870-1913." In particular regarding the cases of Italy and Austria-Hungary (i.e. Austria-Hungary's second attempt to join the gold standard which culminated in the 1892 legislation) cf. Morys, "The Classical Gold Standard in the European Periphery: A Case Study of Austria-Hungary and Italy, 1870-1913".

„... the spectrum of domestic politics changed significantly in the developed world in the 19th century. The rise of political liberalism was a manifestation of the political rise of an urban-industrial class and a challenge to the traditional dominance of an agricultural class. With the shift in the political balance of power came a concomitant shift in monetary preferences from a standard oriented around a bulky and inflationary metal (i.e., silver) to one oriented around a light and non-inflationary metal (i.e., gold). The victory of gold over silver in gold-club nations was coterminous with the political victory of a new class of urban industry over the more traditional classes connected with the land.“<sup>21</sup>

Such a broad version of the theory entirely neglects the turning point of 1873. Research has shown that before 1873, no such connection between silver and inflation existed.<sup>22</sup> If at all, the reverse might be true for some periods such as the 1850s, when gold came to be seen as the inflationary metal (cf. chapter 3). As such a connection did not exist before 1873, we should not be surprised that countries of very different economic development wanted to join the gold standard at the same point in time. As we will see in chapter 4, Romania, a poor country at the European periphery, was among the first countries to pass gold standard legislation in 1867.

### **2.3 The Gold Standard as an ideological choice**

This theory argues that the adoption of the gold standard was largely determined by non-economic factors. The theory does not deny that adherence to gold might have delivered substantial economic advantages, but it argues that the reasons why the gold standard emerged in the first place were of ideological rather than economic nature. This theory has always found very strong supporters, among them Mertens<sup>23</sup> and, more recently, Milward<sup>24</sup>:

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<sup>21</sup> Gallarotti, *The Anatomy of an International Monetary Order: The Classical Gold Standard, 1880-1914*, p. 10.

<sup>22</sup> Flandreau, "The French Crime of 1873: An Essay on the Emergence of the International Gold Standard, 1870-1880," p. 887. Morys, "The Classical Gold Standard in the European Periphery: A Case Study of Austria-Hungary and Italy, 1870-1913", pp. 76-87.

<sup>23</sup> J. E. Mertens, *La naissance et le développement de l'etalon or. 1696-1922* (Paris: Presses Universitaires de France, 1944), pp. 341-47.

<sup>24</sup> Milward, "The Origins of the Gold Standard."

„... nations came to see monetary standards as economic and political status symbols. Gold monometallism came to confer high status, while silver and bimetallism came to confer low status. Much of the status of gold was conferred on the metal because it was a characteristic of advanced-industrial nations in the 19<sup>th</sup> century that their economies were able to keep more gold in circulation relative to less advanced economies. The status was compounded by the fact that Britain had been practicing a gold standard ... The example of Britain was especially compelling because its elites were drawing associations between Britain's monetary practices and its industrial successes.”<sup>25</sup>

As in the case of the two theories spelt out earlier, it seems to be important to keep the tipping point of 1873 in mind. Once England, Germany, France, and Belgium had settled on gold in that crucial year, ideological reasons were certainly one motivation why countries wanted to join the Classical Gold Standard. For instance, Charles Feer-Herzog, one of the most respected monetary specialists of the time, bluntly stated at the 1878 International Monetary Conference that “gold is the rich countries' standard, and silver the poor countries' standard.”<sup>26</sup> Can the same be said for the period before 1873?

The theory that the emergence of the gold standard owes more to ideology than economics draws strongly on the German process of monetary unification in the early 1870s.<sup>27</sup> Milward, for instance, argues that with France defeated in 1870, the Germans came to admire England most; England was not only associated with economic success, but also with the more liberal political system desired by large parts of the German population after the Bismarckian *Reichsgründung*. While some evidence can be marshalled to support this theory (cf. section 4.2), we believe such an approach draws too narrowly on a period of less than three years between the German victory over France (September 1870) and the adoption of the gold standard (July 1873). Throughout the 1860s up until the Franco-Prussian war, the German states followed the standard pattern that we will describe in more detail in the fourth chapter. As evidenced by subsequent chambers of commerce meetings, the German states pronounced themselves increasingly clear in favour of gold monometallism based on the French coinage system (i.e. adopting the French system of coinage without the link to bimetallism). The point of orientation for the German states – as

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<sup>25</sup> Gallarotti, *The Anatomy of an International Monetary Order: The Classical Gold Standard, 1880-1914*, p. 9.

<sup>26</sup> Quoted after S. P. Reti, *Silver and Gold: The Political Economy of International Monetary Conferences, 1867-1892* (Westport (CT), London: Greenwood, 1998), p. 77.

<sup>27</sup> Milward, "The Origins of the Gold Standard." Mertens, *La naissance et le développement de l'etalon or. 1696-1922*, pp. 118-23.

much as for all other European countries – was France rather than the UK.<sup>28</sup> Why, if the early English example had been so important for the emergence of the Classical Gold Standard, would have the European countries wanted to adopt French rather than English coinage? France was politically the hegemon in the 1860s; on the economic level, it witnessed considerable improvements under the *Empire* and had spread its monetary system to a bloc of 74 million people, more than twice as many as the UK (cf. table 1). The only thing that sets the German case apart is that *after* the Franco-Prussian war, adopting the French coinage system was seen as incompatible with the new political status in Europe.<sup>29</sup> This change in attitude, however, did little to influence the decision in favour of gold; it only meant that Germany would have its own coinage system based on coin ratios different from France.

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<sup>28</sup> In the same vein L. L. Einaudi, *European Monetary Unification and the International Gold Standard* (Oxford: Oxford University Press, 2000). A somehow condensed version is L. L. Einaudi, "From the Franc to the 'Europe': The Attempted Transformation of the Latin Monetary Union into a European Monetary Union, 1865-1873," *Economic History Review* 53 (2000).

<sup>29</sup> The extent to which this argument explains the German refusal to accept French coinage is somewhat debatable. Helfferich has argued forcefully that the German refusal can be traced back to before the Franco-Prussian War. Cf. K. Helfferich, *Die Reform des deutschen Geldwesens nach der Gründung des Reiches*, 2 vols. (Leipzig: Duncker&Humblot, 1898), p. 130. In the same vein Einaudi, "From the Franc to the 'Europe': The Attempted Transformation of the Latin Monetary Union into a European Monetary Union, 1865-1873." "... the French proposals [of a European system of identical coinage] progressed much further and were close to success by the end of 1869, but failed before and independently of the Franco-Prussian War of 1870."



### 3. The monetary standard in Europe until 1865

#### 3.1 Coin convenience and monetary standards in Europe until 1850

Since the earliest times, metals have not only been used for weaponry and jewellery, but also for monetary purposes. While metals were not the sole items used as a medium of exchange – as Latin *pecunia* (money), derived from *pecus* (cattle), demonstrates –, they were by far the most important ones. Among the many metals, two have featured most prominently: gold and, more widely used, silver.

Why was silver so particularly desirable for monetary purposes? Traditionally, i.e. before the introduction of deposit banks and paper money, silver suited the requirements of money best; namely, as a store of value and as a medium of exchange. As a store of value, precious metals in general are well suited due to their unchanging nature. As well as their unchanging nature, gold and silver – in contrast to copper, iron, nickel, and bronze<sup>30</sup> - were particularly attractive for monetary use due to their scarcity. Gold was particularly scarce until the gold discoveries in California (1848) and Australia (1851). The best estimates available suggest that by 1850, 30 times more silver than gold had been extracted worldwide since Columbus' times (figures 1 and 2). Compared to what happened in the second half of the 19<sup>th</sup> century (and contrary to their own perceptions, labelling the age of discoveries the *siglo de oro*) not even the Spaniards had found *Eldorado*.

While silver and gold performed equally well in terms of store of value, silver enjoyed a clear advantage as a medium of exchange, the other characteristic of money. This advantage followed naturally from silver being less scarce than gold. A commodity standard required coins that would encapsulate a metallic value suitable for most transactions, including the transactions of daily life. Copper coins, for instance, would have been overly bulky for most transactions. 17<sup>th</sup> century Sweden, which had to rely on copper in the absence of gold and silver, famously invented the bank note in response to these inconveniences.<sup>31</sup> Gold, by contrast, was so precious that extremely small coins would have been needed for most transactions. Silver turned out to be the happy medium: big enough, but never bulky. The wage series that have been collected by Bob Allen in the context of

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<sup>30</sup> Bronze is no elementary metal, but an alloy of copper and tin.

<sup>31</sup>

the great divergence debate clearly demonstrate why silver was the most suited metal in the late Middle Ages and Early Modern Europe. Daily wages ranged between two and ten grams silver, which translated into convenient coin sizes.<sup>32</sup> Gold, by contrast, was relegated to the settlement of extremely large sums of money, often involving long distances where weight played an important role. Silver became the money for daily use, while gold was viewed as representing extreme wealth. The dichotomy between silver and gold in popular imagination is well captured in Shakespeare's *Merchant of Venice* (III, 2): Bassanio describes gold as "hard food for Midas" and silver as "pale and common drudge between man and man".

The advantages of gold over silver in settling large transactions over long distances suggest that it was no coincidence that England was the first country to introduce the gold standard in 1717.<sup>33</sup> By then, England had acquired a sizeable maritime empire, which involved a substantial amount of intercontinental transactions. Due to the industrial revolution later in the 18<sup>th</sup> century, transactions increased in both numbers and size, conferring an additional advantage to the lighter gold as opposed to the bulkier silver.

It should be emphasised that England was the exception rather than the rule, and that it remained the only country to follow the gold standard until 1854.<sup>34</sup> All other countries found other solutions in their quest to reconcile the use of silver on a daily basis with the advantages of using gold to settle large transactions.<sup>35</sup> The most common approach was to use so-called "trade coins" made out of gold. Trade coins were tailored for large cross-country transactions, and they often exhibited the same design, weight, and fineness as the coins of the country they were sent to. In some cases, trade coins were even named after their most common destination. For example, the *Dukat*, a century-old Habsburg trade coin that was to remain the most important Austrian trade coin until 1870, was named after the *ducato*, the Venetian gold coins.<sup>36</sup>

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<sup>32</sup> R. C. Allen, "The Great Divergence in European Wages and Prices from the Middle Ages to the First World War," *Explorations in Economic History* 38 (2001).

<sup>33</sup> Mertens, *La naissance et le développement de l'étalon or. 1696-1922*, pp. 55-109. A. Redish, "The Evolution of the Gold Standard in England," *Journal of Economic History* 50 (1990).

<sup>34</sup> Reis, "First to Join the Gold Standard, 1854."

<sup>35</sup> A good overview is given by Einaudi, *European Monetary Unification and the International Gold Standard*, pp. 20-36. A very detailed description of the early modern Holy Roman Empire can be found in: B. Sprenger, *Das Geld der Deutschen. Geldgeschichte Deutschlands von den Anfängen bis zur Gegenwart* (Paderborn: Ferdinand Schöningh, 2002), pp. 73-147.

<sup>36</sup> Sprenger, *Das Geld der Deutschen. Geldgeschichte Deutschlands von den Anfängen bis zur Gegenwart*, p. 78.

To be sure: Trade coins did not enjoy any link to the domestic monetary system. Trade coins were neither legal tender, nor was there free coinage on private account. Instead, the mint produced trade coins according to demand and sold them at a variable price, which essentially depended on the current gold-silver ratio. Occasionally, trade coins enjoyed legal tender status in other countries; at least they would be accepted *de facto*, for this was their *raison d'être*. In sum, even though trade coins had no connection to the domestic monetary system, the combination of a silver standard complemented with gold coins combined the best of both worlds. A country could have it both ways, using silver for daily transactions and gold for the settlement of large sums of money.

Another solution to the quest to reconcile the use of silver for the payments of daily life with the advantages of using gold to settle large transactions was to extend the two key components of any metallic system to silver and gold simultaneously (free coinage on private account and unlimited legal tender status), i.e. to introduce a bimetallic standard. This was the solution adopted in 1803 by France, which was to become the global advocate of bimetallism for many decades.<sup>37</sup> The benefits of a bimetallic system are straightforward. If both silver and gold enjoy full legal tender status, the number of ways transactions can be settled is doubled and transactions costs with gold *and* silver standard countries are reduced.

At the same time, such a system is afflicted with a specific problem. The legal ratio between gold and silver stipulated in the coinage act (also referred to as coin ratio or mint ratio) is likely to differ from the market ratio between gold and silver as determined by supply and demand on world bullion markets. Any such difference between coin ratio and market ratio can potentially be exploited in two ways. First, the metal whose price is lower in bullion markets than the coin ratio suggests is brought to the mint (which in the late 19<sup>th</sup> century was often the bank of note issue itself) and coined on private account; in a second step, it is then attempted to redeem the currency obtained (be it coins or bank notes) at the bank of note issue into the other metal, i.e. the one whose price is higher in bullion markets

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<sup>37</sup> The recent literature on French bimetallism has been dominated by Flandreau. Many of his ideas challenging the conventional wisdom on bimetallism stem from: M. Flandreau, *L'or du monde. La France et la stabilité du système monétaire international. 1848-1873* (Paris: 1995). This book has recently been translated into English: M. Flandreau, *The Glitter of Gold. France, Bimetallism, and the Emergence of the International Gold Standard. 1848-1873* (Oxford: Oxford University Press, 2004). Cf. also H. P. Willis, *A History of the Latin Monetary Union: A Study of International Monetary Action* (Chicago: University of Chicago Press, 1901), pp. 1-14. Mertens, *La naissance et le développement de l'etalon or. 1696-1922*, pp. 257-76.

than the coin ratio implies. As this would be an “obvious get-rich scheme” (Friedman) for arbitrageurs at the expense of the bank of note issue, the latter’s obligation under bimetallism only implied to redeem at its discretion in either metal.<sup>38</sup> While this way of arbitrage was hence eliminated, another danger remained very real: targeting the currency in circulation rather than the bank of note issue’s vault. Arbitrageurs would benefit from withdrawing the metal whose price is higher on bullion markets than the coin ratio suggests – often referred to as the “good metal” – and replacing it with the “bad metal”. This process of the bad metal driving the good metal out of circulation is conventionally referred to as Gresham’s Law.

As coin ratio and market ratio will rarely be the same, any bimetallic system inherently carries the tendency to become a de-facto monometallism. In the words of Ludwig von Mises, bimetallism was the “alternative standard” rather than the “double standard”.<sup>39</sup> This conventional view of bimetallism as “knife edge” has recently been challenged by Friedman and Flandreau, whose research is partly inspired by Irving Fisher’s analysis of bimetallism. Fisher pointed out to a potentially self-stabilizing mechanism of bimetallism. The bad metal will flow to the mint, thereby increasing demand for it, which in turns increases its market price. By contrast, the good metal will be withdrawn from circulation, thereby increasing its supply at the open market, which in turn reduces its price. Fisher hence argued that equilibrium under bimetallism was restored by readjusting the domestic currency composition.

Which of the two – bimetallism as “knife edge” versus the self-stabilizing mechanism of bimetallism – fits better 19<sup>th</sup> century monetary history? This depends on whether the capacity to readjust the domestic currency composition has come to an end or not. For the French bimetallic experience from 1820 to 1850 – a time when gold sold on bullion markets consistently above 15.5 : 1, the French bimetallic ratio – there is widespread agreement that the system developed ever more into de facto silver monometallism.<sup>40</sup> Controversy has centred very much on how to see bimetallism from 1850 – 1873, i.e. after the gold findings of California (and later Australia) poured large quantities of gold into Europe and made the market ratio remain below 15.5 : 1 for 15 years until 1865. Flandreau

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<sup>38</sup> Friedman, "Bimetallism Revisited," p. 86.

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<sup>40</sup> A. Redish, "The Persistence of Bimetallism in Nineteenth-Century France," *Economic History Review* 68 (1995).

in particular has portrayed bimetallism as in equilibrium from 1848 – 1873.<sup>41</sup> While coin estimates by Flandreau, reproduced in figure 4, suggest a dramatic re-arrangement of domestic currency from silver to gold, they do not imply that France necessarily ran out of silver. This, however, is exactly the issue that other scholars such as Oppers<sup>42</sup> and Redish<sup>43</sup> have taken issue with. Redish, for instance, quotes overwhelming evidence of the 1850s and 1860s that silver coin was almost entirely missing in France; in other words, Redish argues that France was operating a de facto gold standard since the early 1850s. Before spelling out our own point of view – which will be crucial to our interpretation of the emergence of the Classical Gold Standard – we feel the need to explain somewhat more in detail the consequences of the 1850s gold supply shock to the European monetary system. This is what we turn to now.

### **3.2 1848 – 1865: Gold supply shock to the world monetary system**

The 1850s and 1860s witnessed a major change with profound long-run implications for the global monetary system. In fact, it is argued in this paper that the gold supply shock to the world monetary system due to large gold discoveries in California and in Australia prepared the ground for the global shift to gold in the late 1860s and early 1870s. For the first time in history, gold came to be viewed as the relatively abundant metal, while silver was perceived as extremely scarce.<sup>44</sup> The large gold discoveries in California in 1848 and in Australia in 1851 put pressure on the gold price in the 1850s and early 1860s. This trend was reversed in the mid-1860s, when large quantities of silver poured into Europe.<sup>45</sup> This alleviated the pressure on gold, putting it back on silver (cf. figure 3).

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<sup>41</sup> M. Flandreau, "As Good as Gold? Bimetallism in Equilibrium 1848-1873," in *Monetary Standards and Exchange Rates*, ed. L. Officer (London: Routledge, 1997). M. Flandreau, "'Water Seeks a Level': Modeling Bimetallic Exchange Rates and the Bimetallic Band," *Journal of Money, Credit and Banking* 34 (2002). Cf. also S. E. Oppers, "A Model of the Bimetallic System," *Journal of Monetary Economics* 46 (2000).

<sup>42</sup> Oppers, "A Model of the Bimetallic System," p. 520.

<sup>43</sup> Redish, "Redish 1995."

<sup>44</sup> R. S. Sayers, "The Question of the Standard in the 1850s," *Economic History. Economic Journal Supplement* 2 (1933).

<sup>45</sup> This was partly due to recent discoveries in Nevada and Mexico and partly due to more sophisticated extraction techniques.

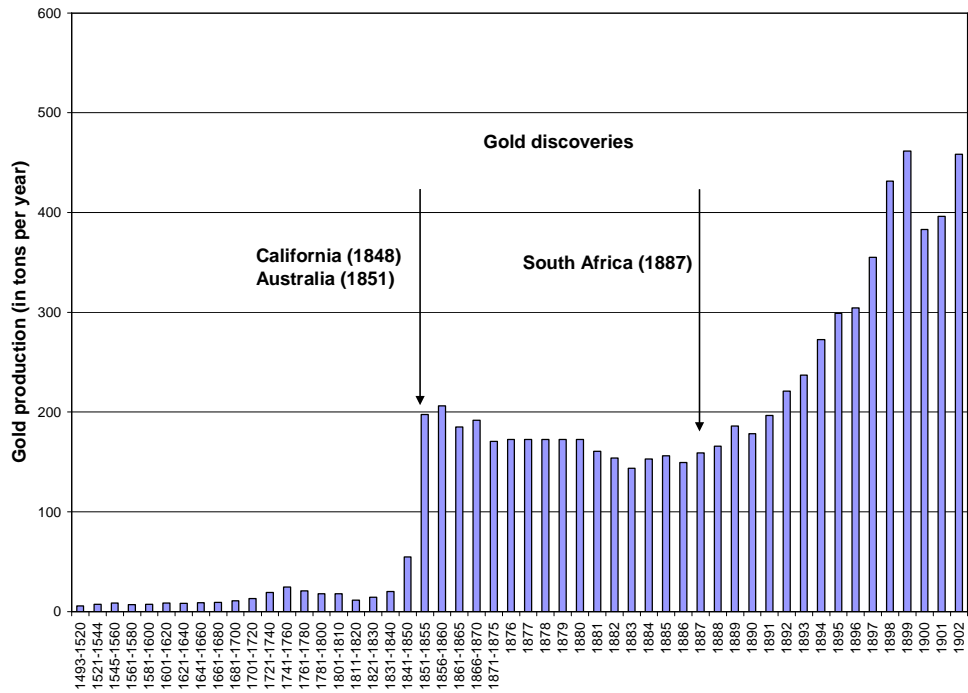


Figure 1: Global gold production 1493-1902 (in tons per year)

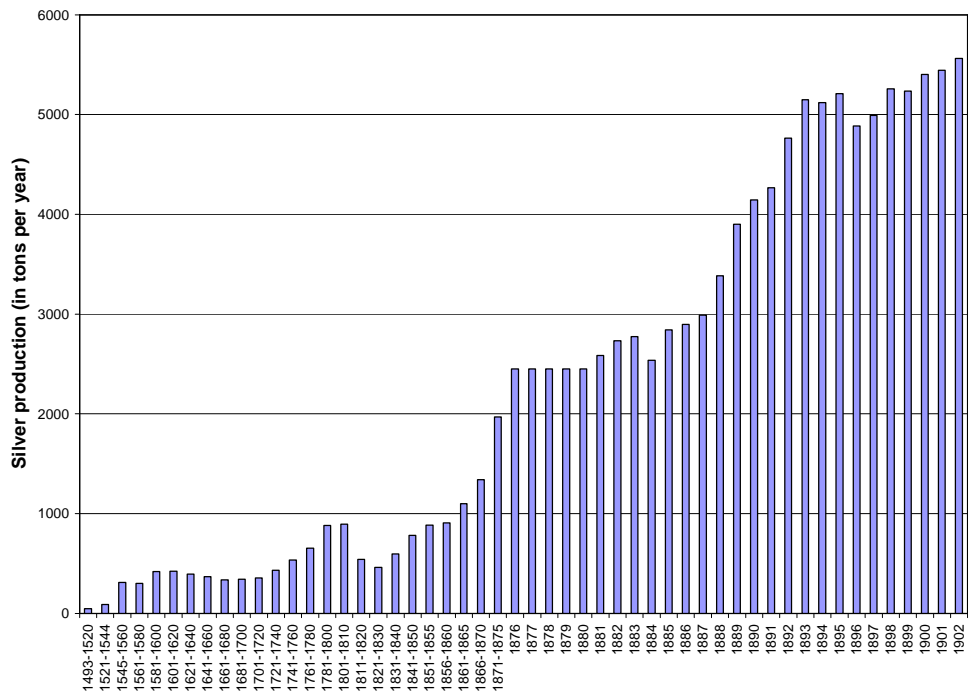
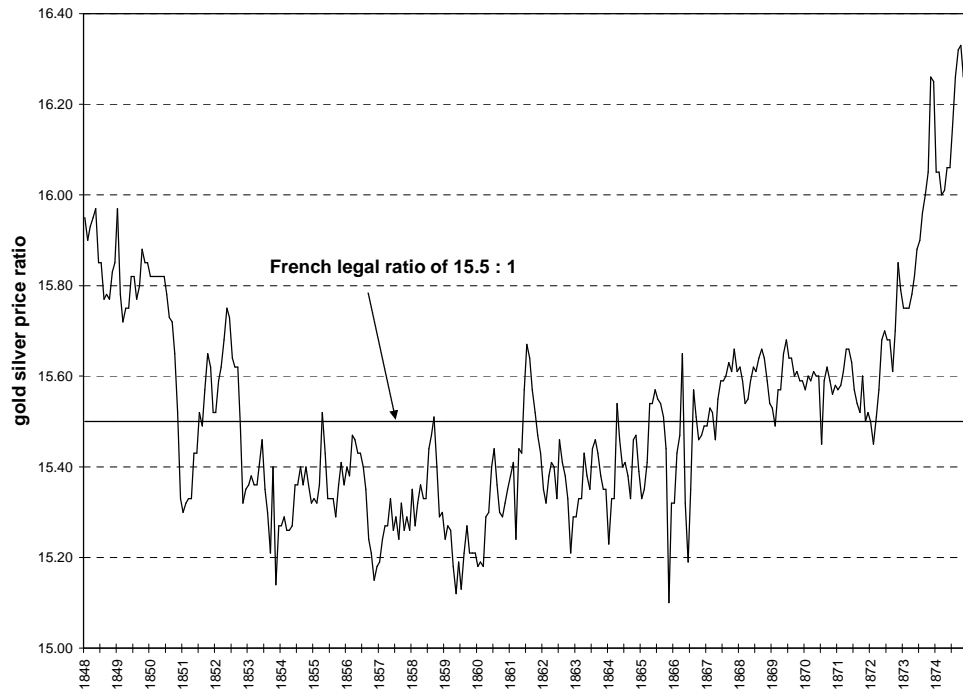


Figure 2: Global silver production 1493-1902 (in tons per year)

Sources for both figures: A. G. Soetbeer, *Edelmetall-Produktion und Werthverhältnis zwischen Gold und Silber seit der Entdeckung Amerika's bis zur Gegenwart*, Gotha 1879, pp. 107-112. k.k. Finanzministerium, *Tabellen zur Währungsstatistik*, 3rd ed., Vienna 1903, p. 3.

The discussions of the 1850s surrounding the monetary standard have largely fallen into oblivion. The most recent academic article encompassing more than one country dates back to the 1930s.<sup>46</sup> The academic negligence is largely because none of the major countries actually switched the monetary standard in the 1850s. Nonetheless, major debates took place throughout the 1850s in England, France and the German states.



**Figure 3: Monthly gold silver price ratio, 1848 – 1874.**

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

The drop of the gold-silver ratio below 15.5 : 1, the French legal ratio, generated a profound change in perceptions. In the early 1850s, pamphlets were published throughout Europe suggesting that gold and not silver was associated with monetary instability.<sup>47</sup>

<sup>46</sup> Sayers, "The Question of the Standard in the 1850s."

<sup>47</sup> J. Ward, *Observations on the effect of the Californian and Australian gold, and on the impossibility of continuing the present standard in the event of gold becoming seriously depreciated* (London: 1852). C. Coquelin, "De la dépréciation de l'or, et du système monétaire français," *Journal des Economistes* 117 (1851). A. G. Soetbeer, *Andeutungen in Bezug auf die vermehrte Goldproduktion und ihren Einfluß. Nebst einer lithographierten Tabelle* (Hamburg: 1852). G. Galotti, *Del ribasso del valore permutabile dell'oro e delle conseguenze che debbono derivare da questo ribasso* (Naples: 1856).

Many people in the United Kingdom suggested the country abandon its gold standard, as an inflationary standard seemed incompatible with the UK's economic and financial status.<sup>48</sup> Other countries, such as the Netherlands (1849), cut off any ties with gold and put their countries firmly on silver.<sup>49</sup> Similarly, Switzerland adopted silver monometallism in 1850. The only country not following the trend was Portugal, which joined the gold standard in 1854.<sup>50</sup> This, however, was a sign of economic weakness rather than strength, as gold was simply cheaper to acquire in the 1850s.<sup>51</sup> Further evidence that gold and not silver was associated with monetary instability at that time are the discussions surrounding the Vienna coinage treaty (1857) between the states of the German confederation. Prussia argued vehemently against the adoption of the gold standard favoured by Austria, the second most important but financially relatively weak state in the German confederation.<sup>52</sup>

The country that deserves most attention in this context is France. As we noted earlier, bimetalism before 1850 had existed on paper rather than in practice. The large discoveries of the 1850s provided France with the opportunity to make the bimetallic standard truly work for the first time. Thus, large quantities of gold were sent to France and coined at the mint. Simultaneously, ever more silver was withdrawn from French circulation. During the course of the 1850s and early 1860s, reserves and circulation in France were increasingly dominated by the relatively inexpensive metal, gold (figure 4).<sup>53</sup>

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<sup>48</sup> Sayers, "The Question of the Standard in the 1850s."

<sup>49</sup> Ibid.: p. 587. Suess, *Die Zukunft des Goldes* (Vienna: 1877), pp. 8-9.

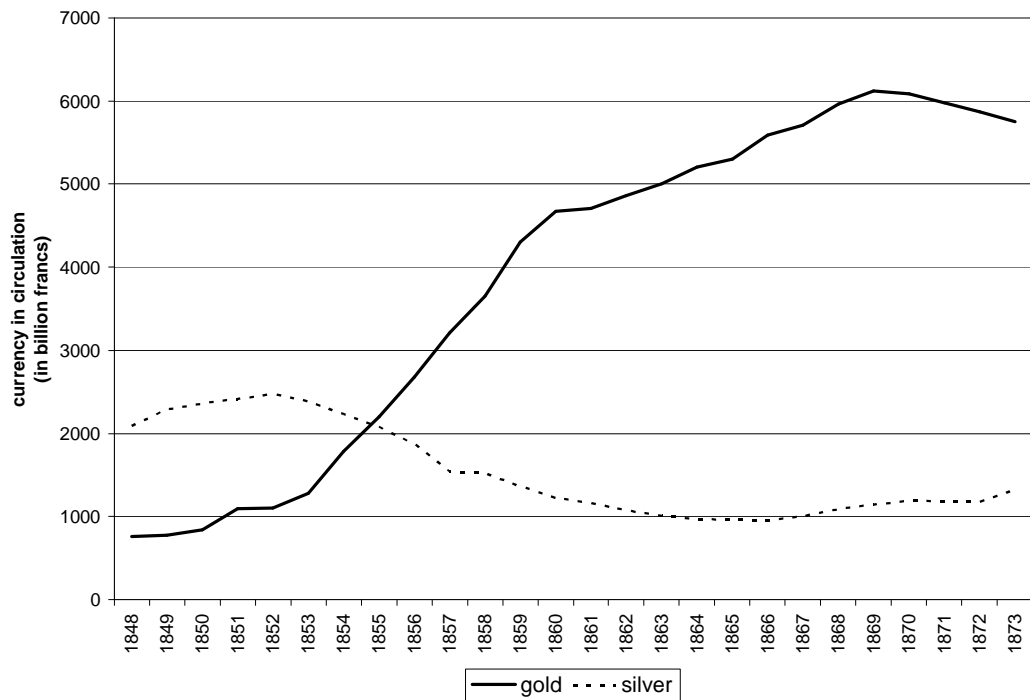
<sup>50</sup> Reis, "First to Join the Gold Standard, 1854."

<sup>51</sup> Ibid., pp. 167-73.

<sup>52</sup> A. G. Soetbeer, *Litteraturnachweis über Geld- und Münzwesen insbesondere über den Währungsstreit, 1871-1891. Mit geschichtlichen und statistischen Erläuterungen* (Berlin: 1892), p. 78.

<sup>53</sup> Flandreau, "The French Crime of 1873: An Essay on the Emergence of the International Gold Standard, 1870-1880," pp. 865-70 and 80-85.





**Figure 4: French currency in circulation, 1848 - 1873.**

Source: M. Flandreau, *Coin Memories: Estimates of the French Metallic Currency*, *Journal of European Economic History*, 25 (1995), p. 308.

Gold replacing silver led to a number of problems. First and most important, small coins were increasingly absent. As early as 1857, a French government commission reports that silver “had disappeared almost entirely”<sup>54</sup>. It is difficult to reconcile statements such as this one – which can be found in abundance in late 1850s and 1860s sources, a point also made by Redish<sup>55</sup> - with the revisionist perspective allured to earlier that tend to portray bimetallism as in equilibrium in the 1850s. Second, the substitution of silver for gold created problems relating to France’s neighbours Belgium, Switzerland, and Piedmont-Sardinia.<sup>56</sup>

Due to occupation in the Napoleonic wars, Belgium, Switzerland, and Piedmont-Sardinia had all adopted the system of French coinage that was based on the decimal system, 1 silver franc having a weight of exactly 5 grams at a fineness of 900/1000. Coins

<sup>54</sup> Ministère des Finances, *Documents relatifs à la question monétaire* (Paris: Imprimerie impériale, 1868), p. 51.

<sup>55</sup> Redish, "Redish 1995."

<sup>56</sup> Einaudi, *European Monetary Unification and the International Gold Standard*, pp. 37-40.

being completely identical proved very beneficial, which explains why the three countries retained the French system even after 1815. Piedmontese could pay for French goods simply by sending domestic coins to France, which would then circulate in France as if they were French coins. This system of a *de facto* coinage union worked very well in the first half of the 19<sup>th</sup> century when gold circulation was limited and the face value of silver coins was identical to their intrinsic value.

As the disappearance of silver coin became an ever more pressing problem, France, Belgium, Switzerland, and Italy thought of remedies against the silver exports. As early as 1854 France was forced to introduce a 5 franc gold coin as a substitute for the 5 franc silver coin.<sup>57</sup> France (1850, 1857, 1861) and Switzerland (1859) called monetary commissions to specifically deal with the question of silver exports. In the case of Italy, the same issue was discussed by the 1862 monetary commission<sup>58</sup> within the broader context of monetary unification<sup>59</sup> after the establishment of the kingdom of Italy (1860). The solution to the export of silver, first suggested by the French commission of 1857<sup>60</sup>, was straightforward. Rather than coining silver coin with a fineness of 900/1000 as stipulated in the French 1803 legislation, reducing the fineness would stop withdrawing silver from circulation from being profitable. With the fineness of silver coin reduced but their weight and nominal value left unaltered, this would normally imply a change of the gold-silver legal ratio. The Swiss, who were the first to react to the silver efflux by legislative means, took a more subtle approach, however. The idea was to retain the original fineness of 900/1000 only for the 5 franc coin, thereby leaving the bimetallic link between gold and silver at a ratio of 15.5 : 1 unaltered. The fineness of all coins below 5 francs – 2 francs, 1 franc, 50 centimes and 20 centimes – would be reduced to 800/1000. In other words, only the 5 franc coin would remain a full-bodied coin, while coins below 5 franc were reduced to token coins (i.e. a coin whose intrinsic value is lower than its face value).

The Swiss legislation stopped the export of silver, only to create another problem. As already mentioned, coins were widely used for cross-border transactions, bringing many of them to France, Italy and Belgium. These countries, therefore, found themselves in a delicate position. On the one hand, domestically coined silver coins were leaving the

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<sup>57</sup> Redish, "Redish 1995," p. 732.

<sup>58</sup> *Atti parlamentari, Camera dei deputati, legislatura VIII, sessione 1861, documenti, n. 258. Atti parlamentari, Camera dei deputati, legislatura VIII, sessione 1861, documenti, n. 258-A.*

<sup>59</sup> R. de Mattia, *L'unificazione monetaria italiana* (Turin: 1959).

<sup>60</sup> Willis, *A History of the Latin Monetary Union: A Study of International Monetary Action*, pp. 11-14.

country, as the three countries had maintained a composition of 900/1000. On the other hand, they were flooded with Swiss silver token coins.<sup>61</sup> Such a situation was not acceptable to the French, Italian and Belgian authorities. The most straightforward remedy was to reduce the fineness of the own silver coins as well. Italy<sup>62</sup> and France<sup>63</sup> took similar steps, even though they reduced the fineness only to 835/1000 and did not reduce as many full-bodied silver coins to token coins as the Swiss had done. Table 3 summarizes the changes in legislation in the four bimetallic countries between 1860 and 1864.

**Table 3: Fineness of silver coinage in bimetallic countries**

Country	Year of coinage act	Denomination (Franc / Lira)				
		5	2	1	0.50	0.20
Switzerland	1860	900	<b>800</b>	<b>800</b>	<b>800</b>	<b>800</b>
Italy	1862	900	900	<b>835</b>	<b>835</b>	<b>835</b>
France	1864	900	900	900	<b>835</b>	<b>835</b>
LMU convention	1865	900	<b>835</b>	<b>835</b>	<b>835</b>	<b>835</b>

Source: Ministère des Affaires Etrangères, *Conférence monétaire entre la Belgique, la France, l'Italie et la Suisse, Procès verbaux*, Paris 1865.

The steps taken by Switzerland, Italy and France could only lead to a “race to the bottom” in terms of fineness, and thus were not sustainable in the long term. It took little time before the four countries realised their mutual dependence in monetary matters. Standardisation of coinage appeared to be the most promising way out of the problem. France and Belgium, which had suffered most from the influx of foreign token coins as they had maintained the initial fineness of 900/1000 the longest<sup>64</sup>, thus called a conference in late 1865, which gave rise to what became known as the Latin Monetary Union, established by international treaty on 23<sup>rd</sup> December 1865. A detailed examination of the 1865 International Monetary Conference will demonstrate how fragile bimetalism was by that time. We will argue that

<sup>61</sup> Einaudi, *European Monetary Unification and the International Gold Standard*, pp. 37-40.

<sup>62</sup> Articles 2 and 3 of the 1862 Italian coinage act, reprinted in M. de Cecco, ed., *L'Italia ed il sistema finanziario internazionale. 1861-1914*, Collana storica della Banca d'Italia. Serie "Documenti". Volume I (Rome: Editori Laterza, 1990), pp. 90-93.

<sup>63</sup> Ministère des Affaires Etrangères, *Conférence monétaire entre la Belgique, la France, l'Italie et la Suisse, Procès verbaux, novembre et décembre 1865* (Paris: Imprimerie impériale, 1865), p. 4.

<sup>64</sup> Belgium, in fact, did not change its legislation at all.

the Latin Monetary Union is better understood as a transitory step towards gold monometallism rather than as the foundation of a bimetallic bloc.

## 4. Monetary commissions and monetary legislation 1865 – 1873

### 4.1 The 1865 International Monetary Conference and the Latin Monetary Union

We have described at the end of the previous chapter the monetary problems facing France, Belgium, Italy and Switzerland in the early 1860s. The international monetary conference of 1865, called in response to these problems, gave rise to what has become known as the Latin Monetary Union (LMU). A fair assessment of the 1865 monetary conference and the LMU is important, as much depends on it. If the LMU is seen, as is conventionally the case, as the firm commitment of four countries to bimetallism, then it makes sense to portray the pre-1870 European monetary order as triangular, with a (small) gold bloc led by England, a bimetallic bloc led by France and a silver bloc positioned around the German states.

We will argue, however, that the LMU is best understood as a compromise between three countries desiring to switch to gold monometallism as soon as possible and a reluctant France in which opinion remained divided over the issue of the monetary standard. While the LMU left bimetallism at 15.5 : 1 formally intact, a future transition to gold was made as easy as never before. No more than suspending the free coinage of the 5 franc silver coin, the only remaining link to bimetallism, was required to switch to gold; which is exactly what the governments of Belgium and France (France, in the meantime, had changed its position in favour of gold monometallism) eventually did in September 1873. This explains why the LMU is probably better seen as a transitory agreements on the way towards gold monometallism.

The LMU was an attempt to retain and, where necessary, to restore the advantages of identical coinage without being exposed to the heavy influx of silver token coins.<sup>65</sup> This goal translated into the following clauses<sup>66</sup>: Articles 2 and 3 unified the coinage of the full-bodied coins (all gold coins and the 5 franc silver coin), essentially confirming pre-existing practice and previous national legislation (cf. table 3). Art. 4 unified the coinage of token silver coins (i.e. coins below 5 francs / 5 lire), thereby terminating the “race to the bottom (of fineness)” which had been the very reason why the Paris monetary conference had been

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<sup>65</sup> Willis, *A History of the Latin Monetary Union: A Study of International Monetary Action*, pp. 33-41. Mertens, *La naissance et le développement de l'etalon or. 1696-1922*, pp. 263-67.

<sup>66</sup> A reprint of the Latin Monetary Union convention can be found in de Cecco, ed., *L'Italia ed il sistema finanziario internazionale. 1861-1914*, pp. 94-99.

called in the first place. As we can see from table 3, the LMU agreement weakened considerably the link to bimetallism. This link was henceforth reduced to a single coin, the 5 franc silver piece. Also, in order to distribute seigniorage in a fair way, there was a ceiling to the coinage of token silver coins of 6 francs per inhabitant (coinage of full-bodied coins naturally remained unlimited, article 9).

All this demonstrates that the LMU is best understood as a practical solution to very specific problems facing France, Belgium, Italy and Switzerland. The LMU was a coinage union rather than a monetary union. The terminology *Latin Monetary Union* is not of its own making and was first used by Anglo-Saxon commentators, apparently afraid of some *grand projet* that was notably absent, as we have seen.<sup>67</sup> If the LMU had been labelled coinage union, probably a great deal of confusion and exaggeration would have been avoided; this is because the label “monetary union” has often evoked comparisons to much more ambitious projects of monetary unification. This most unfortunate error stems from the fact that both French and Italian do not have separate words for “coin” and “money” (French *monnaie* and Italian *moneta*), whereas English and German do. As opposed to English language sources, German sources use the more appropriate word “coinage union” (*Münzunion*) rather than “monetary union” (*Währungsunion*).

The very limited character of the LMU is underscored by the fact that the LMU convention did not go beyond public tills (articles 2, 3, 7), i.e. it did not grant legal tender status to foreign coins. Last but not least, that such an arrangement can hardly be called a *monetary* union becomes clear from what the LMU treaty *did not* stipulate: for instance, member countries were not obliged to have a convertible currency at all, an omission that would already create problems in May 1866 when Italy declared the lira inconvertible.

Our interpretation of the LMU agreement is supported by the protocol of the conference.<sup>68</sup> On a number of occasions, Belgium, Switzerland and Italy made clear their desire to switch to gold monometallism as soon as possible.<sup>69</sup> Belgium in particular, which had been affected by the drain of silver more than the others owing to its geographic position between the three large currency blocs, was very insistent that the LMU agreement be based on gold. It tried to bring the question of the monetary standard itself on the

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<sup>67</sup> Einaudi, *European Monetary Unification and the International Gold Standard*, p. 37.

<sup>68</sup> Ministère des Affaires Etrangères, *Conférence monétaire entre la Belgique, la France, l'Italie et la Suisse, Procès verbaux, novembre et décembre 1865*.

<sup>69</sup> *Ibid.*, pp. 6, 12, 21-29 (Belgium), 30, 72-73 (Switzerland), 43, 72-73 (Italy).

agenda, an attempt blocked by the French.<sup>70</sup> The Swiss delegation made another attempt in this direction, but again without success.<sup>71</sup>

Why, then, did Belgium, Switzerland and Italy accept the LMU treaty at all, if they were so convinced of the merits of gold monometallism? The simple answer is that the LMU agreement, while a compromise, came at no cost whatsoever to the three countries. The free coinage of the 5 franc silver piece, which was the only remnant of bimetallism, posed no immediate threat, as no one took up this option anyway given that for the last 15 years silver had been undervalued at the mint (cf. figure 3). If silver were ever to devalue to the point that it would flow to the mint again, free coinage could quickly be suspended (as it happened in September 1873). What mattered most in the specific circumstances of 1865 was to put the silver token coinage on a common footing; which had been achieved by the LMU agreement. As for the other two goals – switching to gold and safeguarding the pre-existing monetary community – , Belgium, Switzerland and Italy could only have one of the two in the face of French resistance. As postponing the transition to gold entailed no costs, safeguarding the conveniences of the pre-existing monetary community would naturally take precedence.

This interpretation is confirmed by the Italian 1862 decision to adopt bimetallism. The Italian states had been largely on silver on the eve of Italian unification, but the single most important one of them, Piedmont-Sardinia, followed bimetallism.<sup>72</sup> The monetary commission appointed by the Italian government to discuss the question of the monetary standard spoke out in favour of gold monometallism, which it saw as “the most logic system”.<sup>73</sup> The commission cautioned against the adoption of gold, however, as long as France remained on bimetallism. Such a step was considered to be “premature”. The commission’s advice was to prepare the transition to gold monometallism as much as possible – for instance by introducing silver token coins for values of 1 Lira and below – and to try to convince France of the merits of gold monometallism whenever an opportunity arose. The 1865 International Monetary Conference can be seen as a continuation of this policy.

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<sup>70</sup> Ibid., pp. 12, 31.

<sup>71</sup> Ibid., pp. 72-73.

<sup>72</sup> de Mattia, *L'unificazione monetaria italiana*.

<sup>73</sup> *Atti parlamentari, Camera dei deputati, legislatura VIII, sessione 1861, documenti, n. 258-A.*

#### 4.2 Developments in the silver standard countries

We have so far only studied the response of the bimetallic countries to the gold supply shock of the 1850s. How did the silver countries respond to the same phenomenon? While the impact on the domestic monetary system was necessarily different, the conclusions reached were, interestingly enough, rather similar to the bimetallic countries: increasing support for a transition to gold monometallism.

We will first focus on developments in the German states, which was by far the largest silver standard “country” in the 1860s (cf. table 1). As Germany had not yet found a common political voice, the growing pro-gold sentiment articulated itself first and foremost in subsequent meetings of the German chambers of commerce. In the meetings of 1861, 1865 and 1868, the German chambers of commerce pronounced themselves increasingly clearly in favour of gold monometallism. To the long-standing goal of unified coinage among the German states – which had not been achieved despite the ‘coinage associations’ (Münzvereine) of Dresden (1838) and Vienna (1857) – another objective was added: the transition to gold. During the 1861<sup>74</sup> and the 1865<sup>75</sup> meetings, the chambers of commerce stopped short of requesting the introduction of gold monometallism, but they desired the mintage of gold coins identical to the Napoleon d’Or (the 20 FF gold coin), to be used as trade coins. In both meetings we can already detect strong support in favour of gold monometallism. This movement grew stronger, and in 1868 the chamber of commerce meeting voted in favour of gold monometallism almost unanimously.<sup>76</sup>

What explains this dramatic shift? The impact of the global gold supply shock on the silver block countries was necessarily very different from the impact it had on the bimetallic countries. In a world of gold, silver and bimetallic countries, the silver driven out of circulation in the bimetallic countries as a result of Gresham’s Law would ideally find its way to the silver bloc countries. In reality, it seems as though the German states were swamped with French gold coin, a fact widely observed and commented on by contemporaries.<sup>77</sup> Figure 5 shows the composition of public tills in the kingdom of Württemberg, a southern state without direct border with France.

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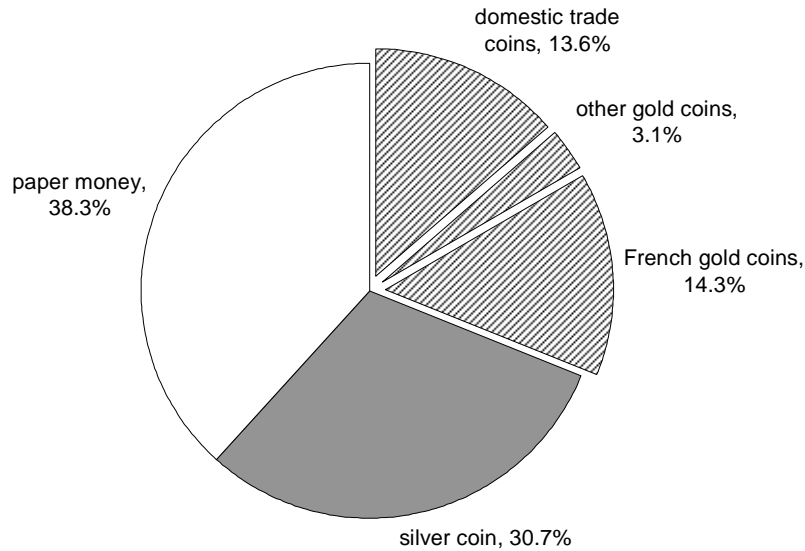
<sup>74</sup> *Verhandlungen des ersten deutschen Handelstages zu Heidelberg*, (Heidelberg: 1861).

<sup>75</sup> *Verhandlungen des dritten deutschen Handelstages zu Frankfurt am Main*, (Frankfurt: 1865).

<sup>76</sup> *Verhandlungen des vierten deutschen Handelstages*, (1868).

<sup>77</sup> *Verhandlungen des dritten deutschen Handelstages zu Frankfurt am Main*, p. 57. Helfferich, *Die Reform des deutschen Geldwesens nach der Gründung des Reiches*, vol. II, pp. 130-36. Einaudi, "From the Franc to the





**Figure 5: Composition of public tills in the kingdom of Württemberg in 1867.**

Source: K. Helfferich, *Die Reform des deutschen Geldwesens nach der Gründung des Reiches*, Leipzig 1898, vol. II, pp. 130-136.

For a silver standard country, it is most surprising to see that only 30.7% of money in public tills were actually comprised of silver. In what follows, we will argue that the other two components – the vast amounts of gold coin and paper currency – explain why the German states wanted to switch to gold.

Let us turn to the gold coins first. Our source indicates that 46% of these gold coins are Napoleon d'Or (i.e. 14.3% of the total), the 20-FF gold coin, and 44% are German trade coin. The origins of the remaining 10% are not specified in our source, but nothing suggests that they were of English origin. Other sources from silver standard countries in the 1860s, both from within the German states and beyond<sup>78</sup>, give a similar picture. The silver standard countries were literally swamped with French gold coins which circulated much

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'Europe': The Attempted Transformation of the Latin Monetary Union into a European Monetary Union, 1865-1873," p. 301.

<sup>78</sup> Similar claims can be found in the Austro-Hungarian commission of 1867, cf. *Verhandlungen der Special-Commission zur Berathung der Münzfrage vom 10. bis zum 14. April 1867*, (Vienna: 1867).

more widely in continental Europe than the English sovereign. This also helps explain why the German chambers of commerce wanted to align the German monetary system to the French one and not the English one.

Of equal interest in our context is the vast amount of paper money; as a matter of fact, with 38.3% paper money was more important than either gold or silver. As the second half of the 19<sup>th</sup> century witnessed the widespread use of bank notes in many European countries, one might be inclined to pay little attention. As a study of the protocols of the German chambers of commerce shows, however, the widespread use of bank notes was widely seen as an argument in favour of gold monometallism.<sup>79</sup> Even when the German government first submitted their gold standard proposals to parliament following political unification, this argument was high on the agenda.<sup>80</sup>

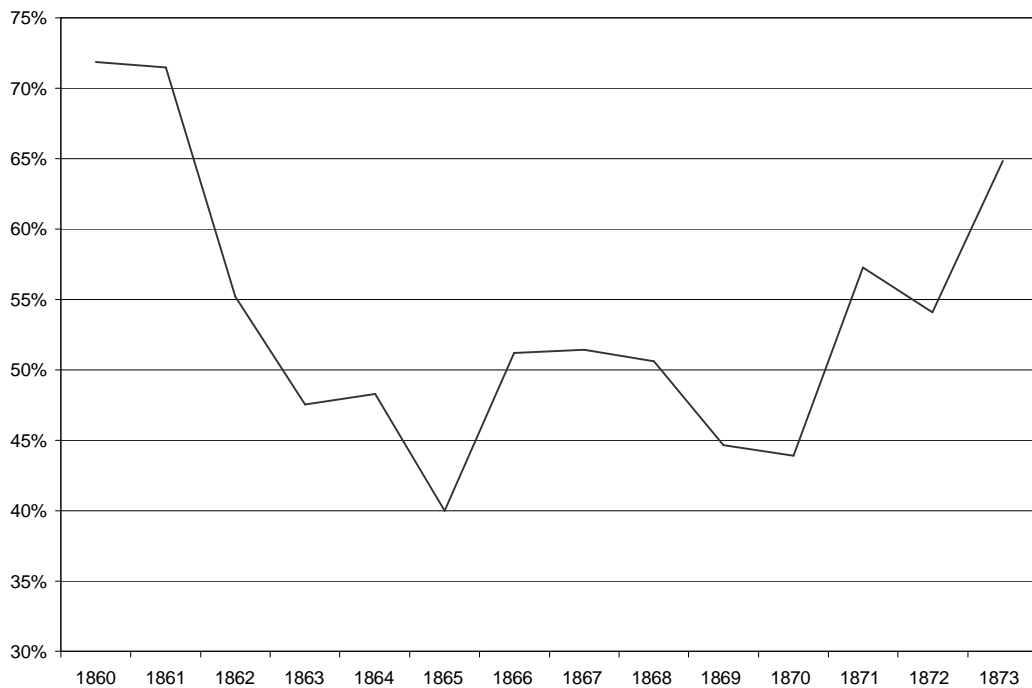
In order to understand this connection, it is important to take into account that most German states had their own note issuing institute, and some even had more than one. While bank notes had been virtually unknown until the foundation of the Prussian Bank in 1846, the 1850s and 1860s saw not only massively increased note issuance, but also the emergence of ever more note issuing banks. By 1858, there were 30 note issuing banks in 20 German states.<sup>81</sup> As legislation on minimum reserve ratios was largely absent, public confidence was relatively low. As figure 6 shows, the public had enough reasons to be sceptical. In the span of only five years from 1860 to 1865, the reserve ratio of the banks of note issue fell from more than 70% to a paltry 40%.

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<sup>79</sup> *Verhandlungen des dritten deutschen Handelstages zu Frankfurt am Main*, pp. 56-7, 59. *Verhandlungen des vierten deutschen Handelstages*, pp. 39, 45.

<sup>80</sup> Helfferich, *Die Reform des deutschen Geldwesens nach der Gründung des Reiches*, vol. I, p. 185.

<sup>81</sup> Sprenger, *Das Geld der Deutschen. Geldgeschichte Deutschlands von den Anfängen bis zur Gegenwart*, pp. 165-68.



**Figure 6: Cover ratio of bank of note issue in the German states, 1860 – 1873.**

Source: B. Sprenger, *Geldmengenänderungen in Deutschland im Zeitalter der Industrialisierung (1835 bis 1913)*, Cologne 1982, pp. 122-123, 136-137.

The approach of contemporaries to solve this problem was straightforward. If there were vast amounts of foreign gold coins and (domestic) gold trade coins in circulation anyway, why not put them to use in a more constructive way? Contemporary calculations showed that gold coin circulating in Germany exceeded the amount of silver in the vaults of the note issuing banks by factor 2.5 (245 million marks versus 100 million marks<sup>82</sup>). A transition to gold would help in two ways. To begin with, banknotes over amounts too large to issue bulky silver coins could be easily withdrawn against gold coins. In turn, such a move would help the reserve ratios of the banks of note issue to recover.

A substitution of bank notes was thought feasible only for gold coins but not for silver coins; which brings us to the third key factor driving German monetary reform: coin convenience. The fact that gold was the ‘lighter’ metal was an advantage frequently

<sup>82</sup> Helfferich, *Die Reform des deutschen Geldwesens nach der Gründung des Reiches*, vol. II, p. 136. B. Sprenger, *Geldmengenänderungen in Deutschland im Zeitalter der Industrialisierung (1835 bis 1913)*, Kölner Vorträge und Abhandlungen zur Sozial- und Wirtschaftsgeschichte, Heft 36 (Cologne: 1982), pp. 122-23. argues for higher reserves in the 1860s, but the point made by contemporaries remains relevant either way.

mentioned in 19<sup>th</sup> century monetary debates, including the German chambers of commerce meetings.<sup>83</sup> Neither all contemporaries<sup>84</sup> nor modern researchers<sup>85</sup> agree(d) on the issue, arguing instead that most transactions were settled in bills of exchange rather than metal. Still, the fact remains (cf. above) that foreign coins widely circulated in Germany which clearly suggests that, at least, a large number of cross-border transactions were actually still settled in coin rather than by bills of exchange.

Last but not least, it is quite instructive to mention which arguments did not matter in the German case. As demonstrated above (cf. section 2.1), trade relations with the UK did not militate in favour of gold monometallism. The fact that Germany traded substantially more with its neighbours, including the LMU countries, rather than the UK was well-known. In the 1868 chambers of commerce meeting, a participant declared: „Jedenfalls aber scheint mir dies Moment des Anschlusses an Amerika und England ... viel weniger in die Waagschale fallend als der Anschluss an unsere Nachbarlaender, mit denen wir in taeglichem Verkehr stehen.“<sup>86</sup> Similarly, there is certainly not enough evidence to support Milward's claim that the UK's adherence to gold determined the German decision. Obviously, the lengthy protocols of the German chambers of commerce meetings make occasional reference to the English case, but all this is far outweighed by the importance attached to the French monetary system.

The development in Austria-Hungary was similar. Following the defeat against Prussia at the battle of Königgrätz (Sadowa), Austria withdrew from the coinage union among the German states. Consequently, it called a monetary commission to discuss the question of the monetary standard. The 1867 commission recommended the adoption of the French coinage system but without its link to bimetallism.<sup>87</sup> The solution proposed by the monetary commission was similar to what Italy, Belgium and Switzerland had done by minting coins of identical shape, weight and fineness, with only the effigy being different.<sup>88</sup>

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<sup>83</sup> *Verhandlungen des vierten deutschen Handelstages*, pp. 38-39, 42-43.

<sup>84</sup> For instance by Walter Bagehot, the publisher of the London *The Economist*. Cf. Einaudi, *European Monetary Unification and the International Gold Standard*, p. 65.

<sup>85</sup> Flandreau, "The French Crime of 1873: An Essay on the Emergence of the International Gold Standard, 1870-1880," pp. 875-77.

<sup>86</sup> *Verhandlungen des vierten deutschen Handelstages*, pp. 37-38.

<sup>87</sup> *Verhandlungen der Special-Commission zur Berathung der Münzfrage vom 10. bis zum 14. April 1867*.

<sup>88</sup> An additional difference in the Austrian case was that the unit of account also needed to be adjusted. 1 Austrian florin was to equal 2 ½ French franc.

From further away, another silver standard country decided to switch to gold. By law of 4<sup>th</sup> May 1867, Romania adopted the French system of coinage, but again without its links link to bimetallism.<sup>89</sup>

Summarizing the experience of the continental European countries on the eve of the International Monetary Conference in Paris in 1867, we can conclude as follows: even though for different reasons, both bimetallic countries and silver standard countries came to express a desire to switch to gold monometallism. In the case of the bimetallic countries, Gresham's Law had driven full-bodied silver coin largely out of circulation. Retaining silver in circulation was possible only by converting the bulk of silver coins into tokens. In the silver standard countries, the rationale for joining the gold standard was more complex, but it owed little neither to trade relations with the UK nor capital imports from London.

Equally important, bimetallic countries and silver standard countries not only favoured increasingly gold monometallism, but they also expressed a clear-cut preference in favour of the same coinage system, i.e. the French one. This reflected not only the fact that the French system was more rational in the sense that it was based on the metric system, undoubtedly an important feature at a time when the harmonization of weights and measures was high on the agenda. The crucial factor was that the European countries had been exposed to French gold coins, especially the Napoleon d'Or, more than to gold coins of other origins, including the English sovereign.

Gold monometallism based on the French coinage system was hence what countries wished for. This call would not be ignored for too long. The French government – or at least the constantly increasingly gold faction within French government circles<sup>90</sup> – saw an opportunity to spread the French system all across Europe and, potentially, beyond. In 1867 the French government called an International Monetary Commission to discuss plans for monetary unification. This is what we turn to now.

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<sup>89</sup> Ministère des Finances, *Procès-verbaux et rapport de la commission monétaire, suivis d'annexes relatifs à la question monétaire* (Paris: Imprimerie impériale, 1869), p. 157.

<sup>90</sup> The research of Einaudi has stressed different attitudes within the French government and administration to the question of the monetary standard. Cf. Einaudi, "From the Franc to the 'Europe': The Attempted Transformation of the Latin Monetary Union into a European Monetary Union, 1865-1873."

### 4.3 The 1867 International Monetary Conference

While the LMU convention of 1865 has been described as a practical solution to very specific problems, the 1867 International Monetary Conference was characterised by a more ambitious project.<sup>91</sup> Nothing less than the unification of coinage on a global scale was attempted. The 20 countries attending the conference – all of which were from Europe with the exception of the US – unanimously voted in favour of gold as the monetary standard (with the single exception of the Netherlands). This made the resolution of the 1867 monetary conference the clearest signal yet that the world would move towards the gold standard. Regarding the coinage, it was stated that the five franc gold piece, at a fineness of 900/1000, should be the common denominator. International coinage was to be based on the acceptance of the 25-franc piece, which would require some debasement of the English sovereign and the American half-eagle. In other words, the 20 countries present at the 1867 International Monetary Conference wanted exactly what Italy, Belgium and Switzerland had already wished for in 1865 and what Austria-Hungary and Romania had decided to do in the meantime: the shift to gold monometallism based on the French coinage system. What were the reasons for the unanimous vote in favour of gold monometallism?

To begin with, there was widespread agreement that, for the first time ever, there was enough gold in circulation to be not only confined to trade coins but to be actually employed as monetary standard in all European countries and the US.<sup>92</sup> In fact, it was argued that silver could not be chosen as a common standard for there was not enough of it left in circulation within Europe. This is certainly in accordance with our findings presented above.

Is there any chance to quantify the amounts of gold and silver in European circulation in 1867? Flandreau has produced coin estimates for France which we have reproduced in figure 4. Figure 4 is testimony to the overwhelming circulation of gold coin in France in the late 1860s. There is little reason to assume that the distribution of gold to silver coin was vastly different in the other three LMU countries. If we now add to this the UK and Portugal, both of which were on gold de jure and de facto, we see that, by the time of the

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<sup>91</sup> Reti, *Silver and Gold: The Political Economy of International Monetary Conferences. 1867-1892*, pp. 34-45.

<sup>92</sup> Ministère des Affaires Etrangères, *Conférence monétaire internationale. Procès-verbaux* (Paris: Imprimerie impériale, 1867), pp. 17, 38, 40, 111.

International Monetary Conference, most Europeans lived in countries with a predominant gold circulation (cf. table 1).

Global coinage data also point to a predominance of gold in European monetary circulation. France alone minted between 1852 and 1867 5 billion francs in gold, which was ten times more than it minted in silver.<sup>93</sup> The UK and the US combined minted the equivalent of another 5 billion francs. Similar to France, silver coinage only amounted to 10% of the gold coinage.

It is interesting to compare the coinage data with the data for global gold production. The 10 billion French gold franc that were minted in France, the UK and the US since the gold discoveries in California in 1848 translate into 2900 tons gold brought to the mint. This suggests that almost all gold produced in this period was actually minted, and very little of it employed for different use (cf. figure 1).

Gold being available in sufficient quantities is a necessary but not yet a sufficient condition for a European gold standard. Why did the 1867 International Monetary Conference not favour bimetallism or silver monometallism instead? As for bimetallism, the protocols clearly show that contemporaries viewed bimetallism as a knife-edge story. In fact, even France supported the gold monometallic agenda of the 1867 International Monetary Conference and, as we will see in the next section, French support for bimetallism dwindled away quickly after 1867.

As bimetallism was ruled out, countries were left with the choice between gold and silver. In addition to gold being available in sufficient quantities, matters of coin convenience militated in favour of gold. Gold encapsulated more value in the same volume, and this was seen as advantageous at a time when cross-border transactions had increased both in terms of volume and in terms of number of transactions.<sup>94</sup> It is often argued that these motivations did not play a role, given that most of European commerce was actually settled with bills of exchange rather than with coins; an argument raised both by contemporaries<sup>95</sup> and by modern researchers.<sup>96</sup> Still, as demonstrated above (cf. figure 5),

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<sup>93</sup> Ibid., p. 23. Ministères des Finances et de l'Agriculture et du Commerce, *Conseil Supérieur du Commerce, de l'Agriculture et de l'Industrie. Enquête sur la question monétaire*, 2 vols. (Paris: 1872), p. 387.

<sup>94</sup> Ministère des Affaires Etrangères, *Conférence monétaire internationale. Procès-verbaux*, p. 111.

<sup>95</sup> For instance by Walter Bagehot, the publisher of the London *The Economist*. Cf. Einaudi, *European Monetary Unification and the International Gold Standard*, p. 65.

<sup>96</sup> Flandreau, "The French Crime of 1873: An Essay on the Emergence of the International Gold Standard, 1870-1880," pp. 875-78.

the widespread circulation of foreign gold coin in the 1860s suggests that a considerable amount of transactions was still settled by coin. Also, we find it hard to ignore this simple but compelling argument when we find it mentioned in virtually all the 1860s sources we studied.<sup>97</sup> Last but not least, gold coin was far less prone to wear and tear, an issue that had been discussed at great length already in the 1865 LMU conference<sup>98</sup> but was also of some importance at the 1867 International Monetary Conference<sup>99</sup>.

#### 4.4 Developments 1867 – 1873

The monetary commissions and the coinage legislation we study in this section will be of interest for two reasons. First, they will demonstrate the continued importance of the French system of gold coinage which served as a point of reference for other countries; second, they will show that Germany was actually not the first country to switch to gold in the early 1870s. Table 4 summarizes the monetary legislation and the monetary commissions studied in this paper.

It might be worthwhile to begin this section with developments in France. France is often portrayed as the bulwark of bimetallism, but on closer inspection such a perspective seems difficult to sustain. In the 1860s, France called three monetary commissions to discuss the monetary system. The first one took place immediately before the 1867 International Monetary Conference, while the other two commissions took place in 1868/69 and 1869/70, respectively. In addition, chambers of commerce and tax collectors were asked to submit their views on the monetary standard in preparation of the 1868/69 monetary commission. Figure 7, showing the results of the three commissions and the views presented by the chambers of commerce and the tax collectors, demonstrate that support for bimetallism was dwindling also within France.

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<sup>97</sup> Ministère des Affaires Etrangères, *Conférence monétaire entre la Belgique, la France, l'Italie et la Suisse, Procès verbaux, novembre et décembre 1865*, p. 23. *Verhandlungen der Special-Commission zur Berathung der Münzfrage vom 10. bis zum 14. April 1867*, pp. 24, 49-50. *Atti parlamentari, Camera dei deputati, legislatura VIII, sessione 1861, documenti, n. 258-A*, pp. 3-4. *Verhandlungen des dritten deutschen Handelstages zu Frankfurt am Main*, pp. 61-64.

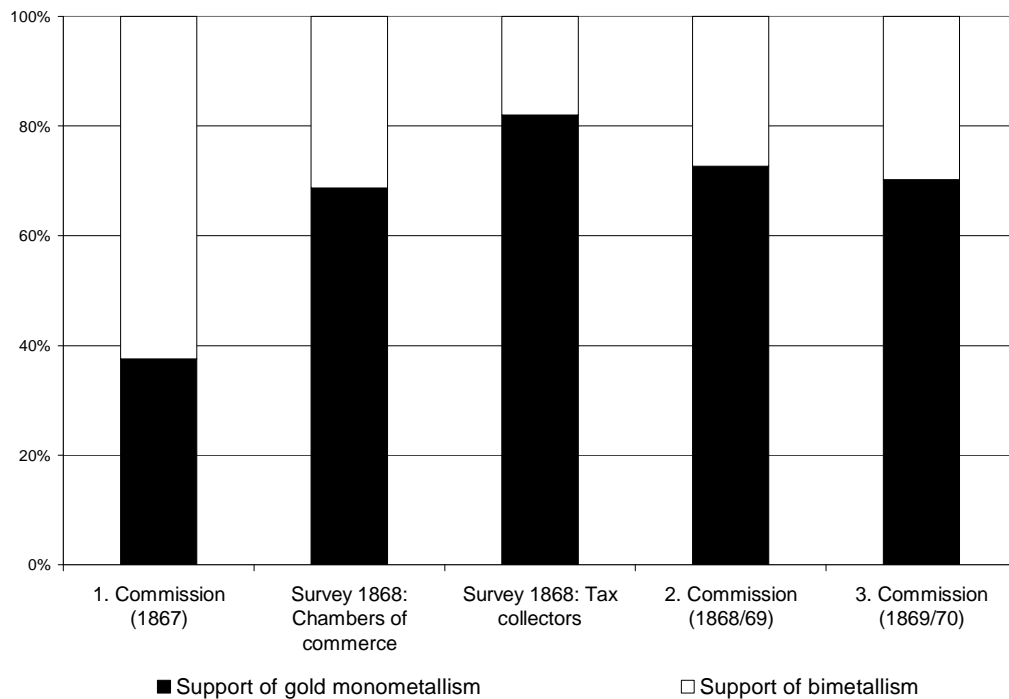
<sup>98</sup> Ministère des Affaires Etrangères, *Conférence monétaire entre la Belgique, la France, l'Italie et la Suisse, Procès verbaux, novembre et décembre 1865*.

<sup>99</sup> ———, *Conférence monétaire internationale. Procès-verbaux*, p. 111.



**Table 4: Monetary Commissions and Monetary Legislation 1861 - 1873**

<b>Country</b>	<b>Monetary Commission</b>	<b>Monetary Legislation</b>
<b>Germany</b>	1861 (First Chamber of Commerce meeting)	
	1865 (Third Chamber of Commerce meeting)	
	1868 (Fourth Chamber of Commerce meeting)	
		1871 (4.12.) 1873 (9.7.)
<b>Italy</b>	1862	1862 (2.8.) 1865 (23.12.) (LMU Convention)
		1874 (31.1.) (Addition to LMU Convention)
<b>France</b>	1858	
	1862	
	1867	1865 (23.12.) (LMU Convention)
	1868/69 1869/70	1874 (31.1.) (Addition to LMU Convention)
<b>Belgium</b>		1865 (23.12.) (LMU Convention)
		1874 (31.1.) (Addition to LMU Convention)
<b>Switzerland</b>		1865 (23.12.) (LMU Convention)
		1874 (31.1.) (Addition to LMU Convention)
<b>Austria</b>	1867 Commission 1867 Negotiations with LMU	
<b>Greece</b>	1868	1868
<b>Spain</b>		18.10.1868
<b>Romania</b>		4.5.1867
<b>Sweden</b>	1869	1872 (SMU Convention)
		1872 (SMU Convention)
<b>Denmark</b>		1872 (SMU Convention)
<b>Norway</b>		1872
<b>Netherlands</b>	1872	1873



**Figure 7: Increasing support for gold monometallism in France, 1867 – 1870.**

Source: Ministère des Finances, *Documents relatifs à la question monétaire*, Paris 1868. Ministère des Finances, *Procès-verbaux et rapport de la commission monétaire, suivis d'annexes relatifs à la question monétaire*, Paris 1869. Ministères des Finances et de l'Agriculture et du Commerce, Conseil Supérieur du Commerce, de l'Agriculture et de l'Industrie, *Enquête sur la question monétaire*, Paris 1872.

The last two commissions voted overwhelmingly in favour of gold monometallism. In all likelihood, France itself would have moved to gold monometallism in late 1870/1871, if this had not been rendered impossible by the outbreak of the Franco-Prussian War – this is certainly how contemporaries saw it.<sup>100</sup>

If bimetallism had been working so badly as suggested by the commissions we studied, why then had France so long advocated bimetallism? Also, what explains the timing of France turning away from bimetallism? To begin with the second question first, three points seem to explain why France moved away from supporting bimetallism in the late 1860s. First, the silver scarcity became an ever more pressing issue. But this was certainly

<sup>100</sup> Helfferich, *Die Reform des deutschen Geldwesens nach der Gründung des Reiches*, vol. I, p. 133. Soetbeer, *Litteraturnachweis über Geld- und Münzwesen insbesondere über den Währungsstreit, 1871-1891. Mit geschichtlichen und statistischen Erläuterungen*, p. 122.

not sufficient a motivation, for silver scarcity had been witnessed for 15 years, and bimetallism still had not been abandoned. A key factor appears to have been that France knew it could achieve European monetary unification only on the basis of the gold standard.<sup>101</sup> The 1867 International Monetary Conference had made this very clear. Interestingly enough, the first question on the questionnaires for both the 1868/69 and the 1869/70 monetary commission was no longer about the monetary standard – as had been the case in the 1867 monetary commission – but about whether monetary unification could only be achieved through the adoption of the gold standard; a question that was answered positively virtually unanimously in both commissions. Last but not least, starting in the late 1860s we witness a widespread feeling that moving first to gold was the best way to avoid financial losses when it came to demonetizing silver. The report of the 1869/1870 monetary commission is particularly insightful in this respect: “... il y a dans toute l’Allemagne un fort mouvement d’opinion en faveur de l’or, et, si cette vaste contrée démonétise son argent, tout ce métal déprécié va refluer en France, remplaçant notre or qui va passer le Rhin. »<sup>102</sup>

Why, then, did the French government continue to support bimetallism until 1873 despite the monetary commissions of 1868/69 and 1869/70 and a public ever more hostile to the maintenance of this system? The first economic historian to struggle with this question was Willis in his fundamental study on the history of the Latin Monetary Union.<sup>103</sup> His findings were later confirmed by Mertens<sup>104</sup> and Einaudi<sup>105</sup>, who offers the most recent comprehensive interpretation of the Latin Monetary Union from 1865 to 1873. Their findings all lead to the same conclusion: the French Ministry of Finance, the Bank of France and parts of the French *haute finance* were the only stern supporters of bimetallism. The Bank of France’s reasons to support bimetallism were threefold. First, the double standard meant that two metals, rather than just one, were available for convertibility. Second, the double standard was seen as the only way to maintain the value of the existing reserves in the Bank’s vaults. Third, many of the shareholders of the Bank of France were themselves actively involved in bimetallic arbitrage and hence had little interest in

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<sup>101</sup> Einaudi, "From the Franc to the 'Europe': The Attempted Transformation of the Latin Monetary Union into a European Monetary Union, 1865-1873."

<sup>102</sup> Ministères des Finances et de l’Agriculture et du Commerce, *Conseil Supérieur du Commerce, de l’Agriculture et de l’Industrie. Enquête sur la question monétaire*, p. 384.

<sup>103</sup> Willis, *A History of the Latin Monetary Union: A Study of International Monetary Action*, pp. 57-60.

<sup>104</sup> Mertens, *La naissance et le développement de l’etalon or. 1696-1922*, pp. 265-67.

<sup>105</sup> Einaudi, *European Monetary Unification and the International Gold Standard*, pp. 40-46.

foregoing this highly profitable business; which brings us to the *haute finance* whose support for bimetallism is well documented<sup>106</sup> and easy to explain: they favoured bimetallism simply because it allowed arbitrage profits. But if support for bimetallism was really as limited as is suggested here, why then did Napoleon III decide to continue with bimetallism, despite declining popular support? The three books quoted concur that Napoleon III was in great need of the Bank of France and the French *haute finance* to support his ambitious political projects; so, he sided with them whenever the question of the monetary standard arose.

The Austro-Hungarian government was well aware that the French government was edging towards gold. We have already mentioned the Austro-Hungarian monetary commission of April 1867 which concluded in favour of gold monometallism and the French system of coinage. In the summer of the same year, following the 1867 International Monetary Conference, Austria-Hungary started negotiations with France regarding the accession to the Latin Monetary Union. A key condition on behalf of Austria-Hungary, was however, that it were not forced to accept silver coins at public tills. In other words, it intended to join the Latin Monetary Union only in so far its gold content was concerned. In a sign of France edging towards gold, the French government accepted this demand. Austria-Hungary was allowed to join the Latin Monetary Union only as far as the mutual acceptance of gold coins at public tills was concerned.<sup>107</sup>

Another example of a country quickly moving to gold was Sweden. Immediately after the 1867 International Monetary Conference it began to mint coins similar to the French gold coins. These coins were meant as trade coins that could be transformed into legal tender at any moment. In September 1869 Sweden called a monetary commission which in August 1870 recommended the introduction of the gold standard based on the French coinage system.<sup>108</sup> In extension of this domestic move, Sweden, Denmark and Norway formed a coinage union based on these principles on 18<sup>th</sup> December 1872 which became known as the Scandinavian Monetary Union. While the gold coins were based on the French system, the silver token coins followed a different pattern.

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<sup>106</sup> de Cecco, ed., *L'Italia ed il sistema finanziario internazionale. 1861-1914*, pp. 13, 122-33, 369-83. De Cecco also provides additional references for the Rothschild family.

<sup>107</sup> The text of the convention, signed on 31st July 1867, can be found in k.k. Finanzministerium, *Denkschrift über den Gang der Währungsfrage seit dem Jahre 1867* (Vienna: Kaiserlich-königliche Hof- und Staatsdruckerei, 1892), pp. 3-5.

<sup>108</sup> *Documents relatifs a la Question monétaire recueillis et publiés par M. le Ministre des Finances*, (Brussels: 1873), p. 135.

Not all countries moved to gold as quickly and as unconditionally as Austria-Hungary and the Scandinavian countries, however. Greece joined the Latin Monetary Union in 1868, both with respect to its gold and its silver component.<sup>109</sup> Similarly, Spain adjusted its coinage system to that of the LMU in 1868.<sup>110</sup> Another case in point was the Netherlands which intended to move to bimetallism in January 1873. The Dutch case is very interesting in the sense that the decision in favour of bimetallism contained a key caveat: the Netherlands intended to suspend, or at least limit, from the beginning the free coinage of silver coin.<sup>111</sup> In that sense, the Dutch case might be closer to a transition to the gold standard than it looks on the surface.

Last but not least, Germany was also moving towards gold monometallism. Such a move was to be based for a long time on the French coinage system. The 1868 meeting of the German chambers of commerce, to which we already referred earlier, voted in favour of such a move. Nowhere in this protocol is any specific reference made to the German states following the English example.<sup>112</sup> This recommendation of the German chambers of commerce was given to the governments of the German states in 1869. The reference to the French coinage system was only omitted *after* the Franco-Prussian War when adopting French coinage seemed incompatible with the recently acquired political status. Interestingly enough, English coinage was not contemplated as an alternative.<sup>113</sup> The German coinage act was passed on 9<sup>th</sup> July 1873.<sup>114</sup>

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<sup>109</sup> Ministère des Finances, *Procès-verbaux et rapport de la commission monétaire, suivis d'annexes relatifs à la question monétaire*, p. 157.

<sup>110</sup> *Ibid.*

<sup>111</sup> *Documents relatifs à la Question monétaire recueillis et publiés par M. le Ministre des Finances*, pp.2-3.

<sup>112</sup> *Verhandlungen des vierten deutschen Handelstages*.

<sup>113</sup> Helfferich, *Die Reform des deutschen Geldwesens nach der Gründung des Reiches*.

<sup>114</sup> It is worth pointing out that there were two pieces of legislation in the German case, dated 4<sup>th</sup> December 1871 and 9<sup>th</sup> July 1873 (cf. table 4). The law dated 4<sup>th</sup> December 1871 only stipulated the coinage of gold coins but did not constitute the transition to the gold standard, as silver coins remained legal tender. From a technical point of view, Germany followed bimetallism from 1871 to 1873. Cf. B. Sprenger, *Währungswesen und Währungspolitik in Deutschland von 1834 bis 1875*, Kölner Vorträge und Abhandlungen zur Sozial- und Wirtschaftsgeschichte, Heft 33 (Cologne: 1981), pp. 30-31. The distinction between these two pieces of legislation is not only of theoretical interest but it did shape the attitude of foreign governments. As we know from a Dutch government report dated 18<sup>th</sup> January 1873 – i.e. in between the two German laws – people were not entirely sure that Germany would necessarily move to gold monometallism. The report reads (in French translation): “... il est encore permis de supposer que l’Allemagne finira par adopter le système du double étalon avec fabrication libre de monnaies d’or et d’argent.” Cf. *Documents relatifs à la Question monétaire recueillis et publiés par M. le Ministre des Finances*, p. 2.

## **5. How important was the silver supply shock of the 1870s? The viability of bimetallism under different scenarios**

### **5.1 Background**

We have argued so far that the emergence of the Classical Gold Standard in the late 1860s and early 1870s is best explained by the gold supply shock beginning with the gold discoveries in California and Australia. This shock set in motion a trend towards gold monometallism both in the bimetallic and the silver standard countries, a trend that would translate slowly but surely into pro-gold legislation starting in 1867. Incidentally, the argument put forward largely diminishes the role that the early English example in following gold played; also, we showed that Germany's 1873 decision had been preceded by a number of smaller countries and should better be seen in the context of a large number of European countries seriously contemplating the transition to gold.

The inclined reader of this paper might be surprised that another supply shock has not yet figured in our account: the silver supply shock beginning in the late 1860s. In fact, it is *this* supply shock – rather than the gold supply shock 15 to 20 years earlier – which normally figures prominently in accounts on the emergence of the Classical Gold Standard. The September 1873 decision of France and Belgium to limit the free coinage of silver is seen by many as inevitable, given that the excessive silver production had increased the gold-silver price ratio to 15.96 : 1 the previous month (cf. figure 3). As a consequence of this decision, the bimetallic bloc could no longer provide the exchange-rate stability it had hitherto provided between the gold and the silver bloc. This theory essentially says that the gold standard was a historical inevitability after 1873, but it leaves unanswered why countries wanted to join gold before 1873.

Here again it is important to get the chronology right. If the emergence of the Classical Gold Standard is, explicitly or implicitly, reduced to the 1873 decision of Germany to adopt gold monometallism, then it is tempting to explain the emergence of the Classical Gold Standard by the silver supply shock. As shown in section 4.3, by the early 1870s there was a widespread feeling that the price of silver might well come under more pressure in the near future. We have argued differently, however, attempting to show that the 1860s pan-European movement in favour of gold was based on very different considerations. In fact,

at the 1867 International Monetary Conference any sense of the silver supply shock being imminent was completely absent.<sup>115</sup>

It is yet another thing to argue that once gold standard countries began to sell off their silver supplies, this would create a problem for countries that remained on silver and bimetallic standards. For the cases of France and the German states, we have shown in section 4.4 that both were afraid that the other side would move first, thereby making it more difficult for the second-mover to demonetize silver at a favourable rate.

To put it another way, this raises the issue to what extent bimetallism was viable in the face of increased global silver production and widespread demonetization in Europe. Under a policy perspective, this question was widely discussed in the late 19<sup>th</sup> century at the time of the international bimetallic movement (1878-1896).<sup>116</sup> Later, it has become an all-time classic in monetary history. Two recent contributions in economic history<sup>117</sup> have argued that the bimetallic bloc could have readjusted its gold and silver holdings similarly to the way the gold supply shock in the 1850s had been well absorbed. As a consequence, the limitation of free silver coinage in September 1873 by France and Belgium is interpreted in a rather different way: the authorities were not forced to limit silver coinage. They had other reasons. Different advocates of this theory have presented different explanations. Mertens, who first introduced this idea to the academic debate in his study *La naissance et le développement de l'étalon-or* (1944), argued that the authorities acted in panic, not seeing that the gold-silver ratio of 15.96 : 1 in August 1873 would only be a temporary deviation from the legal ratio of 15.5 : 1.<sup>118</sup> Oppers, by contrast, argues that given "this *Zeitgeist* in favour of gold as the basis of the currency, France and Belgium were unwilling to let bimetallic arbitrage significantly reduce the share of gold in their circulation...".<sup>119</sup> Yet another explanation is provided by Flandreau for the events of September 1873<sup>120</sup>: France was unwilling to allow Germany to use the bimetallic system to sell off its

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<sup>115</sup> Only a single occasion the conference proceedings suggest that the price of silver might decline in future, cf. Ministère des Affaires Etrangères, *Conférence monétaire internationale. Procès-verbaux*, p. 42.

<sup>116</sup> For the 'bimetallic' position in the debate cf. For the opposite view – i.e. bimetallism was not viable after 1873 – cf. M. J. Bonn, "Die Vorgänge am Edelmetallmarkt in den Jahren 1870-1873," *Münchener Volkswirtschaftliche Studien* 40 (1900).

<sup>117</sup> Flandreau, "The French Crime of 1873: An Essay on the Emergence of the International Gold Standard, 1870-1880." S. Oppers, "Was the Worldwide Shift to Gold Inevitable? An Analysis of the End of Bimetallism," *Journal of Monetary Economics* 37 (1996).

<sup>118</sup> Mertens, *La naissance et le développement de l'étalon or. 1696-1922*, pp. 337, 52 and 55.

<sup>119</sup> Oppers, "Was the Worldwide Shift to Gold Inevitable? An Analysis of the End of Bimetallism," p. 149.

<sup>120</sup> Flandreau, "The French Crime of 1873: An Essay on the Emergence of the International Gold Standard, 1870-1880."

demonetised silver; given the tensions between Germany and France following the Franco-Prussian war of 1870, Flandreau argues, this goal suddenly became more important to France than the maintenance of bimetallism.

## 5.2 Theoretical framework

In order to assess the various hypotheses ventilated in the literature, we rely on a model proposed by Flandreau (1996) and recently used by Meissner (2013). The model is centered on world gold and silver supplies and the demand for precious metals both for monetary and non-monetary purposes (industrial, ornamental, etc.). Such a model aims at establishing an explicit long-run relationship between world bullion stocks and specie holdings in the bimetallic countries, thereby allowing to calculate the potential of as well as the limitations to bimetallism for three counterfactuals of the post-1873 international monetary system.

### Monetary demand in the silver, gold and bimetallic bloc of the international monetary system

$M_J^i$  is the monetary demand (measured in weight) for metal J by bloc i:

$$(1) M_S^s = k^s p Y^s$$

where  $k^s$  is the silver bloc's Cambridge coefficient,  $p$  the world price level and  $Y^s$  the silver bloc's real GDP.

The gold bloc's monetary demand needs to be multiplied by the (legal) mint ratio  $p_g$  between the two metals (15.5 : 1 for the French case and 16.0 : 1 for the US case).

$$(2) M_G^g p_G = k^g p Y^g$$

The bimetallic bloc monetary demand is satisfied through a combination of the two metals:

$$(3) M_G^b p_G + M_S^b = k^b p Y^b$$

### Non-monetary demand for gold and silver (industrial, ornamental, etc.)

is obtained by adding the respective non-monetary demand in each bloc:

$$(4) D_S = \mu_s^s p Y^s + \mu_s^g p Y^g + \mu_s^b p Y^b$$



where superscripts indicate the bloc (s, g, b) and subscripts denote the metal (S, G) and

$$(5) D_G = \mu^s_G (p / p_G) Y^s + \mu^g_G (p / p_G) Y^g + \mu^b_G (p / p_G) Y^b$$

where  $\mu^i_J$  is a weighting factor for bloc i with respect to metal J.

### **Demand for gold and silver equals supply**

The model is closed by equating supply of silver and gold with demand:

$$(6) S = M^s_S + M^b_S + D_S$$

$$(7) G = M^g_G + M^b_G + D_G$$

where S and G are the stocks of existing silver and gold in a given year.

Adding (1) to (4) gives total demand (i.e., monetary and non-monetary demand) for silver except for the bimetallic bloc's monetary demand. We proceed similar for gold by adding (2) to (5), reducing the system from 7 to 5 equations. Some rearranging allows eliminating  $Y^s$ ,  $Y^g$ ,  $Y^b$  and  $p$  as well as establishing two composite variables  $m_g$  and  $m_s$  which do not figure in (1) - (7) but allow a straightforward economic interpretation of the resulting set of equations:

$$(8) p_G M^b_G = p_G G (1 - m_g) - S m_g$$

$$(9) M^b_S = - p_G G m_s + S (1 - m_s)$$

where  $m_g = m^m_g / (k^b + m^m_g + m^m_s)$ ,  $m_s = m^m_s / (k^b + m^m_g + m^m_s)$ ,  $m^m_g = (k^g + \mu^g_G) \beta^g + \mu^s_G \beta^s + \mu^b_G$ ,  $m^m_s = \mu^g_S \beta^g + (k^s + \mu^s_G) \beta^s + \mu^b_S$ ,  $\beta^g = Y^g / Y^b$  and  $\beta^s = Y^s / Y^b$  (the composite variables  $m_s$  and  $m_g$  render obsolete  $k$ ,  $\mu$  and  $\beta$  separate estimation of which is not of interest in our context).

Equations (8) and (9) contain an explicit long-run equilibrium relationship between world bullion stocks G and S and specie holdings  $M^b_G$  and  $M^b_S$  in the bimetallic bloc. They capture the economics of Gresham's law in a bimetallic regime: If the world gold stock G increases by one unit, gold holdings of the bimetallic bloc will increase by  $(1 - m_g)$  units; simultaneously, silver holdings will decrease by  $m_s$  units. Eqs. (8) and (9) can be

reformulated to establish the limits to bimetallism by means of inequations: bimetallism collapses on silver monometallism if there is no longer gold in circulation, that is  $M_G^b \leq 0$ . Similarly, bimetallism collapses on gold monometallism if  $M_S^b \leq 0$ . Bimetallism is viable, if (and only if) the following condition holds:

$$(10) \quad m_g / (1 - m_g) < p_G G / S < (1 - m_s) / m_s$$

### 5.3 Data

Assessing the viability of bimetallism in equation (10) rests on only 4 variables: the stocks of gold (G) and silver (S), respectively, and  $m_g$  and  $m_s$ . Based on data for the 1848-1873 period, Flandreau (1996) estimated  $m_g$  and  $m_s$  as 0.37 and 0.39, respectively. Different series are available for the stock of precious metals, but all of them are very close as far as the annual increments – that is, the production of gold and silver – are concerned: they all go back, directly or indirectly, to the estimates of Soetbeer (1886, 1889) for the period 1850-1885 and to the estimates of the US Director of the Mint for the period beginning in 1886.

The main difference relates to the stock of gold and silver in 1849, i.e., before the gold rushes in California and Australia vastly increased the gold production and, as a by-product, also resulted in the collection of better statistics on precious metals. As this difference turns out to be of crucial importance for assessing scenarios 2 and 3, we shall elaborate on it.

	<b>Gold</b>	<b>Silver</b>	<b>ratio of gold stock to silver stock (at ratio of 15.5:1)</b>
Hey (1886), Soetbeer (1886, 1889)	5,112 tons	148,577 tons	0.53
Warren (1935) US gold commission (1982)	4,577 tons	156,488 tons	0.45
Flandreau (1996)	1,806 tons	37,500 tons	0.75

We group the data by Warren (1935) for silver and the US gold commission (1982) for gold together, as they form the data set used by Meissenr (2013) whose findings we will discuss below. The data by Warren (1935) and the US gold commission (1982) go back to Hey (1886) and Soetbeer (1886, 1889) but make several minor adjustments to them. The resulting difference amounts to 10% in the case of gold and 5% in the case of silver. The main criticism against the data – as rightly emphasized by Flandreau (1996) – is that they rely on various assumptions which might or might not be plausible. Flandreau (1996), by contrast, estimates data for 1849 precious metal stocks as part of the model outlined above (for details cf. p. 893).

The implications of the differences are twofold: if initial stocks are lower, subsequent production will have a bigger impact. This explains the stronger dynamics in Flandreau's results. Second, the lower initial gold to silver ratio in 1849 (0.45 / 0.53 versus 0.75) makes a collapse onto the silver standard more likely in analyses based on Hey (1886) and Soetbeer (1886, 1889), simply because there was a higher silver stock in the first place; conversely, collapsing onto a de facto gold standard (in the 1860s, cf. chapter 4) is more likely if relying on Flandreau's data.

#### **5.4 Estimating three different counterfactuals relating to Germany, France and the US**

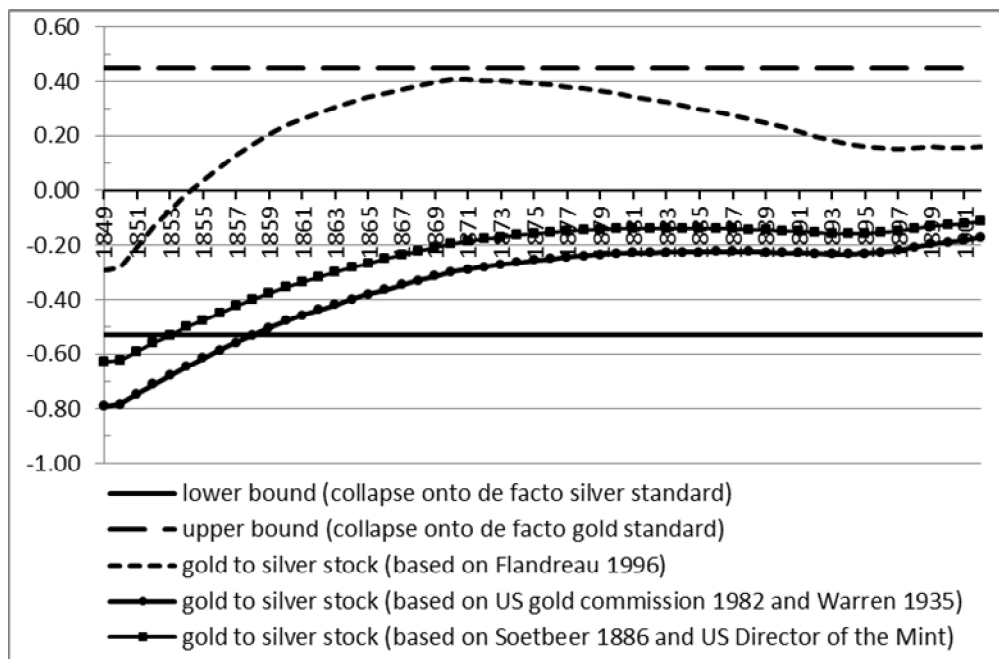
We estimate three different counterfactuals which were widely discussed at the time and have dominated subsequent research. They revolve around the political decisions taken by three of the four largest economies of the day, namely Germany, France and the U.S. (the U.K. was continuously on gold, hence no similar discussion in the British case). In chronological order, the counterfactuals are:

##### **Counterfactual 1: Neither Germany nor France change monetary standard in 1873**

Would French (and Latin Monetary Union) bimetallism have remained viable if Germany (and many smaller European countries, cf. table 4 and chapter 4) had not switched from silver to gold between 1867 and 1873? This scenario involves two counterfactuals as opposed to scenario 2 (under which Germany switches to gold, as it did in reality) but is easier to calculate, as coefficients  $m_g$  and  $m_s$  were obtained for the 1848-1873 period in

which the German states *did* adhere to the silver standard. In other words, the lower and the upper bound as established by equation (10) do not change.

Figure 8 shows that bimetallism would have remained viable independent of which precious metal stock data we follow: In all three cases, enough gold remains in circulation for the gold-to-silver stock not to even come close to the lower bound. Do the different gold-to-silver stock calculations possess different degrees of plausibility when confronted with the qualitative evidence presented in chapter 3 and 4? No clear-cut verdict seems justified: In the case of Flandreau's data we see bimetallism come perilously close to de facto gold monometallism in the late 1860s; which is in line with the evidence presented in chapters 3 and 4. The other two data sets, by contrast, make it difficult to understand the intense discussions on the monetary standard which took place in all Latin Monetary Union countries, as silver remains dominant throughout. Yet on the other hand, calculations relying on Hey and Soetbeer are more plausible for the earlier period: they suggest that bimetallism started working properly in the early 1850s but not earlier; which is most in line with the period before 1848 where all authors see bimetallism as a de facto silver standard (chapter 3).



**Figure 8: gold-to-silver stocks compared to upper and lower bound (ln) for counterfactual 1: Neither Germany nor France change monetary standard in 1873.**

Source: Own calculations based on sources discussed in the main text.

An important caveat seems in place. One of the key time series needed for our estimation is the world silver production; an excessive production would make bimetallism unsustainable. By the very nature of things, we use the data series of actual silver production from 1850 to 1902, whereas we ought to use a hypothetical time series: What would silver production have been if the price of silver had not fallen since the 1870s, but instead stabilised due to the continued existence of the bimetallic bloc? Free coinage on private account would have acted as a price stabilizer, thus leading to a substantially larger world silver production than actually experienced after the decline of the silver price. Such a counterfactual time series does not exist for obvious reasons. As a consequence, we introduce a bias into our econometric estimation: the estimation results based on the historical time series could potentially suggest the viability of bimetallism after 1873, whereas the unknown counterfactual time series might not. Oppers (1996) is very frank about the inherent limitation of his finding. "... I have assumed that the monetary supplies of gold and silver are the same in the counterfactual and the actual situations. This might introduce a bias, since the higher real value of silver under continued free coinage might have increased its supply and lowered its non-monetary demand compared to the actual situation. [...] The bias introduced is most likely small in the early years of the counterfactual, since mining output responds with a lag to changes in the silver price. [...] However, the bias could become more important as we get farther away from 1873. This is one of the reasons for not extending the counterfactual beyond 1879."<sup>121</sup> It is interesting to note that Mertens, in his *opus magnum* on the gold standard, already noted that we could never establish with certainty whether bimetallism would have been feasible after 1873 or not.<sup>122</sup>

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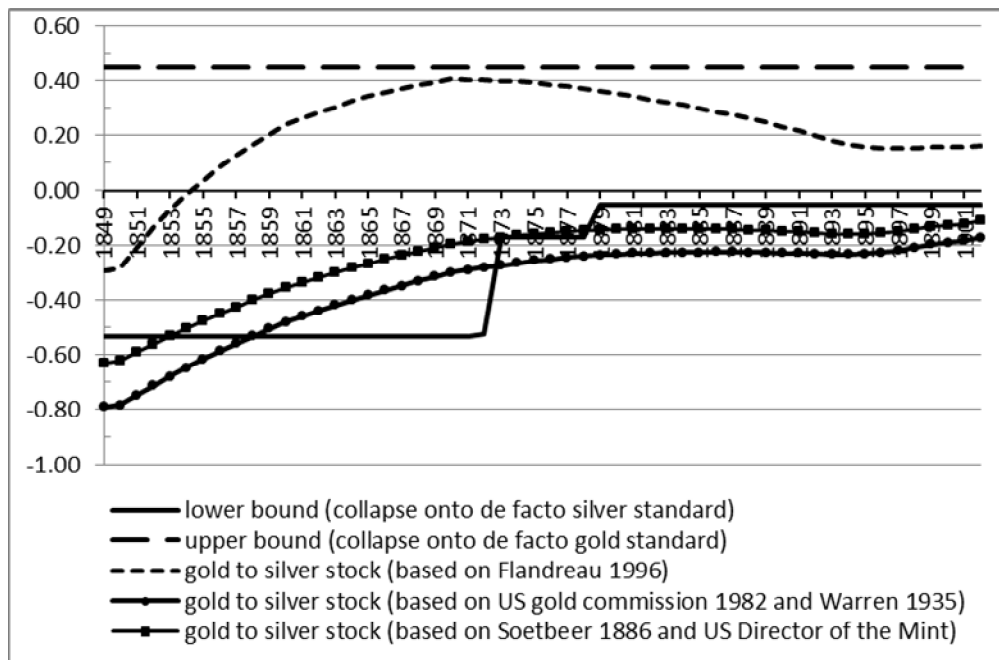
<sup>121</sup> Oppers, "Was the Worldwide Shift to Gold Inevitable? An Analysis of the End of Bimetallism," p. 157.

<sup>122</sup> Mertens, *La naissance et le développement de l'étalon or. 1696-1922*, p. 335. "Comment, en effet, comparer ce qu'a été l'expansion réelle du système monétaire entre 1870 et 1914 et ce qu'aurait été son expansion hypothétique en cas de bimétallisme? Aucun élément certain ne nous permet d'estimer comment auraient évolué les productions d'or et d'argent dans une telle éventualité. »

**Counterfactual 2: France remains on bimetallism after September 1873**

This scenario reproduces the dilemma facing French decision-makers in September 1873: with several European countries having switched to gold between 1867 and 1873 (most notably Germany in July 1873), was France still in a position to maintain bimetallism?

The switch of European countries increased monetary demand for gold while simultaneously reducing it for silver, making it *ceteris paribus* more difficult for France to stabilise the bimetallic system than under scenario 1. In our model (1) – (7), introducing such a shift from the silver standard to the gold standard by a set of countries can be achieved in eq. (1) by assuming a lower  $Y^s$  and in eq. (2) a higher  $Y^g$ , leading to a lower  $\beta^s$  and a higher  $\beta^g$ . In consequence, eq. (8) and eq. (9) need to be re-estimated. The new estimates for  $m_g$  and  $m_s$  are then used to establish the structural limits to bimetallism after 1873 under scenario 2.



**Figure 9: gold-to-silver stocks compared to upper and lower bound (ln) for counterfactual 2: France remains on bimetallism after September 1873.**

Source: Own calculations based on sources discussed in the main text.

Figure 9 focusses on the lower bound. Crucially and different from counterfactual 1, it now matters which series we employ for the ratio of gold-silver-stock. If relying on the Flandreau (1996), bimetallism remains viable; if relying on the Hey and Soetbeer data, bimetallism comes close to collapsing onto silver monometallism as early as 1873 in which Germany switched to gold. If following the Soetbeer data, bimetallism would have remained viable until 1879 (when the US resumed gold convertibility) but always close to collapsing on silver monometallism.<sup>123</sup>

What did policy-makers at the time believe – and does this help us view one time series as more plausible than the other? Mertens argued that the authorities acted in panic, not seeing that the gold-silver ratio of 15.96 : 1 in August 1873 would only be a temporary deviation from the legal ratio of 15.5 : 1.<sup>124</sup> Oppers, by contrast, argues that given “this *Zeitgeist* in favour of gold as the basis of the currency, France and Belgium were unwilling to let bimetallic arbitrage significantly reduce the share of gold in their circulation...”.<sup>125</sup> Yet another explanation is provided by Flandreau for the events of September 1873<sup>126</sup>: France was unwilling to allow Germany to use the bimetallic system to sell off its demonetised silver; given the tensions between Germany and France following the Franco-Prussian war of 1870, Flandreau argues, this goal suddenly became more important to France than the maintenance of bimetallism.

If French policy-makers had any specific model in mind, it appears to have been closer to a model relying on the Hey and Soetbeer data. Sources from 1873 found in the Archives of the Bank of France raise serious doubts whether French policy-makers truly believed in the viability of bimetallism and acted solely to undermine German efforts to sell silver on world bullion markets. To begin with, in the 200 pages where events between June 1873 (i.e. shortly before the German gold standard legislation of the following month) and January 1874 (when the Latin Monetary Union convened to limit silver coinage similar to what France and Belgium had unilaterally decreed in September 1873) are covered – letters between the Bank of France and different French ministries, copies of letters between

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<sup>123</sup> Our calculations differ slightly from Meissner (2013), as we put the transition of the Scandinavian countries (1872) and of the Netherlands (1873) somewhat earlier and of Germany (1873) a year later (cf. table 4 above), but the broad pattern remains the same.

<sup>124</sup> Mertens, *La naissance et le développement de l'etalon or. 1696-1922*, pp. 337, 52 and 55.

<sup>125</sup> Oppers, "Was the Worldwide Shift to Gold Inevitable? An Analysis of the End of Bimetallism," p. 149.

<sup>126</sup> Flandreau, "The French Crime of 1873: An Essay on the Emergence of the International Gold Standard, 1870-1880."

French ministries, correspondence with officials abroad – no mention is made of any deliberate desire of the French policy-makers to undermine German silver sales.<sup>127</sup> The issue at stake seems to be *silver* but not the fact that the silver in question comes *from Germany*. Second, a number of indications exist that French policy-makers saw the disturbances on the silver market as long-term, i.e. structural, rather than temporary, i.e. only related to current efforts of demonetization. At the Latin Monetary Union conference of January 1874, de Parieu, the chief French negotiator, clearly stated: « M. de Parieu considère les causes de la dépréciation de l'argent comme générales et probablement de longue durée. »<sup>128</sup> Similarly, in a letter of the French foreign minister to the French finance minister, dated 30<sup>th</sup> June 1873<sup>129</sup>, the French foreign minister suggests to switch as soon as possible to gold in the light of ever more European countries seriously contemplating the regime shift with imminent demonetizations. In our view, it is thus not justified to portray French policy-makers as excessively confident in the viability of bimetallism.

### **Counterfactual 3: US specie payment resumption in January 1879 in gold *and* silver**

As we saw in scenario 2, France was barely able to stabilise bimetallism. Would France have been able to do so alongside the US, if the latter had re-established convertibility in 1879 on the basis of gold *and* silver? This counterfactual assumes implicitly that France would have stabilised bimetallism between September 1873 and December 1878 (earlier resumption of specie payment was not feasible given US financial constraints in the years following the Civil War). Such unilateral stabilisation would have required political coordination between France and the US in anticipation of an international monetary system in which the two large bimetallic countries would share the responsibility for making the system work. While this might sound theoretical or even utopian, it is worth keeping in mind that this is what proponents of international bimetallism had in mind (Reti 1998). Similar to scenario 2, we first re-estimate eq. (8) and (9) but this time based on an enlarged bimetallic area captured through a larger  $\beta^b$ . We then calculate the structural limits under this set of assumptions.

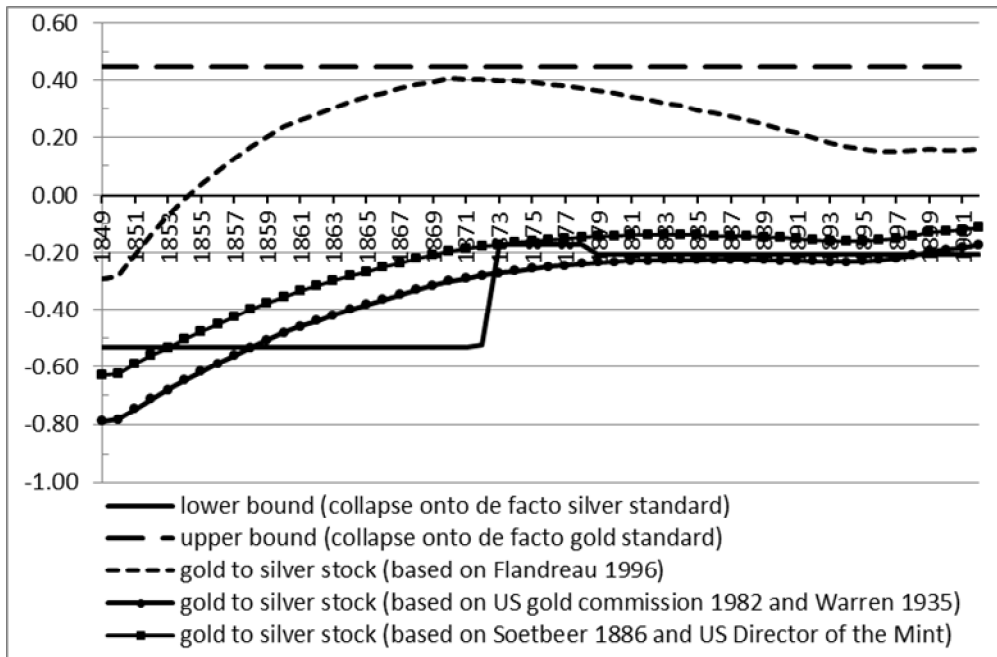
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<sup>127</sup> Archives de la Banque de France (Paris), Question Monétaire VII.

<sup>128</sup> Ministère des Affaires Etrangères, *Conférence monétaire entre la Belgique, la France, l'Italie et la Suisse, Procès verbaux* (Paris: Imprimerie nationale, 1874), p. 13.

<sup>129</sup> Archives de la Banque de France (Paris), Question Monétaire VII, pp. 111-113.





**Figure 10: gold-to-silver stocks compared to upper and lower bound (ln) for counterfactual 3: US specie payment resumption in January 1879 in gold and silver.**

Source: Own calculations based on sources discussed in the main text.

We find (figure 10) that even with the US on bimetallism, the gold to silver ratio comes dangerously close to the (downwardly revised) lower band. It is worthwhile keeping in mind an important caveat. Scenario 3 relies on the implicit assumption that France and the US could have come to an agreement at some point *before 1873* on sharing the responsibility for stabilising bimetallism *after the US resumption*. If the unsuccessful attempts to agree on international bimetallism at the 1878 and 1881 international monetary conferences are any guidance in this context, the probability of such an agreement appears low; it would have amounted to France delivering between 1873 and 1878 on its side of the deal (that is, accepting a substantial reduction of gold in its monetary circulation) but receive no more than promises from the other side.

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