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IN SEARCH OF THE MAIN CAUSE OF THE SPREAD OF THE *GOLD STANDARD* BEFORE WORLD WAR I: AN ATTEMPT AT CLASSIFICATION AND PRELIMINARY ASSESSMENT OF POSITIONS

Abstract

The aim of the article is to outline the history of the spread of gold standard before 1914, to identify and conceptualise representative positions as regards causes of this process, and finally, to provide preliminary assessment of the presented arguments. Gold monometallism was born in Great Britain in the late 18th century (*de facto*) and shortly after the Napoleonic Wars (*de iure*). First followers emerged in the fifth and sixth decade of the 19th century, but most numerous transfers to the gold standard were to be witnessed in the 70s, 80s and 90s. On the verge of World War I, the gold standard functioned, formally or actually, in over 80 territory units (states, semi-colonies, colonies) with approximately 45 different currencies. Alternative monetary systems, among others bimetallism and the silver standard, found themselves on the margin. Four groups of decision-motivations, determining the gold standard victory, are discussed in the source literature. The author classifies them as imitation-status, political-social, technological-institutional and functional-situational motivations, and analyses in further sections of the article, respectively. The conclusion is that all distinguished groups of motivations are prone to falsifying criticism. Hence, instead of searching decisive ‘flywheels’ responsible for the gold standard domination in the pre-first-war world, historians and economists should explore in their studies more than ever specific and changing decision-motivations of individual countries.

Keywords: old standard, before 1914, decision-making motivations, gold supply shock, silver supply shock

JEL Classification Codes: N00, N4, N20, N40

Introduction

The question of the causes of the global domination of the gold standard before 1914 still remains open. What prevails in the source literature are multicausal explanations which, however, do not refrain from grading the importance of individual causative factors. Numerous authors attempt to indicate the main cause, a determining event or array of events constituting a 'flywheel' of sorts which once put in motion left no alternative but mass accessions to the gold standard. The aim of this text is to: a) outline the history of the spread of this monetary system before World War I; b) identify and conceptualise representative positions as regards the main cause; c) provide preliminary assessment of the presented arguments.

Making generalisations exceeding the experience of individual economies is always bound to involve great simplification. Even greater when – as it is in this case – the generalisations are burdened with the ambition to establish the first-plan determinants of international processes. As it is, motivations of individual countries joining the gold standard were not only highly diversified but often unique.[1] 'Supranational' interpretations of the key causes of the spread of the gold standard are thus particularly prone to criticism and falsification. Nevertheless, the presented points of view should be put in order, grouped into broader categories, confronted, while the arguments supporting them evaluated. This, in turn, can open the field for explanations easier to defend in light of facts.

The canonic principles of the gold standard system include: fixed parity of the monetary unit; free flow of gold (in coins, bars and ore), banknotes and foreign exchange across borders; mutual convertibility of gold, national banknotes and foreign

[1] This question is also raised, among others, by B. Eichengreen, M. Flandreau, *The Geography of the Gold Standard*, [in:] *Currency Convertibility. The Gold Standard and Beyond*, J. Braga de Macedo, B. Eichengreen, J. Reis (Eds.), Routledge, London–New York 1996, pp. 121–126, 133; S. Bryan, *The Gold Standard and the Turn of the Twentieth Century. Rising Powers, Global Money and the Age of Empire*, Columbia University Press, New York–Chichester 2010, pp. 5–8, 32–36, 42–50.; T. Wilson, *Battles for the Standard. Bimetallism and the Spread of the Gold Standard in the Nineteenth Century*, Ashgate Publishing, Aldreshot–Burlington–Singapore–Sydney 2000, passim (in particular, chapters. 2–6).

currencies; connection between the size of the issue of banknotes and the state of gold reserves; regulation of the issue of credit money via interest rates, commercial banks deposits in the central bank, etc.; limited legal tender and absence of the freedom to mint silver coins. All these principles are first and foremost an expression of the practice of the gold monometallism in Great Britain. In the majority of other countries, the systemic 'rules of the games' were implemented with modifications, deviations or even omissions. Researchers studying the problem have failed to agree on which specific array of canonic principles was to be implemented for a given monetary system 'to deserve' being called the gold standard. This also concerns the element which might seem the most constitutive: the guarantee of the internal convertibility of national banknotes to gold, gold coins and foreign currencies.[2]

1. Expansion of the gold standard system before 1914

The first country with a monetary system based on the gold standard principles was Great Britain.[3] The bimetallism[4] established in this country in 1717 transformed already in the mid-century in actual gold monometallism. Starting from 1774, the secondary role of silver as the monetary ore came to be reflected in the legislation of the House of Commons. The convertibility of silver coins was limited, with a large part of them being withdrawn from circulation, the minting of new ones being made significantly more difficult and the acceptance of silver coins being for some time reduced only to transactions of up to 25 pounds sterling.

The evolution of Great Britain towards the gold standard system was temporarily halted by the Napoleonic Wars for the needs of which the issuance of banknotes had to be increased. As a result, in February 1797, the parliament suspended the

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2 Compare M.D. Bordo, F.E. Kydland, *The Gold Standard As a Rule: An Essay in Exploration*, "Explorations in Economic History" 1995, vol. 32, no. 4, pp., 423–426, 430; B.W. Ickes, *Lecture Note on the Gold Standard* (2006), pp. 1, 4–5, www.econ.la.psu.edu/~bickes/goldstd.pdf [accessed: 09.09.2019]; L.H. Officer, *Gold Standard*, EH.Net Encyclopedia, R. Whaples (Ed.), March 26, 2008, URL [without pagination], https://eh.net/encyclopedia/gold-standard [accessed: 15.09.2018].

3 I described the process of the development of the shape of the gold standard in Great Britain more extensively in the texts: *Początki systemu gold standard*, [in:] *Między stabilizacją a ekspansją. System finansowy w służbie modernizacji* (z warsztatów badawczych historyków gospodarczych), J. Łazor, W. Morawski (Eds.), Gajt Publishing House, Wrocław 2014, pp. 24–34; *Geneza systemu waluty złotej w Europie: aspekt krajowy i międzynarodowy,* [in:] *Systemy walutowe współczesnego świata*, J. Łazor, W. Morawski (Eds.), Polish Society of Economic History, Warszawa 2018, pp. 32–43, including the source literature.

4 In the bimetallic system, the parity of the national currency unit was determined simultaneously in silver and in gold at a fixed official exchange rate of the two ores. As a rule, freedom of the choice of the transaction currency (gold or silver) was guaranteed, along with a possibility of exchanging the two ores to full-value coins as well as exchangeability of banknotes to both types of coins and ores.

convertibility of paper pounds to gold, in both coins and ore. The restoration of convertibility, possible only after the end of the war and a deflationary therapy, proved a good occasion for the formal implementation of the gold standard. By virtue of the acts of 1816, 1819 and 1821, the parity of the pound sterling was retained solely in gold (on the 1717 level), solely gold holders were given the right to free coinage, banknotes were converted solely to gold, the issuing activity of the Bank of England was secured solely in gold, solely gold could be taken out of the country and brought in from abroad. Silver was *de iure* and *de facto* marginalised: in circulation it performed primarily the function of the token money, having but a supplementary role in bank reserves.

The construction of the British gold standard system was completed with the bank law of 1844. It allowed the Bank of England to issue up to 14 m pounds sterling in banknotes above the level of reserves held (for the remainder of the issue full coverage was required), and in the longer perspective, to assume the functions of the 'bank of banks' and the exclusive issuer of paper money. What should be emphasised is that the final shape of the gold standard in Great Britain resulted from the total of individual and often uncoordinated moves, undertaken to solve subsequently arising current problems rather than a well-thought over vision of the target monetary order.

The example of Great Britain long remained isolated. Its first followers emerged in the fifth and sixth decade of the 19th century. The gold standard was first adopted by Brazil (1846 – ephemerally; 1849 – for a longer time), and soon afterwards by Australia (1852), Canada (1853) and Portugal (1854). In the following decade, the group was joined by Argentine (1863 – an unsuccessful attempt; 1867 – a more lasting attempt).[5] Yet, in terms of the scope of its use, the gold standard lagged behind bimetallism, monetary parallelism and silver monometallism.[6] Only in the 70s, more numerous transfers to the gold standard were to be witnessed with the system being chosen, among others, by the united Germany, Scandinavian countries, the Netherlands, France, Belgium, Switzerland and the United States. Later, we can already speak of a mass accession trend. In the 80s, the gold standard was adopted, among others, by Turkey, the Union of South Africa, Italy, Egypt and Chile, while in the last

5 M.D. Bordo, F.E. Kydland, *The Gold*…, op.cit., pp. 432–433, 436–437, 439. The second implementations of the gold standard in Brazil and Argentina lasted till 1864 and 1876, respectively. The following periods were: in the case of the Brazilian milréis – 1888–1889 and 1906–1914; in the case of the Argentinian peso – 1881, 1883–1885 and 1899–1914.

6 The system of the parallel currency differed from bimetallism in its absence of official exchangeability relation between gold and silver which developed freely on the market. The remaining principles were common. The silver standard is a system of features similar to those of the gold standard though referring to another ore.

decade of the 19th century, among others, by the Austro-Hungarian Empire, Mexico, Russia, Japan and India.[7]

After the outbreak of World War I, the gold standard functioned – formally or actually – in over 80 territorial units of the world (sovereign states, semi-colonies and colonies). According to different collations, from thirty some to forty some of them had their own monetary systems.[8] There are two causes of the discrepancies in the calculations. The first is omissions and mistakes, especially in the qualification of smaller countries and dependent territories such as, for instance, Montenegro, Lichtenstein, Ceylon or Eritrea. The second lies in the already mentioned different approaches to systemic 'rules of the games'. As a result, part of the calculations covers only the formal and full-form gold standards, while others are less orthodox in this respect.

I believe that it is more convenient to count the accessions of individual currencies rather than territorial political entities and to treat the monometallism 'rules of the games' in a flexible way, including also the solutions which function only *de facto* and (or) partially (in the form of the gold limping standard or the gold exchange standard[9]). The calculation made on the basis of the above assumptions showed that from the final adoption of the gold standard in Great Britain (1821), the system was installed a total of 58 times before World War I.

The result obtained requires certain correction as, in fact, in the analysed period there were fewer currencies functioning in the orbit of the broadly understood gold standard than it might appear from the number of aggregate accessions. Some of the accession attempts multiplied in the calculations because they were repeated after one or even several failures. The record breakers, the Argentinian peso and the Brazilian milréis, 'joined' the system five and four times, respectively.[10] Not all the currencies managed to maintain gold monometallism till World War I. Among others, the Portuguese réis (1891), the Chilean peso (1898), the Bulgarian lev and the Serbian dinar

[7] L.H. Officer, Gold…, op. cit., Tab. 1 [without pagination; M.D. Bordo, F.E. Kydland, The Gold…, op.cit., pp. 432–439, 441; C.M. Meissner, *A New World Order: Explaining the International Diffusion of the Gold Standard, 1870–1913*, NBER Working Paper Series. Working Paper 9233, October 2002, pp. 7–9, http://www.nber.org./papers/w9233 [accessed: 16.09.2019].

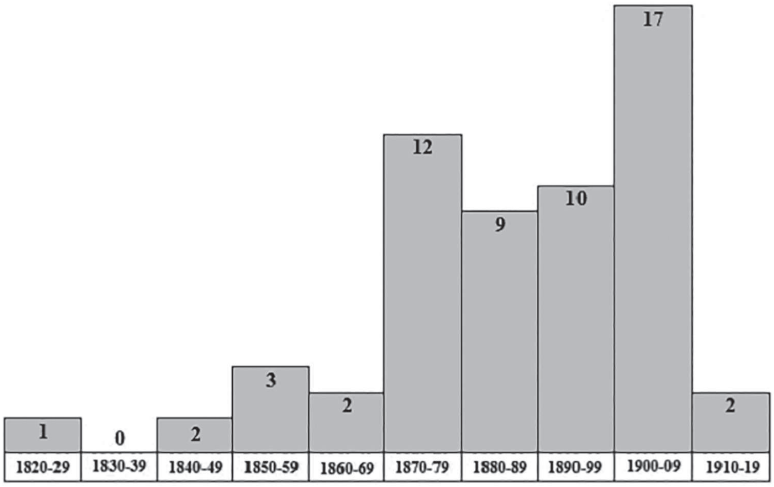
[8] Compare ibidem, p. 7 (Tab. 1); L.H. Officer, *Gold …*, op.cit., Tab. 1 [without pagination].

[9] The specificity of the gold limping standard consisted in a large share of silver coins in the money circulation. They maintained the status of full-right legal tenders, however, without the freedom of minting and formal guarantee of exchangeability to gold. In the conditions of the gold exchange standard national banknotes were exchanged only to currencies and foreign exchange. Their conversion to gold required transfer abroad. Some countries, among others, France, Belgium, Switzerland and Italy maintained their currencies in the gold limping standard, while others, among them Austro-Hungary, Russia, Rumania and Hungary adopted the gold standard system.

[10] See: Footnote 5.

(both in 1912) left the system and did not return to it.[11] After the elimination of the multiplications and permanent losses, there were, counting points, approximately 45 currencies left in the system. China, Spain, Persia and part of Latin American countries never adopted the gold standard system.

Figure 1. Number of accessions to the gold standard system* in the years 1820–1919 (subsequent decades)**



* also in the form of the gold exchange standard and the gold limping standard
** both accessions of the second decade of the 20th century took place before 1914 (the Montenegro perper – 1911; the Nicaraguan córdoba – 1912)

Source: the author's own study on the basis of L.H. Officer, *Gold Standard*, EH.Net Encyclopedia, R. Whaples (Ed.), March 26, 2008, URL, Tab. 1 [without pagination], https://eh.net/encyclopedia/gold-standard [accessed: 15.08.2019]; M.D. Bordo, F.E. Kydland, *The Gold Standard As a Rule: An Essay in Exploration*, "Explorations in Economic History" 1995, vol. 32, no. 4, pp. 431–441; M.D. Bordo, A.J. Schwartz, *The Operation on the Specie Standard – Evidence for Core and Peripheral Countries*, [in:] *Currency Convertibility: The Gold Standard and Beyond*, B. Eichengreen, J. Braga de Macedo, J. Reis (Eds.), Routledge, London–New York, 1997, pp. 20–34; C.M. Meissner, *A New World Order: Explaining the International Diffusion of the Gold Standard, 1870–1913*, NBER Working Paper Series. Working Paper 9233, October 2002, pp. 7–9, http://www.nber.org./papers/w9233 [accessed: 16.08.2019]; *Monetary Systems of the Principal Countries of the World*, Government Printing Office, Washington 1913, pp. 3–49.

[11] M.D. Bordo, F.E. Kydland, *The Gold*…, op.cit., pp. 438, 439; M. Morys, *Adjustment under the Classical Gold Standard (1870s–1914): How Costly Did the External Constraint Come to the European Periphery?*, [in:] *The Experience of Exchange Rate Regimes in Southeastern Europe in a Historical and Comparative Perspectives*, Second Conference of the South-Eastern European Monetary History Network (SEEMHN), April 13, 2007, 'Workshops. Proceedings of OeNB Workshops' 2008, no. 13, pp. 54, 55 (Tab. 1), www.oenb.at/en/img/morys_i_tcm16–80924.pdf [accessed: 8.09.2016].

In general, the world of monetary systems towards the end of the 'long 19th century' was thus not fully set to the gold standard template.[12] Nevertheless, gold monometallism dominated, while alternative systems found themselves on the margin. World War I put an end to this situation, triggering a universal trend to suspend the convertibility of national currencies to gold. After the end of the war, convertibility was slow to be restored and – as it was to turn out – not for long, almost exclusively in the form of the gold bullion standard[13] or the gold exchange standard. The full gold standard was rebuilt, as early as in 1919, only in the United States, where it persisted until 1933. During the great economic crisis or soon after it, the prevailing majority of other countries also abandoned the *gold standard* system.

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The source literature distinguishes four more general interpretations of the causes of the spread of the gold standard. Within each of them, the key role is attributed to another group of decision-motivations. They are referred to as imitation-status-, political-social-, technology-institution- and function-situation-determined motivations, respectively.[14]

2. Imitation-status-determined motivations

One of the versions of this interpretation is the observation that what decided of the victory of the gold standard system was the fact that it was born in Great Britain – the largest economic power of the world, dominant in terms of its financial potential and trade position, outpacing the nearest competitors in respect of the effects of the industrial revolution by several decades. In that situation, the British monetary solution was treated abroad as a model one, to be followed even where the economic foundations were not adequate as having the gold standard system created the feeling of having an equal status or at least high international prestige. The imitation-related motif was to be reinforced when Germany, France, Belgium, the Netherlands,

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[12] See: B. Eichengreen, M. Flandreau, *The Geography …,* op.cit., pp. 111–112, 113 (Tab. 5.1), 114 (Fig. 5.1), 115, 117, 118 (Tab. 5, 119, 120 (Fig. 5.4).

[13] In the gold bullion standard gold coins were not minted and banknotes were exchanged to gold bars of a limited size which limited the social accessibility to the operation because of the high price involved.

[14] For other individual authors' attempts see: A.S. Millward, *The Origins of the Gold Standard*, [in:] *Currency*…, op.cit., pp. 85–87; M. Flandreau, *The French Crime of 1873: An Essay on the Emergence of the International Gold Standard*, 1870–1880, "The Journal of Economic History" 1996, vol. 56, no. 4, pp. 863, 870–871, 875–876, 877; S.P. Reti, *Silver and Gold. The Political Economy of the International Monetary Conferences, 1867–1992*, Greenwood Press, Westport–London 1998, pp. 1–3, 9–32.

Switzerland and the United States adopted gold monometallism in the 70s of the 19th century. It was then and in the decades which followed that many economies with a lower level of economic development decided to follow the world leaders for fear that maintenance of bimetallism, monetary parallelism or silver monometallism might be considered petrification of the state of backwardness.[15]

The ever more frequent implementations of the gold standard were also explained in terms of the 'lemming-like rush' phenomenon presented through the prism of the concept of network externalities. According to this approach, the increase in the number of the participants in a given monetary standard encourages the remaining countries to adopt it. Once a certain border number of accessions is passed, the process of the spread of the standard begins to gain momentum. In the case of the gold standard, this accession level was reached in the 70s of the 19th century.[16] In terms of the status, it can be said that what counted from then on was the very adoption of the majority solution, endorsed by the participation of world economy leaders. The maintenance of monetary systems linked to silver seemed to be condemning to marginalisation and isolation.

The imitation-status-determined calculations were often associated with the hope that by becoming similar to the monetary standard of first Great Britain and later also of a broader group of the so-called 'core countries' will not only build up, strengthen or confirm the high international position of a given country but will also translate into higher market confidence, thus opening new trade opportunities, facilitating access to capital and ultimately accelerating economic growth. In the case of weaker economies, in need of industrial and infrastructural investments, the implementation of the gold standard was identified with a 'seal of approval' of sorts, legitimising the attractiveness and security of foreign credits, capital deposits and direct investments. In the case of countries advanced in the process of industrialisation, the transition to gold monometallism was linked to the prospect of faster catching up and competing with Great Britain.[17] The specificity of the discussed variant of the imitation-status-determined interpretation thus consists in giving priority to economic and financial benefits.

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[15] See, for instance, J.A. Frieden, *The Dynamics of International Monetary Systems: International and Domestic Factors in the Rise, Reign, and Demise of the Classical Gold Standard*, [in:] *Coping with Complexity in the International System*, J. Snyder, R. Jarvis (Eds.), Westview Press, Westview 1993, pp. 141, 145, 153–154, 157–158.

[16] See, for example, B. Eichengreen, *Globalizing Capital: A History of the International Monetary System*, 2nd ed., Princeton University Press, Princeton 2008, pp. 4, 16–18.

[17] M.D. Bordo, H. Rockoff, *The Gold Standard as a 'Good Housekeeping Seal of Approval*, "The Journal of Economic History" 1996, vol. 56, no. 2, pp. 389–428; M.D. Bordo, F.E. Kydland, *The Gold*…, op.cit., pp. 442, 449–451.

The part of the analyses using the network externalities concept also led in the same direction. It was thus pointed out that the transition to gold monometallism had been chosen the earlier, the higher the share of trade with the gold standard countries in the national GDP, the more stable the functioning of fiscal and banking regulations, the better the possibilities of foreign debt service and of securing the issuance of banknotes with gold reserves. The presence of the above circumstances was believed to encourage the gold standard orientation in order to reduce transaction costs of trade and capital operations.[18] What proved to be an instructive research field in this respect were not only mass accessions from the eighth and later decades of the 19th century but also earlier, embracing Australia, Canada, Portugal, Brazil and Argentina. Those were the countries of tight trade and financial relations with Great Britain, at that time the only gold standard economy. Though not all of them could boast of good economic conditions, monetary gold was relatively easily available, for different reasons, everywhere.[19]

Another variant of the imitation-status-determined motivation involved counting on the favourable influence of the gold standard on the internal financial stability and in particular on the level of prices and exchange rates.[20] What was expected was, first of all, to ensure greater security for the issuance of banknotes, fast increasing their share in the money circulation (from approximately 30% at the end of the 18th century to over 60% in 1885 and approximately 85% in 1913) but very frequently inflation-ridden. This form of money was afflicted by inflationary pressures both in the times war and in the times of peace.[21] In light of the problem with the repeated inflation of banknotes, gold monometallism looked in theory more deflationary than silver monometallism due to less frequent occurrence of gold than white ore, not to mention bimetallism or monetary parallelism.[22] Simultaneously, in practice, the situation in Great Britain could have been envied: the

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[18] C.M. Meissner, *A New*…, op.cit., pp. 3, 29, 33–34. Also therein an econometric analysis intended to support the theses put forward by the author (pp. 23–29).

[19] Compare J. Powell, *A History of Canadian Dollar*, Bank of Canada, Ottawa 2005, pp. 2–11; A.C. Davidson, *The Gold Standard in Australia*, "Australian Quarterly" 2008, vol. 80, no. 5, pp. 11–13; J. Reis, *First to Join Gold Standard*, [in:] *Currency*…, op.cit., pp. 159–182; K. Mettenheim, *Monetary Statecraft in Brazil 1808–2014*, Routledge, Abingdon–New York 2016, pp. 25 and the following; A. Ford, *The Gold Standard 1880–1914: Britain and Argentina*, Clarendon Press, Oxford 1962, passim.

[20] See, for instance, M.D. Bordo, A.J. Schwartz, *A Specie Standard as a Contingent Rule: Some Evidence for Core and Peripheral Countries, 1880–1890*, NBER Working Paper No. 4860, September 1994, pp. 1–2, 11 and the following, https://www.nber.org/papers/w4860.pdf [accessed: 20.09.2019]; S.P. Reti, *Silver*…, op.cit., passim (in particular, Chapter 7).

[21] L.H. Officer, *Gold*…, op.cit. [without pagination]; P. Bernholz, *Monetary Regimes and Inflation. History, Economic and Political Relationship*, E. Elgar Publishing Ltd, Cheltenham–Northampton 2003, passim.

[22] S. Knafo, *The Gold Standard and the Origins of the Modern International Monetary System*, "Review of International Political Economy" 2006, vol. 13, no. 1, pp. 78–101.

parity of the pound sterling in gold which remained unchanged from 1717, the high credibility of the Bank of England and its banknotes, relatively low and basically 'war-related' inflations.[23]

3. Political–social–determined motivations

The supporters of this explanation see grounds for the spread of the gold standard in the category of the game of interests, claiming, most commonly, that alternative monetary systems lost primarily due to the weakening position of agricultural lobbies, gradually losing influence in favour of industrial, trade and financial sectors. Agricultural interest-oriented circles tended to prefer inflation to deflation, solidarised with debtors rather than creditors, criticised the social consequences of industrial revolutions, supported raw materials branches and sectors at the expense of processing sectors. The preferences of the groups supporting the non-agricultural sectors represented opposite attitudes. The discussed interpretation is thus based on the claim that the establishment of the gold standard followed in conditions of the growing importance of the stakeholders of the 'urban' sector of the economy, valuing the stability of prices and exchange rates as well as openness to the external world.[24] It can, therefore, be perceived as the result of advances of modernity and industrialism.

For instance, in Great Britain, the evolution towards gold monometallism ran concurrently with the industrial revolution, completed and solidified in the course of the battle for the abandonment of corn laws, which was finally won. Richard Cobden, a figure emblematic for agricultural protectionism-opposing circles, was not only a free trade spokesman but also enemy of exchange rate fluctuations which made him, against the liberal orthodoxy of the day, support the law of 1844 which limited the size of the issuance by the Bank of England of banknotes without coverage in gold.[25] In Portugal, the gold standard was introduced in the period of the so-called *fontismo,* an economy modernizing policy oriented mainly towards infrastructural and industrial aims, financially supported by foreign capital and carried

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[23] J. Luszniewicz, *Początki*…, op.cit., pp. 27–28.

[24] Compare, for instance, M. de Cecco, *The International Gold Standard: Money and Empire*, St. Martin's Press, New York 1984, passim (in particular, Chapter 3); G.M. Gallarotti, *The Scramble for Gold: Monetary Regime Transformation in the 1870s*, [in:] *Monetary Regimes in Transition*, M.D. Bordo, F. Capie (Eds.), Cambridge University Press, New York 1994, pp. 17–31, 46–49; A.S. Millward, *The Origins*…, op.cit., pp. 85–90, 94–96, 98.

[25] A. Cohen, *Cobden's Stance on the Currency and the Political Forces Behind the Approval of the Bank Charter Act of 1844*, "The European Journal of the History of Economic Thought" 1998, vol. 5, no. 2, pp. 255–270. British corn laws, established after the Napoleonic Wars, were *de facto* abolished by the laws of 1846 and 1849.

out at the cost of the interests of the small-scale agricultural sector.[26] In the united Germany the gold standard was adopted against the interests of Junkers' circles, influential particularly in the territory of Prussia. That was interesting in view of the fact that it was from Junkers' circles that Chancellor Otto von Bismarck came.[27] In the United States, an analogous operation gave rise to a long-term conflict with the populist farmers' movement as well as eulogists of traditional economy and silver as the monetary ore, such as William J. Bryan.[28]

A specific version of the interpretation discussed, purely political, oriented towards the international plane and clearly anti-deterministic, can be found in the works of Marc Flandreau. The latter argues that the balance actually tipped in favour of the gold standard only by chance. It was to be 'an accident in history',[29] caused by the monetary policy of France, implemented in 1873 in retaliation against united Germany for the recently lost war, lost territories and imposed contribution. When in June 1873, in connection with gradual implementation of the gold standard system, Berlin began to demonetarize silver reserves, France decided to raise market sales so as to cause a decline of prices which questioned the profitability of the sale of the hitherto monetary ore by Germany and at the very best also block the very adoption of the gold standard.[30] Guided by political aversion towards Germany, Paris chose finance as the field for the game because silver quotations were already under pressure due to the weakening dynamics of gold production, demonetarisation of the white ore by Scandinavian countries as well as expectations of comparable but higher-level sales on the part of Germany.[31]

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26 M.E. Mata, *Economic Ideas and Policies in Nineteenth-Century Portugal*, pp. 5–7, 8–9, [accessed: 28.09.2019]. Creator of the Portuguese 'fontismo' policy of António Maria de Fontes Pereira de Melo, at the time of the adoption of the gold standard (1854) minister of public works, later three times prime minister.

27 J. Wiegand, *Destabilizing the Global Monetary System: Germany's Adoption of the Gold Standard in the Early 1870s*, IMF Working Paper, Strategy, Policy and Review Department, February 2019, pp. 7, 11–13, 17–18, [accessed: 28.09.2019]. The conflict was extinguished when Bismarck, who actually supported the gold standard till the unification of Germany, halted in 1879, further demonetarization of silver in exchange for the support by the Junkers' lobby for high import tariffs on farm and industrial articles.

28 W.D. Harpine, *From the Front Porch to the Front Page: McKinley and Bryan in the 1896 Presidential Campaign*, Texas A&M University Press, College Station 2005, pp. 26–36, 56–68 and the following. At the turn of the 19th and 20th century, Bryan three times ran in vain for president of the United States. He put an emphasis on the defense of bimetallism especially in the 1896 campaign. In the years 1913–1915 the might-have-been president performed the function of the secretary of state in the administration of Woodrow Wilson.

29 M. Flandreau, *The French*…, op.cit., p. 863.

30 Ibidem, pp. 864, 885–886, 890.

31 Flandreau's archive inquiries did not reveal the French decision-makers having been motivated to the same extent by other than political premises. The fear of escape of gold the reserves of which had been depleted by the repayment of the war contribution was but of secondary importance. Flandreau denies that the 5 bn francs contribution imposed, the last instalment of which was paid to Germany at the beginning of September 1873, constituted a large burden for the French economy. The principal form of payment was not gold but indefinite-time nominated bonds in convertible currencies (mainly in pounds sterling). France repaid but 0.5 bn francs in monetary ore, half of it in silver. Ibidem, pp. 873–874, 886.

At the beginning of September 1873, the French government discretionarily introduced daily maximum levels for minting silver coins. Limitation of silver purchases for minting purposes, though initially announced to extend to the end of December, created a serious gap in the bimetallistic system in force from 1803. In addition, the Bank of France began to sell out silver as if it were oriented towards gold monometallism. The moves of the government and the central bank were aimed against Germany and not bimetallism. Yet, the situation quickly got out of control, both for the banks in France and in the area of the Latin Monetary Union of which France was the leader.[32] In October, defending itself against the flood of silver, Belgium followed France imposing clear limitations, similar to the French ones. In November, the French government tightened their limits and information about it leaked to the public. Nervous reactions followed, also in Belgium, Switzerland and Italy. The issuance of silver coins declined, while individual and institutional holders began to get rid of them on a massive scale. As a result, in spite of the counteraction attempts, silver reserves in the Bank of France began to grow. With the advent of 1874, the French authorities, instead of restoring the equal status of silver, extended issuance restrictions, and moreover, forced their maintenance in Belgium as well as extended them to cover Switzerland and Italy. That put an end to cooperation between the main members of the Latin Monetary Union in stabilising the exchange relation of monetary ores and finally buried confidence in silver as a monetary ore along with its price on the markets. Finally, the right to mint silver coins was suspended, in France from August 1876, in Belgium from December, and later also in Switzerland and in Italy.[33]

Thus, France succeeded in deepening the decline in the quotations of silver against gold but what this victimised was its monetary system and the bimetallic block as a whole. Germany emerged from the conflict on the safe side. Though the country demonetarised less silver than it had intended but yet in 1873 it completed the installation of the gold standard. In the majority of the Latin Monetary Union countries, the gold limping standard was gradually established on the ruins of bimetallism. In the opinion of Flandreau, without the 'crime of 1873'[34] and the solidification of its decisions of the years which followed, the bimetallistic systems would have maintained

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[32] The Latin Monetary Union gathered, apart from France, Belgium, Switzerland and Italy. The foundation treaty was signed in December 1865. The member countries maintained a bimetallic system based on the parity of the French franc. In later years, the Latin Monetary Union was joined by Greece and informally by the Vatican, Rumania, Spain, Finland, Bulgaria and Serbia.

[33] The course of events from September 1873 till December 1876 and interpretation for: M. Flandreau, *The French…*, op.cit., pp. 885–890; M. Flandreau, K. Oosterlinck, *Was the Emergence of the International Gold Standard Expected? Evidence from Indian Government Securities*, "The Journal of Monetary Economics" 2012, vol. 59, no. 7, pp. 650, 657, 662–663, 665–666.

[34] Flandreau coined this term misquoting the title of the famous article of Milton Friedman referring to the United States (*The Crime of 1873*, "Journal of the Economy" 1990, vol. 98, no. 6, pp. 1159–1194;

their *raison d'être*. The fact that anti-German sentiments were put before the efficiency of the bimetallism system was the free choice of French ruling circles. It is in this sense that Flandreau speaks about 'an accident in history'.[35]

4. Technology-institution-determined motivations

Adherents of this interpretation see the main cause of the abandonment of bimetallism, monetary parallelism and the silver standard in favour of gold monometallism in the effectiveness of the latter in coping with the problem of the token money, strictly speaking: with repeated depreciations of small every-day-use coins in relation to high denomination coins. The 'small change', being the traditional basis for retail transactions on internal markets, was always in short supply. To counteract the shortages of low denomination coins, mints lowered their commodity value in relation to the monetary value, reducing the quantity of the ore they contained, minting the coins from base metals (tin, lead, copper, nickel and their alloys) or reaching for other raw materials (for instance, leather). What favoured the depreciations of such token coins, undervalued already at the time of their production, were not only too large issuances but also the fact that they were the type of money most prone to wear and tear (for instance, abrasion) and easiest to forge (counterfeiting, scrap cutting, etc.). Although already in the Middle Ages, not to mention the 16th, the 17th and the 18th century, different remedial measures were undertaken in practice and in theory, all of them failed because of two problems. Firstly, failure to manufacture sufficiently resistant and standardised token money. Secondly, absence of attempts at maintaining or inability to maintain their convertibility into full-value ore coins over a longer time. Both the above barriers were overcome only in the 19th century thanks to the technological advances of the industrial revolution and new practices in monetary policies. What became possible to be solved was then also 'the big problem of the petty coins'. The translation of this possibility into reality was to push ever new countries towards installing the gold standard because it was capable of eliminating shortages of token money in a more effective and safer way than other monetary systems.[36]

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in Polish: M. Friedman, *Intrygujący pieniądz. Z historii systemów monetarnych*, trans. K. Szlichciński, Lodz Publishing House, Łódź 1992, pp. 60–91).

[35] More on the potential ability of bimetallism to continue to exist see: M. Flandreau, *The Glitter of Gold: France, Bimetallism and the Emergence of the International Gold Standard, 1848–1873*, Oxford University Press, Oxford 2004, passim.

[36] Technological-institutional interpretation was first more broadly developed and substantiated by A. Redish, *The Evolution of the Gold Standard in England*, "The Journal of Economic History" 1990, vol. 50,

The technological barrier was abolished by the discovery and application of steam-powered mint presses. The precursor here was Matthew Boulton, James Watt's partner. His cutting-edge construction of 1875 was first successfully used in the production of copper coins in private mints, later, temporarily, also in the Royal Mint. For the need of ore issuance, Boulton's invention was used in Great Britain shortly after the end of the Napoleonic Wars.[37] What helped the spread of the use of mint presses on the international scale were the technical modifications of Dietrich Uhlhorn (1817) and Pierre-Antoine Thonnelier (1834).[38] The new minting technology improved the quality and durability of all types of coins: of large and small denominations, ore and non-ore ones, etc. Thus, it made them resistant to wear and tear as well as increased the cost of possible forgery. As an effect, given the relatively equal availability of gold and silver (a state achieved in the second half of the 19th century) and the fast-growing circulation of banknotes (also better made thanks to the use in their production of steam power), full-value ore coins could be minted almost solely from gold and destined for the needs of fast-developing long-distance trade in which they still played a significant role. Simultaneously, silver, freed from the role of monetary ore of a lower than gold unit value, was much more frequently than in bimetallism, monetary parallelism and silver standard used to mint token money of a nominal value higher than the material value. Moreover, silver coins of low denominations were for analogous technological reasons equally well protected against wear and tear and forgery as gold coins.[39]

The institutional barrier disappeared following the discovery, after long centuries of attempts and mistakes, of an effective way of guaranteeing the convertibility

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no. 4, pp. 789–805; eadem, *The Persistence of Bimetallism in Nineteenth-Century France*, "The Economic History Review" 1995, vol. 48, no. 4, pp. 717–736; eadem, *The Latin Monetary Union and the Emergence of the International Gold Standard*, [in:] *Monetary…*, op.cit., pp. 68, 74–82. For a modified and extended view see: T.J. Sargent, F.R. Velde, *Wielki problem drobniaków*, trans. J. Lang, Kurhaus, Warszawa 2012, passim [English language original: 2001]. Ibidem numerous historical examples of shortages and depreciations of token money as well as practical and conceptual attempts at counteracting (Parts II, III i IV). The term 'the big problem of the petty coins' after: C. Cippola, *Money, Prices, and Civilization in the Mediterranean World. Fifth to Seventeenth Century*, Princeton University Press, Princeton 1956, p. 27–37.

37 A. Redish, *The Evolution…*, op.cit., pp. 799–802; T.J. Sargent, F.R. Velde, *Wielki…*, op.cit., pp. 34–35, 75, 91–92, 327, 339, 365, 377–379. More about Boulton's invention and its applications see: G. Selgin, *Steam, Hot Air, and Small Change: Matthew Boulton and the Reform of Britain's Coinage*, "The Economic History Review", vol. 56, no. 3, pp. 478–509; idem, *Good Money. Birmingham Button Makers, the Royal Mint, and the Beginnings of Modern Coinage*, The Independent Institute. The Michigan University Press, Ann Arbor 2008, p. 154 and the following.

38 T.J. Sargent, F.R. Velde, *Wielki…*, op.cit., pp. 92–93, 383; R. Doty, *The World Coin. Matthew Boulton and His Industrialisation of Coinage*, "Interdisciplinary Sciences Review" 1990, vol. 15, no. 2, pp. 177–186.

39 A. Redish, *Bimetallism: An Economic and Historical Analysis (Studies in Macroeconomic History)*, Cambridge University Press, Cambridge 2000, Chapters 5–7. The fact that the issuance of small coins was based on silver did not mean that non-ore token money was pushed out of circulation.

of silver small coins to gold. The convertibility was made *de iure* and *de facto* or only *de facto*, according to the nominal value exceeding the value of the silver used, as a rule at any request and without any significant quantitative limitations, yet with the limited legal tender of silver coins (only small transactions) and the monopolisation of their production by the state (i.e. without free coinage).[40] This allowed monetary authorities to stabilise the exchange rate value of the token money more efficiently. The first to ensure the convertibility of small denomination silver coins to gold was Great Britain. That practice, never reflected in the legislation, developed as a result of a long-term controversy between the Bank of England, which supported the convertibility of small silver coins, and the Exchequer, holding the opposite view. The controversy continued from 1818. What tipped the balance in favour of the convertibility was the 1836 decision on the sale to the Royal Mint of the whole stock of silver coins of the Bank of England at the nominal not material value (the former was higher).[41] In the united Germany, the silver token money was exchangeable to gold from 1873, in the United States – from 1879 (in both cases *de iure* and *de facto*). In France and the remaining main countries of the Latin Monetary Union it took place in the following decade of the century (everywhere only *de facto*).[42] The presented evolution of monetary policies, also embracing several other countries, resulted from the belief that to prevent the problem of the depreciation of token coins of non-full material value it was not enough to make them from silver. What was necessary was also the certainty of their convertibility to basic settlement units, that is money with a full ore content. In the course of the 19th century, in the majority of countries, the role of settlement units was taken over mostly by gold, while the readiness to give away monetary ore for undervalued small coins was no longer hampered by the low value of the latter.[43]

5. Function-situation-determined motivations

This interpretation has its roots in the claim that the most important premise for the expansion of the gold standard were problems with the functionality of alternative systems: bimetallism, monetary parallelism and silver standard. The problems

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[40] Smaller limitations were in force in conditions of the gold limping standard. See: Footnote 9.

[41] T.J. Sargent, F.R. Velde, *Wielki…*, op.cit., pp. 378–379, 396–397; A. Redish, *The Evolution…*, op.cit., pp. 802–805.

[42] T.J. Sargent, F.R. Velde, *Wielki…*, op.cit., pp. 22, 383–385, 390–392, 395–398.

[43] It was logical that in conditions of the gold standard silver token coins were as a rule also convertible to banknotes.

are believed to have had their source in the long-term trend towards depreciation of silver in relation to gold, initially undermining and finally blighting the possibility of maintaining the position of the white metal as a monetary ore.

Though in the meantime silver prices enjoyed a period of stabilisation and even appreciation, the overall conclusion to be drawn from historical data is clear: in terms of long-term persistence silver was losing value. At the beginning of the 16th century, market price relations of gold and silver ran at the ratio of approximately 11:1. At the end of the following century, they reached the level of 14.7–15.2:1. Later, for some 170 years, the depreciation of silver slowed down significantly. Throughout most of the 19th century, the exchange value of the two ores oscillated at the level of 15.5:1. After 1870, the price of silver already began to decrease by leaps and bounds, a trend initially triggered by the so-called 'silver supply shock' caused by the discoveries of new deposits in Mexico and the United States. In the 80s the price ratio rose to over 20:1 in favour of gold and in the 90s exceeded 30:1. In the first decade of the 20th century, the ratio was twice about to reach 40:1[44]. Occasional appreciations of silver from the turn of the centuries, resulting from the inflow of enormous quantities of gold from South Africa and later from Canada and Australia, were not able to reverse the general trend. In light of ever more frequently repeating slumps of the exchange value, the wave of resignation from silver-linked monetary systems could seem but a crowning of the long-term depreciation tendency.

Subsequent transitions to gold monometallism were only strengthened by the price consequences of the 'silver supply shock' since they required demonetarisation of silver to be effected, among others, through market sales. What must have also contributed to additional supply pressure was the German policy of putting large quantities of silver on the market just at the time when the effects of Mexican and American discoveries came to be felt. Silver was also demonetarised by other countries in the process of conversion to the gold standard. Simultaneously, every accession to the gold standard made the demand for gold go up, the later thus becoming the sole monetary ore. It was that culmination of the supply-price effects of the growing gold output and subsequent demonetarisation of silver of the 70s of the 19th century that, in the opinion of many authors, determined negatively the future of bimetallism, parallelism and the silver standard.[45]

A variant of the interpretation discussed is also the view of Matthias Morys, who argued that the process was actually predestined in the two previous decades and

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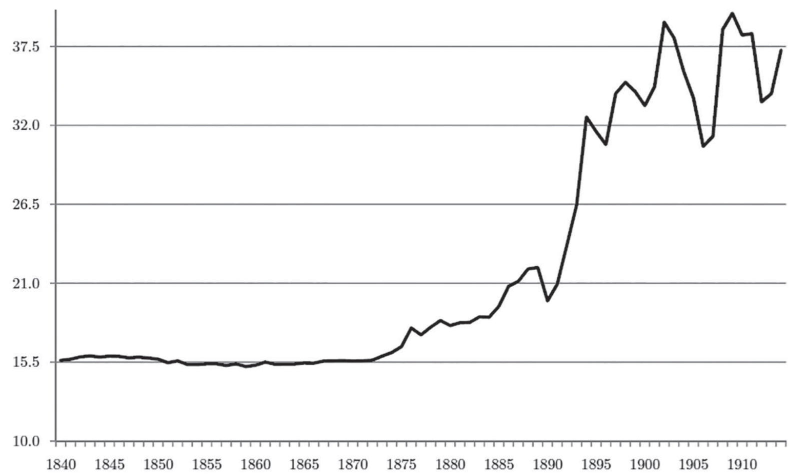
[44] D.H. Leavens, *Silver Money*, Principia Press Inc., Bloomoington 1939, pp. 3, 6–8, 25–26, 31–32, 34; M. Flandreau, *The French*…, op.cit., pp. 865 (Fig. 1); S.M. Reti, *Silver*…, op.cit., pp. 185–186 (Tab. 1).

[45] Compare M. Friedman, *Intrygujący*…, op.cit., pp. 71–73, 146; C.M. Meissner, *A New*…, op.cit., pp. 8–9; Ch. Kindleberger, *A Financial History of Western Europe*, Allen and Unwin, London 1984, Chapter 4.

not by the depreciation of silver but one of its periodical appreciations. What he had in mind were in fact the repercussions of the so-called 'gold supply shock' of the 50s and the 60s of the 19th century caused by the discovery and development of new deposits in the United States and Australia.[46] As a result, the global output of gold almost doubled, recording a growth scale equalling the total figures for the previous 350 years. In comparison to the-until-then record 18th century, the production results of the 6th and the 7th decade of the next century were twice as high. Most importantly, they translated into growth of monetary gold reserves which more than doubled. Thus, what happened was a true revolution comparable to the later supply shocks of the turn of the 19th and 20th century. Twenty years were enough to beat the effect of the whole 18th century.

Figure 2. Gold and silver price relations in the years 1840–1914 (in annual terms)



Source: Ch.M. Meissner, *The Limits of Bimetallism*, University of California, Davis and NBER, February 8, 2013, p. 25 (Fig.1), https://www.clevelandfed.org/research/Conferences,2012/Meissner_final_draft.pdf [accessed: 20.09.2018].

Though the very appreciation of the white ore in the 50s and the 60s of the 19th century was small and short-time,[47] the 'gold supply shock' changed a lot. The transition

[46] M. Morys, *The Emergence of the Classical Gold Standard*, CHERRY Discussion Paper Series, January 2012, pp. 2–4, 18, 43, www.york.ac.uk./res/cherry/docs/1201dp.pdf [accessed: 23.09.2016].

[47] In the worst year for gold (1859) its exchange ratio with silver dropped to the level of 15.19:1. S.M. Reti, *Silver*…, op.cit., p. 185 (Tab. 1). The then depreciation of gold was intensified, apart from the growth of gold output, by two additional circumstances: sale of gold by some bimetallic countries and export of silver from Europe to China and India.

from the situation of a shortage to the situation of a relative abundance of monetary gold, for the first time in history led to the situation that there was, on the one hand, enough gold to make it possible for a larger group of countries to install the gold standard system and, on the other, too little to think of any more permanent hike of gold ore prices. Fears that it will be gold that will be more prone to depreciation, expressed at the beginning of the 'gold supply shock', began to expire yet in the 50s of the 19th century (among others, thanks to French interventions on the markets of both precious metals). What undermined the reputation of silver as a monetary ore was the reversal in its favour of the supply growth (clearly visible already in the second half of the 60s).[48] It seems that, given the equal availability of gold and silver, it was the higher unit value that deter mined the greater attractiveness of the former as the base for monetary systems.

Table 1. The role of gold in the world economy in the years 1493–1919

Period	Gold production (in millions of ounces)	Growth of monetary gold reserves* (in millions of ounces)	Monetary gold reserves*	
			at the end of the year (in millions of ounces)	relative growth
1493–1600	23.6	–	–	–
1601–1700	29.3	–	–	–
1701–1800	61.1	–	39.0	–
1801–1839	19.8	7.0	46.0	18%
1840–1849	14.7	6.0	52.0	13%
1850–1859	60.4	46.0	98.0	88%
1860–1869	61.0	30.0	128.0	30%
1870–1879	54.6	22.0	150.0	17%
1880–1889	51.4	17.0	167.0	11%
1890–1899	95.1	59.0	226.0	35%
1900–1909	173.2	104.0	330.0	46%
1910–1919	213.8	122.0	452.0	37%

* in coins, bars and ore

Source: R.N. Cooper, *The Gold Standard: Historical Facts and Future Prospects*, "Brooking Papers on Economic Activity" 1982, vol. 1, no. 1, p. 14 (Tab. 3).

[48] M. Morys, *The Emergence*…, op.cit., pp. 3–4, 18, 20–21 and the following. Compare D.H. Leavens, *Silver*…, op.cit., p. 9 (Chart 1), 30; T.S. Green, *Central Bank Gold Reserves. An Historical Perspective since 1845*, "Research Study" November 1999, No. 23, World Gold Council, pp. 3–8, www.WGC-central-bank-gold-reserves.pdf [accessed: 16.09.2018]. It is estimated that around 1870, gold constituted, in terms of value, at least half of European monetary reserves.

Against this background, politically reliable initiatives in favour of gold monometallism appeared in numerous countries already before 1870. Only a few of them were finally implemented (in Brazil, Canada, Australia, Portugal and Argentine) but actions undertaken in this respect on the self-government, government, parliamentary and, last but not least, international level had a much wider geographical reach.

Table 2. Initiatives in favour of the gold standard in the years 1849–1870

Country	Year	Notes	Country	Year	Notes
Accessions to GS			National recommendations		
Brazil	1846	resignation in the same year	Baden*	1861	German Chamber of Commerce
	1849	till 1864			
Australia	1852	till 1914	Italy	1862	parliamentary monetary commission
Canada	1853	till 1914	Frankfurt a/Main*	1865	German Chamber of Commerce
Portugal	1854	till 1891	Austria	1867	government monetary commission
Argentina	1863	resignation in the same year	France	1868	chamber of commerce
Argentina	1867	till 1876	France	1868	tax-collector chamber
Rumania	1867	legislation not implemented	Prussia*	1868	German Chamber of Commerce
Recommendation on the international forum			France	1868/69	ministerial monetary commission
Austria	1857	during negotiations on the Vienna Convention	France	1869/70	ministerial monetary commission
Belgium, Switzerland, Italy	1865	at the foundation conference of the Latin Monetary Union in Paris	Sweden	1870	parliamentary monetary commission
France and 18 other countries	1867	resolution of the monetary conference in Paris**			

* the country organising the debates of the German Chamber of Commerce (Frankfurt a/Main was the free city)
** adopted by the majority of votes

Source: the author's own study on the basis of M. Morys, *The Emergence of the Classical Gold Standard*, CHERRY Discussion Paper Series, January 2012, pp. 21–42, www.york.ac.uk./res/cherry/docs/1201dp.pdf [accessed: 23.09.2016]; M.D. Bordo, H. Rockoff, *The Gold Standard as a 'Good Housekeeping Seal of Approval*, "The Journal of Economic History" 1996, vol. 56, no. 2, pp. 397, 398–399; M.A. Denzel, *Handbook of World Exchange Rates*, Ashgate Publishing Co., Farnham–Burlington 2010, passim.

What can serve as a good illustration of how sentiments shifted in favour of the gold standard was the position of members of the bimetallist Latin Monetary Union, which was created at the end of 1865. Three out of the four founder countries – Belgium, Italy and Switzerland – were initially ready to adopt the gold standard and resigned only because of the absence of the readiness to do it on the part of France, which they were linked to in monetary terms. Yet, their point of view soon began to gain importance in France. During the International Monetary Conference held in Paris in 1867, the hosts promoted the concept of the unification of the world monetary system based on the gold frank (the so-called *germinal)*, treating bimetallism as a transitional stage.[49] The French motion met with the approval of the majority of the delegations. A few objected, among others, Great Britain's, because what France wanted to achieve was gold monometallism under its own control and in the form competitive to the British model.[50] The idea collapsed in a natural way with the defeat of France in the war with Prussia, which weakened the leadership power of Paris and reduced the gold reserves of the Bank of France.

Nevertheless, according to Morys, the victory of the gold standard system was determined already in the 60s of the 19th century. It was of secondary importance which country and for what reasons would activate the internationalisation trend but the gold standard was inevitably bound to dominate. What was necessary was only the proverbial 'nail in the coffin' for silver as the monetary ore.[51] That was provided by Bismarck's Germany, when the latter chose gold monometallism, triggering an avalanche of further accessions to the system and cumulating pressure on the price of silver. But the merit for tipping the balance could equally well have fallen to another country and other circumstances because the drive towards the gold standard had already gained a pan-European scope.

6. Interpretation of the principal motivation: substantive doubts

In no study analysing the genesis of the spread of the gold standard system shall we find a monocausal approach. Irrespective of the preferred principal motivation, researchers studying the problem are in agreement that none of them acted in isolation

[49] M. Morys, *The Emergence*…, op.cit., pp. 22–28, 35–38, 40–41. See more in: L. Einaudi, *Money and Politics: European Monetary Unification and the International Gold Standard (1865–1973)*, Oxford University Press, Oxford 2000, passim; L. Einaudi, *From the Franc to the 'Europe': The Attempted Transformation of the Latin Monetary Union into a European Monetary Union, 1865–1873*, "The Economic History Review" 2000, vol. 53, no. 2, pp. 284–308. Franc *germinal*, introduced in France on 28 March 1803 together with the formalisation of bimetallism, owed its colloquial name to the then revolutionary calendar. *Germinal* was the seventh and the first spring month, corresponding, according to the Gregorian calculation of time, to the period from 21 March to 19 April. The Georgian calendar was restored in France from the beginning of 1806.

[50] It is enough to say that the franc *germinal* functioned in the decimal system and was minted from a different assay of gold.

[51] M. Morys, *The Emergence*…, op.cit., pp. 4, 43 and the following.

from others. What arouses disputes is the question of which motivation group or which component of a given group played a decisive role, exerting simultaneously the strongest and irreversible influence. In other words, what was the prerequisite sufficient to make the majority of currencies adopt the gold standard. Numerous polemics arise when the merit is attributed to imitation-status, political-social, technology-institution or function-situation-determined motivations, irrespective of their variants. For instance, in the context of the first of the motivation groups mentioned, the claim concerning the model-setting role of London in the monetary field is opposed by Morys. The latter points out that countries with two-ore systems and the silver standard, having a total social and economic potential greater than Great Britain, took sufficient advantage of mutual trade and capital turnover not to have to copy British monetary solutions to seek new development opportunities.[52] In turn, Flandreau provides abundant material showing that different types of network externalities, including those present on the international scale, also supported the existence of bimetallic systems.[53] Ricardo Fernholtz, Kris J. Mitchener and Marc Weidenmier show through econometric analyses that the system of the gold standard did not by any means always favour stable prices and high exchange rates, while its deflationary influence virtually exhausted in the 90s of the 19th century.[54] Steven Bryan describes in detail how in a concrete example of Argentine the adoption of gold monometallism constituted a pretext for the devaluation of the country's own currency as much as an anti-British step.[55] Ample evidence of the fact that what was hidden behind accessions to the gold standard was also a desire to strengthen the exchange rates of individual currencies is also provided by Meissner, although the results of his study of over 30 countries support the economic version of the imitation-status interpretation.[56]

52 M. Morys, *The Emergence*…, op.cit., pp. 6–8, 12–13, 33–34. For assessment of Morys' counterarguments see:. J. Luszniewicz, *Geneza*…, op.cit., p. 44.

53 M. Flandreau, *The Glitter*…, op.cit., passim; idem, *Was the Latin Union a Franc Zone?*, [in:] *International Monetary Systems in Historical Perspective*, J. Reis (Ed.), MacMillan, London 1994, pp. 71–89. See also: B. Eichengreen, *The Globalizing*…, op.cit., p. 14.

54 R. Fernholz, K.J. Mitchener, M. Weidenmier, *Pulling up the Tarnished Anchor: The End of Silver as a Global Unit of Account*, June 25, 2013, pp. 2–4, 10, [accessed: 16.09.2019].

55 S. Bryan, *The Gold*…, op.cit., pp. 11–12, 21, 43, 36, 59–100. The author refers to the fifth and most successful attempt at the coexistence of the Argentine peso with the gold standard, extending from 1889 World War I. Return to gold monometallism was linked to lowering the parity of the peso, increasing the crediting of the domestic industry and tightening tariff protectionism. The last mentioned hit the economic interests of Great Britain.

56 C.M. Meissner, *A New*…, op.cit., pp. 4, 28–29, 33–34. Till the 70s of the 19th century, exchange rates in Europe were basically stable. Larger fluctuations began after the collapse of the bimetallic block. B. Eichengreen, M. Flandreau, *The Geography*…, op.cit., pp. 117, 119, 121.

In the case of the political-social motivations, critics, among others, Jeffry A. Frieden and Meissner, argue that the game of interests involved not so much agricultural circles and industrial-financial circles, as circles oriented towards the domestic market and the international market. What is more, attitudes towards the gold standard did not have to remain permanent. For instance, exporters of farm produce were for or against the gold standard in different periods and in different countries depending on their current economic interests.[57] Other researchers, among others, Bryan and Ted Wilson, draw attention to the fact that the free-trade idea did not always prevail among the stakeholders of the gold standard. On the contrary, they were often driven by protectionist motifs, not only to protect their domestic 'infant industries' but also to support armaments, serving nationalist or even imperial ambitions (e.g. Japan). Sometimes one position was presented with reference to the domestic monetary system, while another, completely different, with respect to dependent territories (e.g. British elites towards India before 1898).[58] The interpretation of Flandreau, who called the global victory of gold monometallism a political and diplomatic 'accident in history' also met with counterarguments. The opinions of the French historian and economist as regards the functional efficiency of bimetallism are not shared by, for instance, Meissner and Stefan Oppers. According to them, the bi-ore system would anyway get destabilised in the second half of the 70s of the 19th century, irrespective of the internal monetary policy of France and reactions of other Latin Monetary Union countries.[59]

The key importance of the technological-institutional motivations seems to be undermined by the absence of a clear time correlation between the spread of new minting technologies and the installation of the gold standard. In fact, this correlation of a few consecutive years, appeared only in Great Britain. In Germany, France and other industrialised economies, silver was deprived of its role of monetary ore

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57 J.A. Frieden, *The Dynamics*…, op.cit., pp. 147–154; C.M. Meissner, *A New*…, op.cit., pp. 4, 28, 33–34. Even if reliable representatives admit that in reality not everything looked as simple as in the original version of the political and social interpretation. Compare M. de Cecco, *The International*…, op.cit., passim (in particular, Chapters 4 and 5); A.S. Millward, *The Origins*…, op.cit., pp. 86, 88, 98. In the opinion of Flandreau, interpreting the victory of the gold standard in *stricte* political and anti-deterministic categories, different preferences as to the type of the monetary system within the same social and professional groups also resulted from the diversification of regional interests. Idem. *The French*…, op.cit., pp. 880–882.

58 On the genesis of the gold standard in Japan see: S. Bryan, *The Gold*…, op.cit., pp. 9, 11–12, 43, 113–173; M. Schiltz, *Money on the Road to Empire: Japan's Adoption of Gold Monometallism 1873–1897*, "The Economic History Review" 2011, vol. 65, no 3, pp. 1144–1168. On the subject of the position of London on the monetary system of India see: D.H. Leavens, *Silver*…, op.cit., pp. 65–85; T. Wilson, *Battles*…, op.cit., pp. 65–89.

59 Compare C.M. Meissner, *The Limits of Bimetallism*, University of California, Davis and NBER, February 8, 2013, pp. 17–21, 25–26 (Fig. 1–2), https://www.clevelandfed.org/research/Conferences,2012/Meissner_final_draft.pdf [accessed: 20.09.2018]; S. Oppers, *Was the Worldwide Shift to Gold Inevitable? An Analysis of the End of Bimetallism*, "Journal of Monetary Economics" 1996, vol. 37, no. 1, pp. 143–162.

only several decades after the appearance of the first steam presses in state mints. Simultaneously, in countries which were the first to make their currencies systemically similar to the pound sterling – Brazil, Australia, Canada, Portugal and Argentina – gold monometallism spread yet before steam power came to be used in their mints.[60] An even poorer time correlation was witnessed between the industrialisation of minting and the institutional guarantee of the exchangeability of 'small change'. The several-decade long delay of the latter in Germany, France or the United States was accompanied by the absence of the exchangeability of token coins, both formal and actual, in the majority of other gold standards, including those established in the 40s, 50s and 60s of the 19th century. In addition, the influence of technological progress on the position of gold and silver as monetary ores was not unidirectional before World War I. In the last decade of the century, the application of the cyanide method in the yellow ore refining process was magnified by the depreciating effect of the South African discoveries and for some time again created better prospects for bimetallism.[61]

There are also serious doubts as regards the interpretation attributing a first-plan role in the spread of the gold standard system to functional-situational motivations. Flandreau was a declared critic of this point of view. He questions the claim that silver was more prone to depreciation than gold, argues for the functional efficiency of the 19th-century bimetallism (particularly, in France), denies that the,silver supply shock' and German and other demonetisations had contributed significantly to the fall of silver prices.[62] Alan S. Millward emphasises the poor correlation between the installation of subsequent gold standards and periods of silver depreciation as well as the significant role of the white ore in the 19th-century international trade. According to him, subsequent declines in the value of silver were the consequence of not so much fluctuations of supply as fluctuations of demand for monetary ores, with the faltering demand for silver resulting from political interests and aspirations of individual countries.[63] Some econometric studies suggest that bimetallic systems

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[60] B. Eichengreen, *The Globalizing*…, op.cit., p. 13; M. Flandreau, *The French*…, op.cit., p. 876.

[61] J. Gray, J.A. McLachlan, *A History of the Introduction of the MacArthur–Forrest cyanide process to the Witwatersrand goldfields*, "Journal of the Southern African Institute of Mining and Metallurgy" 1932/1933, vol. 33, no. 12, pp. 375–376, 382–383; R. Fernholz, K.J. Mitchener, M. Weidenmier, *Pulling*…, op.cit. p. 4. The cyanide method soon began to be used also in silver refining.

[62] M. Flandreau, *The French*…, op.cit., pp. 863–876, 879; idem, *As Good as Gold? Bimetallism in Equilibrium, 1850–1870*, [in:] *Monetary Standards and Exchange Rates*, M.C. Marcuzzo, L.H. Officer, A. Rosselli (Eds.), Routledge, London–New York 1997, pp. 150–176; idem, *'Water Seeks the Level': Modelling Bimetallic Exchange Rates and the Bimetallic Band*, "Journal of Money, Credit and Banking" 2002, vol. 34, no. 2, 491–519.

[63] A.S. Millward, *The Origins*…, op.cit., pp. 86–89. On the use of silver in international trade see also: M. Flandreau, *The French*…, op.cit., pp. 863, 877, 878 (Fig. 6).

became dysfunctional only in the 90s of the 19th century.[64] Before the French-Prussian war and the unification of Germany, gold could seem a less secure monetary ore not only in connection with the 'gold supply shock' of the 50s and the 60s but also in light of the recurrent financial crises and suspensions of convertibility in Great Britain, the first economy with the gold standard system.[65] Most significantly, however, also after 1871, even when France and other main Latin Monetary Union countries had switched to gold monometallism (in the gold limping standard version), bimetallism was still considered a real alternative. Not only in continental Europe but also in the United States and in Great Britain. The question of the revitalisation of silver as a monetary ore was systematically discussed, mainly thanks to US delegates, during international monetary conferences in Paris (1878 and 1881) and Brussels (1892).[66]

Conclusion

The author's own classification of the subject of the positions as to the main cause of the spread of the gold standard before World War I proposed in the article reflects the current state of research and discussions, both far from being orderly and complete. Hence the classification is neither a fully separate nor single-criteria discussion. For instance, the imitation-status motivations happened to be politically determined, the functional-situational motivations could cover institutional aspects, while in each of the motivation groups distinguished there were economic incentives, etc. What draws attention is also a lack of chronological balance. In the intentions of their adherents political-social motivations and technological-institutional motivations account for the whole time spectrum of the phenomenon of the spread of the gold standard, while imitation-status motivations and functional-situational motivations refer to narrower chronological periods, starting at the turn of the 40s and the 50s and from the 70s or possibly the 60s of the 19th century.

From the formal point of view, it would certainly be more easily justifiable to attempt to arrive at a classification based on better differentiating criteria, separating the internal (domestic) causative factors from international ones, economic

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64 R. Fernholz, K.J. Mitchener, M. Weidenmier, *Pulling*…, op.cit., p. 10.

65 R. Dornbusch, J.A. Frenkel, *The Gold Standard and the Bank of England in the Crisis of 1847*, [in:] *A Retrospective on the Classical Gold Standard, 1821–1931*, M.D. Bordo, A.J. Schwartz (Eds.), University of Chicago Press, Chicago 1984, pp. 233–276; L. Shakinovsky, *The 1857 Financial Crises and the Suspension of the 1844 Bank Act*, [without pagination], [accessed: 19.09.2019]; M. Flandreau, S. Ugolini, *The Crisis of 1866*, Graduate Institute of International and Development Studies Working Paper, No. 10/2014, The Graduate Institute, Geneva, pp. 1–29, [accessed: 20.09.2019].

66 Compare T. Wilson, *Battles …,* op.cit., pp. 156–183; S.P. Reti, *Silver …,* op.cit., pp. 3–5, 61–156.

from non-economic (political and social) ones, those considered necessary (unavoidable) from the accidental, random ones, etc. The problem is that the application of these and other distinctive classification criteria would depart completely from the hitherto publications. The same would be true of distinguishing decision-making motivations comparable in terms of the explanatory chronology.

The ambitions of this text do not extend beyond the identification, conceptualization and preliminary assessment of the positions already present in the scientific circulation. Their most conspicuous features include: mutual substantive incompatibility and significant proneness to falsifying criticism. Agreement is missing not only in terms of interpretation but also some hard facts. Numerous authors tend to universalise the research findings obtained for one or several countries in time-limited periods. Generalisations based on poor grounds provoke adversaries to multiply doubts and historical counter-examples. Debates going on for decades, instead of moving forward and nearing a conclusion, are still at the stage of pondering over nuances, complications and variants of interpretations proposed a long time ago.

What seems to be a mistake is the temptation to seek one main and determining cause of the domination of the pre-first-world war monetary system by gold monometallism. The point is that there was never one single decisive 'flywheel' responsible for the spread of the gold standard. At best, we can speak about the main causes changing over time: different for the first accessions from the turn of the 40s and the 50s, embracing the economic 'customers' of Great Britain; other for the accessions of the 70s, when the gold standard was joined primarily by well-developed economies; and yet other for those which followed in the 80s, the 90s and later, when the gold standard was adopted mainly by agricultural-industrial and agricultural countries (some of them with imperial ambitions). Moreover, in all the cases, the causes (chains of events) were not predestined and thus possible to avoid, while once they occurred potentially reversible. In the controversy over historical necessity *versus* historical randomness of the victory of the gold standard system it is no doubt that this is Flandreau who is right, though this author's arguments about the key importance of the French policy of the 1873–1876 period are much less convincing.

Yet, it was Flandreau together with Barry Eichengreen who outlined in the 90s of the past century an interpretation devoid of the aspiration to determine the main 'flywheel' but oriented towards periodisation of the process of the spread of the gold standard on the basis of the criterion of changing causative factors.[67] A similar approach was presented several years later by Bryan.[68] In both cases, the starting

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[67] B. Eichengreen, M. Flandreau, *The Geography*…, op.cit., pp. 121–126, 130, 133–134.
[68] S. Bryan, *The Gold*…, op.cit., pp. 34–36 and the following.

point was the awareness of the fact that what should underpin all generalisations is the recognition of the causes of the transition to the gold standard system by the largest number of individual economies possible.

This is also the disposition that should be formulated in the context of further studies over the causes of the displacement of other monetary systems by the gold standard before World War I.

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