

**Conference “Ricardo’s monetary theory and policy two hundred years after  
*Proposals for an Economical and Secure Currency*”**

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**Keynote address**

***PROPOSALS: A TURNING POINT IN RICARDO’S THEORY OF MONEY***

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**1. INTRODUCTION**

Money is what made Ricardo become an economist. The publication in 1810 of *The High Price of Bullion, a Proof of the Depreciation of Bank Notes* established him as a leading figure in the economic debates of the time, and, more than on public finance or free trade, his monetary ideas gained him celebrity during the whole of his lifetime, for the better or worse. In his own eyes, the adoption of the Ingot Plan by Parliament in 1819 was “the triumph of science and truth in the great councils of the Nation,” but it was also about money that one of his opponents dubbed him ironically “the Oracle by excellence.”

For the past two centuries, money also played a singular part in the evaluation of Ricardo as an economist. This singularity lies in a paradox: Ricardo’s monetary theory is usually exposed on the basis of his contributions to the debates around the *Bullion Report* of 1810, as if his subsequent theory of value and distribution contained in *On the Principles of Political Economy, and Taxation* (1817) had not affected in any way his monetary views. A mere chronological gap makes the starting point become *ipso facto* the ending point of the story: Ricardo’s theory of money pre-exists his theory of value and distribution, *hence* the former is independent of the latter. To use a modern phrase: the “dichotomy” between his “real” theory of value and his monetary analysis is complete. A variant of this approach to Ricardo on money is to acknowledge that *Principles* might have affected Ricardo’s theory of money, but just to lock it into inconsistency or contradiction: advocating a bank money backed by a metallic standard, Ricardo would be trapped in the impossible task of reconciling a commodity-theory of money – in which the value of money determines its quantity – and a quantity theory of money – in which the causality goes the other way.

My aim is at challenging this view by arguing that Ricardo’s theory of money is neither independent from nor contradictory with his theory of value and distribution. But this requires looking *also* at his monetary writings *after* he started inquiring into the determination of the rate of profit – that is, after *An Essay on the Influence of a low Price of Corn on the Profits of Stock* (1815) –, not only *before*. I will contend that the most elaborate expression of Ricardo’s theory of money – again using a modern phrase, one that integrates his monetary analysis in his theory of value and distribution – is to be found in his late monetary writings

(of 1819-1823), *not* in his early ones. The publication of *Proposals for an Economical and Secure Currency* in 1816 and of the three successive editions of *Principles* in 1817-1821 gave a theoretical foundation to Ricardo's views on money in the 1819-1823 papers, by putting the notion of monetary standard centre-stage. The bicentenary of these two books thus offers the opportunity of revaluing Ricardo on money by shifting the cursor from the early to the mature monetary writings.

Such revaluation leads to a rehabilitation. In modern times, the dominant evaluation of Ricardo on money has been negative. It will not be asked here since when and why it is so. Surely Keynes's statement in *General Theory* that "Ricardo conquered England as completely as the Holy Inquisition conquered Spain" (Keynes, 1936: 32) played a role, although it was strictly addressed to "Ricardo's doctrine that it was impossible for effective demand to be deficient" (ibid). It seems that in academic circles Schumpeter's judgment in *History of Economic Analysis* was decisive, both for its negative tone and the affirmation that it was useless to dig into Ricardo's numerous writings on money and banking. Listing the published ones, he wrote:

Other items might be added. Ricardo's theory of money, credit, and banking gains on acquaintance, and in perusing his letters as well as his evidence before the Committees on the Usury Laws and on Resumption, one discovers more and more fragments that might be combined into a spacious structure. No attempt will be made, however, to do so. (Schumpeter 1954: 689n)

Their author having died in 1950, these words had been written before the publication by Piero Sraffa of the *Works and Correspondence of David Ricardo*, which started in 1951. Although this publication added many more "other items" related to this field, it did not, however, give rise to any attempt at building the "spacious structure" suggested by Schumpeter. Several books have since aimed at providing a comprehensive view of Ricardo's works, but money has always been treated as only a piece of them. Leaving collections of essays aside – such as *Ricardo on Money and Finance*, edited by Yuji Sato and Susumu Takenaga in 2013 – the only book devoted entirely to money in Ricardo was published twenty-five years ago (in 1991) by Maria Cristina Marcuzzo and Annalisa Rosselli and it was an important source of inspiration for my research. However, as indicated by its title – *Ricardo and the Gold standard. The Foundations of the International Monetary Order* – it mainly aimed at integrating theoretical analysis and historical reconstruction in order to account for a particular question: international adjustment. Thus, although a rough calculation indicates that around one half of what Ricardo wrote in economics was devoted to money and banking, no book is covering this topic as a consistent whole.

It may thus be worthwhile to take up the challenge suggested by Schumpeter, all the more so since the reason why he did not do it himself – and possibly why it was not done since – is to be found in his negative evaluation of Ricardo's theory of money. The above quotation continues as follows:

We shall have to be content with a few features of Ricardo's analysis that are of major importance to doctrinal history. The reader is warned that this may involve some injustice to his performance as a whole. But the impression the reader is bound to get, that Ricardo did not contribute much that was both true and original,

agrees with Viner's judgment, and so does, I believe, my opinion that as an analyst of money and credit Ricardo was inferior to Thornton. (ibid)

The distinction between “doctrinal history” and what should be expected from “an analyst of money and credit” speaks for itself. A few pages further, Schumpeter is even clearer:

In matters of monetary as of general theory, Ricardian teaching is a detour and it slowed up the advance of analysis, which could have been much quicker and smoother had Thornton's lead been followed – had Ricardo's force not prevailed over Thornton's insight. (ibid: 704n)

This opinion, it seems, only gained in force during the last sixty years and this may explain the lack of comprehensive study on Ricardo on money: why should “a spacious structure” be built to accommodate the whole of Ricardo's writings in this field if it is to tell the story of “a detour [having] slowed up the advance of analysis”? In contrast with Sraffa's “Introduction” to *Works* that launched a heated and on-going debate on the logical structure of Ricardo's theory of value, distribution, and accumulation, nothing of the kind exists for Ricardo's theory of money, and it might be that nothing could exist, if Schumpeter was right in his evaluation. On the contrary, I will try to show that, on money too, there is an original and coherent theory of money to be found in Ricardo, provided the whole of his monetary writings is taken into account. In my view it is time to rehabilitate Ricardo as a first-rank monetary theorist.

The dominant negative evaluation of Ricardo on money is also to be related to the paradox mentioned at the beginning. On the one hand, it usually overemphasises his doctrinal extremism. For Schumpeter, “here as elsewhere Ricardo was a prisoner to once-for all conceived ideas. In this case he had pinned his colors to the mast of a rigid quantity theory.” (ibid: 724) He was “espousing a hard-line version of it [the quantity theory]” (Blaug 1995: 31) and held an “extreme bullionist” position (Viner 1937: 106; Laidler 1987: 290) On the other hand, as noted above, commentators usually draw exclusively on what Sraffa called “the Bullion Essays” of 1809-1811 to ascertain Ricardo's theory of money, in spite of the fact that these writings were mostly concerned with a monetary regime in which, due to the then inconvertibility of the Bank of England note, the quantity of money was *not* regulated by a standard (to use Ricardo's words). In contrast, his theory of money in *Proposals for an Economical and Secure Currency* and beyond dealt with a monetary regime endowed with such regulation:

The only use of a standard is to regulate the quantity, and by the quantity the value of the currency. (*Proposals*; IV: 59)

The centrality of the standard in Ricardo's mature theory of money was not only a matter of historical context – the perspective of the resumption of convertibility. Parallel was Ricardo's elaboration of a theory of value and distribution that would apply to all commodities produced in competitive conditions – including the standard of money: gold bullion – and end up in the search for an invariable standard of value. I contend that this “real” line of inquiry had important consequences for the theory of money. Before attributing a quantity theory of money to Ricardo – and *a fortiori* an extreme version of it – it seems thus

prudent to account for the writings dealing explicitly with a currency regulated by a standard: not only *Proposals* and *Principles* but also the 1819-1823 papers, whether published, in manuscript form, or reported. This prudence should also apply to other negative evaluations of Ricardo's theory of money, which less emphasise its extremism than its contradiction with the theory of value and distribution contained in *Principles*. It may be demonstrated that there is neither extremism nor contradiction, but an idiosyncratic theory, which is neither a quantity theory of money nor a commodity-theory of money, and which integrates money into Ricardo's theory of value and distribution.

To rehabilitate Ricardo as a first-rank monetary theorist and to show how he succeeded in integrating money in his theory of value and distribution, one may lean on *Proposals for an Economical and Secure Currency*, because, I will argue, this book was a turning point in Ricardo's theory of money. This turning point was the outcome of two changes in Ricardo's inquiry about money. First, with the end of the Napoleonic wars in June 1815, the historical perspective was now the resumption of the convertibility of the Bank of England note. Consequently the question on the agenda was no longer the understanding of a monetary regime deprived of any standard but of one endowed with a standard. Second, this line of inquiry, formulated in 1816 in *Proposals*, now ran parallel to another line of inquiry on exchangeable values and the rate of profit, inaugurated in 1815 with the *Essay on Profits*. As a turning point *Proposals* designed what would be Ricardo's monetary program until his death seven years later: the search for what he called "a perfect currency" that should fulfil three conditions:

A currency may be considered as perfect, of which the standard is invariable, which always conforms to that standard, and in the use of which the utmost economy is practised. (ibid: 55)

I will thus follow Ricardo and examine successively these three conditions for "a perfect currency", which make *Proposals* a turning point in Ricardo's theory of money.

## **2. "A CURRENCY MAY BE CONSIDERED AS PERFECT, OF WHICH THE STANDARD IS INVARIABLE,..."**

It is widely recognised that the question of the invariable standard is an integral part of Ricardo's theory of value and distribution. I will contend that it is also an integral part of his theory of money. On this question, the evolution of the former had indeed a disappointing effect on the latter: the more Ricardo dug into the invariable standard of value, the more the possibility of an invariable standard of money moved away.

The notion of invariable measure of value first appeared in *High Price*, in a note on a paragraph where Ricardo criticised the double standard of money. Ricardo then felt content with the value of gold or silver being "tolerably fixed" in the short run, although it might change a lot in the long run. This was enough in his perspective at the time, which was to show that the *recent* fall in the value of money was to be ascribed to an excess quantity of inconvertible notes issued, not to a fall in the value of the precious metals.

As I noticed above, things changed in 1815. The historical perspective was now the resumption of the convertibility of the Bank of England note and the question was henceforth how to ensure a “secure currency,” *even in the long run*. And Ricardo’s new inquiry on exchangeable values and the rate of profit faced a difficulty, summed-up in the following letter of 30 December 1815 to James Mill:

I know I shall be soon stopped by the word price, and then I must apply to you for advice and assistance. Before my readers can understand the proof I mean to offer, they must understand the theory of currency and of price. They must know that the prices of commodities are affected two ways one by the alteration in the relative value of money, which affects all commodities nearly at the same time, – the other by an alteration in the value of the particular commodity, and which affects the value of no other thing, excepting it enter into its composition. – This invariability of the value of the precious metals, but from particular causes relating to themselves only, such as supply and demand, is the sheet anchor on which all my propositions are built. (VI: 348)

The price of a commodity being measured in money – in contrast with its exchangeable value that was measured in any other commodity – a change in this price could as well reflect a change on the side of money – “the alteration of the relative value of money” – and on the side of the commodity – “an alteration in the value of the particular commodity.” The difficulty concerned the possibility of disentangling these “two ways” through which “the prices of commodities may be affected.” In order to isolate what was to be studied by the theory of value and distribution, Ricardo neutralised the operation of the monetary way by assuming the absence of any “alteration of the relative value of money.” And this he did by assuming “this invariability of the value of the precious metals, but from particular causes relating to themselves only.”<sup>1</sup> With this method, which was “the sheet anchor on which all my propositions are built,” the invariability of the standard was not only required to study the distribution of aggregate income or variations in the exchangeable values of commodities relatively to each other (as acknowledged by the modern literature), but also to allow interpreting a change in the money price of a commodity as reflecting the same change in the real value of that commodity – what Ricardo would call in his last manuscript its absolute value. In other words, the invariable standard of value and the invariable standard of money should be one and the same thing: gold (or silver) bullion.

As is well-known, Ricardo soon discovered that to be invariable the standard should not only be produced with constant quantities of labour. This was a necessary condition but not a sufficient one, because the value of any commodity in terms of any other was not only affected by the relative quantities of labour but also by the rate of profit, whenever the durability of capital advanced in the production of each commodity was unequal. To be invariable in value and measure properly the value of other commodities, the standard should be, as far as the durability of capital was concerned, “a mean between the extremes” (“Absolute Value”; IV: 405). And this led to a dilemma. *Either*, the standard of money was the actual gold bullion and there was no reason why it would be produced in such average conditions; consequently, it varied in *value* even if it remained produced with the same quantity of labour through time, since its exchangeable value was affected by any change in

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<sup>1</sup> It will be noticed that at the end of 1815 Ricardo still emphasised “supply and demand” among the “particular causes” of variation in “the value of the precious metals,” as he had done in 1810 – the theory of value based on the cost of production would have to wait one more year.

the distribution between wages and profits. *Or*, since no commodity produced in average conditions could be found in nature, one should adopt as the standard of money a composite commodity constructed in appropriate proportions.

Both options were unsatisfactory. The variability in the value of the standard of money destroyed “the sheet anchor on which all my propositions [on value and distribution] are built,” as Ricardo wrote in his letter to Mill of 30 December 1815. But at the same time he did not envisage the option of replacing actual gold bullion by a constructed composite standard of money. One may explain this unwillingness by the existence of an important difference between the use of a standard of value by “the Political Economist” and the use of a standard of money by individuals in a monetary economy. This difference was law, which had two consequences that emphasised the social character of the standard of value conceived by Ricardo as the standard of money – a social character consistent with his repeated assertion that no such standard could be found in nature. The first consequence was that the commodity chosen as the standard of money had not only a market price but also a legal one, and decisions of the issuer of money as to its quantity should aim at making the market price of the standard conform to its legal level. This interference with the private activity of the producers of the “standard commodity” (*Proposals*; IV: 58) was welcome since it prevented money from being depreciated (or appreciated). However, the adoption of a composite “standard commodity” constructed with actual commodities combined in appropriate proportions would extend such interference to the private activity of the producers of all these selected commodities, even if only a weighted average of their market prices was legally fixed – a provision at odds with Ricardo’s general conception of society.<sup>2</sup>

A second consequence of law applied to money was that, in contrast with a measure of length, it did not only enforce the use of a unit of measure, however variable. It enforced it in a particular way, by opening the possibility of arbitrages, permitted by the necessary complement to the legal definition of the monetary unit: convertibility of the standard into the currency and of the currency into the standard. According to Ricardo, these arbitrages had a stabilising effect, except in case of a double standard of money (gold *and* silver) and this was the reason why he opposed it. One may think that, in Ricardo’s view, such destabilising effect of a double standard would be magnified with a composite standard, even if his plan of a circulation exclusively composed of notes convertible into the standard (instead of coins) were adopted. In the 1880s, Alfred Marshall tried to marry Ricardo’s proposal of note convertibility into bullion with bimetallism (conceived by him as a scale model of a “tabular standard” composed of many commodities combined in certain proportions so as to reduce its variations in value), recommending the adoption of note convertibility into a bimetallic bullion standard as a way to reduce the variability of the *value* of the standard of money (Marshall 1887). But it may be shown that Ricardo’s intuition proved well-founded: this reduction had a counterpart in the impossibility of stabilising the *price* of the standard of money.

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<sup>2</sup> One may think that the interference with the activity of the private producers of the standard was all the more acceptable in the case of gold bullion since it was a commodity produced abroad. This would no longer be the case with a composite standard of money constructed with commodities produced nationally.

The conclusion is that the above-quoted requirement formulated in *Proposals* (“A currency may be considered as perfect, of which the standard is invariable, which always conforms to that standard;” IV: 55) could not be met: what made the standard “invariable” (being “a mean between the extremes”) prevented money from “conforming” to it, and what allowed money conforming to the standard (the selection by law of an actual commodity) prevented the standard from being invariable in value.

To overcome this dilemma, Ricardo assumed in the third edition of *Principles* that gold was *actually* “a mean between the extremes”:

May not gold be considered as a commodity produced with such proportions of the two kinds of capital as approach nearest to the average quantity employed in the production of most commodities? May not these proportions be so nearly equally distant from the two extremes, the one where little fixed capital is used, the other where little labour is employed, as to form a just mean between them? (*Principles*; I: 45-6)

This solution presented in an interrogative form was evidently a *petitio principis*, as acknowledged in Ricardo’s answer to Malthus’s critique addressed to his “invariable measure of value”:

It was never contended that gold under the present circumstances was a good measure of value, it was only hypothetically, and for the purpose of illustrating a principle, supposed that all the known causes of the variability of gold, were removed. (*Notes on Malthus*; II: 82-3)

At the end of his life, Ricardo was clearly disappointed by the outcome of his inquiry into the invariable standard. His last letter of 5 September 1823 – the day, as Sraffa put it, when he “was struck with his fatal illness” – and addressed to James Mill ended as follows:

I have been thinking a good deal on this subject lately but without much improvement – I see the same difficulties as before and am more confirmed than ever that strictly speaking there is not in nature any correct measure of value nor can any ingenuity suggest one, for what constitutes a correct measure for some things is a reason why it cannot be a correct one for others. (IX: 387)

This disillusion was probably caused by the understanding that, even if the invariable standard of value could be conceived by “the Political Economist,” it could not act as the standard of money in the actual working of a monetary economy. One had to accept that the first condition of “a perfect currency” – the invariability of the value of the standard of money – could not be met. This was all the more reason to concentrate on the second condition.

### 3. “...WHICH ALWAYS CONFORMS TO THAT STANDARD,...”

With gold or silver as the standard, the conformity of money to the standard meant for Ricardo that a given weight of the metal in the form of money (whether coin or convertible note) was of equal value with the same weight of the metal in bullion. This condition of conformity of money to the standard reads:

$$(1) \quad V_M^* = (1 / \overline{P_G}) \cdot V_G$$

with  $V_M^*$  the current value of the pound when it conforms to the standard (say, gold bullion),  $\overline{P}_G$  the legal price in pounds of an ounce of gold (hence  $1 / \overline{P}_G$  the quantity of gold defining the pound, measured in ounces), and  $V_G$  the value of an ounce of gold bullion. By values of the pound and of bullion Ricardo meant their respective purchasing power over all commodities taken together except gold bullion.

A corollary was that this condition of conformity was fulfilled when the market price of bullion was equal to the legal price of the metal in coin (the mint price) or, preferably, the legal price of the bullion into which the note was convertible (in Ricardo's Ingot Plan, see below). Another expression of the condition of conformity is thus:

$$(2) \quad P_G = \overline{P}_G$$

with  $P_G$  the market price of gold bullion.

Thanks to convertibility of bullion into money and of money into bullion (money being whether coin or note), arbitrage ensured the fulfilment of (2), taking into account the costs incurred by convertibility both ways. In such "sound state of the currency" money conformed to the standard. According to Ricardo, money was depreciated if  $P_G > \overline{P}_G$  and appreciated if  $P_G < \overline{P}_G$ :

While these metals [gold and silver] are the standard, the currency should conform in value to them, and, whenever it does not, and the market price of bullion is above the mint price, the currency is depreciated. – This proposition is unanswered, and is unanswerable. (*Proposals*; IV: 62-3)

And symmetrically:

To say that money is more valuable than bullion or the standard, is to say that bullion is selling in the market under the mint price. (ibid: 57)

The condition of conformity of money to the standard, stated in *Proposals*, explains that the knotty point in Ricardo's mature theory of money was the distinction between "a fall in the value of money" and "a depreciation of money." In a speech in Parliament on 12 June 1822 he declared:

The great mistake committed on this subject was in confounding the words "depreciation" and "diminution in value." With reference to the currency, he [Ricardo] had said, and he now repeated it, that the price of gold was the index of the depreciation of the currency, not the index of the value of the currency, and it was in this that he had been misunderstood. (V: 203-4)

A depreciation (or appreciation) of money should be understood in respect to the standard, while a fall (or a rise) in the value of money should be understood in respect to all commodities taken together, except the standard. One did not necessarily go with the other, as Ricardo contended in his evidence before a committee of Parliament on 4 March 1819:

The term 'depreciation,' I conceive, does not mean a mere diminution in value, but it means a diminished relative value, on a comparison with something which is a standard; and therefore I think it quite possible that a bank note may be depreciated, although it should rise in value, if it did not rise in value in a degree equal to the standard, by which only its depreciation is measured. (ibid: 393-4)

In a speech in Parliament on 7 May 1822, Ricardo repeated that there could be depreciation while the value of money was actually *rising*:

It might so happen that a currency might be depreciated, when it had actually risen, as compared with commodities, because the standard might have risen in value in a still greater proportion. (ibid: 166)

One may show (see Deleplace 2017) that the following equation may be derived from the condition of conformity and gives a consistent meaning to this quotation:

$$(3) \quad \Delta V_M / V_M = \Delta V_G / V_G - \Delta P_G / P_G$$

in which  $\Delta V_M / V_M$  is the rate of change in the value of the pound,  $\Delta V_G / V_G$  is the rate of change in the value of an ounce of gold bullion (both values in terms of all commodities except gold bullion), and  $\Delta P_G / P_G$  is the rate of change in the market price of an ounce of gold bullion.

I will call (3) the **Money-Standard Equation**. It states that the rate of change in the value of money during a period is determined by the rate of change in the *value* of the standard minus the rate of change in the *price* of the standard. This equation thus formalises the conjunction of two additive channels through which the value of money may vary: a change in the value of the standard and a change in its price. In particular, money could rise in value while being depreciated – as testified by a rise in the price of bullion –, because the value of bullion had risen more than its price. The Money-Standard Equation thus accounts for any combination of change in the value of gold bullion and of change in its price, the resultant being a rise, a fall, or constancy in the value of money. As Ricardo declared in Parliament on 11 June 1823:

A currency might be depreciated, without falling in value; it might fall in value, without being depreciated, because depreciation is estimated only by reference to a standard. (ibid: 311)

The first cause of change in the value of money – a change in the *value* of the standard – was “real”: it reflected a change in the conditions of production of the standard, such as the discovery of a new highly-productive gold mine. The second cause of change in the value of money – a change in the *price* of the standard – was monetary: it reflected the excess (or deficiency) of the actual quantity of money in respect to the quantity consistent with the condition of conformity. The Money-Standard Equation may thus be reformulated as follows:

$$(4) \quad \Delta V_M / V_M = \Delta V_G / V_G - [\Delta M / M - \Delta M^* / M^*]$$

with  $\Delta M / M$  and  $\Delta M^* / M^*$  the rates of change of respectively the actual and the conformable quantities of money.

On the basis of Ricardo’s indications in *Proposals* and later monetary writings, one may analyse the adjustment of the value of money to a change in the needs of trade (which affects  $\Delta M^* / M^*$ ) and to a discretionary increase in the note issue (which affects  $\Delta M / M$ ). The specificity of Ricardo’s mature theory of money appears in full light when one compares (4) with the well-known equation derived from the Quantity Theory of Money (QTM):

$$(5) \quad \Delta V_M / V_M = \Delta T / T - \Delta M / M$$

with  $\Delta T / T$  the rate of change of the real volume of the planned aggregate transactions.

A comparison between (4) and (5) shows that  $\Delta T / T$  in the QTM is replaced by  $\Delta V_G / V_G$  in Ricardo, and  $\Delta M / M$  by  $[\Delta M / M - \Delta M^* / M^*]$ . In Ricardo's integration of money in his theory of value, there is obviously a dichotomy between the "real" economy and money. However, the "real" part of the value of money does not show up in the aggregate output, as in the QTM, but in the value of the standard, determined by the (real) system of relative prices. And the monetary part does not show up in the money supply but in the excess (or deficiency) of the money supply. An exogenously-given supply of money does not confront an independently-given demand for real balances, as in the QTM, but the supply of money  $M$  endogenously adjusts to the quantity of money  $M^*$  required by the needs of trade. Moreover, one does not need to measure the variation in the excess (or deficiency) of the money supply (with the related problems of choosing the appropriate monetary aggregate) to determine the variation in its value, since  $[\Delta M / M - \Delta M^* / M^*]$  is equal to the observable variation  $\Delta P_G / P_G$  of the market price of gold bullion (equation (3)). A conclusion emerges: although changes in the aggregate quantity of money affect its value, Ricardo's mature theory of money is *not* a quantity theory of money.

Of course, the quantity of money mattered, as emphasised in *Principles*:

There is no point more important in issuing paper money, than to be fully impressed with the effects which follow from the principle of limitation of quantity. (I: 353)

The Money-Standard Equation shows how this "principle of limitation of quantity" should be understood: whatever the circumstances, it was always possible to make money conform to the standard by managing its quantity so as to equalise the market price of the standard with its legal price. As quoted above:

The only use of a standard is to regulate the quantity, and by the quantity the value of a currency. (*Proposals*; IV: 59)

This leads to the third condition of "a perfect currency".

#### 4. "...AND IN THE USE OF WHICH THE UTMOST ECONOMY IS PRACTICED"

As is well-known, *Proposals* contained a plan of reform of the currency, which had been already outlined in the Appendix to the fourth edition of *High Price* in 1811. In a letter of 5 March 1822, Ricardo called it his "Ingot plan of payment" (IX: 176) and it is known in the literature as the Ingot Plan. However, this plan is often downplayed as being only a technical device – already to be found in Adam Smith – aiming at economising on gold by substituting paper money for metallic coins. It was of course far more than that, and the "utmost economy" mentioned by Ricardo in the quotation is to be related with the two other conditions contained in this quotation. Ricardo had entitled his 1816 pamphlet *Proposals for an Economical and Secure Currency*. The two aims of his plan announced in this title were

summarised in the sentence which opens the long passage of the pamphlet quoted in the 2<sup>nd</sup> and 3<sup>rd</sup> editions of *Principles*:

To secure the public against any other variations in the value of the currency than those to which the standard itself is subject, and, at the same time, to carry on the circulation with a medium the least expensive, is to attain the most perfect state to which a currency can be brought. (*Proposals*, IV: 66; *Principles*, I: 356-7)

This quotation continues with the following passage, which embodies the main technical provisions of the plan:

and we should possess all these advantages by subjecting the Bank [of England] to the delivery of uncoined gold or silver at the Mint standard and price, in exchange for their notes, instead of the delivery of guineas; by which means paper would never fall below the value of bullion, without being followed by a reduction of its quantity. To prevent the rise of paper above the value of bullion, the Bank should be also obliged to give their paper in exchange for standard gold at the price of 3*l.* 17*s.* per ounce. [...] The most perfect liberty should be given, at the same time, to export or import every description of bullion. These transactions in bullion would be very few in number, if the Bank regulated their loans and issues of paper by the criterion which I have so often mentioned, namely, the price of standard bullion, without attending to the absolute quantity of paper in circulation. (*Proposals*, IV: 66-7; *Principles*, I: 357-8)

These provisions reflect the two principles on which the plan was founded. First, there is what may be called the *ingot principle*: the Bank of England notes had to be convertible into bullion (bars), instead of specie (coins) as they were prior to 1797. Symmetrically, these notes could be obtained from the Bank against bullion at a fixed legal price, slightly below the mint price of £ 3.17.10½ per standard ounce at which they were convertible. Second, the quantity of banknotes issued had to vary inversely with changes in the observed market price of bullion, instead of being left to the discretion of the Bank, as before. This provision constituted a “judicious management of the quantity” of paper money (*Proposals*, IV: 57) and may thus be called the *management principle*.

The specificity of both principles should be underlined. The ingot principle makes sense of the sentence in *Principles* (I: 354), that “it is not necessary that paper money should be payable in specie to secure its value”: Ricardo was against the inconvertibility of notes, but he favoured another kind of convertibility than the one usually put forward before (and also after) him. The management principle meant that the issue of notes had to be modified according to an objective criterion – the market price of bullion – which in no way implied any judgment on an appropriate level of the stock of circulating notes or of the metallic reserves of the Bank (as would later be the case in the Bank Charter Act of 1844). The object of these two principles was twofold: stabilising the market price of bullion, thus preventing the currency from being depreciated or appreciated; increasing the security of the monetary system. Let us look successively at these two goals.

With convertibility of notes into bullion as into specie, arbitrage makes the market price of bullion fluctuate with supply and demand between two fixed limits depending on the monetary regime; but the width of this margin is consequently not the same. Let me again call  $\overline{P}_G$  the legal price of an ounce of gold bullion. With convertibility of notes into freely exportable bullion, the cost of melting fraudulently the coins obtained from the Bank disappeared, so that arbitrage ensured that the market price of gold bullion  $P_G$  could not be

higher than its legal price. Symmetrically, the charge of interest while waiting for the delivery of coins by the mint was eliminated, so that arbitrage ensured that  $P_G$  could not be lower than its legal price minus the commission  $b$  of the Bank, which could be made as little as desirable. As a consequence:

$$(6) \quad \overline{P}_G \geq P_G \geq \overline{P}_G (1 - b)$$

In Ricardo's terms:

That regulation is merely suggested, to prevent the value of money from varying from the value of bullion more than the trifling difference between the prices at which the Bank should buy and sell, and which would be an approximation to that uniformity in its value, which is acknowledged to be so desirable. (*Proposals*, IV: 67; *Principles*, I: 358)

One object of the Ingot Plan was then to ensure a higher stabilisation of the market price of bullion, hence, for a given value of the commodity chosen as the standard, a higher stabilisation of the value of money itself (because of Equation (3)). But there was another object, still more important. Inequalities (6) were ruling in the normal course of events; but when the pressure on the currency became hard, the two sides of the inequalities were exposed to different threats. Whenever the Bank remained open to the public, it could absorb all the bullion which depressed the market and consequently appreciated the currency; the only drawback imposed on the Bank by the Ingot Plan was to force it to accumulate a sterile asset. On the contrary, when, for any reason, the market price of bullion increased, signalling a depreciation of the currency, this movement was hindered by arbitrage as long as the Bank had enough reserves to ensure the convertibility of its notes. The suspension of cash payments decided in 1797 had shown that this could not always be guaranteed. The issue here at stake was no longer the range of variation of the value of the currency in normal times, but the security of the monetary system, which could be jeopardised by a drain of the Bank reserves. As the title of the 1816 pamphlet made explicit, convertibility into bullion was supposed to increase the security of the currency, as compared with convertibility into specie. In what precisely was it so?

With convertibility into specie, one had to distinguish between three types of drain. The first one was caused by a panic, when notes were brought back to the Bank, not to substitute a circulating medium for another, but to hoard the metal itself as a store of value:

Against such panics, banks have no security, *on any system*; from their very nature they are subject to them, as at no time can there be in a Bank, or in a country, so much specie or bullion as the monied individuals of such country have a right to demand. (*Proposals*, IV: 68; *Principles*, I: 358; Ricardo's emphasis)

This kind of run could then jeopardise the monetary system because notes issued through discounting of commercial bills were not backed by corresponding metallic reserves. This was the price to pay for issuing money to the benefit of owners of commercial capital and not only of precious metals. For this kind of drain the Ingot Plan could not improve upon convertibility into specie because the threat to security was consubstantial with banking activity itself.

The second type of drain was caused by the coexistence of coins and notes in the domestic monetary system; it was thus an internal drain. Old coins becoming light through debasement in one way or another while keeping their nominal legal value, the market price of bullion increased, and new full-bodied coins were demanded from the Bank (against notes) to be melted and sold in the market to pocket the difference. Facing a drain of its reserves, the Bank had to purchase bullion in the market to have it coined, then sustaining the market price above the legal price; this process could go on indefinitely, imposing losses on the Bank. In the Ingot Plan, notes convertible into bullion did not aim at complementing coins but at eliminating them altogether (as Ricardo wrote in *Principles*: “A currency is in its most perfect state when it consists wholly of paper money”; I: 361). The elimination of the metallic currency radically prevented this internal drain from occurring, by suppressing the defects which were attached to that kind of currency and caused that drain.

There was an additional advantage: having no longer to guard itself against an internal drain, the Bank could hold a smaller reserve. The system was then more “economical” *because* it was more “secure”. This “economy” contributed in turn to the stabilisation of the value of money: as long as the market price of bullion remained equal to its legal price, the circulation of notes could increase (to accommodate the needs of trade) without the size of the reserve having to increase (as quoted above, the Bank would not have to bother about “attending to the absolute quantity of paper in circulation”). Consequently, the working of the monetary system did not alter the world demand for gold. The changes in the value of the standard were then limited to real causes; in Equation (3), the Ingot Plan not only reduced  $\Delta P_G / P_G$  to zero but also eliminated domestic monetary causes of  $\Delta V_G / V_G$ .

A third type of drain remained: the external one, when gold was obtained from the Bank to be exported. This external drain could also be handled in the Ingot Plan, which strengthened international adjustment. As seen above, the stabilisation of the market price of bullion eliminated the margin of depreciation of the pound which was a cost (in addition to the transportation cost) in the operation of the gold-points mechanism. Hence the Ingot Plan did not only produce domestic monetary stability but also contributed to the international one. Again one should note that this stabilisation occurred in normal times, when the Bank could accommodate the demand for gold against notes. The security of the monetary system required that its metallic reserves could not be threatened by an external drain. During the Bullion Controversy, Ricardo had stated that an external drain could *only* be caused by an excess issue of notes: an unfavourable exchange was the consequence of the market price of gold being above the legal price – signalling a depreciation of the currency – not the other way round. Consequently, any external drain would be avoided if the Bank reduced its issuing of notes when the market price of bullion tended to increase. As stated in a quotation above, the management principle would ensure that “these transactions in bullion [at the export or import] would be very few in number.” (*Proposals*, IV: 67; *Principles*, I: 357)

It is worthwhile noting that this international adjustment rested only on the stabilisation of the market price of gold, not on the adjustment of domestic price levels and corresponding changes in the balance of commerce (as in the price-specie flow mechanism). Still more: if the same gold-standard system *à la Ricardo* were adopted in every trading

nation, the stability of the international monetary system could be achieved without any international movement of gold. Not only gold would stop circulating inside each nation, but it would also stop moving from one nation to another, since the respective domestic quantities of paper money would endogenously adjust, without having to be corrected by the actual export or import of gold. In that sense, Ricardo's Ingot Plan not only rendered the price-specie flow mechanism useless but the price-bullion flow mechanism also.

## 5. CONCLUDING REMARKS

A careful examination of Ricardo's theory of money leads to one main conclusion: the concept of monetary standard played a central role in that theory. This conclusion may look trivial, since Ricardo is commonly considered as an advocate of the gold standard. But, as compared with monetary orthodoxy which would rule in Britain until the end of the classical gold standard (in 1914), Ricardo's concept of monetary standard – hence his theory of money, as embodied in *Proposals* – had a revolutionary content, which put it far ahead of its time.

In Ricardo's system, the standard is a commodity, which provides an anchor for the currency defined in terms of it; but it is a very specific commodity. It has a world value, determined, like the value of all competitively-produced commodities, by its difficulty of production, but its domestic market price is not governed by the gravitation process of supply and demand, for two reasons. First, being the standard in which the unit of account is defined by the State, it is the only commodity which has a legal price, in addition to its market price. Second, the positive (or negative) difference between its market price and its legal price reflects the excess (or deficiency) of the quantity of money in respect to "the wants of commerce", hence the depreciation (or appreciation) of the currency. Consequently, as Ricardo testified before a committee of Parliament on 4 March 1819:

In a sound state of the currency the value of gold may vary, but its price cannot. (V: 392).

On the basis of Equation (3), a corollary of this statement reads as follows: "in a sound state of the currency", the value of money may vary, but money cannot depreciate or appreciate. The "most perfect state" of the currency would be achieved if the monetary system were designed in such a way as to prevent depreciation or appreciation, leaving changes in the value of the standard as the sole possible cause of variation in the value of money. In addition, this cause could be restricted to the real factor of change in the value of the standard (its difficulty of production) if the monetary system minimised the pressure on the world production of the commodity (gold) acting as monetary standard: the currency was all the more "secure" since it was "economical".

How to achieve this "sound" (i.e. "secure") state of the currency? Two conditions were necessary and sufficient: convertibility of banknotes into bullion (ingot principle) and regulation of their issue so as to maintain the market price of bullion equal to its legal price (management principle). The first principle prevented an internal drain of the gold reserves of the issuing bank (except in the case of a panic, which no monetary system could guard from), while the second principle prevented an external drain. These two principles ensured that the

currency conformed to the standard (to prevent monetary causes of instability in its value), although it was not issued through the monetisation of the standard but of circulating capital (to ensure the fulfilment of the needs of trade). They testified to the fact that money was not subject to physical constraints: in Ricardo's system, the monetary standard is a specific commodity, but money is no commodity at all. No natural laws explain changes in the value of money: they apply in Equation (3) to one of their determinants (changes in the value of the standard), but not to the other (changes in the price of the standard, which entirely depend on the institutions ruling the monetary system). The quantity of money is not restricted by the available quantity of gold (whether at the level of the world as a whole or in the reserves of the issuing bank) but is adjusted to "the wants of commerce". The soundness of money only depends on the soundness of the plan designed for it.

The standard and the paper currency were then two complementary but distinct features of Ricardo's ideal monetary system, and this distinction is in no way trivial in the history of monetary thought and in the history of money as well. On the one hand, the Ingot Plan led to a demonetisation of gold in domestic circulation: gold was the standard of money but no longer money. As Bonar (1923: 298) would put it one century later: "His [Ricardo's] complete Plan was to be the euthanasia of metal currency." On the other hand, Ricardo was the first to theorise the gold-exchange standard, by separating domestic circulation (of convertible notes) and foreign payments (in bullion), though preserving a link through gold (which acted as domestic monetary standard and international means of settlement).

Assessing a theory of money that focuses on the standard could as well be for Ricardo the kiss of death. Against the old accusation of abstract reasoning, modern commentators have mostly relied on Ricardo's knowledge of facts and practices to reevaluate him: for Davis (2005: 100) he was "an empirical economist", and for King (2013: 81) "he reveals himself to be above all a practical economist." This judgment is particularly applied to monetary matters: the only qualifications to an overall negative evaluation that may be found in modern literature are Ricardo's defence of an exclusive paper circulation and of an independent central bank regulating the issue by open-market operations. In contrast, emphasising Ricardo's *theory* of money and shifting it towards the understanding of a currency anchored to a standard seems to be a sure recipe to bury it in the gone-away times of the gold standard.

However, theorising on money did not mean for Ricardo neglecting adjustment processes and feasible plans. And there are two levels at which his theory of money may appeal to modern readers. First it has been acknowledged for long that the Ingot Plan was the forerunner of the Gold-Exchange Standard, hence of any monetary system where the domestic currency is anchored to a foreign currency – a still-debated issue today. Second, one lesson to be drawn from Ricardo is that the standard may "regulate the quantity, and by the quantity the value of the currency" thanks to private arbitrage between its market price and its legal price (fixed by the monetary authority). This adjustment process does not require necessarily a metallic standard but solely any marketable asset that is legally convertible into money and into which money is convertible at a fixed price. Such asset might as well be a public bond purchased and sold for money by a central bank at a fixed price – a situation not far from that of our modern economies.

Then there is about Ricardo a paradox. Although he no doubt was the greatest monetary author in the 19<sup>th</sup> century, his unorthodox ideas had to wait until the 20<sup>th</sup> century to be applied, and they may even remain fruitful in the 21<sup>st</sup>. Nevertheless most historians of economic thought have kept considering him as an obsolete orthodox. Reading again *Proposals* and the monetary writings that followed, shows that Ricardo was not only a giant on value, distribution, and accumulation, but on money too.

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