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ON TWO MYTHS ABOUT RICARDO'S THEORY OF MONEY

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1. Introduction

Judging by the Sraffa edition of his *Works and Correspondence* (Ricardo 1951-1973), more than one half of Ricardo's writings was devoted to money. However, many commentators in this domain only consider his early publications, what Sraffa called his "Bullion Essays" of 1809-1811. It is as if Ricardo's turn to the study of value and distribution from 1815 onwards changed nothing in his monetary views or at worst made them more confused. Such an attitude obviously downplays his *Proposals for an Economical and Secure Currency* (Ricardo 1816) and the monetary aspects of *On the Principles of Political Economy, and Taxation*, which cannot be reduced to the sole Chapter XXVII 'On Currency and Banks'.¹ It also neglects many interventions by Ricardo from 1819 until his death in 1823, whether in print, speeches, or correspondence.² This is not only to be regretted because the "Bullion Essays" were written in the exceptional circumstances of the suspension of convertibility while the later contributions were concerned with the conditions and effects of the return to a normal system of convertible notes. Focusing on the "Bullion Essays" also postulates that Ricardo's theory of money was disconnected from his theory of value and distribution. On the contrary, when in 1815 he shifted from monetary issues to political economy at large, Ricardo was conscious that the understanding of commodity price required coordinating these two theories.³ To know whether he succeeded in doing so one must assess the logical consistency between them. I will contend that only after 1815 did Ricardo develop a mature theory of money, both specific and coherent.

Failing to take account of the whole of Ricardo's writings on money has nourished some myths about his monetary theory. Indeed, myths have been common for long in the literature on his other theories, but nowhere are they more frequent than on money. Just to mention a few: most of Ricardo's economics is concerned with a non-monetary economy (barter); Ricardo held a commodity-theory of money (money is gold); he also held a strict Quantity Theory of Money (in which the general level of prices varies proportionally with the quantity of money); according to him paper money (banknotes) behaves like metallic money, with its quantity adjusting automatically thanks to convertibility and international gold flows;

¹ In what follows I will refer to the third edition of *Principles* (Ricardo 1821).

² For an exhaustive list of Ricardo's contributions on money from 1809 to 1823, see Deleplace (2017: 75-80).

³ "It appears to me that there are two causes which may cause a rise of prices, – one the depreciation of money, the other the difficulty of producing." (letter to Malthus of 27 June 1815, in Ricardo 1951-1973, vol. VI: 233) "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." (letter to James Mill of 30 December 1815, in *ibid.*: 348)

his precept for the issuing bank was to maintain a 100 per cent proportionality between issues and metallic reserves.

Some of these statements obviously contradict Ricardo's explicit and repeated contentions, for example about the desirability of paper money rather than metallic one and the relevance of a note-issuing rule that made international gold flows and proportionality between note issues and reserves unnecessary.⁴ Others contradict one another, such as the alleged commodity-theory of money (in which the value of gold-money determines its quantity in circulation) and the Quantity Theory of Money (in which the causality goes the other way round), or the alleged automaticity of monetary adjustment contradicted by the 100 per cent reserve requirement. Since to be effective myths require an appearance of consistency, a reading key is usually resorted to: the distinction between short run and long run. The story thus goes as follows. In the short run (the time of practice and observation), any increase in the quantity of bank issues above the equilibrium level may stimulate output and employment but also leads to a rise in the price level which triggers correcting effects – the export of gold and the corresponding shrinkage of bank reserve forcing a contraction of the note issue – and brings back the economy to the equilibrium output, employment and price level. In the long run (the time of economic laws and abstract theory), paper money only represents gold, the quantity of which is distributed among nations according to their needs. The value of money only varies with the relative price of gold (determined by its conditions of production), without any effect on output and employment. Money neutrality strictly rules and the economy behaves as if commodities exchanged against one another through the medium of one of them (gold). According to whether one is inclined to praise or to criticise Ricardo, this short run / long run reading key strengthens his importance in the history of monetary thought or is another proof of the “Ricardian vice” blamed by Schumpeter (1954: 472-3).

The purpose of the present paper is to challenge this story, that is, the two myths from which all others derive, by showing that Ricardo's monetary theory is neither a commodity-theory of money (Section 2) nor the Quantity Theory of Money (Section 3). The conclusion hints at an interpretation which puts the market price of the standard of money centre-stage (Section 4).

2. Ricardo's monetary theory is *not* a commodity-theory of money

2.1. A search for consistency

⁴ “A currency is in its most perfect state when it consists wholly of paper money, but of paper money of an equal value with the gold which it professes to represent.” (Ricardo 1821: 361) “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.” (Ricardo 1816: 67; reproduced in Ricardo 1821: 357-8)

The question of the consistency between the theory of value and the theory of money has not been much discussed in the literature on Ricardo (nor on other Classical authors), something that contrasts with its importance in the literature on modern General Equilibrium Theory, where the so-called problem of integration of money in the theory of value has been explored in depth. In fact this problem is not raised in the same way in the two frameworks. In modern General Equilibrium Theory, relative prices are supposed to be determined for a non-monetary economy and money is “integrated” at a later logical step, under the constraint that this integration should both be consistent with the general law of supply and demand *and* leave relative prices unaltered (neutrality). This method of reasoning was not Ricardo’s.⁵ When he exposed his theory of value and distribution, he did not refer to an economy where money was supposed to be *absent* but to one where its value was supposed to be *constant*.⁶ The proper object of the theory of money was then to inquire into the conditions under which this assumption could be considered as valid, so that money was “perfect”. Although in a different perspective from the modern general-equilibrium one, this also raises the question of the consistency in Ricardo between the theory of value and the theory of money.

However, the most common attitude is to evacuate this question in the following way: the theory of value is concerned with the determination of natural prices and applies in the long run, where money is simply confused with a particular commodity (gold), while the theory of money is concerned with the regulation of its quantity and applies to the short run, where this quantity affects the general price level but is disconnected from the variations in individual market prices (the so-called gravitation). This sharp distinction reinforces the belief that Ricardo’s understanding of money is actually split in two theories inconsistent with each other, one for the long run (a commodity-theory of money) and the other for the short run (the Quantity Theory of Money).

As far as I know, the first attempts at considering the consistency between Ricardo’s theory of natural prices and his theory of money may be found in two texts that are not available in the English language: Cartelier (1987) and Benetti (1990). They both concluded that this consistency was in Ricardo out of reach. To inquire into the presence of a commodity-theory of money in Ricardo implies asking this question again.

Two main issues must be discussed: that of the conditions of production of the commodity chosen arbitrarily as money and that of the variation in its quantity to meet the requirements of the circulation of all other commodities. In the line of the introduction to his edition of Ricardo’s *Works and Correspondence*, Sraffa has proposed a reconstruction of Ricardo’s theory of natural prices in which the quantities of the commodities used in their production are substituted for the labour values (Sraffa 1960). Since it is a well-known feature of Ricardo’s approach to money that a change in its quantity is supposed *not* to affect natural prices and distribution, a commodity-money may only be consistent with such a reconstruction if a change in its quantity does *not* affect the price system and distribution.

⁵ In a manuscript written in 1932, Piero Sraffa suggested that no economist used such a method until Hayek published *Prices and Production* in 1931; see *Sraffa Papers* D3/9/181.

⁶ See for example: “The reader is desired to bear in mind, that for the purpose of making the subject more clear, I consider money to be invariable in value, and therefore every variation of price to be referable to an alteration in the value of the commodity.” (Ricardo 1821: 110; see also *ibid*: 46-47, 87)

Let us consider an economy producing n basic commodities – that is, entering directly or indirectly into the production of all commodities – called $1, \dots, i, \dots, n$. In the natural state they are produced in quantities $q_1, \dots, q_i, \dots, q_n$ with $a_{ji} q_i$ the quantity of commodity j and l_i the quantity of direct labour required to produce q_i of commodity i . Prices $p_1, \dots, p_i, \dots, p_n$ and the wage rate w are measured in the n th commodity (*e.g.* gold), the price of which is thus fixed equal to 1. With r the uniform rate of profit, the system of natural prices is composed of n independent equations having the general form:

$$q_i p_i = (1 + r) \sum_{j=1}^n a_{ji} q_i p_j + l_i w \quad (1)$$

If, as in Sraffa (1960), the rate of profit r is given exogenously, the system of n equations determines the $n - 1$ real prices and the wage rate w , all in terms of gold. By contrast, if, as in Ricardo's *Principles*, the quantities of goods in which the wage rate is spent in the natural state are given exogenously, one must add a corresponding independent equation and the system now determines both distribution variables w and r . Since the requirements to apply the price system to a monetary economy are the same, the simplicity of exposition calls here for the adoption of Sraffa's assumption.⁷

If this economy is a monetary one and gold is supposed to be the money-commodity all prices are now money prices. An equation must be added, which accounts for the circulation of all quantities of commodities at their natural money prices (including the quantity of gold not used as money) by means of the quantity q_n^M of gold-money, for a given velocity of circulation V :

$$q_n^M = \frac{1}{V} \frac{1}{p_n} \left[\sum_{i=1}^{n-1} q_i p_i + (q_n - q_n^M) p_n \right] \quad (2)$$

The question now is whether the system described by the n equations of type (1) and equation (2) accepts a solution.

2.2. Gold-money and the surplus product

In a Sraffa system any change in the quantity of a basic commodity used in the production of another one affects the whole system of prices and the level of the endogenously-determined distribution variable. Hence the condition of consistency we are looking for cannot be found in a situation where the change in the quantity of the commodity-money would alter the quantities of this commodity that are used in the production of the

⁷ As is well known, Sraffa's argument for adopting this assumption is that the wage is not only "consisting of the necessary subsistence of the workers" but also "may include a share of the surplus product" (Sraffa 1960: 9), so that, contrary to the rate of profit which is a ratio, it "does not acquire a definite meaning until the prices of commodities are determined." (*ibid.*: 33) Sraffa also suggests – without developing this point – that the rate of profit may be determined "in particular by the level of the money rates of interest" (*ibid.*), a suggestion which has been taken up by some of his followers as a way to link a price system *à la* Sraffa and money. Since such a view is at odds with Ricardo's contention that in the natural state the rate of interest depends on the rate of profit and not the other way round, it will not be considered here.

basic commodities. Since it is a characteristic property of a Sraffa system that the utilisation of the surplus – composed of the quantities of the basic commodities above what is strictly required by the self-replacement of their quantities consumed productively – does *not* affect the price system and distribution, one concludes that the necessary and sufficient condition for a change in the quantity of the commodity-money *not* to alter the price system and distribution is that this quantity should be taken from the surplus.

Two alternative assumptions may satisfy this condition: either gold is a basic product the quantity of which used as money belongs to the surplus in gold produced, or gold is a non basic product. The first alternative implies that some sort of mechanism exists which separates the quantity of gold-money from the quantity of gold-metal entering in the production of the basic commodities. Nothing in (1) or (2) hints at such a mechanism: it might be said that coining gold into specie allows distinguishing between gold-money and gold-metal but this calls for the introduction of the legal price of gold when it is coined, something that modifies completely the formalisation of circulation (see Section 4 below). The reasonable candidate is thus the second alternative of gold as a non basic product – something in accordance with its usual description as a luxury good in the Classical meaning of the word.

The system of n equations of type (1) is now replaced by $n - 1$ equations of type (1a) and the equation (1b) of the natural price of gold (which does not affect the equations of type (1a)):

$$q_i p_i = (1 + r) \sum_{j=1}^{n-1} a_{ji} q_i p_j + l_i w \quad (1a)$$

$$q_n p_n = (1 + r) \sum_{j=1}^{n-1} a_{jn} q_n p_j + l_n w \quad (1b)$$

Equation (2) is left unchanged but one should notice that the quantity $q_n - q_n^M$ of gold not used as money is now exclusively used as final good or as means of production of non basic commodities. Supposing that the system formed by the equations of type (1a) admits a (real) solution, a monetary solution exists for a given quantity q_n of gold produced at a price p_n determined by (1b) if and only if:

$$q_n^M \leq q_n \quad (3)$$

It can immediately be seen that there is no reason why this condition should be fulfilled in the generality of cases, that is, for any given quantity q_n of gold produced. For example, given the same quantities produced of all commodities, there may exist a monetary solution for a certain level of the exogenous distribution variable and not for another, because the price system and hence q_n^M will be different.

If the quantity of gold produced is not enough to answer the requirements of its use as money, can it increase until it does? In other words, can the quantity of money increase

without affecting the price system and distribution? Since gold is a non basic commodity, its quantity is produced by the use of the surplus quantities of the basic commodities. An increase in the quantity of money requires more of these surplus quantities to be diverted from the production of the quantities of the other commodities belonging to the surplus (whether basic or non basic). The limit to an increase in the quantity of money is reached when all surplus quantities of the basic commodities are used to produce gold-money, that is, when the surplus of the economy is entirely composed of gold, which is exclusively used as money. The monetary equation (2) then simplifies in:

$$q_n^M = \frac{1}{V} \frac{1}{p_n} \sum_{i=1}^{n-1} q_i p_i \quad (2a)$$

Beyond the point described by (2a), for which $q_n^M = q_n$, no increase in the quantity of gold-money is possible without jeopardizing the self-replacement of the production system. The solution to the real system of production is no longer consistent with the requirements of circulation: there is no monetary solution to the system of natural prices.

One might think of three ways to overcome this limit. The first is to take into account the physical durability of gold and to rely on its existing stock, not only on its newly-produced flow.⁸ Equation (2a) may be reformulated on this basis, but, even if the constraint is displaced, the condition of compatibility between the system of production and the requirements of circulation ceases to be satisfied when the whole stock of gold is used as money. The second way is a reduction in the production levels of the basic commodities, so as to free some quantities of them to increase the production of gold. To such a reallocation it may be objected that this non-neutrality of money in respect to economic activity only leaves the price system and distribution unaltered under the assumption of constant returns, something at odds with Sraffa's emphatic denial of such assumption (Sraffa 1960: vi). The third way to loosen the constraint imposed by the availability of gold is to complement the commodity-money with paper money; after all, this device is often presented in the history of money as a way to economize on gold-money by increasing its velocity of circulation. However, if the paper is issued with a 100 per cent backing in gold – so that it is only a gold certificate – the limit is not displaced. And if the issue is not 100 per cent backed by gold, one needs an issuing principle guaranteeing that the paper adequately “represents” gold. Obviously this direction leads beyond the domain of a commodity-theory of money.

One may conclude that the quantity produced of the commodity-money cannot be made consistent with the requirements of its circulation.⁹ Formally, even if the conditions of the existence of a real solution to the system built by the $n - 1$ equations of type (1a) and

⁸ On the basis of indications given by Ricardo himself in *Principles*, some commentators give a central role to this aspect; see for example in the recent literature Takenaga (2013).

⁹ This conclusion was already present in Cartelier (1987) and Benetti (1990). In a recent joint paper (Benetti and Cartelier 2020), these authors take up again the problem of the integration of a Classical theory of money in a Sraffa theory of prices. This time they introduce the legal price of the monetary standard (gold) and reach the same conclusion of inconsistency. However, their formalisation assumes that the market price of gold is *always* equal to the legal price, something which they acknowledge as being unfaithful to Ricardo. We will see below that the possible divergence between these two prices of gold is indeed central to Ricardo's theory of money. For a discussion of this point, see Deleplace (2021) followed by their reply and my rejoinder.

equation (1b) are fulfilled, they do not guarantee the existence of a monetary solution compatible with (2). This negative result, however, should not be interpreted as a critique of Ricardo's theory of money but as an indication that Ricardo did *not* have a commodity-theory of money. Notwithstanding the importance of the issuing principle of paper money in Ricardo's monetary writings, a proof of this absence may be given *a contrario*. If the above system had an adequate monetary solution, one should apply to gold the adjustment mechanism described by Ricardo for *any* commodity produced in competitive conditions: the regulation of its market price by its natural price. This would contradict a central idea in Ricardo's theory of money, namely that the market price of gold as commodity is regulated, not by its (variable) natural price but by its (constant) legal price as money. This was why, as he proclaimed in evidence before the Commons' Committee on Resumption of Cash Payments on 4 March 1819, "In a sound state of the currency the value of gold may change, but its price cannot." (Ricardo 1951-1973, vol. V: 392) As already noted, the above system leaves no room for the legal price of gold as money and this testifies to the fact that Ricardo's monetary theory was not a commodity-theory of money.

However, this negative conclusion does not rule out *any* causal relationship between the value of gold and the value of money. Rejecting a commodity-theory of money means denying that gold might be *money*. However, another role should be considered for gold: that of *standard of money*. The relationship between money and its standard implies that in Ricardo the value of money is not *exclusively* determined by the value of gold but is *in some way* dependent on it. And to understand this dependency, we will have to analyse the specific regulation of the market price of gold as commodity by the legal price of gold when coined into money (see Section 4 below).

3. Ricardo's monetary theory is *not* the Quantity Theory of Money

3.1. A dead end for monetary theory: Say's Law

It is often postulated in the literature that Ricardo's adherence to Say's Law and to the Quantity Theory of Money is one and the same thing.¹⁰ Strictly speaking, Say's Law denies that the level of aggregate output might be lowered because of a deficient aggregate demand. Since in modern times the rejection of Say's Law has been associated with a Keynesian point of view, in which money usually plays an important role in the deficiency of aggregate demand, one has become accustomed to equating the adherence to Say's Law with the neutrality of money in respect to the level of aggregate output. Ricardo has been a victim of

¹⁰ See for example King (2013: 120): "There is a very clear link between Ricardo's position on Say's Law and his approach to monetary theory, and here again there is strong support for the conventional interpretation," which King summarises as follows: "[Say's Law] induced Ricardo to deny the existence of 'general gluts', and with them any possibility that output might be constrained by deficient effective demand. This also led Ricardo to endorse a strict version of the Quantity Theory of Money and thereby also to accept the neutrality of money." (*ibid*: 112-113) Speaking of the "group [of Bullionists] led by Ricardo", Green (1998: 137) observes that it "maintained that exogenous changes in the money supply would be reflected in corresponding variations in the price level, which followed from their assumption of a fixed level of output and monetary velocity. In other words, their short-run quantity 'theory' of money was no theory at all but simply a logical outcome of assuming Say's Law."

such association, all the more so since the crude Quantity Theory of Money often attributed to him – in which the level of aggregate output is supposed to be given whatever the quantity of money – provides an illustration of both Say’s Law and neutrality. It will here be contended that relying on Say’s Law – an already intricate issue in Ricardo¹¹ – is of no help to prove the attribution to him of the Quantity Theory of Money.

In order to clarify this issue, one needs to disentangle the possible effects attributed to a change in the quantity of money on aggregate output in two opposite situations: when a sudden shortage of money triggers a depression and when a monetary expansion fuels inflation.¹² It is striking that the commentators who focus on the latter situation usually concentrate on the “Bullion Essays” and disregard the monetary chapters of *Principles*,¹³ which by contrast are privileged by those who focus on the former one.¹⁴ This is not only a matter of historical gap, Ricardo being in 1809-1811 more concerned with inflation and in 1819-1823 with deflation. Theory is involved.

Those who focus on inflation wish to show that the causal relationship between an increase in the quantity of money and the general rise in prices is not “mechanical” (as they say) but obtained through an increase in the demand for commodities allowed by the availability of more money but constrained by their given supply. The purpose is to endow Ricardo’s alleged Quantity Theory of Money with more flexibility (see below) and to relax Say’s Law by introducing a cause of change in aggregate demand independent of production – so as to substitute “Say’s Equality” for “Say’s Identity”. However, these two amendments have nothing to do with each other: the assumed effect of a change in the quantity of money on aggregate demand is to *increase* it while Say’s Law is concerned with its *deficiency*.

Those who focus on depression should admit that for Ricardo a money shortage triggers a depression because of the effects on production, *not* on demand. To introduce an effect of money on aggregate demand that could be responsible for a depression, one would have to consider a store-of-value function of money which is at odds with the only two roles of money in Ricardo as unit of account and circulating medium. So doing, the depression would be caused by something happening on the side of the demand for money (as in the Keynesian liquidity-preference theory), *not* on the side of the money supply. This is going far

¹¹ On these intricacies see King (2013), Meacci (2015).

¹² See Samuel Hollander’s conclusion to the chapter of his book *The Economics of David Ricardo* entitled “The quantity theory and the law of markets”: “My analysis of the quantity theory earlier in this chapter has demonstrated a conscious allowance on Ricardo’s part for depressions generated by sudden contraction of the money supply, and a conscious treatment of the effects on prices generated by money supply increases in terms of an initial pressure on commodity demand in commodity markets.” (Hollander 1979: 512)

¹³ See for example Patinkin (1956: 376): “As against the purely mechanical exposition of the quantity theory in his *Principles*, we have the other passages already cited [from the “Bullion Essays”] that show that he fully understood the effect of an increase in the quantity of money in increasing demand.” Gootzeit (1975: 9) stresses that in *Principles* Ricardo “did not think it necessary to include a carefully coordinated analysis of his monetary system, which was more descriptive than theoretical.” However, “Ricardo’s monetary writings [the “Bullion Essays”] exhibited a ‘sophisticated’ version of Say’s Law because his analysis of the market clearing relationship in a growing inflationary economy concentrated on short run maladjustments generated from the money to the output market.” (*ibid*: 19)

¹⁴ Although he maintains that on monetary matters Ricardo was only “an empirical economist,” Davis (2005: 185) refers to his positions during the resumption debate of 1819-1821 to show that “Ricardo’s preference for stable prices above all other monetary objectives does not imply that he was blind to the effects of money on output and employment. His ingot plan, his allowance for devaluation if the currency was highly depreciated, and his criticism of the Bank’s return to gold all demonstrate that he recognised the nonneutrality of money.”

away from Ricardo, where a function of demand for money based on the store-of-value behaviour of its users is clearly absent.

To sum up, whatever the chosen interpretation of Say's Law in Ricardo's economics, it can in no way sustain the attribution to him of the Quantity Theory of Money. Besides, there are other more positive reasons to deny such an attribution.

3.2. The direct or indirect link between the quantity of money and commodity prices

The attribution of the Quantity Theory of Money to Ricardo takes two forms in the literature. One is to blame a "rigid" (Schumpeter 1954: 724) or "hard-line" (Blaug 1995: 31) version of it, in which all nominal prices vary with the quantity of money in the same direction and proportion as a logical consequence of the combined assumptions of neutrality, constancy of the velocity of circulation, and exogeneity of the supply of money. The second form credits Ricardo with an adjustment process in which an increase in the quantity of money raises the demand for consumption goods thanks to a primitive real-balance effect¹⁵ and the demand for investment goods through a decline in the rate of interest charged by banks,¹⁶ so that a temporary effect on output may occur, although the economy will eventually return to the initial real situation at a higher level of nominal prices. In both cases, the assumption is that a change in the quantity of money directly affects all prices. Since money may purchase any commodity, all commodities play the same role as far as the relationship between the quantity of money and prices is concerned.

However, it is well known that Ricardo repeatedly insisted on the fact that an excess quantity of money was reflected in the rise of a *specific* price, namely the market price of bullion. This was already illustrated by the title of his first published pamphlet: *The High Price of Bullion, A Proof of the Depreciation of Bank Notes* (Ricardo 1810-1811). Later, in his *Proposals for an Economical and Secure Currency*, he introduced a distinction between a situation in which the value of the currency "conforms" to the value of the standard and a situation in which it does not; in the latter money was either "depreciated" or "appreciated". The market price of bullion provided a test of the ruling situation:

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. (Ricardo 1816: 62-63)¹⁷

One could be tempted to recognise here a distinction between equilibrium and disequilibrium. But in the Quantity Theory of Money, the causality goes from the quantity of money to its value in both cases. There is nothing of the kind in Ricardo: in the (so to speak) conformable situation, the value of money is determined by the value of the standard and the quantity of money adjusts accordingly: the causality between the value and the quantity of money is the reverse of what, according to the Quantity Theory of Money, it is in equilibrium. Only out of this conformable situation does an increase in the quantity of money cause a fall

¹⁵ Patinkin was the first to ascribe such effect to "the classical quantity-theory tradition of Cantillon, Thornton, Ricardo, and [John Stuart] Mill," although it was not "in the fullest sense of the term." (Patinkin 1956: 98)

¹⁶ See for example Hollander (1979: 479-83), Panico (1988: 17), Davis (2005: 9).

¹⁷ When this pamphlet was written, there were still legally two standards of money in England, gold and silver. Gold was made the sole legal standard by the Proclamations of February 1817.

in its value, reflected in a market price of bullion higher than the legal mint price, what Ricardo called a depreciation of the currency.

It is common in the literature to assert that the market price of gold was only in Ricardo a proxy of the general price index, at a time when the measure and even the notion of the latter were lacking (see for example Hollander 1979: 416; Laidler 1987: 291). As will be hinted at in Section 4 below, it may be more interesting to take the relationship between the quantity of money and the market price of gold seriously and to give it a central role in the commodity-price changes that have a monetary origin.

This is not a mere amendment to Ricardo's alleged Quantity Theory of Money, which would substitute another link between the quantity of money and nominal prices for the usual one. Focusing on the market price of gold paves the way to a completely different theory of money as can be inferred from the reversal of the relationship between the value of money and nominal prices. In the adjustment process mentioned above an increase in the quantity of money raises the nominal price of a commodity because it raises its demand; here money plays its role as medium of exchange and the adjustment directly concerns every commodity it may purchase. The fall in the value of money is thus only a consequence of the rise in the nominal prices of all commodities, under the heroic assumption that this rise is equiproportional (to comply with neutrality as regards relative prices).¹⁸ By contrast, when the price of gold is put centre-stage, an increase in the quantity of money first raises the market price of bullion and then indirectly the nominal prices of all other commodities, whose rise is a consequence of the fall in the value of money, not the other way round. Money is here considered in its unit-of-account function, and this explains why all prices rise at the same rate as the price of gold, because the value of money has fallen in terms of its standard. The market price of gold bullion being quoted twice a week in London and published in John Castaing's *The Course of the Exchange*, all sellers of commodities could know exactly how much it changed when it did and pass this change on to their money prices in the same proportion, leaving relative prices unaltered.¹⁹ This bullion-price channel of transmission of a

¹⁸ In the Classical tradition since Adam Smith, the market price of a commodity is determined by dividing the "effectual demand" of this commodity – the purchasing power in money addressed to the market of the commodity at its natural price – by the quantity of it brought to market. An increase in the quantity of money raises the demand for the commodity above its initial level while its available quantity does not change, so that the market price rises. However, this rise may only maintain *relative* prices constant (neutrality) if the demand increases at the same rate for all commodities, that is, if the supplement of purchasing power in money is allocated to all markets in the initial proportions. This would be a heroic assumption.

¹⁹ The competition of capitals – the driving force behind the uniformity of the rate of profit – forced them to do so, whether the market price of gold bullion rose above or fell below the mint price. Ricardo maintained that the lag between a change in the market price of gold bullion and the same change in the money prices of all other commodities was not great, whether upwards or downwards. Being examined by the House of Lords Committee on Resumption on 26 March 1819, he answered to a question on the "length of time [after which] the prices of commodities conform to the fluctuations in the market price of gold": "They do not immediately conform, but I do not think it very long before they do" and "I think the prices of commodities fall from a reduction of the paper circulation quite as soon as gold falls." (Ricardo 1951-1973, vol. V: 452) This channel of transmission between the market price of the standard and all commodity prices operated even when the standard had ceased to regulate the quantity of money (that is, when the convertibility of the Bank of England note had been suspended) because the pound in notes was now depreciated in comparison with the pound in coin. When in 1811 the market price of an ounce of gold bullion paid in notes was quoted £4.12, as compared with the mint price of gold in coin of £3.17.10½, Ricardo wrote: "Now, as 4l.12s. of paper currency is of no more value than an ounce of gold bullion, prices are actually raised to the purchaser 18 per cent., in consequence of his purchase being made with

monetary shock to the value of money hence to commodity prices not only contrasts other transmission channels sometimes credited to Ricardo in modern literature (based on the real-balance effect or the rate of interest); it is thus also at odds with the attribution to Ricardo of the Quantity Theory of Money.

We saw in Section 2 above that rejecting the attribution to Ricardo of a commodity-theory of money did not rule out *any* causal relationship between the value of gold and the value of money. Similarly, rejecting the attribution to Ricardo of the Quantity Theory of Money does not rule out *any* causal relationship between the quantity of money and its value. And here also the central notion to be considered is the market price of gold bullion. It is now time to weave these two threads into an explicit relationship between money and the standard of money (gold), so as to account for Ricardo's statement: "The only use of a standard is to regulate the quantity, and by the quantity the value of a currency." (Ricardo 1816: 59)

4. The relationship between money and its standard

The first to have drawn attention to the market for gold as standard of money in Ricardo are Maria Cristina Marcuzzo and Annalisa Rosselli in their 1991 pioneering book *Ricardo and the Gold Standard*. Other scholars have since contributed to a reappraisal of Ricardo's theory of money along this line, so that, even if they still are a minority, one may speak of an "unorthodox view" on this theory (see Deleplace 2020). According to this view, Ricardo's central proposition is that, in a monetary system where the currency is convertible both ways into the (gold) standard, the market price of gold bullion is stabilised thanks to an appropriate regulation of the quantity of money. This stability brings the monetary system as close as possible to perfection, even if it does not guarantee the constancy of the value of money, which may still vary with the conditions of production of the standard. The golden rule of the issuing of money was thus for Ricardo to ensure that the market price of the standard was brought in line with its legal price, so that the value of money was always kept equal to the value of the standard. In Deleplace (2017) I have attempted at bringing together Ricardo's many statements on money so as to provide a firm theoretical basis to that central proposition.

To sum up, the fecundity of Ricardo's monetary views for the day-to-day working of an economy was made possible because, contrary to long-lasting myths, his theory of money was both specific – it was neither a commodity- nor a quantity-theory of money – and coherent – it was consistent with Ricardo's theory of value and distribution.

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