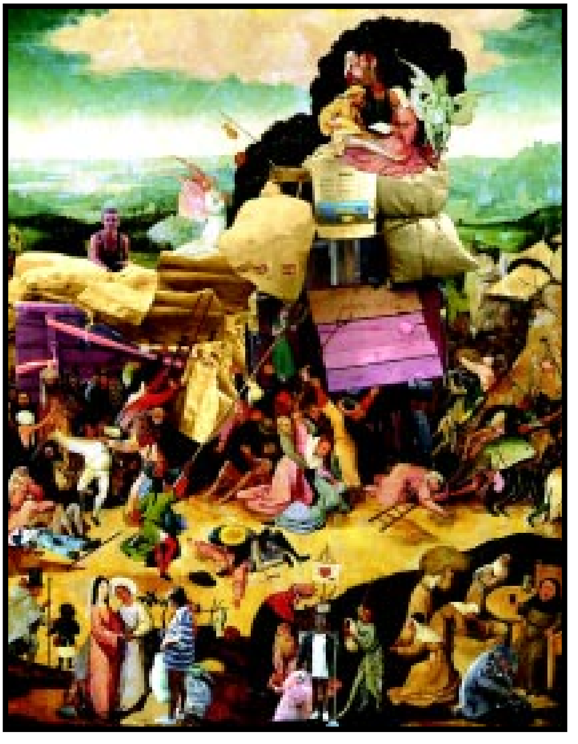

Hieronymus Bosch –El Bosco–. El carro del heno, 1500

Jerónimo, ¿vos cómo lo ves?, 2002

Theory of Money of David Ricardo: Quantity Theory and Theory of Value

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Resumen: *En lo que es necesario enfatizar, al caracterizar la teoría cuantitativa de David Ricardo, es en que ésta es una teoría de determinación del valor del dinero en una situación particular en la cual se impide que el dinero, sin importar cual sea su forma, entre y salga libremente de la circulación. Para Ricardo, la regulación del valor del dinero por su cantidad es un caso particular en el cual el ajuste del precio de mercado al precio natural requiere un largo periodo de tiempo. La determinación cuantitativa es completamente inadmisible, pero solo cuando el período de observación es más corto que el de ajuste. En todo caso, la determinación del valor del dinero rara vez es vinculada a su teoría del valor de las mercancías. Contrario a la interpretación aceptada comúnmente, Ricardo no aplicó a la determinación del valor del dinero una teoría del valor distinta de aquélla aplicada a las mercancías en general.*

Palabras clave: *pensamiento económico, escuela clásica, teorías del valor, moneda. Clasificación JEL: B1, B12, B · 31.*

Abstract: *What is to be underlined in characterizing the Ricardo's quantity theory, is that it is a theory of determination of the value of money in a particular situation where money, whatever the form may be, shall be prevented from freely entering or leaving circulation. For Ricardo, the regulation of the value of money by its quantity is a particular case in which the adjustment of the market price to the natural price requires a long period of time. The quantitativist determination is not valid unconditionally, but only when the time of observation is shorter than that of this adjustment. The determination of the value of money is, in any case, barely linked to his theory of the value of commodities. Contrary to the commonly accepted interpretation, Ricardo did not apply to the determination of the value of money any theory of value different from that applied to commodities in general.*

Key words: *value of money, quantitativist, quantity theory, circulation, commodities. JEL: B1, B12, B-31.*

Résumé: *Pour rémarquer la théorie quantitative de David Ricardo, il faut souligner qu'il s'agit d'une théorie de détermination de la valeur de l'argent dans une situation particulière où l'on ne permettra pas que l'argent, sous n'emporte quelle forme, puisse entrer et sortir librement de la circulation. Selón Ricardo, la régulation de la valeur de l'argent par sa quantité est un cas particulier dans lequel l'ajustement du prix du marché au prix normal exige une période de temps considérable. La détermination quantitative est inadmissible sans réserve, mais seulement quand la période de l'observation est plus courte que celle de cet ajustement. De toute façon la détermination de la valeur de l'argent est a peine liée à sa théorie de la valeur des marchandises. Contrairement à l'interprétation généralement admise, Ricardo n'a pas appliqué à la détermination de la valeur de l'argent, une théorie différente de celle appliquée aux produits en général.*

Mots clés: *pensée économique, école classique, théories de la valeur, monnaie. JEL: B1, B12, B-31.*

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I. Foreword

The period during which Ricardo deployed his theoretical activities as economist covers about the last half of that known as "bank restriction period" (1797-1821) during which the Bank of England had suspended the convertibility of its notes. During his whole life as economist, he was interested in the theoretical and practical problems relating to this "restriction" and did not cease expressing his views in various forms. However, this side of his life as theorist seems to be rather neglected in the Japanese literature since about forty years, in spite of many studies on Ricardo which were made there.

Engaged in business activities of the Stock Exchange, he was interested in the "bullion controversy" and began his activities as economist with the publication of two newspaper articles and a booklet (*Price of Gold*, 1809 and *High Price of Bullion*, 1810) intervening in this controversy from the point of view of the bullionism. But a little later with the ebb of this controversy, his interest turned to the controversy on the Corn Laws and he published the *Essay on the Profits* (1815) in order to take part in the political campaigns against the laws from outside of the parliament. He thus approached to the subjects of his main work *On the Principles of Political*

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Economy and Taxation (hereafter denoted *Principles* for short) such as nature of each category of distribution (wages, profit, rent), their reciprocal relation and its evolution in the process of capital accumulation. And during the writing of this main work his theory of value was formed, which served as the basis for his theory of distribution. The framework of Ricardo's economic system was constituted in this way. Such seems to be the commonly adopted viewpoint on "Ricardo's economics" in the recent literature.

Such a point of view is in agreement with the generally accepted idea on Ricardo, according to which the monetary problems belonged to his concerns only during the beginning of his activities as economist and one of the fundamental characteristics of his economic system rather consists in aiming at the real economy excluding the monetary factors. But, since the drafting of the booklet quoted above until the last moments of his life, each time the debates were revived on the monetary questions (violent fluctuations of the prices including that of the ingot and the rates of exchange, debates in the parliament on the legislative measures for the resumption of convertibility by the Bank of England after the Napoleonic War), Ricardo took part in these debates expressing his opinions in various forms (booklets, letters, and after 1819 parliamentary evidence and speech as a deputy) and made specific proposals on a new monetary banking system. Thus he continued to reflect and write on the monetary questions in parallel with his work about the principles of political economy and with the debates on them. Consulting *Works* edited by Sraffa, this is evident. Made in response to concrete situations of the time, many of these statements of Ricardo naturally have a character of temporary remarks. Moreover, in *Principles* the money is not included among the subjects covered in the part known as theoretical (first 7 chapters, theory of distribution on the basis of theory of value, theory of foreign trade being extension of the theory of profit), and the money as topic is relegated to the chapter 27 "*On Currency and Banks*", one of the chapters known as of controversy located in *Principles* at a rather marginal and additional place. From these facts, it seems to have become a commonly accepted viewpoint that the monetary questions occupy only a marginal place in the economic theory of Ricardo. At least in Japan, in the world of researchers of Ricardo since 1960s, except a very small number of works made by specialists in the monetary and financial theory, the texts of Ricardo on the monetary questions, though non-negligible part of his work, were hardly examined.[1]

1 The studies on Ricardo much progressed and produced many excellent results during these last forty years (1963-2003) thanks to the availability of the sources made possible by the publication

Within the framework of the abstract theory of value of Ricardo, the money intervenes only as the measure of value of other commodities. And even if it takes

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of *Works* by Sraffa. But the majority of these studies mainly aim at examining the problems concerning the theory of value of Ricardo (debates on the laws on corn, *Principles* in its 3 editions, last manuscripts on the absolute value and exchange value). By contrast, after approximately the year 1960, the enormous monetary writings of Ricardo were largely neglected at least in the world of the studies of Ricardo from the point of view of the history of economic thought. This is the situation in Japan. On the other hand, in countries of Europe and America, a considerable number of studies on the monetary theory of Ricardo (made in connection with its relationship to the theory of value and distribution) appeared one after the other, particularly in recent years (although now that seems to be one moment of respite). Here are some examples:

C.F.Peake, "Henry Thornton and the Development of Ricardo's Economic Thought", *History of Political Economy*, Vol.10(2), 1978.

J.L.Carr and J.Ahiakpor, "Ricardo on the Non-neutrality of Money in a World with Taxes", *History of Political Economy*, Vol.14(2), 1982.

J.Ahiakpor, "Ricardo On Money: the Operational Significance of the Non-neutrality of Money in the Short Time", *History of Political Economy*, Vol.17(1), 1985.

D.Glasner, "A Reinterpretation of Classical Monetary Theory", *Southern Economic Newspaper*, 52, 1985.

M.Perleman, "The Bullionist Controversy Revisited", *Newspaper of Political Economy*, 94(4), 1986.

A. Aron, "Banking Between the Invisible and Visible Hands: Reinterpretation of Ricardo's Place Within the Classical School", *Oxford Economic Papers*, 39, 1987.

T.M.Humphrey, "Ricardo Versus Thornton on the Appropriate Monetary Response to Supply Shocks", *Economic Review*, *Federal Reserve Bank of Richmond*, 11/12, 1990.

Maria Cristina Marcuzzo and Annalisa Rosselli, *Ricardo and the Gold Standard, the International Foundations of the Monetary Order*, St. Martin's Press, New York, 1990.

Maria Cristina Marcuzzo and Annalisa Rosselli, "Ricardo's Theory of Money Matters", *Economic Review*, 45(5), 1994.

Maria Cristina Marcuzzo and Annalisa Rosselli, "The Standard Commodity and the Standard of Money", *Cahiers d'Économie Politique*, 23, 1994.

S.Diatkine, "A propos de la position de D. Ricardo concernant la liberté d'émission de la monnaie", *Cahiers d'Économie Politique*, 23, 1994.

G.Deleplace, "Les différents usages de l'étalon monétaire", *Cahiers d'Économie Politique*, 23, 1994.

G.Deleplace, "Does Circulation Need a Money Standard?" in *Money in Motion The post Keynesian and Circulation Approach*, edited by Ghislain Deleplace and Edward J Nell, Macmillan, 1996.

No.23 of *Cahiers d'Économie Politique* is a collection of articles concerning the work of Maria Cristina Marcuzzo and Annalisa Rosselli and one of the most remarkable results of research published recently on the monetary theory of Ricardo.

The following may be one of the very few works of the same period made in Japan: Shigeyoshi Senga, "Role of the Invariable Measure of the Value (Fuhen No Kachishakudoron No Kadai)", in ch.6, ditto, S*tudies on the Political Economy of Ricardo* (*Ricardo* S*eijikeizaigaku Kenkyu*, Sanreishobô, 1989).

the form of metallic money or banknote (convertible) and is counted in term of a monetary unit (sterling for example) instead of weight units (ounce etc), the link with the metal substance (equivalence between metallic moneys or bank notes of a certain denomination and gold or silver of a certain weight) is presupposed as something obvious. Like any other commodity in general, money as a certain quantity of precious metals is exchanged directly with the other commodities, and it is because of the supposed stability of the value of precious metals that money functions as the appropriate measure of value.[2] Moreover, apart from the role of money as measure of value expressing in common unit the amounts of values of the commodities and confirming their variations, Ricardo considers that the commodity exchange can function well as barter where each commodities are exchanged directly without intervention of money (the precious metal as money commodity is only one commodity like any other). Such is the money Ricardo conceives on the level of the theory of value. Thus the money is here a certain quantity of gold which is also one of the commodities in general.

The classical economics including Ricardo founds the theory of distribution on the labor (cost) theory of value, while at the same time it adopts the quantity theory of value as for the money. According to his theory of value the values of the commodities including that of money commodities are determined, independently of circulation, in the preceding process of the production (by labor or cost), while the quantitative theory determines the value of money (its purchasing power) by the relation between the quantity of money and the volume of transactions (in inverse proportion to the former and in proportion to the latter). According to the quantitative theory the value of money is determined in circulation and thus the money does not have a so-called "intrinsic value", but according to his theory of value of commodities in general the "intrinsic value" of money must be given independently of its quantity. The classical economics thus seems to explain the value of money with two theories contradictory one to the other. The quantitative theory regards the money as excluded from the real world of the commodities. The value of money as non-commodity will then be determined by an other logic than

2 "If there were any other commodity which was invariable in its value, we should be able to ascertain, by comparing the value of fish and game with this commodity, how much of the variation was to be attributed to a cause which affected the value of fish, and how much to a cause which affected the value of game. Suppose money to be that commodity". (David Ricardo, "On the Principles of Political Economy and Taxation", *Works and Correspondence of David Ricardo*, edited by Piero Sraffa, Volume I, p.27-8, indicated hereafter as I, 27-8) "The money in which they [commodities] are valued is by the supposition of an invariable value, always requiring the same quantity of labour to produce it" (I, 55, 1st edition).

that which is applied to the determination of the values of commodities (i.e. by the quantitative proportion between the mass of commodities and that of money). But on the other hand, Ricardo does not cease repeating during all his activities as economist that the values of the precious metals as money material are not determined in a different way from those of the other commodities in general.

To investigate the relation of these two determinations apparently contradictory one to the other of the value of money in Ricardo's theory (are they really contradictory?, are there really two determinations?), it will be necessary to examine his writings as well on the level of intervention in concrete historical situations of his time as on the level of the abstract theory.

II. Theory of Money of *The High Price of Bullion*

Under the conditions of the suspension of convertibility of the bank notes by the Bank of England, the market price of the ingot, having stabilized after a surge observed at the beginning of the 19th century, again started to rise. This change of situations again revived the debates on the monetary questions. Ricardo made his debut as economist polemist with his interventions in these debates on current problems of his time. In his booklet The *High Price of Bullion* (1810),[3] he systematically develops his points of view presented in the previous year in his first article of newspaper *Price of gold*, by taking account of his debates with Trower as well as his intensive studies of the literature on the monetary questions,[4] and at the same time he puts forward concrete measures against the depreciation of money in the direction of resuming convertibility as ultimate objective.

To analyze the state of banknotes of England since before the suspension of their convertibility in gold until his time and to show the fact of depreciation of these bank notes in order to put forward concrete measures, Ricardo constructs in this

3 The full title is *High Price of Bullion, A Proof of the Depreciation of Bank Notes* (hereafter denoted as *High Price* for short). This title itself expresses his position as bullionist. The writings of Ricardo (even *Principles*, his main work of the political economy) were intended by the author to be partisan interventions in debates on current situations of his time. In the foreword to this booklet Ricardo denies the originality of his opinions in saying: "He [the author] is aware that he can add but little to the arguments which have been so ably urged by Lord King, and which ought long before this to have carried conviction to every mind."(III, 51-2). This is not simply of the modesty of the author. But given the fact that this booklet was republished 3 times in the space of a little more than one year, and that because of this booklet Ricardo was going to be considered as leader of the bullionism in the later debates, even if his words quoted above are quite correct as for each element of his arguments, their overall composition was sufficiently original to exert a great influence.

4 Cf, Sraffa, *Note on the Bullion Essays*, III, 4-5, 7.

booklet a systematically organized theory of money. He does not speak immediately about the history and the current state of the money. But just as Hume had done in his *Political Discourses* (V *Of the Balance of Trade*), he starts by analyzing the international distribution of precious metals under the conditions of pure metallic circulation, and then develops the theory of mixed circulation of metals and paper money by supposing the creation of an issuing bank instead of discovery of gold mines as supplying source of precious metals. Both states of circulation do not coincide directly with the current situation of the money of England about which the monetary debates of his time were fought. The phenomena relating to this current situation where only the inconvertible bank notes circulated make their appearance only in the last stage of the arguments of Ricardo. By such a procedure of arguments, he intends to criticize the policies of the Bank of England for the period of suspension of convertibility and to put forward measures allowing the value of the money to coincide with the standard.

In this section, we will see the broad outline of the theory of money of Ricardo contained in this booklet to emphasize the original character of his quantity theory, while avoiding as far as possible to go into the details of the history of banknotes and the concrete proposal of political measures.

A. Circulation of Metallic Money

In the first paragraph Ricardo says about the "supposition" made by "the most approved writers on political economy" as follows: "The precious metals employed for circulating the commodities of the world, previously to the establishment of banks, [...] have been divided into certain proportions among the different civilized nations of the earth, according to the state of their commerce and wealth, and therefore according to the number and frequency of the payments which they had to perform. While so divided they preserved every where the same value, and as each country had an equal necessity for the quantity actually in uses, there could be no temptation offered to either for their importation or exportation" (III, 52).[5]

This "supposition" is also that of Ricardo himself. Since the precious metals as money also can circulate as money in all the "civilized nations", they can carry out

5 It is probably David Hume who most clearly had advanced the theory of international distribution of metallic money that Ricardo adopted just at the beginning of his booklet. Just like Hume, Ricardo starts by supposing the state prior to "establishment of banks" i.e. to the existence of paper money for introducing afterward the credit money (Cf., David Hume, *Political Discourses*, Edinburgh, 1752, pp.82-91). However, it is Smith and Thornton whom Ricardo quotes on several occasions in this booklet by way of "most approved writers on political economy", whereas the name of Hume appears only once simply as an author who had supported the same point of view as Smith on the determination of the interest rate.

free international movements with minor institutional barriers. The quantitative theory on the metallic money is thus conceived always in the international context, and so within the framework of this theory one cannot analyze the interior circulation of a country without taking at the same time account of its relationships to the international circulation. It is the relationship between the mass of the metallic money circulating in the whole world[6] and the mass of the commodities circulating in the whole world which determines the "value of precious metals". The metallic money is distributed among the "civilized nations" proportionally to the relative weight that each one of them has in the world according to the "state of their trade and wealth" and the "number and frequency of the payments". And the precious metals then have everywhere the "same value" such as determined above and cease their international movement (balance of foreign trade is zero for all the countries). Thus is determined by the international context the share allotted to each "civilized nations" of the mass of the metallic money of the whole world. And if this relative weight of each country and the money supply remains unchanged, is given the quantity of the money which equalizes the value of money circulating in each country. Within the framework of such a quantity theory of money, there exists for each country something like the "quantity of money necessary for the circulation". The quantity of money circulating in each country put in the international context becomes then of a given size which excludes a discretionary determination in each country, and the value of money too is adjusted to the above "given same value" by the international movement of precious metals.

How are determined, under these conditions, the mass of money and its "value" of the whole world of the "civilized nations" which constitutes the framework of the argument above ? The market prices vary proportionally to the quantity of money, and thus the "value of money" is in inverse proportion to this quantity, which is an independent variable. If such is the quantity theory of money, there can be neither theoretical ceiling nor floor of the quantity of circulating money in the whole world, world circulation absorbs any quantity of money[7] whose value can vary infinitely in inverse proportion to its quantity. That is to say, the "value of money" is

6 The mass of the metallic money, one of the two determining elements of the "value of precious metals" probably does not mean the mass of the precious metals really existing in the whole world including "hidden treasure of gold and silver coin" (III, 91), but the position of Ricardo on this point is not clear. Hume, on his side, wants to bring limitations as well to the money supply as to the mass of the commodities (Hume, ibid, III. *Of Money*, p.52).

7 "The circulation can never be over-full. If it be one of gold and silver, any increase in its quantity will be spread over the world" (III, 91-2).

determined by its quantitative relation with the commodities which it makes circulate, and the money thus does not have (cannot have) a value independent of this relation.[8] But immediately after the paragraph quoted above, Ricardo makes a surprising remark as follows: “Gold and silver, like other commodities, have an intrinsic value,[9] which is not arbitrary, but is dependent on their scarcity, the quantity of labour bestowed in procuring them, and the value of the capital employed in the mines which produce them.” (III, 52).

This text which follows the first paragraph is surprising. One could have awaited from Ricardo that having adopted the quantity theory of money, he was going to affirm the non-commodity character of money and the determination of its value in circulation just in the same way as had done Montesquieu and Hume (cf.

8 Montesquieu, who had supported with Hume the quantity theory in the 18 century, formulates this idea in a concise way as follows: “Si l'on compare la masse de l'or et de l'argent qui est dans le monde, avec la masse des marchandises qui y sont, il est certain que chaque denrée ou marchandise, en particulier, pourra être comparée à une certaine portion de la masse entière de l'or et de l'argent. Comme le total de l'une est au total de l'autre, la partie de l'une sera à la partie de l'autre. Supposons qu'il n'y ait qu'une seule denrée ou marchandise dans le monde, ou qu'il n'y en ait qu'une seule qui s'achète, et qu'elle se divise comme l'argent; cette partie de cette merchandise répondra à une partie de la masse de l'argent”. (Montesquieu, “De l'esprit des lois”, Livre XXII, ch.7, *Oeuvres complètes II*, Gallimard, p.656) The circulation is so to speak made up of a relation of opposition of two worlds (that of commodities and that of money), and the money is formally excluded from the world of the commodities (non-commodity money). What it is also necessary to notice in this statement of Montesquieu, is that the world of commodities made up of heterogeneous elements is supposed to consist of “une seule denrée ou marchandise”, and that an unspecified quantity of any kind of commodities can be regarded as “une certaine portion” of this homogeneous whole mass. It is worthy of attention that in the clear formulation of the quantity theory of money of an early time the author had already become aware that the world of the commodities is not a whole of various commodities but needs a homogenization in order to constitute itself as such. But the classical economics after Montesquieu does not seem to be conscious of this question. In addition, Hume affirms also that money (metal) is not a commodity and does not have its own value. “Money is not, properly speaking, one of the subjects of trade; only the instrument which men have agreed upon to facilitate the exchange of one commodity for another. [···]the greater or less plenty of money is of no consequence; since the prices of commodities are always proportioned to the plenty of money” (Hume, ibid., p.41). “Money having chiefly a fictitious value, the greater or less plenty of it is of no consequence” (ibid., p.63).

9 The term “intrinsic value” was commonly employed since the time of mercantilism above all in the literature on the monetary regime as a term indicating the quantity (the weight of certain alloy) of precious metals contained in a coin or the value of this coin determined by this quantity. Classical economics (Smith, Ricardo at least) does not adopt this term in the context of arguments on the value of the commodities in general. Marx’s use of this term in French translation “valeur intrinsèque” at the beginning of chapter 1 of *Capital* in the context of deduction of the “value proper to each commodity” would belong to an exceptional case with a particular intention.

note 8 above), but on the contrary he advances that the precious metals as money do not at all differ from the other commodities, and hence their value is given like that of the commodities in general. (Hume and Montesquieu exclude money from the world of the commodities. Ricardo, on his side, degrades money among the "ordinary" commodities. While going in the opposed directions, they have nonetheless in common a contrary point of view to the mercantilism which places the money at the first rank of all the commodities.) In addition, Ricardo at that time did not have a clear position yet on the determination of value of the commodities, and in the text quoted above he did noly vaguely enumerate a certain number of elements determining the value as "scarcity", "quantity of labour bestowed", "value of capital employed". Moreover, it is only here that he raises the question of the determination of the value of precious metals (and thus of the commodities in general) in this booklet.[10]

In any case, it is necessary to make a clear distinction between the theory of Ricardo and the theory of Montesquieu and Hume which regards the value of money as given only by the proportion of the money supply with regard to the mass of the commodities, insofar as Ricardo supposes an "intrinsic value" of precious metals as money, determined in whatever may be the way.

Consequently, the monetary theory of Ricardo would suffer from a serious inconsistency. On one hand, he completely recognizes to the precious metals an "intrinsic value" as to the commodities in general. However, on the other hand, he seems to invalidate this recognition while saying as follows: "the variation in their quantity [of gold and silver] would have produced no other effect than to make the commodities for which they were exchanged comparatively dear or cheap. The

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10 However, the idea that the money is one of the commodities in general and the determination of its value is not other than that of these commodities, is not abruptly nor exceptionally expressed only in the text quoted above. In spite of great changes in his points of view on the theory of value which could supposedly happen at one time until the drafting of *Principles*, Ricardo was coherent as for his idea that money is a commodity. I quote here only one passage of his writings written at the same time as *High Price*. Malthus, bullionist author (anonymous) of a review article published in February 1811 in *Edinburgh Review* on 5 works relating to the bullion controversy including this booklet of Ricardo, got in contact for the first time with Ricardo by his letter of June 16, 1811. The following is a passage from the letter of answer of Ricardo of June 18, 1811. Responding to Malthus who underlines the distinction between the money and the general commodities and attaches particular importance to the money in the commercial exchange, Ricardo says as follows: "There does not appear to me to be any substantial difference between bullion and other commodity, as far as regards the regulation of its value, and the laws which determine its exportation or importation. It is true that bullion, besides being a commodity useful in the arts, has been adopted universally as a measure of value, and a medium of exchange; but it has not on that account been taken out of the list of commodities" (VI, 24).

small quantity of money would perform the functions of a circulating medium, as well as the larger." (III, 53). This means that the monetary prices of the commodities can rise or fall without limits in proportion to the quantity of money absorbed in circulation. And the value of money, which varies in inverse proportion to the monetary prices of the commodities, will be able to fall or rise without limits according to its quantity. That seems to be in total contradiction with the assumption of an "intrinsic value" of money.

The quantity theory affirms only that circulation can absorb any quantity of money and that in this case the value of money changes in inverse proportion to its quantity, but it is not a theory which determines the quantity of money in circulation. What is the quantity of money which is actually absorbed in circulation? The quantity theory does not say anything about this question. If there are some bases determining this quantity, one should seek them elsewhere than in the quantity theory. If it is shown, in these conditions, that the quantity of the precious metals as money, whose value is given in circulation by its quantitative relationship to the mass of the commodities, is determined so as to adjust the value of money thus determined with its "intrinsic value", or that this quantity of the precious metals has tendency to be regulated so as to make disappear the discrepancy between these two values, one will be able to consider that contradiction above is only apparent and to interpret Ricardo's monetary theory in a consequent way.

However, at the time Ricardo did not have yet his theory of determination of the value, and one cannot at all know what could be his knowledge on the characteristics of the precious metals and their production.[11] An explanation on these points will be the prerequisite to obtain an univocal response to the problem

11 Following circumstances for example: 1.difficulty of adjustment between the demand and the supply in mining industry with the source of production made of heterogeneous ore-bodies distributed extremely unequally, 2.disorder on the market of the precious metals caused by the discovery of new mines made accidentally from time to time, 3. "intrinsic value" of an immense stock on a worldwide scale since the antiquity of the precious metals as "imperishable wealth", the components of which must have been produced under extremely varied conditions, 4. how is regulated the production and supply quantity of precious metals? What are the constraints which the existence of immense stock can mean to the determination of the "intrinsic value" of the newly produced precious metals? Or on the contrary, is the quantity supplied as flow regulated by the value of the precious metals on the market at this time? In other words, is the supply of the newly produced precious metals carried out only in so far as their "intrinsic value" corresponds to their current value on the market and that from the mines which satisfy these conditions? Relation between the movement of flow and backward flow between the reservoir and the market of the precious metals and the variation of their quantity newly produced in mines etc, etc. These are problems that are unavoidable to discuss on the "intrinsic value" of precious metals as money. Ricardo makes only completely fragmentary arguments on these points (cf. I, 193-4, ch.13 of *Principles*, On Taxes on Gold).

relating to the "contradiction" above. Here we leave the problem open and will pass on to the examination of the following stage of the theory of money of *High Price*.

B. Mixed Circulation of Metallic and Paper Money

In the arguments of Ricardo presented and examined above, he supposed a single circulation of the metallic money "previous to the establishment of banks", and on the basis of the quantity theory of money for the whole world of the "civilized nations", he develops a theory on the proportional distribution of the money supply which equalizes the "value of money" in each country. The additional money supply was supposed to come exclusively from mining industry (the existence and operation of the "hoarded money" was out of question). After these arguments Ricardo introduces the issuing bank beside mines functioning as a source of money supply, and he supposes the state of so-called mixed circulation where circulation is maintained by the metallic coins and banknotes. What will become, within this new framework, the quantity theory and the theory of international distribution of money, developed above concerning the single circulation of metallic money? What will be the functions the banknotes will assume? We will discuss on these points.

The issuing bank, new organization of money supply, is introduced as follows: "If instead of a mine being discovered in any country, a bank were established, such as the Bank of England, with the power of issuing its notes for a circulating medium; after a large amount had been issued either by way of loan to merchants, or by advances to government, thereby adding considerably to the sum of the currency, the same effect would follow as in the case of the mine. The circulating medium would be lowered in value, and goods would experience a proportionate rise. The equilibrium between that and other nations would only be restored by the exportation of part of the coin." (III, 54-5).

The coins made of precious metal, produced by the mining industry, and the paper money issued by the bank, both circulate equally as money. The banknotes are originally the certificates certifying that the bank has the obligation to pay to their bearers the species of gold of a weight corresponding to the face value of the bank notes.[12] They can be received as a means of payment of obligation just like gold metallic money, provided that there is a firm "confidence"[13] towards the bank ensuring the payment in cash constantly to the bearer of its bank notes. If a run on the bank happens, all the banknote bearers make simultaneously their claim of

12 In England at the time preceding the suspension of convertibility the price of 1 once was fixed at 3 livre-sterling 17 shilling 10½ pence. It was also the ingot price fixed by the law (mint price).

13 This term is one of the key-concepts of the work of Henry Thornton, *An Enquiry into the Nature and Effects of the Paper Credit of Great Britain*, 1802. Ricardo, on his side, affirms in the foreword

conversion. But in general such a run may not happen, unless the "confidence" towards the issuing bank is shaken. It becomes thus possible with some gold and silver reserve to issue banknotes in quantity larger than the amount of this reserve until a certain degree. In the text quoted above the bank notes are in such a state, and thus Ricardo speaks about the convertible bank notes and not about the state of the England's banknotes during the time of suspension of cash payment.[14]

The bank issuing convertible bank notes can thus inject into the circulation its notes to an amount higher than its gold and silver reserve.[15] In the country where such a bank is established, the sum of the metallic money and bank notes will be the quantity of the money. The issue of bank notes is comparable to a discovery and operation of new mines in that it increases the monetary quantity in circulation. It is as if there were an increase in the quantity of gold functioning as money in the whole world, but for the moment that would mean increase in the quantity of gold only in England, where the value of money (and thus of gold) would drop.[16] One sees here the situation of disturbance of the proportional distribution of the metallic money of the whole world among the "civilized nations", advanced by Ricardo at the

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of *High Price* the solidity of confidence towards the Bank of England. In this booklet he seems to regard as unnecessary to bring into question the depreciation of inconvertible banknotes from the point of view of confidence.

14 The banknotes of England before 1797 when the law on the suspension of their convertibility was put into force, were certainly convertible and functioned as intermediary of circulation beside the gold and silver money. But, the discussion Ricardo is making here on the "mixed circulation" of paper money and metallic money probably does not have as its object the state of circulation in England before the enforcement of the suspension of convertibility, which belonged for Ricardo already to a historical past. He speaks here about the external drain of species (caused by concrete historical circumstances as poor harvest, consecutive importation of corn) from the point of view of the proportional international distribution of precious metals. But that does not concern the problems proper to the time prior to the suspension of convertibility. Ricardo does not dispute either on historical facts of the past.

15 According to Ricardo, the Bank of England had two means of injection of its bank notes, which were "loan to merchants" and "advances to government". One is the bill discount for London merchants, the other is the purchase of government bonds issued by Treasury to finance the war. They are two principal means of issue of bank notes by the Bank.

16 The "value of the money" is not known unless knowing the general purchasing power of the money or the price level. But these concepts did not exist yet at the time of Ricardo. In the context of this article, we adopt with Ricardo a rather vague criterion to judge the "value of money", according to which money has more value in one of the two countries where the money can "purchase more of any commodity common to both countries" (III, 57) than in the other. But actually, there are several commodities "common to both countries" (or there exists no such one), the results will differ according to commodities chosen as the measure. On the difficulties of measurement and comparison of the "value of the money", cf. for example H.Robertson, *Money*, 1948, ch.2, Value of Money.

beginning of *High Price*. The money will have in England a value lower than that in the other countries. In other words, England has in its interior circulation an excessive quantity of money beyond its share in the proportional distribution. The money, like any other commodities, will flee the country where it is underestimated to flow towards other countries where it will have more value. In other words, England will become an importing country of commodities and "exporter of money".[17] This movement must continue until the re-establishment of the proportional distribution prior to the issue of banknotes. When the rebalancing is reached, the monetary quantity in each country will have somewhat increased compared to its quantity before the issue of the bank notes in England. As for England, "as the Bank would add to the currency of the world, England would retain its share of the increase." (III, 57).

If the proportionality of new distribution is reached in this manner, the increase of monetary quantity will not have any consequence in the economic situation except that the market prices of each country will have increased uniformly.[18] However, it is only the metallic money which can carry out international movements for readjustment of the international distribution of money, money in the form of bank notes not being able to cross the borders to enter international circulation. But, as long as the banknotes are convertible, the whole of the issued bank notes are not locked up in the interior circulation of the country.

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17 The importation of commodities and the flow of money to pay their price are called "deficit of balance of commerce". Ricardo considers that the efflux of money represents no disadvantage but means simply evacuation of excessive money, and that once reached the proportional distribution the efflux will cease or reactions of backward flow will soon take place. Such a process can be also interpreted as that of replacement of metallic money by paper money. In this way, inside a country will circulate the paper money, scrips without "intrinsic value", instead of gold, which will be used to buy foreign commodities and thus to bring to the country "capitals" (food, raw materials, machines and equipment, etc). Therefore, the precious metal leakage is rather advantageous for the country. According to Ricardo, only monetary factors explain the importation (corn above all) and consecutive "adverse" balances of trade of England at the time, and he rejects any other factor (the successive poor harvests, war, etc).

18 Thornton, Malthus and Hume had affirmed (or recognized) that the increase of monetary quantity can temporarily modify the relative market prices and have the effect of stimulating the economic activity during a certain time until all the prices rise uniformly, whereas Ricardo did not approve their arguments. "However abundant may be the quantity of money or of banknotes; though it may increase the nominal prices of commodities,[· · ·] nothing will be added to the real revenue and wealth of the country. [· · ·] There will be a violent and an unjust transfer of property, but no benefit whatever will be gained by the community" (III, 93). "I see no reason why it [depreciation of currency] should diminish the idle, and add to the productive class of society." (III, 123. answer to the criticism of Malthus in the appendix to the 4th edition of *High Price*).

Since the excessively issued quantity exceeding a certain sum is turned over to the issuing bank for conversion into gold metallic money, the bank cannot discretionally increase the quantity of its bank notes (which are so to say commodities to be sold for the bank as private company). Ricardo attached great importance to such a mechanism of “automatic regulation” of the quantity issued under the regime of convertibility. “The Bank might continue to issue their notes, and the specie be exported with advantage to the country, while their notes were payable in specie on demand, because they could never issue more notes than the value of the coin which would have circulated had there been no bank. If they attempted to exceed this amount, the excess would be immediately returned to them for specie.” (III, 57).

According to this explanation of Ricardo, the volume of money of England cannot increase by the establishment of issuing bank, or more exactly, it can increase the volume of money only by the share allotted to this country of the increased quantity of the total money supply of the whole world. In other words, if convertible banknotes are issued in a country when the metallic money has already been distributed to each country so as to equalize its value everywhere, the quantity of money in this country will become excessive by these issued bank notes,[19] and the value of money in this country will fall as much in comparison to the other countries where the quantity of the money has remained stable. In other words, a sum of money containing a certain weight of gold or equivalent to this weight will be able to buy more commodities abroad than in England. Consequently, in spite of prohibition by the law, gold metallic money will be molten and transformed into ingot in order to be exported for purchase of commodities abroad. England will thus get rid of the excess of its money, and its value will rise to the international level. Until this moment a considerable part of the issued bank notes will be turned over to the issuing bank and the corresponding sum of gold metallic money will go out of its vault. Whatever may be the share the gold metallic money leaving the bank occupy in the quantity of ingot that the issue of bank notes expel from England, the remaining part in circulation of the issued bank notes will have decreased in proportion. And if the bank continues its issue of bank notes, the same process will be repeated and gold and silver reserve will decrease. The infinite reduction of gold and silver reserve will shake confidence towards the convertible bank notes and

19 When Ricardo speaks about excess of money, it is always about a state in which the international distribution of money is so disturbed that the value of money in the country in question becomes lower than that in the other countries. Thus it is not question of the absolute quantity of the circulating money in this country. “Excess of currency is but a relative term” (III, 56).

finally endanger even the existence of the bank. The issue of paper money will be naturally braked at a certain point.

However, what we have just seen above is on a little unrealistic assumption that the issuing bank is established only in England and the quantity of the money in all the other countries does not undergo any simultaneous change. Actually, there will probably be issue of bank notes by issuing banks in other countries also, or there will be gold supply newly produced in foreign mines. In these conditions, the banknote increase in England will not automatically involve a proportional excess of money in England which will set off the process described above. In addition, the share allotted to England of the money supply of the whole world will not remain constant but will vary according to the relative level of its economic activities. Taking into account the international economic position of England of the time in question, one could think that this allotted share tended to increase rather than to decrease. These elements will increase the quantity of money of England which equalizes its value with the value of money in the other countries (its allotted share). If so, one can consider that the issue of new bank notes by the Bank of England does not inevitably make the money excessive, but that it can be to a certain extent a mean to procure a necessary quantity of money in the form of inexpensive bank notes instead of gold metallic money. However, the issue going beyond a certain degree will bring about claims of conversion and outflow and reduction of gold and silver reserve. The Bank will then check its issue in its interest.

Here is the point of view of Ricardo in its broad outline on the mechanism and the advantage of the adjustment of the quantity of money by means of issue of banknotes under the conditions of the mixed circulation of metallic and paper money (the bank notes are inexpensive, economic, it is easy to adjust their quantity and to check their over-issue).

In the first pages of *High Price* there exists only the circulation of metallic money and the mixed circulation of metallic and paper money. These forms of circulation do not directly relate to the state of money in England at the time when this booklet was written. These monetary circulations represent the preparatory theoretical stages set purposely by Ricardo to discuss on the problems relating to the de facto single circulation of inconvertible bank notes and on “the present evils” (III, 75) in this state of affairs. He calls what he showed on the circulation of metallic money and the mixed circulation of precious metals and paper money, “the laws that regulate the distribution of the precious metals throughout the world, and which cause and limit their circulation from one county to another, by regulating their value in each." (III, 65), and he proclaims that "I proceed to examine on these principles the main object of my enquiry." (*ibid*.). The "main object" is obviously the banknotes of England at the time of the suspension of convertibility.

C. Inconvertible Banknotes and Their Depreciation

"Our circulating medium is almost wholly composed of paper, and it behoves us to guard against the depreciation of the paper money with at least as much vigilance as against that of the coins. This we have neglected to do. Parliament, by restricting the Bank from paying in specie, have enabled the conductors of that concern to increase or decrease at pleasure the quantity and amount of their notes; and the previously existing checks against an over-issue having been thereby removed, those conductors have acquired the power of increasing or decreasing the value of the paper currency." (III, 74-5).

Here we face finally the problems relating to the depreciation of inconvertible banknotes, "main object of my enquiry" of *High Price*, only after having read half of this booklet. The discussions that Ricardo made until there we have examined up to now are the preconditions to discuss on the variations of quantity of issued banknotes under the conditions of suspension of convertibility and the consecutive fluctuations (in particular falls) of their value.

In 1797 the gold and silver reserve of the Bank of England drained away massively from its vault and it was obliged to suspend the payment in cash to avoid the exhaustion of its gold and silver reserve and at the same time to maintain its functions as issuing bank.[20] Released from the obligation of conversion, the Bank had from now on competence to create to a certain extent the money with paper and ink without any restriction imposed by its gold and silver reserve. The Bank was a private enterprise in the form of joint-stock company founded by the license of the King, and the interest which it received from loan of bank notes issued by itself to the government and London merchants, constituted the source of its benefit. Creator of the money constituting a considerable share of the fortune held by the public, and responsible for the management of its value, the Bank is of public character. But it has on the other side the character of a private company which pursues benefit by selling (lending in fact) its bank notes as its commodities against

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20 This article having the aim of interpreting the monetary theory of Ricardo, do not detail the crisis in February of this year and the later development of concrete situations leading to the suspension of convertibility (in particular its legalization). For a detailed description on these points, cf. Albert Feavearyear, *The Pound Sterling, A History of English Money*, Oxford, 1963, Ch. III, The Bank Restriction Period I.

the interest (price of these particular commodities).[21] As we saw above, if the banknotes are convertible, the quantity of issued bank notes does not exceed a certain limit without careful management of the direction of the bank or without intervention of the authorities, and the excessive issue will be automatically braked. But if the banknotes become inconvertible, their issue will not have any more brakes. And insofar as the bank notes represented for the bank as organization with profit motive its commodities (besides little costly), excessive issues exceeding a certain limit were always possible[22] since the implementation of the suspension of convertibility.

For the metallic money and convertible banknotes, the unit weight of gold was bound by the law to a certain number of monetary units. As the gold metallic money was cast according to this determination, this number of monetary units was called "mint price", which was in England before the implementation of the suspension 3 pound-sterling 17 shilling 10½ pence per ounce of gold. As the conversion of the bank notes in cash at this price was guaranteed, when the ingot price on the market exceeded the "mint price" (in the form of coins the gold underestimated on the market), the coins were illegally molten and sold in the form of ingot on the market (domestic and international), or, bank notes were turned over to the bank for conversion (often with the aim of melting the coins and of exporting them), which resulted in a contraction of quantity of money in circulation. In the contrary case (the gold overestimated on the market in the form of coins), ingot was sold at the bank against its bank notes at the legal "mint price". Such a mechanism prevented the price of the ingot on the market from continuously deviating from its official price.

However, under the conditions of the suspension of convertibility, the reflux of the surplus bank notes to their source of issue and the mechanism against the difference between two gold prices being paralyzed, the issued sum of bank notes

21 If Ricardo did not cease taking the position of opposition to the Bank of England for example by describing it as "a company of merchants, notoriously ignorant of the most obvious principles of political economy" (*Letters on the Bullion Report*, 1810, III, 133), it is because the organization with such a public character abused its privileged position in the private interest of a company (moreover it dissimulated this abuse with erroneous theories).

22 While recognizing the possibility of excessive issue, the administrators of the Bank of England and the tradesmen having interest in the facilities of loan (by means of bill discount), took advantage of the authority of Adam Smith to advance "real bills doctrine" as the preventive measure against over-issue. In chapter 2 of his *Enquiry* Thornton made extensive critical examinations of this theory. Just like him, Ricardo did not recognize the cogency of this theory, which he regarded rather as a simple pretext of the people interested in the excessive issue of the bank notes to deny it.

was not regulated any more according to a certain criterion, it fluctuated under the influence of discount and loan applications of the tradesmen and of the government. Thus becomes a real problem the relationship between the policy of issue of the Bank of England and the movements of the value of money.

According to Ricardo, the value of money is measured by gold as “a standard measure of value” and the paper money is the “representative” of this standard. “It can only be by this comparison to this standard that its regularity [of our paper money], or its depreciation, may be estimated.” (III, 65). In referring to the monetary price of gold on the market, one can thus know whether the value of bank notes is stable or fluctuating. To speak about stability or fluctuations, there must in addition be a price fixed as criterion. It is the average price before the suspension of convertibility, which is the “mint price” fixed by the law.[23] One can thus judge variations of the value of money by observing the variation of the market price of gold compared to its “mint price”. However, it is the measurement of the value of money by taking only gold for criterion of reference. So to ensure the certainty of this measurement, the value of gold itself must be constant. But Ricardo says that there cannot be any commodities which have a constant value permanently. However, contrary to the agricultural produce like corn, the value of the precious metals is, although prone to great long-term variations, in short terms “tolerably fixed” (*ibid*.). For this reason one can practically admit gold as measure of value.[24]

“Our circulating medium is almost wholly composed of paper.” (III, 74). In other words, the disappearance of gold metallic money from the circulation and the single circulation of inconvertible bank notes, such was the current state after the suspension of convertibility. In spite of the depreciation of these bank notes, the coins were always cast at the “mint price” fixed by the law. But, as the weight of the gold contained in a coin corresponded to a market price of gold higher than its face value, it was obviously more advantageous to melt it and sell on the market in the

23 The coins were always cast at this price according to the law after as well as before the suspension of convertibility. But actually they did not circulate any more and ceased functioning as money. In addition, the gold price remained fixed officially at the “mint price”.

24 The idea of measuring the variations of the value of the inconvertible bank notes by comparing the market price of the ingot with its “mint price” does not come from Ricardo’s originality at all. Thornton among others had advanced this idea (cf. Thornton, ibid p.79-80) before him and it was shared by many of other bullionists. And the adoption of precious metals as measure of value had already been justified by Adam Smith (constancy of their short-term value in spite of its long-term instability). However, to show the cogency of the constancy of the value, one must have a theory of the determination of value that Ricardo at that time had not worked out yet.

form of ingot than to use it as money. In spite of the existence of the law prohibiting the melting and the export of the coins,[25] the coins as money had disappeared from circulation. If there is an additional issue of bank notes in this state of affairs, “any increase in its quantity will raise the money price of bullion without lowering its value, in the same manner, and in the same proportion, as it will raise the prices of other commodities.” (III, 74). In spite of additional issue of bank notes and their depreciation, the monetary price of ingot will increase as much as the prices of the other commodities without fall of the value of ingot. It is because there is no more coins which one could melt and sell as ingot at the time of rise of the price of ingot, and that there remain only inconvertible bank notes in circulation.

If Ricardo takes the trends of prices of the ingot for the criterion of the variations of the value of money, it is because he thinks, firstly that the price of the ingot can serve as the indicator of evolution or movements of the prices of the other commodities, secondly that one can measure the degree of the variations (in particular reduction) of the value of money by comparing the market price of gold with its price which had been fixed under the regime of convertibility (“mint price”). The prices of all the commodities including the ingot are supposed to vary “in the same manner, and in the same proportion” according to the variations in the quantity of money.[26] One would obtain in theory the same result by taking for criterion the monetary price of any commodity among all including gold. At all events, the remarkable characteristic of Ricardo’s “standard measure of value” is to evaluate the value of money able to buy all the commodities not by its comparison with all the commodities (or some of them at least) but by its proportion of exchange with only one commodity (the ingot).

The comparison of the market price of gold with its “mint price” thus makes it possible to know if the inconvertible bank notes are in depreciation, i.e. if the quantity of their issue is excessive. Even if issued in excessive quantity, the

25 The prohibition of the melting of coins was in order to maintain just as it was the monetary regime fixed by the law, and the prohibition of the export of molten gold was probably by the “mercantilistic prejudice” for which any efflux of the precious metals is equivalent to as much impoverishment of the country. Both clauses of prohibition were without effect. Ricardo was against these ineffective clauses and for the freedom of melting and casting of gold and its free exportation and importation. This is obviously to carry out without obstacle the international proportional distribution of the precious metals as money.

26 It is only what Ricardo supposed within the framework of the model similar to the quantity theory and nothing more. It is a completely other question if the evolutions of the quantity of issue of banknotes of England, of the price of the ingot, the index of the prices at that time were really such as Ricardo envisaged.

inconvertible bank notes can neither leave the country nor go out of circulation. They must remain locked up in interior circulation without being able to go elsewhere and they can only diminish their own value. "Its effects [of circulation of paper money] on prices will then be only local and nominal, as a compensation by means of the exchange will be made to foreign purchasers." (III, 92). Unlike the case of re-establishment of the proportional international distribution of the exported precious metals of the country where they are in excess, in the case of the inconvertible bank notes the effect of excessive issue does not go beyond interior circulation. But, just like the metallic money could be absorbed in any quantity by the world circulation, in the same way the inconvertible bank notes can be built in interior circulation in any quantity. In other words, the depreciation of these bank notes can progress ad infinitum. "The circulation can never be over-full." (III, 91). "There can be no limit to the depreciation which may arise from a constantly increasing quantity of paper." (III, 78). Since the rate of exchange drops as much as the rate of this depreciation, the rise of the interior market prices is completely nominal. For those who buy English commodities with foreign currencies changed against English bank notes, there is no rise in prices (no fall of prices either for the English purchasers abroad). Consequently, this nominal rise of the prices is not the cause of importation of commodities (of "unfavourable of balance of trade"). It is the same for gold, one of the commodities, its price seen from outside not undergoing any change. The excessive issue of inconvertible bank notes exercises thus no influence on the trade of the country with other foreign countries except with regard to the exchange rate which falls (and this precisely because it falls).[27] That would correspond to the case of no disturbance in the proportional distribution of money among the "civilized nations" under the conditions of the circulation of the metallic money.

Any change in the quantity of the inconvertible bank notes thus does not cause any change to the foreign trade of the country, which means that the total sum of the inconvertible bank notes preserves constantly the same "value". "If the Bank were restricted from paying their notes in specie, and all the coin had been exported, any excess of their notes would depreciate the value of the circulating

27 But inside the country, the quantity of money added by the additional issue is not distributed equally (as Hume had supposed) to all those who had money. This additional quantity is distributed to those who have the advantage of borrowing money from the issuing bank and to those who benefit from the money thus issued to increase their incomes. The money held by those who are excluded from such processes depreciates and their pecuniary fortune undergoes substantial reductions. Ricardo accuses this "violent and unjust transfer of property" (III, 93) as "the present evils" (III, 75) of monetary depreciation.

medium in proportion to the excess. If twenty millions had been the circulation of England before the restriction, and four millions were added to it, the twenty-four millions would be of no more value than the twenty were before, provided commodities had remained the same, and there had been no corresponding export of coins; and if the Bank were successively to increase it to fifty, or a hundred millions, the increased quantity would be all absorbed in the circulation of England, but would be, in all cases, depreciated to the value of the twenty millions." (III, 91). The term "value" employed here by Ricardo concerning bank notes indicates the quantity of gold represented by the bank notes, and the aforementioned depreciation means the reduction in the quantity of gold per face value of the bank note. "If twenty millions had been the circulation of England before the restriction", by dividing this figure by 3 pound sterling 17 shilling 10½ pence, the "mint price" fixed at that time, will be obtained the quantity of gold represented by the total sum of these bank notes (in ounce). "The value of the twenty millions" means this quantity of gold (and not the value of this quantity of gold as commodity). That any additional issue of bank notes does not cause any change to their value means that the quantity of gold represented by the total sum of bank notes remains constant, and that the bank notes are depreciated according to increase in their issued quantity.

More than 10 years had elapsed since the implementation of the suspension of convertibility until the drafting of *High Price*. During that time, the social and economic conditions of England and other neighboring countries changed much. It is unthinkable that during all this period "commodities had remained the same"[28] and moreover "there had been no corresponding export of metallic money". In the text quoted above, Ricardo seems to try a kind of non-temporal experiment in the thought like Hume (*ibid*, p.82-4) had done it (the quantity of money is quintupled at one blow), by supposing the exclusive circulation of the inconvertible bank notes and the constancy of the position of England in the world economy (in fact on European scale) i.e. the constancy of the share allotted to England of the metallic money in international circulation.

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28 This sentence in the quoted text can be understood as saying that the issued quantity of banknotes which make coincide the market price of gold with its "mint price" remained the same. Ricardo recognizes the plurality of factors which determine whether the issued quantity is excessive or not, by saying that "extended commerce" increases the sum of bank notes necessary to the maintenance of their stable value whereas "art of economizing the uses of circulating medium" and "country bank note" decreases it. In the banknote circulation of England of the time the "country banks" played a considerable role, on which Ricardo discusses in his booklet devoting some pages to this subject. But we abstracted away from it, this point not touching the essence of his theory of money.

At all events, Ricardo, on the basis of "the rate of exchange and the price of bullion" as "the two unerring tests" (III, 75) justified as above, underlines the fact of the depreciation of banknotes of England of the time (fact which constituted in itself one of the points disputed in the bullion controversy). And he finds the cause of it in the liberal loan granted by the administrators of the Bank to the tradesmen by means of bill discount and in the conformist policy adopted by them towards the loan application of the government to finance the war with France. As conclusion of this booklet, he draws the following proposal to remove "the present evils" (cf. note 27) induced by the monetary depreciation: re-establishment of the convertibility which automatically applies a brake at the excessive issue and "the repeal of the Restriction-bill" (III, 99) to carry it out. "The only legitimate security which the public can possess against the indiscretion of the Bank is to oblige them to pay to their notes on demand in specie; and this can only be effected by diminishing the amount of bank-notes in circulation till the price of gold be lowered to the mint price."[29] (*ibid*.).

D. Characteristic of the Quantity Theory of High Price of Bullion

As we saw above, in this booklet Ricardo takes extremely scrupulous steps to advance as conclusion the resumption of convertibility of banknotes of England. He initially supposed the state of pure metal circulation to discuss on a worldwide scale on the determination of the value of metallic money and the international distribution of precious metals equalizing this value in all the countries. He then showed the changes in the value of money and its international distribution, caused by the creation of money (issue of convertible bank notes) by the bank as substitute for gold mines (the bank notes, while remaining inside the country, function on the international scene as addition to the precious metals of this country). Finally in the last stage where interior circulation was completely covered by inconvertible

29 The political suggestion of Ricardo in his booklet is as follows: at first to gradually diminish the quantity of bank notes until the market price of the ingot falls to the "mint price", and then to repeal the law on the suspension of convertibility put into force in May 1797 for a limited time but afterwards prolonged on several occasions. In this manner one could avoid the most serious danger of a collapse of monetary regime during the resumption of convertibility likely to cause in little time massive claims of conversion resulting in the exhaustion of gold and silver reserve of the Bank of England. The conclusion of Bullion Report submitted to the Parliament about 6 months after the publication of Ricardo's booklet was very similar to that of Ricardo. Although there were divergences there compared to Ricardo in the analyses of the economic situations leading to the similar conclusion, one paid attention only to their political suggestion and attacked them together. Under these conditions Ricardo was to close the eyes to the minor divergences and defend Bullion Report decidedly.

bank notes, their value was estimated in terms of their purchasing power over gold (its monetary price). And Ricardo affirmed that this value was in depreciation because of the excessive issue of bank notes.

It is obvious that the whole of Ricardo's monetary theory in *High Price* thus constructed is within the framework of the quantity theory of money (summarized in equation of exchange of Fischer MV=PT). Gold is absorbed in world circulation in any quantity and (V and T being supposed constant) its value (its purchasing power over the commodities) changes in inverse proportion to its quantity. And the quantity of gold allotted through the international transaction to each country taking part in the world circulation is given so as to equalize the value of gold (expressed in term of market price of commodities common to all the countries, if there are such things[30]). If the value of gold varies from one country to another, it leaves the country where its value is lower (its quantity compared to the quantity of the commodities is relatively large, "excessive" according to Ricardo's expression) and enters the circulation of the country where its value is higher (the commodities are excessive compared to gold). Gold is thus placed under the effect of the force which equalizes the relation between gold and the other commodities in all the countries. Arguments as above in the assumption of pure metallic circulation constitute the fundamental framework of the monetary theory of Ricardo, of which the mixed circulation of metallic and paper money is a variant (monetary creation by the bank, less expensive than the mine[31]). And the circulation of inconvertible bank notes is also to be interpreted by reference to this fundamental framework. With regard to this quantitativist framework, one can say that the theory of money of Ricardo follows the theory of Hume.[32]

"The principal object" of research of Ricardo in this booklet is obviously the value and its variations of banknotes of England circulating in the state of

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30 What Ricardo represents as the world is that which consists of "civilized nations". He seems to tacitly suppose a sphere of exchange made up of countries, which are almost copy of England. Great real differences in the productivity and distinction of the composition of products probably hardly entered into Ricardo's considerations.

31 The stress laid on the advantages of the issuing bank which makes it possible to save the expenditure for the metallic money (on the condition, however, of stability of the value of the bank notes) concerns one of the essential aspects of the monetary theory of Ricardo (inherited from Smith). He takes again and develops further this topic in *Proposals for an Economical and Secure Currency*, 1816.

32 However, unlike Montesquieu and Hume, he considers gold as money in metallic circulation as one commodity on the same footing with the other commodities. Therefore according to him gold as money has also its "intrinsic value" which is not the same as its purchasing power determined in circulation only by its quantitative relation with the commodities. How to reconcile

suspension of convertibility. Whatever may be the issued quantity, the inconvertible bank notes never overflow. They are absorbed entirely in the interior circulation and remain there. Their value expressed as their purchasing power on the ingot (market price of the ingot) —more generally their purchasing power on the commodities in the country (monetary price of the commodities)— is in inverse proportion to their issued quantity. One could think that Ricardo advances here a quantity theory for the inconvertible bank notes, but his quantity theory of money seems to be of a double structure having another framework surrounding the interior circulation. According to his theory of international distribution of the precious metals, if "commodities had remained the same" i.e. the quantity of interior transaction remained unchanged (and if it was the same for the other countries, that would mean that this country kept the same weight in the world trade), the proportional quantity of gold allotted to this country would also remain unchanged. As we saw above, when Ricardo says that the value of the whole of the inconvertible bank notes in interior circulation (quantity of gold represented by the total sum of the bank notes, quantity obtained by dividing this sum by the ingot price on the market) is constant and that each bank note is depreciated in proportion to their quantity, the "constant quantity of gold", of which he speaks, means its proportional quantity of distribution allotted to this country by the world circulation. In other words, even if the inconvertible bank notes inside a country are issued in constant quantity, the value of the bank notes i.e. the quantity of gold represented by the whole of these bank notes (and thus by each one of them with a certain face value) is no less regulated by this proportional quantity of distribution and thus variable. In this way, the structure of the theory of Ricardo on the mode of regulation of the value of the inconvertible bank notes by their quantity is of double framework (national and international). What conditions this value in last analysis is the international framework. In this sense, the theory on pure metallic circulation on a worldwide scale (developed obviously under Hume's influence) at the beginning of *High Price* is always preserved in the thought of Ricardo until the last stage of this booklet, and it constitutes, with its apparent contradictions, the fundamental characteristic of his quantity theory of money.

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the quantitative framework with the assumption of the "intrinsic value" of gold ? There is no key in *High Price* for a solution to this problem. We can only defer it until the following section of this article. Ricardo mentions "intrinsic" value only once in the second paragraph of the beginning. But it is neither simply an arbitrary statement nor a slip of a tongue. Ricardo continued to express the idea that the precious metals, even if it is used as money, are only commodities no less than the others, their value is also given like those of the other commodities (cf. note 10 of this article).

III. Value and quantity of money

Ricardo determines the value of gold as money by the quantity of labor or the cost of production like the other commodities in general. But he adopts at the same time the quantitativist point of view according to which the value of the gold functioning as money varies in proportion to the mass of the commodities which it makes circulate. They are two apparently contradictory points of view. We up to now indicated several times this problem without seeking the solution of it. In the text of *High Price* examined above there is no allusion as to what Ricardo thinks of this point, although the abstract theoretical considerations on the monetary questions occupy a significant part of this booklet. In this section we will seek keys for the solution of the problem above all in *Proposals for an Economical and Secure Currency*, 1816 (hereafter *Proposals* for short) and in related chapters of *Principles* (in particular ch.13 *Taxes on Gold* and ch.27 *On Currency and Banks*).

The treatment of the money in the first chapters of this main work (in particular ch.1 *On Value*) is very different from its treatment in the documents indicated above where are taken into account concrete organizations of monetary issue such as mint and banks. The money in the first chapters of *Principles* enters in scene mainly as measure (invariable) of value which is used to confirm the variations of the values of the commodities. The money is here “money made of gold” (I, 46) which is almost synonymous with gold as commodity. Gold is money, simply because its value is supposed to be more stable in the short run than any other commodities. Even if the sum of money is expressed in real monetary units like pound-sterling etc., it is not a question of the money of England at that time (when circulated in fact only the inconvertible bank notes). The expression in real monetary units would be rather a simplified manner of indicating a certain quantity of gold as commodity money. It is obviously the treatment of the money when it is about the abstract theory of the economy. Having begun as economist with the intervention in the bullion controversy, Ricardo was perfectly conscious that such a money commodity does not correspond to the money such as it circulated at the time.

A. Difficulty of Quantitative Increase and Instability of Value

Proposals is a proposal of the plan drawn up by Ricardo to realize “the most perfect state to which a currency can be brought” (IV, 66). The letter itself of the title “economical and secure” expresses what he understands by “the most perfect state”. “Economical” is ensured by decreasing as far as possible (reducing to zero if possible) the quantity of expensive gold employed as money (for the classical economics it is socially idle cost), and “secure” is ensured by checking as far as possible the variations in the value of money (there is no means to reduce them to zero). For the money to be “secure”, it is essential to maintain the link between the money and a certain standard commodity (gold) in a certain proportion (concretely, to ensure reciprocal conversion —purchase and sale— at a price fixed between gold and money). “A money may be considered as perfect, of which the standard is invariable, which always conforms to that standard, and in the uses of which the utmost economy is practiced.” (IV, 55).

The means of reaching simultaneously the stability of the value of money and the economy in the use of the standard commodity is the paper money which replaces the metallic money. What Ricardo initially underlines in *Proposals* is the significance of the paper money as in charge of such a role. The advantage of the paper money over the metallic money consists in “the facility with which it may be altered in quantity, as the wants of trade and temporary circumstances may require”, which makes it possible to reach “the desirable object of keeping money at an uniform value.” (*ibid*.). To show such an advantage of the paper money, Ricardo supposes initially the circulation of precious metals as in *High Price* and thereafter introduces the issue of banknotes as the solution to the problem of metallic circulation. The latter is simply a preliminary assumption which serves to show the disadvantage of the absence of the paper money to achieve the goal of the stability of the value of money. But there one could find one of the keys to solve the problem brought forward at the beginning of this section.

“The quantity of metal, employed as money, in effecting the payments of any particular country [· · ·] must depend on three things: first, on its value;[33] secondly, on the amount or value of the payments to be made; and, thirdly, on the degree of economy practiced in effecting those payments.” (*ibid*.). Here are given beforehand both the value of the metallic money and the value of the mass of the commodities

33 In *High Price* Ricardo supposed an “intrinsic value” for the metallic money. Here in the same way, without using this term, he supposes clearly, as one of the determining elements of the quantity of the money necessary for circulation, the value of the metallic money as commodity which is not determined in circulation only. It is true that he does not yet show clearly how the value is generally determined neither in *High Price* nor in *Proposals*. But in *An Essay on the Influence of a Low Price of Corn on the Profits of Stock* (1815) , written one year before *Proposals*, there is a passage where Ricardo affirms that the price (or the value) is regulated by the cost of production. “The price of all commodities is ultimately regulated by, and is always tending to, the cost of their production, including the general profits of stock” (IV, 20, author's note). Considering this statement, he seems to have had a certain idea on the determination of value. Incidentally, it was just after having completed the drafting of *Proposals* that he started to write his main work.

put in circulation by this money, independently of their quantities. The quantity of money is a dependent variable in inverse proportion to the value of money and in proportion to the value of the mass of commodities. Here we have a reasoning on the quantity of money necessary for circulation, incompatible with the quantitativist idea. Consequently, if at least one of the "three things" varies, the quantity of (metallic) money must also vary in proportion.

If of these 3 elements only number 2 increases whereas numbers 1 and 3 remain unchanged, naturally the quantity of money necessary for circulation increases. If nevertheless this quantity remains unchanged, "the value of money will rise on account of the increased use which will be made of it, and will continue permanently above the value of bullion, unless the quantity be increased, either by the addition of paper, or by procuring bullion to be coined into money. There will be more commodities bought and sold, but at lower prices; so that the same money will still be adequate to the increased number of transactions, by passing in each transaction at a higher value." (IV, 56). As the quantity of money does not increase in proportion to the quantity necessary for circulation, market prices fall and also the price of the ingot in transaction on the market as commodity falls in the same way. It is a situation which one could interpret as a particular case of difference between the "natural price" and the "market price", consequent to the divergence of supply and demand of the commodity which is money. As here the use of gold metallic money as money is supposed, this situation means that same gold has two different values according to whether it is object of transaction in the form of ingot or that it is used as money (in this case, it is more valuable in its uniform of gold metallic money). If the casting of ingot and the melting of coins are freely feasible, one of these two operations will be done to obtain the form with a higher value (it is the casting in this case), and (apart from the seigneurage) this operation will continue until gold has the same value in its two forms (ingot and coin). "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. It can therefore be purchased, coined, and issued as money, with a profit equal to the difference between the market and mint prices. [· · ·] This profit, however, could not long continue; for the quantity of money which, by these means, would be added to the circulation, would sink its value, whilst the diminishing quantity of bullion in the market would also tend to raise the value of bullion to that of coin: from one or both these causes a perfect equality in their value could not fail to be soon restored." (IV, 57).

The insufficiency of the quantity of money resulting from increase in the volume of transaction in a country causes transformation of ingot into gold coins.

Is this transformation an adjustment only inside a country or does it imply international relations on the world market? Ricardo does not say anything on this point. But, since the ingot is perpetually moving on the international market to some extent as universal money, the purchase of ingot and its transformation into coins such as they are described in the text quoted above would more concretely mean the export of commodities at lowered price from this country and the importation of ingot on the other hand and its casting into gold coins. In other words, here would be a disturbance in the proportional distribution of the metallic money to all the countries of the world (relative insufficiency of gold in this country), and a process of adjustment by its redistribution in order to restore the proportionality, as we saw at the beginning of *High Price*. And this process will be completed with the re-establishment of "perfect equality" between the value of the coins and the value of the ingot. What occurs here is a widening of volume of transaction to the whole of the world and the consecutive redistribution of a certain quantity of the metallic money. It is the situation which one could describe as homothetic enlargement on a worldwide scale of the process inside a country. Then it follows that "if the increase in the circulation were supplied by means of coin, the value both of bullion and money would, for a time at least, even after they had found their level, be higher than before." (*ibid*.). The process of adjustment described above leads to the result that the stability of the value of money is not ensured because of difficulties of adjustment of the quantity of money in the direction of its increase.[34]

As the "mint price" remains fixed, the movements of the value of money and the value of the ingot find expression apparently only in variations of the price of the ingot on the market. With the increase in quantity of money by the casting of ingot the prices of all the commodities including the ingot increase. But this operation decreases the quantity of the ingot on the market (the quantities of all the other commodities remain unchanged, if there are no other elements likely to change their quantities). Only the price of the ingot must then increase more quickly than all the other commodities. Under these conditions, the value of money will be adjusted with that of the ingot before the prices of all the other commodities reach their former level, the price of the ingot on the market will go up until the initial "mint price", but the other prices will remain on a level somewhat lower than the initial level and will not restore it.

34 Here is a rise of the value of money and a fall of the prices of all the commodities. That involves the blameful consequence of "a violent and an unjust transfer of property" (Ricardo gives for example its influence on "all former contracts".)

The enlarging of transaction in a country will cause the international movement of gold resulting in restoring the proportionality of its international distribution. However, as such a process means relative contraction of the quantity of gold in the whole world compared to the mass of commodities, the value of gold (or the money made of gold) compared to these commodities will increase.

If it is necessary to dissolve the state of excessive demand for gold only by the quantitative adjustment of gold coins, there are no other means than new production of gold in mines. But for that it will be necessary to wait during certain time ("for a time at least"). In addition, it is necessary to consider that if the rise of market price of gold caused by its increased demand involves supply of newly produced gold in mining industry, the mines of lower quality formerly uncommercial will begin their operation.[35] Consequently, unless excessive supply, the increased supply of gold will not necessarily lead to fall of its value and its return to the initial level, but it will remain on a level higher than its former value. In other words, even if there is new supply of gold and a quantitative increase in the money after a certain time, the value of money will not necessarily stabilize. "With a system of metallic currency, this additional quantity cannot be so readily supplied, and when it is finally supplied, the whole of the currency, as well as the bullion, has acquired an increased value." (IV, 58).

Supposing that the adjustment of the quantity of money takes place only by casting of bullion, Ricardo shows how the stability of value of money is not ensured in this way even after a long process of adjustment, and underlines the need for paper money. "This inconvenience is wholly got rid of, by the issue of paper money; for, in that case, there will be no additional demand for bullion; consequently its value will continue unaltered; and the new paper money, as well as the old, will conform to that value. Besides, then, all the other advantages attending the use of paper money; by the judicious management of the quantity, a degree of uniformity, which is by no other means attainable, is secured to the value of the circulating medium in which all payments are made." (IV, 57-8) "the advantage of a paper circulation, when established on correct principles, is, that this additional quantity can be presently supplied without occasioning any variation in the value of the whole currency, either as compared with bullion or with any other commodity." (IV, 58).

35 The industry of production of gold is a branch of mining industry. Just like agriculture, the quantity of its production and its production cost depend largely on the state of distribution of lodes, which prevents the tendency to equalization of the conditions of production in the branch. One can consider that the differences in these conditions persist. By this Ricardo explains the appearance of ground rent in mining industry (in particular of production of gold) on the same principle as in agriculture (Ch. 3 *On the Rent of Mines* of *Principles*).

What will it become about it then, if the new supply of money is not ensured by ingot cast into coins in the case of rise of the value of money, and if for the additional money supply the bank issues bank notes (convertible) instead of supplying gold newly produced in mines? As long as the "mint price" of gold remains higher than its market price as is supposed here, a continuous issue of convertible bank notes will never cause claims of conversion nor return of bank notes to the bank. In proportion to the progression of issue the value of money (made up of the sum of the coins and bank notes) will fall. In this case, as the demand pressure on the market of ingot will not constitute an additional element likely to push the price of the ingot on the market above the prices of other general commodities, one can think that the rise of the price of ingot until its "mint price" will be accompanied by the same proportion of rise of the prices of the other commodities. The value of money will have thus fallen up to its level prior to the increase in volume of transaction and its consequent temporary rise.[36] It is as if instead of mines the bank injected gold in circulation. Here the banknotes, simple bits of paper, have virtually the same economic effect as gold. It is of course only because the conversion of the bank notes into gold at price fixed at the "mint price" is guaranteed.

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36 This scenario is in the assumption that there is no claim of conversion into opposite direction (of purchase of ingot for bank notes) during the adjustment of the quantity and value of money by the issue of bank notes. But, since during this process the "mint price" of the ingot constantly remains higher than its market price, the sale of ingot at the bank for bank notes must bring the benefit equivalent to the difference between the two prices of the ingot. Such a sale will be naturally claimed at the issuing bank. (That the bank accepts such a transaction means that it abstains from making purchase itself on the market of gold at a price lower than the "mint price" and that it accepts without condition to buy gold at a loss at a relatively high price.) The purchase of ingot by the bank is a way of issue of bank notes. Therefore this operation increases the quantity of money in circulation and raise the market prices. As this operation decreases the quantity of ingot on the market, the price of the ingot will increase more quickly than the other commodities. However, the difference in the rate of rise of the prices of the ingot and other general commodities will be less than if whole of the addition of money were ensured by the casting of ingot. If the purchase of ingot by the bank constitutes one of the means of monetary issue, the increase in the quantity of money up to the level of convergence of the two prices of the ingot will leave the prices of the general commodities on a level somewhat lower than the level prior to the rise of the value of money. In other words, the value of money will not be restored completely. To restore the initial value of money, an additional issue of bank notes for adjustment will still be necessary. But in this case, as the price of the ingot on the market is already adjusted to its "mint price", it would be necessary to seek the criterion to decide the quantity of bank notes to be issued elsewhere than in the relation of these two prices. That would contradict the idea of Ricardo who wants to stabilize the value of money by adopting gold as standard commodity (besides it is by reference to the price of the ingot on the market that the value of money could be known). Consequently, it is necessary to regard as excluded in advance the procedure of adjustment of the quantity of money by compromising the transaction of ingot and thus varying

Ricardo contends as above that a fast and inexpensive adjustment of the quantity of money by the issue of convertible paper money is essential to the stability of the value of money. This again comes to the problem of difficulties of the quantitative adjustment (increase in quantity supplied) of gold as commodity. In Ricardo's theory, the bank notes are the means for the bank of replacing the gold mines and of playing their role virtually by maintaining the value of gold on a fixed level, with the proviso of ensuring convertibility (but accompanied by measures conceived so as to avoid real conversions as much as possible). If such a means is not available, the metallic money will continue to function as money in circulation with a value discordant with its "intrinsic value".

In the theory of value of chapter 1 of *Principles*, gold as money could precisely function as such because it obeys the principle of the determination of the value like the other commodities apart from the stability of its value as the measure of value. In other words, gold was regarded as commodities of which the quantity of production (of supply) can be freely changed in response to the variations of demand. But that is only an assumption on the level of the abstract theory. In reality, it would be necessary to spend time or to count additional costs of production to increase the quantity of supply of gold diggings in the mine. Gold, incapable of immediate adaptation to a sudden increase in the quantity necessary for circulation, appears to serve as the intermediary of circulation with its value determined by the quantitative relation between the commodities and gold existing in circulation, value discordant with the value determined by "the cost of their production, including the general profits of stock" (quantity theory à la Ricardo).[37] But, in addition to the difficulty of increase in the quantity of supply, there is another difficulty of quantitative adjustment specific to gold, specific commodity as metallic money (difficulty in reducing the quantity of supply of gold as money in response to the reductions in demand).

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the value of ingot itself as standard (the bank issues bank notes by buying ingot with its "mint price" higher than its market price and raises the value of the ingot), in order to stabilize the value of money through issue of convertible bank notes by the bank. Nevertheless, Ricardo underlines in other contexts that it is essential for the bank to ensure the free exchange between the bank notes and gold (sale of gold —conversion— and purchase of gold) to adjust the issued quantity to some extent automatically and to stabilize the value of money by ensuring the convertibility of the bank notes.(besides, the influence and the appreciation of such a transaction of gold between the bank and the market would be variable depending on their dimension. And according toRicardo's idea the reduction of such a transaction would serve as a criterion indicative of success of management of the issued quantity of bank notes).

37 Ricardo says that circulation never overflows and can absorb any quantity of money. According to his theory that applies to inconvertible banknotes injected into circulation inside a country and to the metallic money circulating in the whole world of trade (but not to the convertible bank

Appendix 1. On the Review of *Proposals* by McCulloch

McCulloch published, in the December 1818 issue of *Edinburgh Review*, an article of detailed review on *Proposals* of Ricardo published already nearly 3 years before with reviews on other booklets relating to the monetary questions (published all in 1818).[38] Ricardo had already published the first edition of *Principles* and at this time he was working for the second edition in taking account of his discussions with Torrens etc. This review is particularly interesting, because McCulloch, still faithful disciple of Ricardo at the time and eager about the presentation and popularization subjectively faithful of the doctrines of his "mentor", referred naturally to *Principles* during the writing of this review to try to present Ricardo's money theory in a consequent way with *Principles*, above all with the theory of value. In particular, he raises interesting problems in his efforts to put in agreement the theory of Ricardo determining the value of gold as money and his theory of value determining the value of gold as commodity. In his letter to McCulloch of January 3, 1819, Ricardo communicates his impressions to him after

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notes and the metallic money inside a country). In other words, on a worldwide scale the metallic money as a whole is supposed to remain forever in circulation like the inconvertible bank notes in a country. While recognizing the use of precious metals (gold in particular) as industrial raw materials or craft work, Ricardo never recognizes that the remaining part of gold used as money carries out by itself the quantitative adjustment by repeating entry in and exit from circulation according to the need for transaction (operation of the reserve of money of Marx). But Ricardo does not support this point as Marx reproaches him by identifying Ricardo's theory with that of Montesquieu and Hume: the metallic money does not have a proper value like inconvertible bank notes and its value is given in circulation only by its quantitative relation with the mass of commodities. As Ricardo does not cease underlining since his first intervention in the bullion controversy, the metallic money is for him a commodity having its own value and the commodities are necessarily sold in entirety (the money, being commodity, is sold. In the classical economics the purchase and the sale is in completely symmetrical relation and there is no distinction in principle between them. The law of Say). To stock commodities in depository because they are not sold with their "intrinsic value", is comparable to preserving them in vain. For Ricardo's theory, it is unthinkable that the owner of money with a certain desire of consumption and an infinite desire of accumulation does not spend the money at his disposal to one of these uses and leaves it idle. The quantitativist point of view of Ricardo is the result of such a perception on the money and of the awareness of the difficulties of the quantitative adjustment of the money as commodity, and he does not think that the value of bank notes and that of metallic money are also determined by their quantities by considering them all as simple "representatives" of the mass of commodities, representatives which can have their values only in circulation.

38 The exceptional delay taken with regard to the review on *Proposals* can be explained by the political situation of the time and the political considerations of the author of the review and of the editors of *Review*.

the reading of the review. "I have read the article with an endeavour to discover blemishes in it, but excepting one or two trifling points, not in the least affecting the reasoning, I cannot discover any." (VIII,1). It is a letter of thanks to his "disciple", author of a very favorable review. So these remarks are not to take with their face value, however it would be possible to consider that Ricardo expresses here his assent with the discussion of McCulloch in its broad outline.

Reviewing *Proposals*, McCulloch starts to discuss on the problem indicated above referring together to *Proposals* and *Principles* (ch.1 and ch.27 in particular). His arguments, apparently clear but in fact full of confusion and complicacy, can be summarized as below. He seems to try roughly speaking to amalgamate with the following logic Ricardo's value theory and his quantity theory of determination of the value of money.

According to Ricardo, the metallic money is commodity as every other. But for the production of the precious metals the requirements for the validity of the labor theory of value are not filled, which are the unlimited competition and the facility of quantitative adjustment of supply. The supply of the precious metals is limited to a certain quantity. "Whenever the supply of money becomes fixed, the amount of it to be given in exchange for any one commodity, varies inversely as the *demand*, and is altogether unaffected by any other circumstance" ([McCulloch], Article. III, *Edinburgh Review*, Dec.1818, p.56). The supply of the precious metals being limited, the mass of metallic money cannot increase in proportion to the increase of volume of transaction. Here is a situation in which the difference between supply and demand increases continuously, and the value of money in circulation rises in moving away from the value determined in the production and the market prices continue to fall. The "intrinsic value" of the precious metals whose supply is thus limited is practically absent, as long as they function as money. They become simple vectors of the value given in circulation. Such a quantitativist determination of the value of money is "true only of a gold currency limited in its quantity", and "such a currency not being possessed of any intrinsic value, its worth in exchange is necessarily regulated by the proportion which its total amount bears to the business which it has to perform, or the demand." (*ibid*.58) "Guineas, sovereigns, pound sterling, &c. would then really constitute mere bank notes or counters, to be used in computing the relative value of property, and in transferring it from one person to another" (*ibid*.57).

Taking the case in which the quantity of supply of the precious metals is hypothetically fixed and thus cannot be increased, McCulloch says that their "intrinsic value" loses every meaning with regard to their function as money. What he brings into question in his review is exclusively the case of increase in the value of the precious metals as money because of insufficiency of the quantity of its supply compared to the volume of transaction, and it is not question of the contrary case of reduction in the value of metallic money because of relative excess of its quantity. Here it is not a question of a simple formal defect not to have examined all the two possible cases. In fact, though arguing on the basis of quantitative limitation of the precious metals, he draws the conclusion that the “intrinsic value” of the precious metals as commodities does not have any regulating effect on their value as money. He goes further until trying also to explain with the principle of quantitative limitation the value the bits of paper have in the circulation that have become paper money almost without any “intrinsic value” (an extension of the “principle” affirmed by Ricardo at the beginning of the chapter 27 *On Currency and Banks* (I, 353)). According to the point of view of McCulloch, there is no difference between the metallic money and the paper money (both are only tickets or counters, he says) in the sense that the money with fixed quantity becomes the vector of value determined independently of its “intrinsic value” in circulation by the volume of transaction etc. (but it is odd to affirm that the quantity of supply of the paper money is not freely adjustable. The current state that *Proposals* blamed is rather the excessive issue and the consequent evils. Carried off his feet by his own theoretical schema, McCulloch seems to adopt an assumption completely contradictory with Ricardo’s idea).

In this article of review, McCulloch tries to explain the value which the precious metals have as money with the principle of quantitative limitation, like the value of bank notes completely independent of its intrinsic value. The precious metals are thus excluded from the world of the commodities as long as they function as money. By thus relegating the quantitativist determination of the value of money outside the field of application of Ricardo value theory (the precious metals as money are not commodities anymore), McCulloch puts them out of conflictual relation. But such a procedure for “resolving” the problem would not be in agreement with Ricardo’s idea, for whom gold is always a commodity which serves as the standard of money in his attempts to stabilize its value. In Ricardo’s conception, the ultimate basis of the stability of this value is the stability of the “intrinsic value” of gold, standard commodity.

B. Difficulty in Reducing the Quantity and Instability of Value

The imposition of tax on commodities is comparable with an increase in the difficulty (of the cost) of production, says Ricardo. Consequently, if one continues to produce and supply on the market the same quantity of commodities to sell them with the same price afterwards as before the imposition on these commodities, that will mean a kind of sale at a loss caused by an excessive supply. To recover as before the imposition the production cost including the general profit by the sale of the taxed commodities, it is necessary to diminish through a process of adjustment the production and the supply in order to raise the "market price", which is now lower than the "natural price" supposed to have been raised by the imposition, up to the level of this new natural price. In the chapter 13 *Tax on Gold* of *Principles*, Ricardo, in examining particular circumstances in which the production and supply of gold must be diminished because of imposition on gold, tries to show the specificities of the determination of the value of the metallic money as commodity. "The duration of the interval, before the market price will conform to the natural price, must depend on the nature of the commodity, and on the facility with which it can be reduced in quantity. [· · ·] In proportion as the supply of a particular commodity can be more easily reduced, without inconvenience to the producer, the price of it will more quickly rise after the difficulty of its production has been increased by taxation, or by any other means." (I, 191).

In the first chapters of *Principles*, it was not question of the market price, being supposed to have accomplished all the process of adjustment on the side of supply reabsorbing the difference between the natural price and the market price. Or even when it was question of this process (ch.4), were not at all raised the problems one could not have escaped if the time necessary to this process had differed from one commodities to another or if it had been very long for some commodities compared to the others. In chapter 13 including the text quoted above, in connection with the commodity gold, closely related to the subject of present article, Ricardo considers the characteristics of the process of downward adjustment of its quantity of production and supply, by comparing to a reduction in demand the relative fall of the "market price" caused by a rise in the production cost including the tax.

In this chapter Ricardo takes up again the same point of view according to which the value of the precious metals to monetary use is determined by the same principle as the other commodities. "The metal gold, like all other commodities, has its value in the market ultimately regulated by the comparative facility or difficulty of producing it." (I, 193). And the quantity of money necessary to make circulate the commodities is determined in inverse proportion to this value. In other words, the value of money is an independent variable and its quantity varies in accordance with this value. Contrary to the quantitativist idea, the "demand for money" (quantity necessary for circulation) is an amount to be determined. It is the fundamental position of Ricardo.[39] But in order for this position to be valid without condition, it is necessary that unlimited competition reigns in the production of the precious metals as in all the others and that the quantity of supply is adjusted without obstacle to the quantitative variations of demand (theoretically, instantaneously and in unlimited amplitude). But with regard to the production and supply of gold on the market, these conditions are placed under heavy constraints, which are at the origin of particular problems. It is in this context that Ricardo had to take the point of view apparently quantitativist concerning the determination of the value of gold (or of the money made of gold).

If the price of gold as commodity falls below its natural price, the capital invested in the branch of production of gold becoming incapable of obtaining the general profit, part of this capital leaves this branch and the supply will decrease. But, the supply of gold to monetary use has some characteristics which make obstacle to the adjustment of supply and demand by such a process. Once sold to the consumers, the consumer goods in general leave circulation definitively, and their new supply can be done only in their production renewed by new investments of capital. On the other hand, gold used as money remains permanently in circulation because of its durability (abstracting away from grated and scraped coins). Ricardo recognizes, other than the part of gold supplied by the mining industry and used as money, the existence of the part which is used as industrial raw materials and is consumed as decorations etc. And as for this part he supposes that it follows the same cycle of production, circulation and consumption as the other industrial products. Consequently, even in the extreme case of a complete stop of the production of gold, the quantity of money will not change for the moment and only the supply of gold to non-monetary use will stop. This gold being object of transaction on the market like the general commodities, naturally its market price will go up rapidly. A part of the gold coins will then be molten and supplied on the market instead of newly produced gold. The quantity of money in circulation will decrease by the quantity eroded for this supply. Under these conditions, to decrease the quantity of money, will be necessary a very long time in proportion to the importance of the part of existing gold used as money, even admitting the extreme

39 Ricardo takes the same position on the circulation of paper money as on metallic circulation. “While money is the general medium of exchange, the demand for it is never a matter of choice, but always of necessity. [· · ·] You may, indeed, substitute paper money, but by this you do not, and cannot lessen the quantity of money, for that is regulated by the value of the standard for which it is exchangeable” (I, 194-5).

case of the total stop of the production of gold. "Although from its [of metal gold] durable nature, and from the difficulty of reducing its quantity, it does not readily bend to variations in its market value, yet that difficulty is much increased from the circumstance of its being used as money." (I, 193) "It [gold] could not rise in relative value to other things, till its quantity were reduced. This would be more particularly the case, if gold were used exclusively for money." (I, 192).

Thus the metallic money requires much time to reduce its quantity. During long intermediate time until the completion of the quantitative adjustment when gold will be sold at its market price corresponding to the difficulty of production to which the tax was compared and when the industry of production of gold will be able to resume the operation, the price fallen below the natural price because of a virtual excessive supply seems to determine the value of gold. And this market price must vary with the quantity of money. In other words, if the time of observation is shorter than the time necessary for the quantitative adjustment which restores the market price to the level corresponding to the "cost of production", it seems as if the value were determined by the quantity. And if the time of adjustment is longer than a certain duration, the determination of the value by the quantity could be regarded as consequence of the nature of the precious metals themselves used as money rather than as a consequence of the relatively short time of observation. "The demand for money is regulated entirely by its value, and its value by its quantity." (I, 193) Literally this sentence says only that the quantity of money determines in the last analysis its demand (quantity demanded) by the intermediary term that is the value. In other words, there is initially the quantity of money which circulates in whole, and the value of money is determined by this quantity in circulation. As a whole Ricardo expresses the quantitativist position here, but first the half is the theory of the "quantity necessary for the circulation" (with a "sufficiently" long time of observation). Here it is in any case the value that regulates the quantity. If this sentence appears to be a circular reasoning, it is because Ricardo made cohabit the two ideas without putting them in coherent relation. At all events, while trying to reconcile the theory of money with his theory of value (ch.1 of *Principles*), Ricardo was to accept in certain conditions the theory of determination of the value by the quantity (quantity theory) because of the particular circumstances of the supply of gold as money.

As regards the metallic money, the market price of metal money can remain for a long time on a level lower than the natural price. But it is what can occur if the metallic money covers the circulation in the absence of paper money, which will make possible other form of quantitative adjustment.[40] "The argument which I have just been using, applies only to those states of society in which the precious metals are used for money, and where paper credit is not established." (*ibid*.). "As money made of paper may be readily reduced in quantity, its value, though its standard were gold, would be increased as rapidly as that of the metal itself would be increased, if the metal, by forming a very small part of the circulation, had a very slight connection with money." (I, 194). We saw above Ricardo affirming that the issue of paper money to compensate for the insufficient quantity of metallic money can carry out the stabilization of the value of money. Here in the opposite direction he speaks about the possibility of raising this value by recovering a certain part of banknotes already in circulation (being also creator of money, the bank costs much less and is much prompter to react to the changes than the mine). Ricardo thinks here of the "ideal" state of money he had proposed a few years before, where gold is only standard of money and what really circulates is convertible bank notes for the most part (entirely, ideally). In this state of affairs a very broad room is available for the adjustment of quantity of money. If the convertible bank notes circulate along with very small quantity of gold coins, its market price exceeds its "mint price" with the rise of the value of gold, which causes claims of conversion and the consequent reduction in bank notes, and the market prices including that of gold fall. This process will stop when the fall of the gold price on the market brings it back to the level of its "mint price". In this process the gold price on the market rises and returns to the initial level, but the prices of the other commodities do nothing but fall. In other words, from the point of view of the result, the diminution of banknotes raises the value of money in the same proportion as that of gold, its market price is the same as before, whereas the prices of all the other commodities fell in proportion to the rise of the value of gold. This process of adjustment has nothing to do with quantitative variation of the production of gold, there are only recoveries of bank notes by operations of conversion.

40 The procedure which consists in supposing initially the metallic circulation and then introducing the paper money is, as we saw, a routine of Ricardo's theory both in *High Price* and *Proposals* to advance the need for paper money for the stability of the value of money. As regards the problem arising in chapter 13 of *Principles*, Ricardo underlines the utility of paper money as means of promptly carrying out the rise of the relative price of gold compared to the other commodities in proportion to the rise of the "natural price" of gold as standard of money caused by the imposition of tax, by diminution of issued quantity instead of reduction in supply of gold itself on the market. However, for us what is important here is not the imposition of tax in itself, but the difficulties (specific to the precious metals as money) of quantitative adjustment of the supply in response to the increase in the value of gold caused by the imposition comparable to the increase in difficulty of production, and the characteristics of the value of gold.

From this one can draw conclusion that the paper money is essential to the stability of the value of money. But in the international circulation where the paper money cannot function, when instead of tax the difficulty of gold production increases, the problem of instability of the value of gold comparable to the instability of the value of money in a country will not be solved.

C. Value and Quantity of Money

The chapter 27 *On Currency and Banks* of *Principles* is the only chapter in the main work of Ricardo which has as its subject the money and finance. This chapter does not belong to those "chapters of theory" which constitute together the systematic development of his abstract economic theory, but it is located among those known as "chapters of controversy". In the system of Ricardo's economic theory, the money does not make particular object of theoretical considerations, apart from its function as measure of value because of the relative stability of the value of gold as commodity among the others. Ricardo had made on many occasions interventions for the resumption of convertibility in the controversy around the extraordinary state of the money during the time of suspension of convertibility when the "company of merchants" endowed with competence to control the value of the pecuniary wealth of people misused it to depreciate the money and to redistribute violently and unjustly the national fortune. In this chapter 27 he expresses his global position in this controversy by taking into account the interventions he had made until then and the situation at the time of the drafting of *Principles* (development in favor of the bullionism after the end of the Napoleonic war). Therefore, if there were not the extraordinary state of the money and the consequent controversy on problems of real interest, the subject on "Currency and Banks" would probably not have a place in *Principles*, the system of the abstract economic theory.

By saying that this subject having already been discussed much it is not necessary any more all to recapitulate again, Ricardo starts by delimiting the topic of the chapter as follows. "I shall, therefore, take only a brief survey of some of the general laws which regulate its quantity and value." (I, 352). In other words, the relation between the value and the quantity of money constitutes the most significant problem of the theory of money. This relation in the theory (monetary and abstract economic) of Ricardo is also the central problem we examined up to now (in form of the relationship between the quantity theory and the theory of value[41]). The arguments of Ricardo on the value and the quantity of money at this

41 The contradiction between a quantity and a labour (or a cost of production) theory of the value of money is obvious, and has often been discussed. [· · ·] There is no explicit attempt at reconciling

stage where the theory of value proper to Ricardo had already taken form will provide us with some keys for the examination of this central problem.

In this chapter, Ricardo discusses the monetary regime within the national framework of England, and the point of view adopted in *High Price* in particular where the national money was considered in its international relations (distribution and redistribution of the metallic money on a worldwide scale) is not explicit. The precious metals as such are money in the international circulation, but what Ricardo calls "money" in connection with the interior circulation of a country is the gold coins or the banknotes, the ingot itself is not money. It is thus necessary to make a distinction between the value of gold and the value of money. According to Ricardo, gold obeys the principle applicable to the commodities in general but money is determined in its value by other principle. It is essential not to lose sight of this point when reading the text of this chapter 27 which has for its sole object the national circulation of England.

"Gold and silver, like all other commodities, are valuable only in proportion to the quantity of labour necessary to produce them, and bring them to market." (*ibid*.). "The quantity of money that can be employed in a country must depend on its value." (*ibid*.). According to these texts, the precious metals as money are commodities like the others and their values are also determined like the other commodities. And their quantity as money is determined by value. In other words, the quantity of the precious metals incorporated in circulation is of a certain amount (quantity necessary for circulation), and above this amount the precious metals cannot circulate as money and must overflow (determination of the quantity by the value). However, in the paragraph which immediately follows the text quoted above, Ricardo makes an assertion apparently completely contradictory with the preceding one.

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the two conflicting views in Ricardo. [···] the contradiction is only to be found in the *Principles* and not in Ricardo's earlier works on monetary theory, where he does not yet have a labour theory of value (this is the case also for *Economical and Secure Currency*) (De Vivo, G, Ricardo, *The New Palgrave: A Dictionary of Economics* edited by J. Eatwell, Mr. Milgate, P. Newman, London, 1987, Vol.4, p.195). Many commentators seem to share such a point of view which sees contradiction in the relation between the theory of value of Ricardo and his quantity theory founded on the neutrality of money. If Ricardo himself did not try to connect coherently these two theories, it is probably because he did not see a contradictory relation between them. It is difficult to think that he was not aware of the above mentioned contradiction while having discussed on various occasions on both subjects. And it is not very probable that he used alternatively one of these two theories according to the circumstance, considering his character which can be guessed from his letters etc. We will try to show that these two theories of Ricardo are not always contradictory, by the examination of the chapter on money in only one of his works in which the author of the text quoted above finds a contradiction.

"A circulation can never be so abundant as to overflow; for by diminishing its value, in the same proportion you will increase its quantity, and by increasing its value, diminish its quantity." (*ibid.*).

At first sight it would seem that Ricardo, starting from this paragraph, expresses abruptly a quantitativist point of view in contradiction to what he said in the preceding paragraph. According to what he says here, Ricardo may be considered as supposing that the product of the value of money and its quantity remains constant so that they are in inverse proportion. A given value of money determines its quantity (the first two quoted sentences), whereas if the money can circulate in any quantity its value varies in inverse proportion to its quantity. In this case money circulates not with its "intrinsic value" but well with the value determined in circulation by the quantity injected[42] by the issuing monetary organization (banks or state). Ricardo implies this, when he speaks about the money in the interior circulation of a country. According to his terminology (not always coherent), with regard to interior circulation where organizations of monetary issue can exist, the precious metals themselves are not identical to the money.

Saying that the money can circulate in any quantity, Ricardo implies a certain prerequisite for the validity of this thesis. This prerequisite is made explicit by his arguments on the seigniorage[43] somewhat suddenly introduced into the following paragraph. The seigniorage is not only the price of the commission which the mint levies to cast the coins, but it is also the principle according to which is determined the value of money injected into circulation by the issuing organization independently of its intrinsic value (it thus means the benefit of privilege allotted to competences of monetary issue capable of claiming the "unequal" exchange).

"While the State alone coins, there can be no limit to this charge of seignorage; for by limiting the quantity of coin, it can be raised to any conceivable value./ It is on this principle that paper money circulates: the whole charge for paper money may be considered as seignorage. Though it has no intrinsic value, yet, by limiting

42 The money thus injected into circulation (coins or bank notes) can circulate in the country as money only in national uniform of coin or printing made by the issuing organization, and for the operation of this organization it can, legally or economically rationally, neither enter nor leave circulation freely. It is the money of which only the issued quantity as a whole can be used.

43 Ricardo explains his point of view on the seigniorage in the chapter VI *Observations on the Principles of Seignorage* of his work published in 1811 *Reply to Mr. Bosanquet's Practical Observations on the Report of the Bullion Committee* (III, 222-6). One can consider that the discussion on the seigniorage in chapter 27 of *Principles* constitutes a summary presented of it in the form of "principle of limitation" (McCulloch) of the issued quantity of money.

its quantity, its value in exchange is as great as an equal denomination of coin, or of bullion in that coin. On the same principle, too, namely, by a limitation of its quantity, a debased coin would circulate at the value it should bear, if it were of the legal weight and fineness, and not at the value of the quantity of metal which it actually contained." (I.353, the oblique stroke / means the end of paragraph).

If the issuing monetary organization (the state) limits the quantity of its issue, the money will have a value above its intrinsic value (in the case of coins the quantity of gold contained, in the case of bank notes practically zero). When the ingot or the bits of paper are endowed with a uniform of coins or bank notes, such divergences occur.[44] It is these divergences that make it possible for circulation to absorb any quantity of money. In other words, Ricardo supposes that there is a "normal" quantity without quantitative limitation of issue. When the money is issued in this quantity, gold as coins becomes equivalent to the ingot and the seigniorage disappears.[45] The quantity of money which carries out this equivalence would be that which "must depend on its value" Ricardo mentions at the beginning of chapter 27. And this holds only if the coins and bank notes are locked up in circulation so that their quantity cannot change without the operation of the issuing organization. But that does not hold any more, if casting and melting of coin are free, export and import of gold is allowed, and the conversion of the bank notes and the unlimited purchase of gold by the bank are assured.

The principle of "seigniorage" was that of "limitation" of the quantity of money. In the case of the inconvertible bank notes without any intrinsic value, their quantity is always "limited" whatever may be the issued quantity. Thus the principle of the maintenance of value by the quantitative limitation changes, for the inconvertible bank notes, into the opposite principle of indefinite depreciation by the unlimited expansion (depreciated but always above their "intrinsic value"). If the bank (or the state) monopolizes the competences to issue and recover the money, and if casting (or printing) and melting (or destruction) is at the discretion of the issuing authority, it will be its quantity which determines its value. "The

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44 In this respect there is no distinction between the coins and the bank notes. What are the intrinsic values each of them has? Here is a question completely independent of another question: how are the values determined the coins or the bank notes injected into circulation by the issuing organization have?

45 Or the quantity of ingot which the bank note claims to represent has the price identical to the face value of this bank note. But in the case of the inconvertible bank notes, since a value is given to the bits of paper without intrinsic value, the seigniorage never disappears although it can decrease with the increase of their quantity. This is why there is no limit to the quantity of issue of bank notes, which is always "limited".

value of such money must depend wholly upon its quantity, and in the case supposed the Bank would not only have the power of limiting the amount of paper money, but of metallic money also." (III, 223, cf. note 43 of this article). From this, Ricardo deduced his diagnosis that the depreciation of the England's banknotes at the time is due to the excessive quantity of their issue. Considering these arguments in themselves, they are certainly quantitativist, but the regulation of value by quantity is not valid any more under the conditions of convertibility of the bank notes, free casting and melting of gold, and its free international movements.[46] These are precisely those conditions, the realization of which Ricardo recommended with insistence in *Proposals*, etc.

What is necessary to underline to characterize Ricardo's quantity theory, is that it is a theory of the determination of the value of money in a particular situation where the money, whatever may be the form, is prevented from entering and leaving circulation freely. To discuss on the relation of this theory with the theory of value, the two following levels should be distinguished.

One is that of the international circulation where no money issuing organization can exist such as state or banks and the precious metals as kinds of commodities have their rates of exchange as money with other commodities in their shape of ingot. For the classical economics including Ricardo, the exchange between the money and commodities is nothing other than a symmetrical exchange between commodities (barter). And thus if the precious metals meet the conditions enumerated at the beginning of chapter 1 of the *Principles*, conditions necessary for the application of the theory of value, the metallic money could circulate with their value as commodities. But precious metals have very large durability (which allows them to remain permanently in circulation without deterioration, and which makes them apt for their function as money), and the quantitative limit as mineral resources (which makes it possible to keep great values in relatively small volumes and weights, which is also a condition of aptitude as money), these characteristics make obstacle to the prompt quantitative adjustment of supply. Moreover, Ricardo

46 However, although Ricardo does not make it explicit, according to his theoretical position, the regulation of value by quantity should be considered to become valid again for international circulation where gold as universal money can neither enter nor leave circulation (the reserve of hoarded money being supposed to be null), although there can be neither organizations of monetary issue nor seigniorage. And the "intrinsic value" of gold thus determined on a worldwide scale passes for the intrinsic value of the gold which functions as standard in each country. If it is thus, it is because the quantity of the precious metals used as money is given independently of the quantity appropriate to their intrinsic value, and that a long time is necessary for their quantitative change for adjustment to their intrinsic value.

denies the existence of the mechanism of quantitative adjustment of money in circulation, supposing the full employment of the metallic money. It follows that in the international circulation the existing quantity of the precious metals as a whole functions as money independently of the volume of transaction, and the variations of their quantity require a long time. Then their value (their ratio of exchange with the other commodities) appears to be largely dependent on their quantity. Hence the theory of Montesquieu and Hume, for which the precious metals as money do not have intrinsic value and the value of money is determined by the quantitative relation between the mass of the metallic money without value and the mass of the commodities. Ricardo, on his side, does not interpret in this way the regulation of the value of money by its quantity, but for him this regulation is a particular case in which the adjustment of the market price to the natural price requires a long time. The quantitativist determination is not valid unconditionally, but only when the time of observation is shorter than that of this adjustment. Thus for Ricardo the determination of the value of money is in any case barely linked to his commodities' value theory. If he did not cease saying, on the level of abstracted theory, that the determination of the value of the commodities functioning as money does not at all differ from that of the other general commodities, is it not because he thought so?

The other is obviously the interior circulation of a country. What distinguishes it in a decisive way from the first level, is that there exists for this field of circulation the external world of international circulation and the issuing organization of national money (here is left aside the fact that the existence of central banks supplying unified currencies within the framework of national state belongs to the time posterior to that of Ricardo). The money which the state or the bank injects into circulation is of various kinds. But only the money which is shut from the external world and must function as intermediary of the interior transaction in any quantity, is prone to the regulation of its value by its quantity. In fact these are the inconvertible bank notes which can pass as money only inside the country where is their issuing organization, and the gold coins whose owners are prohibited from freely melting them to sell as ingot. Their value as money is determined by the relation between their issued quantity and the volume of the interior transaction, independently of the “intrinsic value” of their vectors (paper and gold). If the coins are subjected to prohibition indicated above, this also applies to the convertible bank notes as long as the conversion is done with such coins. In this situation, the value of money is raised or lowered at the discretion of the organization of issue, only one entity capable of deciding its quantity. Taken separately such a point of view of Ricardo on the current state of the money, one could certainly consider that he adopted the quantity theory of money. But for him, it is a kind of despotism which an organization monopolizing the competences of monetary issue exerts on the whole society for its private interest. It is as if this organization made money monopolized commodities. The quantitativist determination of Ricardo has significance only in this state of affairs. The measures put forward by Ricardo to stop the destabilization of the value of money can all be interpreted as aiming at removing the bulk-heading which separates the money in interior circulation from the external world of international circulation. In other words, to allow the metallic money as with the other general commodities the free movement for the most favorable market to its sale (by this only gold functions fully as standard of money), such is the objective of his proposals (conversion with ingot, purchase of ingot by the bank at the fixed "mint price", free melting and export of gold coins, free casting with receipt of commission equivalent to the real cost). In doing this, Ricardo must have had in prospect an international distribution of gold equalizing its value in all the countries, which would realize a money linked with gold in a certain fixed proportion. The value of money would then stabilize as much as the "intrinsic value" of gold.

By such a detour, the theory of value of money of Ricardo is linked to the theory determining the value of gold, standard commodity and universal money. This last theory is, in its turn, barely linked to his theory determining the values of the commodities.

Appendix 2. Evaluation of Marx on Ricardo's Money Theory (Chapter 2 of *Contribution to the Critique of Political Economy*)

Marx made on several occasions comments on Ricardo's money theory examined in this article in order to show the historical position of his own theory of money. The sketch of the history of theories of money C. *Theories on Medium of Circulation and Money* annexed in chapter 2 *Money or Simple Circulation* of *Contribution to the Critique of Political Economy* (1859) contains detailed comments on this subject. This text seems to have continued to exert a considerable influence on some of commentators of Ricardo for whom the reference to Marx was essential. We examine below the interpretation and the evaluation of Ricardo's money theory by Marx according to our interpretation of Ricardo. We intend only to consider the discussion of Marx on Ricardo, and this is to be distinguished from our interpretation and evaluation of Marx's money theory. (Besides he makes careful examinations on Ricardo's points of view concerning the problems relating to the money and the credit in his enormous notes of reading made at the beginning of 1850's immediately after his emigration to London. Most of these documents were published for the first time during 1980's in volumes of the new MEGA. So the documents of Marx's research on Ricardo's monetary theory at that time are not examined yet fully.)

The evaluation of Ricardo's money theory by Marx turns around the question: how Ricardo considers the relation of determination between the value of money and its quantity. On the basis of the text of *Principles* above all, he positively estimates the point of view of Ricardo according to which Ricardo determines like Marx the quantity of money in circulation by the relation between the value of metallic money (gold) and the sum of market prices in circulation (determination of quantity by value). But, according to Marx, Ricardo is not coherent on this point and there exists in his theory a major cleavage. "When Ricardo suddenly interrupts the smooth progress of his exposition and adopts the opposite view, he does so in order to deal with the international movement of precious metals and thus complicates the problem by introducing extraneous aspects." (Marx, K, *A Contribution to the Critique of Political Economy*, Progress Publishers, Moscow, 1977, p.171). Estimating that Ricardo halfway reverses the relation of determination between the value and the quantity, Marx begins the critical examination of this "opposite view". In Ricardo's money theory there would be a positive side which is akin to his own point of view and another side which is not. Marx concentrates most of his discussions on this last side (he refers besides to *A History of Price* of Thomas Tooke to indicate that the theory of money of Ricardo is unrealistic in the light of historical vicissitude of prices, exchange ratios, international transactions, etc. of the time of the bullion controversy. Like up to now we leave here this side of the problems aside).

The sentence quoted above gives the impression as if Ricardo abruptly diverted his discussion in a contrary direction in the same text. But actually it is not the case. Marx uses as reference texts of Ricardo (*High Price*) after the sentence quoted above, texts different from those which were used by him as references before (*Principles* and partially *Proposals*). Therefore, Ricardo abruptly does not stop "the smooth progress of his exposition" to turn to "the international movement of precious metals". *High Price* was his first publication in which he systematically developed in his way his theory of money (although he owed much to his predecessors on several points). As we saw in section 2 of this article, his theory of money supposes from the very beginning the "international circulation of precious metals". And we showed in the whole of this article that he could not think the problems concerning the national money without this supposition.

The summary of the theory of Ricardo by Marx is thus made by temporally going back from *Principles* (and *Proposals*) to *High Price* to find there a passage from the "positive" side to the "negative" side in his theoretical development. It is an extremely dogmatic summary which has as a criterion of judgment the distance with regard to the theoretical position of Marx himself. By reproaching Ricardo for having fixed his attention on the "international circulation of precious metals" and for thus complicating "the problem by introducing extraneous aspects" (*ibid.*), Marx insists on the considerations of monetary questions within the national framework and for this purpose he locates "the gold and silver mines within the countries in which the precious metals circulate as money" (*ibid*.) to erase the "international veneer" (*ibid*, p.174) of the theory of Ricardo. Such a procedure seems to come from the position of the theory of commodity and money in the plan of the system of critique of political economy of Marx. In other words, in the theoretical fields located within the framework of "capital in general" developed before the economy in a country (national economy) makes its appearance as such and the international economic relations become the object of the theory, all must be considered inside the economy in a country by leaving aside the international relations. All the problems raised by Ricardo concerning the money are also dealt with inside such a framework.

Obviously Ricardo had never thought of it. He faced the rise of the interior prices of the commodities including the ingot, fall of exchange ratios, and international movements of gold. He did nothing but question these phenomena as correlative and inseparable problems, and he was coherent in this position. Moreover, in Ricardo's theory, the distinction and the relation between coins and bank notes placed under constraint of the national framework and the ingot in perpetual international movement as universal money play a great role. The procedure of Marx (to locate the gold mines inside the country in question) amounts to comparing a national economy to the homogeneous and closed world economy which does not have anything outside (one of the methodological characteristics of "first half of the system" of the critique of political economy of Marx). This makes disappear various topics that Ricardo had wanted to discuss in his theory of money.

The reading of Ricardo by Marx is very egocentric, and while discussing on Ricardo's theory he speaks after all about his own theory and his own problematics. To say thus is not at all to discredit his arguments. But, for the studies of the history of economic thought such an evaluation of Ricardo is not acceptable. Moreover, if one reads Ricardo following the criterion of the evaluation by Marx as above, serious misinterpretations are possible. These are general characteristics of the evaluation of Ricardo by Marx. By presupposing them, in the following we make comments on some particular points.

While having determined the value of the metallic money by the embodied labor required for its production, Ricardo thinks in addition that inside the circulation this same metallic money passes as value higher or lower than that which was determined by labor, according to the quantitative relation with the sum of the market prices, and moreover that this value of the metallic money determined by this quantitative relation becomes valid as such independently of the value of the precious metals as commodities. If the prices were adjusted, “the amount of gold in circulation will once more be commensurate with the needs of circulation (a result which Ricardo emphasizes with special satisfaction)” (*ibid*.173). This is the “contradiction” which Marx finds in Ricardo’s monetary theory, and it is this contradiction that he aims at in his criticism. According to whether the quantity of gold is above or below that which is necessary for circulation, gold “becomes a token which (...) represents a metal with a lower exchange-value than its own”, or which “represents a metal which has a higher value” (*ibid*.172) .Therefore, in circulation the value of gold as money is given not according to its “intrinsic value” but by its quantity. On this point gold is not distinguished at all from the bank notes. Marx criticizes the quantitativist determination of the value of Ricardo, in putting on the same plan any kind of money (ingot, coins, banknotes). Ricardo is “entirely dominated by the phenomenon of value-tokens depreciating because of their quantity” (*ibid*.174). “the amount of gold present in a country must enter the sphere of circulation; as a token representing itself it can thus rise above or fall below its value” (*ibid*.177). This is, according to Marx, the “simple thesis” (*ibid*.) put at the starting point of Ricardo’s theory.

Ricardo certainly thought that any kind of money including gold remains locked up in circulation, and such a point of view on money was at the basis of his quantitativist theory (this is why gold as money always remains as a whole in circulation, cf. note 37). Consequently, he denied the existence of the mechanism of adjustment which makes it possible for gold to enter and leave circulation according to the need of circulation and thus to maintain the quantity of gold in circulation at the suitable level (at which value of gold as money corresponds to its value as commodity). But, unlike Marx who wanted to think all these problems inside a national economy comparable to the closed homogeneous world economy (leaving aside the international relations), Ricardo always made the distinction between interior circulation in a country and international circulation and at the same time took account of their mutual relation to think on the value and the quantity of money. Unable to cross the borders, the bank notes can leave interior circulation all the same if they are convertible, but they must remain locked up there if they are inconvertible. Gold as money cannot leave out world circulation, but it can however circulate freely between the countries. The bank notes are without intrinsic value, whereas gold has its value as commodity (values which are more stable in the short run compared to other commodities).

On the basis of these differences between gold and the inconvertible bank notes, Ricardo made gold the standard of money and made the purchasing power of money over this standard (price of gold) the measure of the value of the inconvertible bank notes of the Bank of England, and made the discrepancy between the market price and the "mint price" of this gold the criterion for judging the excess or insufficiency of the sum of the issued bank notes. The theoretical framework that Marx applies to evaluate the theory of Ricardo completely prevents him from seeing these essential aspects of the monetary theory of Ricardo. In fact, as the title itself of this work *High Price of Bullion*, *A Proof of the Depreciation of Banknotes* shows it clearly, these aspects constitute the most important topics in this booklet. And yet Marx never mentioned them in *Contribution to Critique*...

The critical examination by Marx presented above suggests that Ricardo did not have any idea on the possible mechanism allowing gold to circulate with its value as commodity by the adjustment of the quantity itself of the metallic money (increase and reduction in the production of gold). By contrast, Marx affirms that whenever the quantity of the metallic money in circulation goes up above or fall below the quantity necessary for the circulation determined by the relation between the value of the commodity money and the value of the other commodities, a positive quantitative adjustment of gold in circulation takes place by increase or reduction in the production of gold independently of exit of gold from circulation to the "reservoir" or of its entry from the "reservoir" to circulation. Moreover, according to Marx, this question is only one "case of exercises of application" of Ricardo's general theory of value who could well have answered to it thus: "According to Ricardo's general theory of exchange-value, the rise of gold above its exchange-value, in other words above the value which is determined by the labour time it contains, would lead to an enlarged output of gold until the increased supply reduced it again to its proper value. Conversely, a fall of gold below its value would lead to a decline in the output of gold until its value rose again to its proper level. These opposite movements would resolve the contradiction between the metallic value of gold and its value as a medium of circulation; the amount of gold in circulation would reach its proper level and commodity-prices would once more be in accordance with the standard of value." (*ibid*.173). It would be certainly possible to deduce from the theory of value in general of Ricardo such a quantitative adjustment as its obvious consequence, as long as gold is considered not at all to differ from the other commodities. But precisely because Ricardo was conscious of the dysfunction of this mechanism of adjustment with regard to gold, he was to recognize the quantitativist determination of its value and underlined the advantages of the paper money which serves to substitute for the metallic money and solve the problem of instability of the value of money caused by the difficulties of the quantitative adjustment of the precious metals.

So it would be legitimate to take the text quoted above for expression of the point of view not of Ricardo but of Marx on the theory of money and value. Generally speaking, Marx seems not to have been conscious of several particular problems of the production of gold as the material of money, the adjustment between its supply and demand and the determination of its value, in contrast with the other commodities (general industrial products in particular). (In connection with the theory of land rent Marx reflects on problems relating to the extraction of gold as a mineral resource, but he hardly considers them from the point of view of the characteristics of gold as the material of money). As can be seen in the text quoted above, Marx thinks probably that the adjustment between the demand and supply of gold and the determination of its value are the problems which can (must) be dealt with in the same way as those concerning the commodities in general constituting the object of the theory of value, at least in the first parts of his system of critique of political economy. The famous allegory of the "hole" in circulation (*Capital*, volume I, MEW Bd.23, S.131) Marx uses in the chapter on money of *Capital* precisely shows his approach which denies any characteristic of gold in so far as concerning the determination of its value. Such a treatment of the gold as money by Marx was at the origin of many debates between "marxist" economists, which ended up leaving the problems open. From this point of view, one could estimate that Marx was behind Ricardo who had become aware of the problems and tried to tackle them, obviously without arriving at a final solution.

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