1. Introduction

The immediate question we have to resolve in this paper is about what criterion can apply for the currency judgments like ‘overvalued’ or ‘undervalued’. Typical practice of measuring misalignment as a deviation from linear trend is not appropriate. For, at the time of the 1997 Asian crisis, Korean currency was not so aberrant from the trend but it was officially stated to have been overvalued. An alternative Marxian criterion for such a judgment is the concept of natural exchange rate. If market exchange rate is too high compared to the natural exchange rate, it is said ‘overvalued’ but, if it is too low, it is said ‘undervalued’. Yet what determines the natural exchange rate? This is reminiscent of the classical concept of natural price. It must be independent of market fluctuations in supply and demand, being determined by the production cost of the commodity in question. And the production cost is calculated in value terms as the latter is also to be independent of market fluctuations. By the same spoken, the
Marxian concept of natural exchange rate shall also be calculated in value terms as far as it is required to be independent of market fluctuations.

Exchange rate is the price of a foreign currency represented in terms of domestic money. In Marx’s value theory, it should be the ratio between two intrinsic values of domestic and foreign currencies. But how can we affirm the existence of those intrinsic values of domestic and foreign currencies if they are not labor-products? This is the primal question we have to resolve here.

Our discussion shall proceed in the following order. In the first two sections, we shall explain why gold and paper moneys pertain to the same commodity category (Section 2), and argue that the values of gold and paper moneys are determined, since they are all commodities, in the same way as any other ordinary commodity values (Section 3). We shall apply this theory to the question of foreign exchange rates and discuss two things in the subsequent two subsections. One is that the foreign exchange rate has a dual existence like a market exchange rate and an official exchange rate just as in the gold standards the bank notes had a double conversion rate like a market conversion rate and an official conversion rate (Section 4.1). The other is that the determination structure of the exchange rate can be demonstrated by tracing back to the origin of its dual existence (Section 4-2). Applying Marx’s labor-value theory to the case of foreign exchange rates, this paper aims to show the value of foreign currencies are not determined on the market posteriori by supplies and demands but a priori before being put into the market. This message will be provided in conclusion in the last section (Section 5).

2. The nature of money is in its commodity character.
Ever since money ceased to be commodity money being replaced with fiat money, its value has been conceived to be irrelevant to its production cost. It has been assumed that money enters into circulation without its value being pre-determined, and its value is determined while it mediates commodity exchanges, only after its entrance into circulation. That is, like ordinary commodity values, the value of money too has been conceived not to be determined until it enters into the world of commodity exchanges. Yet, this conception is in stark contrast with Marx’s.

In Marx’s conception, money is included in the commodity category. So, its value too, like other ordinary commodity values, can be determined by the amount of labor expended for its production (or acquisition). The value of foreign currencies too must be determined in the same way, by the amount of labor expended for the acquisition of them. A practical question is this, “Even if the money is a non-labor product, can we still calculate the labor amount expended for it?”

If we eye on electronic or paper moneys, moneys might be seen as mere symbols that can be characterized as abstract a-dimensional numbers. Here arises a crucial question; who on earth can issue such moneys? In the society of private individual producers, no private individual producers possess such a privilege as issuing abstract a-dimensional numbers as money. Unless we insert a third party (the state, for instance) into the society, a mere symbol or a token can in no way be issued as money. This explains why the nature of money must be in the commodity character as long as the society consists of only private individual producers. Therefore, a market confined to the exclusive realm of freedom, equality and property cannot force others to accept abstract a-dimensional numbers as money. Money needs to be a commodity whether it is a labor-product or not.
Money cannot but be a labor product within the exchange world between private individual producers. The only exception might be credit money. It is a promise of payment issued by private, individual producers. It thus has a claim on a certain value and, on that account, is traded as a commodity although it has no immediate value in itself. So, it can be argued as a commodity as it is sold and purchased with a certain price. It is issued as a non-labor product by private individual producers but well acts as money. But it can never be used as a final means of debt settlement since it is not a value itself but a mere claim on a certain value. It only acts as a supplementary in restricted monetary functions. So, it is not money. Its movement is not the same as that of proper money. It has a definite period of duration and when the duration period expires must return to its original issuer to extinguish. This is why credit money cannot replace proper money. Credit money did not exist on its own and existed only along with proper money, e.g. gold money, convertible or inconvertible bank notes. Those who argue the present fiat money is a kind of credit money are ignorant of such differences.

To be short, money is not a symbol, nor a token. It is a commodity only because we live in the society of private individual producers. Credit money issued by individual private producers only acts as a supplementary in limited functions. Any proper money if issued by private individual producers must be a labor-product. Money as a non-labor product would be credit money or must have been issued by a third party in commercial trades. The third party is the non-producers who rule the society outside the realm of private individual producers. They issue the non-labor product as money as they are the rulers. We call them the non-producers not because they are rulers but because they produce nothing and sell nothing but only purchase one-sidedly anything
they want with the money they issue. Their relationship with the rest is not of an exchange but of a tributary character. They should be excluded from the world of commodity exchanges as depicted in <Figure 1> below.

The money the non-producers issue is not yet money until it is handed over to commodity producers. It can become money only after it enters into circulation when money issuers buy some commodity with it. Before it happens, it remains as a mere piece of paper. Seen this way, even paper or electronic moneys must be a labor-product in the eye of commodity producers because they have surrendered a commodity (or a service) to the non-producers to acquire it.

Figure 1, A Symmetry between Gold Money, Gold Standards, and Fiat Money Systems.

In the above, we presupposed two distinct relationships: an exchange relationship among private individual producers and a tributary relationship between the producers, on one hand, and the non-producers, on the other. In the former, even inconvertible paper money can be a labor product while, in the latter, even gold money is not a labor product. Any alienable object suffices to act as the means of one-sided purchase. A tool
for charging taxes on commodity producers from outside is the very money issued by
the non-producers. For the commodity producers, however, it is a pure transaction cost.
Among the pure transaction cost was the production cost of gold in the case of gold
money system (Marx, 1978, pp. 213-4). It changed into the form of seignorage in the
gold standards and fiat money systems. The tribute arisen from the monetization of
non-labor products corresponds to the pure transaction cost which would have anyhow
evaporated even in the gold money system. It willingly goes instead to the money
issuers as it can be used beneficially to the commodity producers themselves in various
forms like SOC constructions, welfare subsidies, defense expenditures, etc. Those who
insist that money is not a commodity are ignorant of the distinction between the non-
producers who issue money and the producers who must surrender labor or labor
products to acquire it. The two groups are erroneously mixed in the same category of
private individuals for their conception.

3. The value of money is just like any other ordinary commodity value.

In the previous section, we have seen why money cannot but be a commodity. To
become a commodity, it need not be a labor product. Even paper or electronic money
can be a commodity if it is injected into circulation with a positive price. The positive
price predetermined is called the intrinsic value of money as it differs from the external
value (or the purchasing power)\(^1\) that can only be determined after exchange. Our
argument that money is a commodity is to say that its value is determined \textit{a priori}, not
\textit{posteriori}, before it enters into circulation. This section shall show how its value is

\(^1\) the purchasing power of money = the units of commodities purchased with the
money (= the external value of money \(\div\) the value of the purchased commodities).
As seen earlier, paper moneys are never issued unless in the form of a unilateral purchase by the non-producers. The paper moneys become money only after being injected into circulation in such unilateral purchases. The price term in those unilateral purchases are not determined arbitrarily. The price conditions in other transactions will be respected and followed suit in those transactions too. If only there is no previously issued money of the same kind in circulation, new money’s exchange value will be determined by a decree. Otherwise, new money’s intrinsic value shall be determined by the external value (or purchasing power) of the money previously issued in circulation. The price term thus determined would define the issuance cost or acquisition cost of new money. The same was the case with gold money. The intrinsic value of new gold is determined by its production cost and the production cost is determined by the current market value of its input materials and labor-powers engaged in its production, which should be identical with the current purchasing power of old gold in circulation.

Someone might argue, ‘it might be circular if the purchasing power of old money in current circulation determine the intrinsic value of newly issued money: an intrinsic value that would determine the external value of its own is determined by the external value of the same kind previously produced. But the presumed circularity can well be dispersed with two facts. The first is that, when it is said that the purchasing power of previously issued money determines the intrinsic value of newly issued money, the two moneys are not of an identical. One refers to the money stock previously issued and piled up in circulation while the other does to the money flow newly injected into circulation as an increment. The intrinsic value of the latter is not determined by its own external value but by the external value of the latter determined by the previous
market and production conditions. As for newly issued money, in principle, its external value cannot be determined until it is exchanged with some other commodities but its intrinsic value must be determined before it enters into circulation. The two values of money need not be identical with each other as they are determined in different ways.

The second fact that could defeat the circularity is that the intrinsic value of new money determined *a priori* at its issuance and the external value (or purchasing power) of its own determined *a posteriori* after its issuance do not coincide with each other. In the case of ordinary commodities, a commodity’s intrinsic value accords with its own external value. But, in the case of money, the internal and external values of money do not accord with each other. The reason is as follows.

In exchange, there must be two opposite and reciprocal flows of supply and demand with the same value. But there are no such reciprocal flows in the unilateral purchase where additional money is newly issued. Since there should be no reciprocal supplies against the unilateral demands created when new money is additionally issued, aggregate demands exceed aggregate supplies. The demanders only supply additional money instead but the newly issued money is not like ordinary commodities. Ordinary commodities leave circulation after being traded. But money stays in circulation being added to the existing money stock and continues to mediate commodity exchanges. The newly issued money is therefore not included in the aggregate supplies. In the result, aggregate demands exceed aggregate supplies, which lowers the purchasing power (or the external value) of money to be determined *a posteriori* compared to its intrinsic value *a priori* determined. The mechanism requires more detailed explanation.

As seen earlier, the relationship between the commodity producers, on one hand, and the money issuer, on the other, is not of an exchange but of a tributary character.
The tribute paid by the commodity producers to the money issuer is a pure transaction cost for them. A practical question is, however, what will be the financial source of the tribute? At first sight, producer B in <Figure 1> might appear to be its immediate payer because he would have paid some products or services to acquire the new money. But he can redeem it by using the money as the means of purchase. Producer C will then become its actual payer. But he can also refund it by using the money as the means of unilateral purchase. The redemption process can continue ad infinitum. Any individual can shift the tribute onto others by using the money as the means of purchase since no individual producer would be willing to pay it. After all, no individual producers in practice actually pay the tribute. But the tribute was already paid in advance before the redemption process started. Although the tribute can be shifted onto others, it cannot be avoid by any means.

However, the tribute can be spread out over the commodity producers if refunded a bit less than its full amount each time new money changes hands. For instance, the producers B, C in the above example buy less than $10 worth of commodities with the respective $10 of money. It would seem to violate the law of equivalent exchanges. But the law cannot be violated if a nominal value is universally surcharged on commodity values in the same proportion without making any change to real commodity values. Only between the commodities (of which each nominal value is $10), on one hand, and the money (of which the nominal value is $10), on the other hand, the so-called non-equivalent exchanges can be seen. Yet those non-equivalent exchanges cannot matter since they are not between commodity producers themselves. The indirect exchanges between actual commodity producers mediated by money can still be equivalent ones. The no-equivalent exchanges between the $10 worth of money, on one hand, and the
less than $10 worth of ordinary commodities, on the other, can still be equivalent ones in nominal terms since the nominal value surcharges are made equi-proportionally. But, in practice, since the nominal value surcharges are not made equi-proportionally, the social resources are often reallocated even by the issuance of new money alone.

Marx called this nominal value surcharge a *social overhead cost* in the sense that a social cost for the monetary accommodation of commodity trades is spread out over the heads of commodity producers (Marx, 1978, p.209). Its financial source is from the deviation between the nominal and the real value of commodities (cf. Marx, 1981, pp. 394-417). No doubt, this must lower the purchasing power of money than the intrinsic value of the money.2

4. Exchange Rate can be likened the Price of Gold in the gold standards.

Before entering directly into the exchange rate discussion, we should like to deal with another subject in advance. In the gold standards, gold had a double price like the market price of gold and the legal (official) price of gold. And, by the same token, the (convertible) bank notes also had a double value like the market conversion rate and the official conversion rate. Today’s exchange rates also have a double value like the market exchange rate and the official (or policy) exchange rate. Why do they have such

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2) The nominal and real values are not in harmony with traditional Marxian value concept. But Lee (1993, 1998, 2000) uniquely presents a new value concept that can comply with the above nominal and real value concepts measuring value magnitudes in terms of not abstract labor time but market values without infringing the value concept as embodied labor. This conformed to the requirements set out by Sato (1979) for the aggregation problem of capitals raised in the capital controversy. On the other hand, the nominal and real value concepts are required even from another aspect: what connects and compares two distinct social average labors (since the socially average labor must change with time and place) is nothing but money, which commands the same nominal magnitudes of value irrespectively of its issuance points of time and place.
a double value? We shall discuss this question first.

4.1. Dual Exchange Rates and the Double Price of Gold

We shall start from the gold standards. In this monetary system, gold is declared as genuine money. But, in practice, its monetary functions are taken over by the bank note. A strange thing happened on this account. In principle, money cannot have its price as it is the unit of price account. But gold was given a price and that a double price, which was a contradiction in the definition of money. It was because the bank note acted as the unit of price account. The price of gold was thus represented in terms of bank note units as if the gold had degenerated into an ordinary commodity position.

In its initial stage, the bank note was backed by their conversion system into gold. The rate of conversion was determined in two ways. One was the official (or legal) conversion rate. Its reciprocal was the official (or legal) price of gold. The second was the market conversion rate, of which the reciprocal was the market price of gold. The two often deviated from each other. But any market price of gold that drifted away from the legal price of gold was brought back towards the latter by the intervention of monetary authorities. This created a wrong idea, however, that the legal price of gold was to determine the market price of gold, and not vice versa (as if official conversion rate of bank notes determine the market conversion rate of the bank notes, and not the other way round).

But actual history showed to the contrary. Any change in the legal price of gold had always been preceded by a change in the market price of gold, and not the other way round. This implies that the legal price of gold has not been determined arbitrarily but by reference to the market price of gold and not vice versa. When the latter rose too
high and too fast so that the conversion system was destabilized by the gold rushes thereby triggered, they devalued the bank note to heighten the price of gold. What was devalued in this case was not genuine money, gold, but the so-called money substitute, the bank note. The devaluation did not make any change to the value of gold but simply corrected an ill-defined, legal conversion rate of the bank note (or an ill-defined legal price of gold) to be in line with their already changed market conversion rate (or the already changed market price of gold).

Amid repeated devaluations, people at last realized that the conversion system was unnecessary and redundant. Originally, the conversion system was supposed to define the value of bank notes on the presumption that abstract a-dimensional numbers of the bank notes could not mediate commodity exchanges. A pegging system was required inevitably when there were no previously issued bank notes in circulation. Once they entered into circulation, however, the external value (or the purchasing power) of the previously issued bank notes in circulation, which must have already deviated from the value pegged to a certain amount of gold, could determine the intrinsic value of the bank notes to be newly issued. The pegging system was no more necessary from the second issue. Yet it continued to officially determine the values of gold and bank notes. This created the notorious double price of gold and the double value of bank notes.

4.2. The Structure of Dual Exchange Rate corresponding to the Dual Price of Gold

Now, we shall turn to our original question of in what way foreign exchange rates are determined. An exchange rate is the price of foreign currency represented in terms of domestic money. Since both moneys pertain to the commodity category as seen in Section 2, the ratio between the value of a foreign currency and that of domestic
money should determine the exchange rate. But how can we measure the values of foreign and domestic currencies when both currencies are not labor products?

We shall follow the same principle that determined the value of fiat money in the previous section. Foreign currencies are not free goods. We buy them with certain labors or labor products. Their acquisition costs can be defined in terms of labor values like the intrinsic value of gold in the gold standards. Figure 2 describes this procedure. Here, the world money (gold or the key currency, US dollar) is posited as representing all sorts of foreign currencies. Its value is seen here as determined by its acquisition cost. The import cost of the world money or the export cost of domestic products worth a unit of world money is posited as determining the value of world money. How many units of national labor are required to earn one unit of the world money is spoken by it. Someone might argue that the causal sequence described in <Figure 2> is circular. But the point in this figure is that the value of world money is not determined *a posteriori* on the exchange market but *a priori* before the world money is put on the market to be traded with other currencies. Its determination should be related to many things, e.g. the domestic price level of exports, the social, physical and technological conditions for the production of the exports, the government trade policy, the international trade environments, etc.

*Figure 2* Exchange Rate Determination in the Managed Currency System:
The causal relationship described in <Figure 2> can be compared to that in the gold standards case of <Figure 3>. The three kinds of exchange rates, the value rate of exchange (B/A), the market rate of exchange (C), and the official (or policy) rate of exchange (D) in <Figure 2> correspond each to the three kinds of gold price, the value price of gold (B/A), the market price of gold (C), and the legal price of gold (D) in <Figure 3> respectively. Among these three pairs, the first is the most precedent and the third is the last precedent. Yet the third may sometimes influence the second in limited capacity by dint of the government interventions.

The origin of the official price of gold and the official exchange rate in the two
systems can be traced back to the standard of price in their previous system, the gold money system. At that time, the standard of price was to define monetary units, like $1.00 = 1/20 oz. of gold. Later, this definition immediately applied to the unit value of bank notes since the latter directly quoted the nomenclature of gold money system. It was then seen as the official conversion rate of bank notes. In the fiat money system, later, it became the official exchange rate of domestic currency. Now it became a mere vestige since the governments abrogated the official policies for foreign exchange rates just like the abrogation of the conversion system in the gold standards.

What about if domestic money directly counts as the world money? Its exchange rate is constant by definition to be unitary. The key currency’s value rate of exchange, \( \frac{B}{A} \) in Figure 2, loses any relevance. The causal relationship in Figure 2 would change into the one described in Figure 4 below. The key currency’s intrinsic and external values are all determined within this country, of which the domestic price level can be influenced in part by the import price level and yet the import price level is dependent on the exchange rates of other currencies. Other countries’ trade and foreign exchange rates policies will become the major target of international politics of this country.

\[ \text{Figure 4} \] Exchange Rate in the Key Currency Country

3) We have three distinct monetary systems, gold money system, the gold standards, and the managed currency system. Each monetary system required, respectively, the standard of price, the official conversion rate, and the official (or policy) exchange rate. One is to define price units in the gold money system. Another is to fix the legal price of gold at certain units of bank note. The other is to stabilize the price of world money in terms of domestic money. Although they belonged to mutually different systems, their function was identical.
5. Conclusions

Money is a commodity not because it is a labor-product but because we live in a society of individual private commodity producers. What determines its value is not the labor contained in it if the money is a non-labor product. A non-labor product could be monetized because it was issued by the outsider of the society of individual private producers. The issuer belongs to the non-producer. Its value is therefore not relevant to the labor expended for the production of it. Its acquisition cost, its cost of importation from the outsider into the world of producers should determine its value. This was not circular on accounts of the two facts explained in Section 3.

The value of foreign currencies too is to be determined by their acquisition cost, the import cost of foreign currencies. What determines this cost is another question to be discussed next. The point we have resolved is that the values of foreign moneys are not determined on the exchange markets but in the outside of the exchange markets in the same manner as commodity values.
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