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International Exploitations in Marxian  
and Neo-Marxian Economics

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(1)

The neo-classical theory of international trade presupposes the given supplies of factors of production, including labor, and their international immobility. The price of a factor of production is then determined by its value productivity which in turn depends on physical productivity and the price of the product. In other words, wages are determined as quasi-rents exclusively by the demand for labor, i.e., by the marginal productivity of labor.

This is quite a contrast to the theory of classical economists and Marx, who consider, at least in the long-run, that real wages are independent of demand for labor and determined solely by the reproduction cost of labor power. The supply of labor, on the other hand, is considered by them to be variable and to be adjusted to demand for labor either through Malthusian principle of population or by the existence of the industrial reserve army. Since there are countries and areas in the present world where the theory of the subsistence wage and Malthusian principle can still be applied, even neo-classical economists may not be uninterested in classical and Marxian theories of international trade which are based on the theories of wage quite different from that of the neo-classical economics.

As for the classical theory, we have already discussed Ricardian theory of international trade elsewhere.<sup>1)</sup> Although Marx did not develop his theory of international trade fully, he argued for the international

exploitation of the poorer countries by the richer countries. In sections (2) and (3) we shall formulate Marxian arguments into a simple model where equal real wages and capital and labor immobility are assumed between countries. It is interesting that we have to admit international exploitation even though labor is not mobile between countries while we argued elsewhere against exploitation in the capitalistic production on the ground that labor is not perfectly mobile through time.<sup>2)</sup>

In his neo-Marxian theory of international unequal exchange, Emmanuel emphasized the importance of international difference of real wage between developed and under-developed countries and that of capital movements between such countries. We have to admit that Emmanuel's emphasis on capital mobility and wage-differentials does fit present-day reality of the world economy much more than neo-classical theory, i.e., the so-called Heckscher-Ohlin model with international factor price equalization, which excludes the necessity of capital movements.<sup>3)</sup> Unfortunately, Emmanuel's demonstration of unequal exchange is given in terms of numerical examples and based on clumsy process of Marxian transformation of values into prices. In section (4), we shall reformulate it in terms of simple price-cost relations.

Emmanuel considered that the terms of trade between developed and under-developed countries are determined solely by real wages which are given exogeneously. In other words, there is no role of reciprocal demand in the determination of the terms of trade, which may seem to be too extreme to some neo-classical economists. In section (5), therefore, we shall consider an eclectic model, in which the real wage is exogeneously given only in the under-developed country and the terms of trade and the real wage in the developed country are determined by the reciprocal

demand of two countries.

(2)

Although Marx did not develop his theory of international trade fully, what he thought somewhat confusingly on the international exploitation can be seen from the following quotations from Das Kapital and Theorien über den Mehrwert.<sup>4)</sup>

"In proportion as capitalist production is developed in a country, in the same proportion do the national intensity and productivity of labour there rise above the international level. The difference quantities of commodities of the same kind, produced in different countries in the same working-time, have, therefore, unequal international values, which are expressed in different prices, i.e., in sum of money varying according to international values. The relative value of money will, therefore, be less in the nation with more developed capitalist mode of production than in the nation with less developed. It follows, then, that the nominal wages, the equivalent of labour-power expressed in money, will also be higher in the first nation than in the second; which does not at all prove that this holds also for the real wages, i.e., for the means of subsistence placed at the disposal of the labourer."

"Say, in his notes to Ricardo's book translated by Constancio, makes only one correct remark about foreign trade. Profit can also be made by cheating, one person gaining what the other losses. Loss and gain within a single country cancel each other out. But not so with trade between different countries. And even according to Ricardo's theory, three days of labour of one country can be exchanged against one of another country - a point not noted by Say. Here the law of value

undergoes essential modification. The relationship between labour days of different countries may be similar to that existing between skilled, complex labour and unskilled, simple labour within a country. In this case, the richer country exploits the poorer one, even where the latter gains by the exchange, as John Stuart Mill explains in his Some Unsettled Questions."<sup>5)</sup>

Firstly, we have to note that here Marx is concerned, not with the international difference in real wages, but with that in money wages. Real wages have nothing to do with the productivity of labor in Marxian economics, since they are determined by the values of labor power, i.e., the values of wage goods necessary, physiologically as well as socially, to produce labor power. This is also clear from the fact that, just after the first quotation in the above, Marx criticized Carey who argued that real wages rise and fall in proportion to the productiveness of labor.<sup>6)</sup> Secondly, we have to conclude that wage goods consist of, at least partly, the local or non-traded goods. Otherwise, there can be no international difference in money wages, since there is no difference in real wages. In other words, it is the price of such local or non-traded wage goods which is higher in the richer countries.

How can Marx conclude that the richer country exploits the poorer one, on the ground that three days of labor of the latter country are exchanged against one of the former country. Here Marx must be implicitly assuming that labor of different countries are identical. Since labor is not mobile between countries, however, this assumption cannot, in general, be justified. Different kinds of concrete useful labor, say, that of tailoring and that of weaving, can be considered identical as abstract human labor, if and only if labor is perfectly mobile between

industries within a country. "In our capitalistic society, a given portion of human labor is, in accordance with the varying demand, at one time supplied in the form of tailoring, at another in the form of weaving. This change may possibly not take place without friction, but take place it must. Productive activity, if we leave out of sight its special form, viz., the useful character of the labour, is nothing but the expenditure of human labour-power. Tailoring and weaving, though qualitatively different productivities, are each a productive expenditure of human brains, nerves, and muscles, and in this sense are human labour. They are but two different modes of expending human labour-power."<sup>7)</sup>

Elsewhere we have already argued against Marxian theory of exploitation in the capitalistic time-consuming production on the ground that labor and commodities are not perfectly mobile through time. Unlike in the case of the mobility through time, however, at least internationally traded goods are mobile between countries. We may argue, therefore, that physically identical labor, i.e., labor with the same intensity, equally trained, of different countries are socially and economically identical, if the quantities of internationally traded goods directly and indirectly necessary to reproduce the corresponding labor power are identical between countries. This implies, firstly, that there is no difference in labor productivity with respect to the local, non-traded wage goods between countries. Secondly, the international difference in the productivity with respect to internationally traded goods has to be explained by such factors external to labor as the difference in technology and not by such factors internal to labor as the difference in the intensity or in the training of labor.

(3)

Having the above considerations in mind, let us construct a simple model to show what Marx thought on the international exploitation can be proved. Consider a two country three goods economy. The first good is a non-wage good and the last two goods are wage goods while the first two goods are internationally tradable and the last good is a local or non-traded good. By taking units properly, we can assume that a unit of the labor power can be reproduced by the consumption of a unit of the second good and of a unit of the third good. By choosing the first good as numeraire, we denote the price of the second good, that of the third good in the first country, and that of the third good in the second country by  $p$ ,  $w$  and  $v$ , respectively. Finally, let us denote by  $a_{ij}$  the quantity of labor necessary to produce a unit of the  $j$ -th good in the  $i$ -th country and assume that the first country has the comparative advantage in the first good, i.e.,  $a_{11}/a_{12} < a_{21}/a_{22}$ .

Then, the price-cost equations are

$$(1) \quad 1 = (1+r)a_{11}(w+p)$$

$$(2) \quad p = (1+s)a_{22}(v+p)$$

$$(3) \quad w = (1+r)a_{13}(w+p)$$

$$(4) \quad v = (1+s)a_{23}(v+p)$$

where  $r$  and  $s$  are the rate of profit in the first and second countries, respectively. The first and the third goods are produced in the first country where the rate of wage is  $w+p$  while the second and the third goods are produced in the second country where the rate of wage is  $v+p$ . Since the equation of the reciprocal demand is not introduced, we cannot determine all of the five unknowns,  $p$ ,  $w$ ,  $v$ ,  $r$  and  $s$ . Let us regard  $p$  as a parameter, the range of which is given as

$$(5) \quad a_{22}/a_{21} \leq p \leq a_{12}/a_{11}$$

from the principle of comparative costs.

Suppose the second country is the richer one, with higher productivity, i.e.,  $a_{11} > a_{21}$  and  $a_{12} > a_{22}$ . The first country has then no absolute advantage and merely the comparative advantage in the first good she exports, while the second country has the absolute as well as the comparative advantage in the second good she exports. We must have  $a_{13} = a_{23}$ , since the quantity of the second good directly and indirectly necessary to reproduce one unit of the identical labor power must be identical between two countries, i.e.,

$$(6) \quad (1+a_{13})/(1-a_{13}) = (1+a_{23})/(1-a_{23}).^8$$

Since  $a_{13} = a_{23}$ , we have from (3) and (4)

$$(7) \quad (1+r)/(1+s) = w(v+p)/v(w+p).$$

From (1) and (2), then,

$$(8) \quad p = a_{22}v/a_{11}w.$$

In view of (5),  $p \geq a_{22}/a_{21} > a_{22}/a_{11}$ , so that  $v > w$  from (8). The money wage is, therefore, higher in the richer country, since we can assume that the gold is ( a part of ) the first good, the aggregate non-wage good. Since  $p$  units of the first good, which contains  $p a_{11}$  units of the labor of the first country are exchanged against one unit of the second good, which contains  $a_{22}$  units of the labor of the second country,  $p > a_{22}/a_{11}$  implies that the second, the richer country exploits the first, the poorer country.

In autarky, i.e., before trade, the rate of profit is higher in the second country than in the first country. Equations (2) and (4) hold also before trade so that, by adding them up, we can see that  $(1+s) = 1/(a_{22}+a_{23})$  in autarky. For the first country in autarky, on the other



hand, we have

$$(9) \quad p = (1+r)a_{12}(w+p)$$

in addition to (3). By adding (3) and (9), then, we can see that  $(1+r) = 1/(a_{12}+a_{13})$  in autarky. Since  $a_{12} > a_{22}$  and  $a_{13} = a_{23}$ ,  $r < s$  in autarky. Introduction of international trade does not change  $s$ , while it raises  $r$ . From (1) and (3), we can eliminate  $w$  to have

$$(10) \quad 1 + r = 1/(a_{11}p+a_{13}),$$

after trade. Since  $a_{11}p \leq a_{12}$  in view of (5),  $r$  after trade is higher than  $r$  in autarky. Also from (5) we know that  $p \geq a_{22}/a_{21}$  so that  $a_{11}p > a_{22}$ , since  $a_{21} < a_{11}$ . Therefore,  $s$  is still higher than  $r$  after trade.

In words, money wages and the rate of profit are higher in the exploiting country with higher productivity than in the exploited country with lower productivity. This is true even though the exploited country gains from trade with respect to the rate of profit.<sup>9)</sup>

(4)

In Marxian theory of international exploitation, it is assumed that the real wages are equal and the capital is immobile between countries. If the capital is mobile, the rate of profit is equalized, i.e.,  $r = s$  in (1) - (4), with the result that  $v = w$  and  $a_{11}p = a_{22}$ , so that there is no international exploitation. Certainly the assumption of capital immobility was realistic in the days of classical economics and Marx, but it is no longer so in the days of imperialism<sup>10)</sup> and multinational enterprises. Although it is a matter of empirical refutation, furthermore, one may feel uneasy with the result of Marxian theory that the rate of profit is higher in high wage countries.

Emmanuel starts with a set of assumptions quite contrasting to

those of Marx that the capital is perfectly mobile and the real wages are different between countries. He, of course, regards real wages not determined endogenously, i.e., by marginal productivity of labor, but determined exogenously. It is, however, not considered that real wages are inflexibly determined by physiological and biological laws. The notion of the subsistence minimum is considered sufficiently elastic and flexibly so that the social and historical factors can bring about considerable differences in real wages between countries. From our point of view, then, it might seem to be difficult to admit that labor of different countries are identical, though fortunately Emmanuel does not base his theory of international unequal exchange on the exchange of unequal amounts of labor. Unequal exchange is defined by Emmanuel as the unfavourable terms of trade for lower wage countries.<sup>11)</sup>

The table shows an effect of international wage difference when international trade and investment take place between two countries A and B, so that the rate of profit is equalized. To compute terms of trade, Emmanuel transformed labor values into prices of production in Marxian way. The upper part of the table shows a case where there is no international difference in real wages while the lower part, where different real wage levels are exogeneously given. In comparison with the case of no wage-differential, the terms of trade of country B is reduced from 150/190 to 110/230, when her real wage level is lower than in country A. Emmanuel's definition of unequal exchange is this reduction of the terms of trade. It should be emphasized that Emmanuel does not compare autarky and after trade situations and therefore does not deny the gains from international trade.<sup>12)</sup> His criticism on neo-classical trade theory is on the assumption of endogeneous wage determination and

capital immobility, which, in the case of Heckscher-Ohlin theory, leads to international factor price equalization.

It is well known that the Marxian procedure of transformation of labor values into prices of production, followed by Emmanuel in the table, is not correct and can merely be regarded as that of an approximation, since only the output is measured in prices and the input is still measured in values. There is no need, however, to start with values and then transform them into prices, since, unlike Marx, Emmanuel is not concerned with the exchange of unequal amounts of labor. It is useful, therefore, to reformulate Emmanuel's arguments in terms of simple price-cost relations so that it can be seriously considered even by non-Marxian economists who do not accept the labor theory of value.

Let us consider price-cost relations,

$$(11) \quad R p = a p + b$$

and

$$(12) \quad R = c p + d$$

where  $R = 1/(1+r)$  and  $r$  is the internationally equalized rate of profit,  $p$  is the price of the first good in terms of the second good (numeraire),  $a$  and  $c$  ( $b$  and  $d$ ) are, respectively, technically given input coefficients of the first (second) good in the production of the first and second goods. If the input is the wage good, input coefficient is the input coefficient of labor multiplied by input coefficient of wage good in the reproduction of labor power, which is given by the assumption of exogeneously determined real wage.

Any change in input coefficients induces changes in  $R$  and  $p$ . If  $a$  and  $b$  are unchanged, such changes in  $R$  and  $p$  must be in the opposite directions from (11). If either  $c$  or  $d$  only is increased, it is impossible,

from (12), for  $p$  to increase and for  $R$  to decrease. Therefore,  $R$  must increase and  $p$  must decrease, against such a change in  $c$  or  $d$ . Suppose the lower wage country is specialized in the first good, and the higher wage country, in the second good. Let us assume, firstly, that the first good is the wage good. To compare with the situation of no-wage-differential, we have to increase  $c$  in (12) from the level in no-wage-differential situation, since the second good produced in the second country has now higher wage cost. This makes  $p$  decrease. Let us assume, secondly, that the second good is the wage good. We have, then, to increase  $d$  in (12) from the level in no-wage-differential situation, which again results in a decrease in  $p$ . Terms of trade of the lower wage country  $p$  must be always deteriorated, therefore, in comparison with no-wage-differential situation, irrespective of whether she is specialized in wage goods or not.

(5)

As we saw in the previous section, Emmanuel assumed that the real wages are determined exogeneously by the subsistence minimum not only in under-developed countries but also in developed ones, so that the terms of trade are determined independently of the reciprocal demands between countries. Even though the subsistence minimum is considered elastically and flexibly, such an assumption may seem to be too extreme to some neo-classical economists. Let us, therefore, assume that the real wage is determined by the subsistence cost of labor only in under-developed countries where the labor supply follows Malthusian principle of population, while the real wage is determined by the demand for labor and departs from the level of reproduction cost of labor power in developed countries

where the supply of labor is given exogeneously.<sup>13)</sup> We still assume, however, that the reproduction cost of labor power itself remains identical everywhere so that labor in different countries can be compared even if labor is immobile between countries.

Introduction of international wage-differentials in this sense and the international mobility of capital changes (1) - (4) in our model given in section (3) into

$$(13) \quad 1 = (1 + r) a_{11} (w + p)$$

$$(14) \quad p = (1 + r) a_{22} (v + p) t$$

$$(15) \quad w = (1 + r) a_{13} (w + p)$$

$$(16) \quad v = (1 + r) a_{23} (v + P) t$$

where  $r$  denotes internationally equalized rate of profit and  $t$  signifies the surplus wage ratio in the second ( developed ) country. Other notations are as explained in section (3).

Without explicitly introducing the equation of reciprocal demand, we can again regard the terms of trade  $p$  as a parameter and determine four unknowns  $r$ ,  $t$ ,  $w$  and  $v$  from equations (13) - (16). The range of  $p$  is

$$(5) \quad a_{22}/a_{21} \leq p \leq a_{12}/a_{11}$$

from the assumption that the first ( second ) country has comparative advantage in the first ( second ) good. Now, however, we may not assume that  $a_{11} > a_{21}$  and  $a_{12} > a_{22}$ , since capital is now mobile between countries. This is because the national difference in labor productivity in general is largely due to the difference in technology which moves with capital, though it may partly be due to the difference in the social infrastructure. Let us assume, therefore, that  $a_{11} < a_{21}$  and  $a_{12} > a_{22}$  behind (5), i.e., each country has absolute as well as comparative advantage in exportables.

By definition  $t > 1$ , since the real wage is assumed to be higher in the second country. Since  $a_{13} = a_{23}$  must be assumed again, we have from (15) and (16)

$$(17) \quad t = v (w + p) / w (v + p).$$

To make  $t$  larger than 1, we should have  $v > w$  from (17). In words, not only the real wage, but also the money wage is higher in the second country. By substituting (17) into (14), we have again

$$(7) \quad p = a_{22} v / a_{11} w$$

from (13) and (14). Since  $v > w$ , we can see from (7) that the second country has such a favorable reciprocal demand situation that  $p > a_{22}/a_{11}$ . In view of (5) and the assumption that  $a_{12} > a_{22}$ , such a situation can certainly be possible in our model.

The second country is exploiting the first country in Marxian sense that unequal amounts of labor are exchanged, since  $p a_{11} (> a_{22})$  units of labor of the first country are exchanged against  $a_{22}$  units of labor of the second country. There is also unequal exchange in the sense of Emmanuel. Suppose there is no real wage differential between countries and therefore  $t = 1$ . The first (under developed) country has then the terms of trade  $1/p = a_{11}/a_{22}$  from (7), since  $v = w$  from (17). If  $p > a_{22}/a_{11}$ , therefore, the terms of trade of the first country  $1/p$  is deteriorated in comparison with no-wage-differential situation.

In the case of Marx, it is the difference in the physical productivity of labor which causes international exploitation, as we saw in section (3). As was explained in section (4), Emmanuel considered that the wage-differential is the cause of international unequal exchange defined in terms of terms of trade. In our model, however, the real wage-differential is an effect of the terms of trade and international exploitation and

unequal exchange are the results of the relative value productivity of labor in export industries ( i.e.,  $p a_{11}/a_{22}$  ) which is governed by the reciprocal demands between countries.

Thus, by choosing the labor value as the aggregator or the weight of aggregation of many different goods,<sup>14)</sup> we can say that a higher wage country exploits the other through international trade, when capital is mobile between countries so that the rate of profit is equalized internationally and no country can enjoy overall absolute advantage. Suppose this higher wage country is the exporter of capital. The question remains is whether this country is also exploiting the other through international investment. This, of course, depends on whether labor is exploited in the capitalistic production in general, when the wage is equalized to the reproduction cost of labor power. As was already stated,<sup>15)</sup> we do not consider that labor is exploited if the value of the product in the future is larger than the value of the wage in the present. We conclude, therefore, that a country does not exploit the other through international investment itself.

Table

Country	K	c	v	m	V	R	T	P	L
A	240	50	<u>60</u>	60	170	110		80	<u>190</u>
B	120	50	<u>60</u>	60	170	110	33(1/3)%	40	<u>150</u>
Total	360	100	120	120	340	220		120	340
A	240	50	<u>100</u>	20	170	150		80	<u>230</u>
B	120	50	<u>20</u>	100	170	70	33(1/3)%	40	<u>110</u>
Total	360	100	120	120	340	220		120	340

## Notes

- K Total capital invested ( embodied labor value )
- c Constant capital consumed ( embodied labor value )
- v Variable capital, i.e., wages ( embodied labor value )
- m Surplus value ( embodied labor value )
- V Value of output  $c + v + m$
- R Cost of Production  $c + v$
- T Rate of Profit  $(\sum m)/(\sum K)$
- P Profit TK
- L Price of production  $R + P$



Footnotes

- 1) See Negishi (1982), Negishi (1989), pp. 131 - 138. See also Gandolfo (1986), pp. 28 - 31.
- 2) Since capitalistic production takes time, it is difficult to compare the embodied labor in the output and the embodied labor in input ( labor power ). See Negishi (1986), Negishi (1989), pp. 206 - 210.
- 3) Among neo-classical economists, however, M.C. Kemp rightly emphasized the importance of the international capital movements. Even the title of his books has changed from International Trade to International Trade and Investment. See Kemp (1964) and Kemp (1964).
- 4) See Marx (1954), p. 525 and Marx (1971), pp. 105 - 106.
- 5) The ambiguity which leads to the confusing interpretations is firstly due to the fact that Marx argued the difference in productivity and the difference in intensity together and secondly to the fact there can be a different interpretation and therefore different translation of the next to the last sentence quoted. See Marx (1968), p. 101.
- 6) See Marx (1954), pp. 527 - 528.
- 7) See Marx (1954), p. 51.
- 8) The quantity of the second good directly and indirectly necessary to reproduce one units of labor power in the  $i$ -th country ( $x$ ) can be obtained by solving  $x = y + 1$  and  $y = a_{i3} + a_{i3} x$ , where  $y$  denotes the quantity of the second good directly and indirectly necessary to produce one unit of the third good in the  $i$ -th country,  $i = 1, 2$ .
- 9) Since the first country is importing wage goods, trade increases her rate of profit. See Ricardo (1951), p. 132.
- 10) See Kemp (1967), p. 73.
- 11) See Emmanuel (1972), pp. xxxiii - xxxv, 59, 61, 62.

12) Saigal (1973) went, however, further wrongly to deny the gains from trade.

13) The fact that real wage is higher than reproduction cost of labor in developed countries can be ascertained by the existence of saving from wage incomes and by the prevalence of low-calory diet and jogging among laborers.

14) See Morishima (1973), p. 10.

15) See footnote 2). Incidentally, this is also the reason why we are not interested in the theory of international exploitation based on the difference in the organic composition of capital. See Emmanuel (1972), p. 175, Sweezy (1946), p. 291.

## References

- Emmanuel, A., Unequal Exchange, B. Pearce tr., Monthly Review Press, 1972.
- Gandolfo, G., International Economics, Springer-Verlag, 1986.
- Kemp, M.C., The Pure Theory of International Trade, Prentice-Hall, 1964.
- Kemp, M.C., The Pure Theory of International Trade and Investment, Prentice-Hall, 1969.
- Kemp, T., Theory of Imperialism, Dobson, 1967.
- Marx, K., Capital, I., Progress Publishers, 1954.
- Marx, K., Theorien über den Mehrwert, Karl Marx - Friedrich Engels Werke, 26 - 111, Dietz Verlag, 1968.
- Marx, K., Theories of Surplus Value, 3, Progress Publishers, 1971.
- Morishima, M., Marx's Economics, Cambridge, 1973.
- Negishi, T., "The Labor Theory of Value in the Ricardian Theory of International Trade," History of Political Economy, 14(1982), 199 - 210.
- Negishi, T., "Marx and Böhm-Bawerk," Economic Studies Quarterly, 37 (1986), 2 - 10.
- Negishi, T., History of Economic Theory, North-Holland, 1989.
- Ricardo, D., On the Principles of Political Economy and Taxation, Cambridge, 1951.
- Saigal, J.C., "Réflexions sur la théorie de l'échange inégal," in Amin, S., L'échange inégal et la loi de la valeur, Editions Anthropos, 1973.
- Sweezy, P.M., The Theory of Capitalist Development, Dobson, 1946.