

New Interpretation and the Value of Money

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This chapter examines the significance of the so-called new interpretation of Marx's theory of transforming values into prices of production in the first section, as well as remaining related issues in the second section, focusing on the definitions of the value of money and the value of labour-power. Since an important shortcoming of the new interpretation is the absence of any theory of the exchange-value of money, we shall try to fill this gap in the subsequent sections. After assessing Moseley's analysis of the value and exchange-value of commodity money in the third section as a corollary, the chapter examines the dynamic mechanism through business cycles to determine the exchange-value of money commodity in the fourth section. The fifth section briefly explores what happens to the exchange-value of money in the regime of contemporary non-commodity money.

1 The significance of the value of money in the new interpretation

A 'new interpretation' of Marx's theory of transforming values into prices of production was presented by Foley (1982, 1986) and Duménil (1983). The new interpretation is based on a particular definition of the value of money as the monetary expression of labour time. More concretely, the value of money is conceived as 'the ratio of the net domestic product at current prices to the living productive labor expended in an economy over a period of time' (Foley 2000: 21), and thus it represents the average amount of expended labour time obtainable by a unit of money (say, a dollar). For example, in the USA in the early 1980s, the aggregate national value added

¹ This chapter was rewritten and revised through repeated exchange of email messages with Fred Moseley, besides arguments and comments at the Mount Holyoke conference. I hope that some results of our patient dialogue interest our readers. I am grateful also for Moseley's editing of my English.

was about \$3 trillion, while about 100 million employed (productive) workers expended 200,000 million hours (2,000 hours each) a year. Therefore, one hour of labour contributed \$15 of value added, and the value of a dollar was one-fifteenth of an hour (four minutes) of social labour (Foley 1986: 14–15). This notion of the value of money is different from Marx's notion of the value of the money commodity, as embodied labour time in a unit of the money commodity. It is, however, conceived as a useful notion in solving the transformation problem. According to Foley (1986: 95–104), the logical structure of the traditional approach to the transformation problem is exemplified as follows.

A simple model of economy with two sectors – wheat and steel – is assumed, where a technological input–output table is given:

Product	Input			Output
	Wheat	Steel	Labour	
Wheat	0	1/4	1	1
Steel	0	1/2	1	1

The labour value of a unit of steel (v_s) is calculated as 2 from an equation $v_s = 1 + [1/2]v_s$, and then the labour value of wheat (v_w) must be 3/2. Suppose the economy produces 10,000 units of wheat and 10,000 units of steel by these technologies, with the rate of surplus value (s/v) equal to 100 per cent. If we assume prices directly proportional to labour value (value-prices) such as in Marx's *Capital*, Volumes I and II, and if one unit of labour is expressed a dollar, the relations of production in both wheat and steel sectors can be summarized in dollar terms as follows:

Sector	c	v	s	$c+v+s$	p	s/v	$r(\%)$
Wheat	5,000	5,000	5,000	15,000	\$1.50	1	50.00
Steel	10,000	5,000	5,000	20,000	\$2.00	1	33.33
Total	15,000	10,000	10,000	35,000		1	40.00

c : constant capital; v : variable capital; s : surplus value; p : price of a unit of product; r : the rate of profit.

In *Capital*, Volume III, Marx introduces the notion of prices of production, which equalize the rates of profit across industries through the competition of capitals. When values or value-prices are transformed into prices of production, prices no longer realize equal exchange of labour time embodied in commodities, but redistribute surplus value. In Marx's conception, cost prices are the sum of $c + v$ in each sector, remaining in terms of value-prices, and average profits are added to them according to the equalized rate of profit to form the prices of production. From the above example, the price

of production of wheat must become \$1.40, and that of steel \$2.10, redistributing \$1,000 of surplus value from the wheat industry to the steel industry by forming a general rate of profit of 40 per cent. Thus the transformation problem remains how to transform not just values of outputs, but also values of inputs of industrial sectors into prices of production.

In the traditional treatment of the problem following Bortkiewicz (1907) and Sweezy (1942), the value of labour-power is defined as the labour time embodied in the worker's necessary means of consumption, which is to be kept constant through the logical procedure of transforming values into prices of production. In the above numerical example, the value of labour-power in this definition must be 1/2 for a unit of labour, embodied in 1/3 unit of wheat. Then, the unit prices of production of wheat (p_w), and steel (p_s), the general rate of profit (r), and wage rate (w) must be in the simultaneous equations as follows, on the basis of given technological input-output relations:

$$p_w = [1+r]([1/4]p_s + w)$$

$$p_s = [1+r]([1/2]p_s + w)$$

$$w = [1/3]p_w$$

It is possible to solve these equations for r and the ratio of prices p_s/p_w : $r = 39.45$ per cent, and $p_s/p_w = 1.5354$. To these equations, any normalization condition could be added to obtain the absolute prices. For instance, either total profit equals total surplus value (in the value-price system), or total prices equal total values can serve as such an additional condition. However, it is generally impossible to maintain both of these aggregate equalities, except in very special cases, although Marx maintained both of these equalities as logical social linkages between values and prices of production.

Foley and Duménil's new interpretation was initially presented to resolve such riddles in the traditional approach. In its essence, it intends to show that prices of production represent social redistribution of labour time expended in the process of production through monetary form in capitalist competition. With this intention, Foley and Duménil redefine the main concepts of both the value of money and the value of labour-power. The value of money is conceived as the monetary expression of labour time, or the social amount of labour time obtainable by a unit of money (four minutes of labour per dollar in the early 1980s in the USA, or one hour per dollar in the above example). The value of labour-power is conceived as the amount of social labour time workers receive in the form of wages in return for an hour of labour, or the nominal wage rate multiplied by the value of money (half an hour in the above example). By holding constant these values of money and labour-power, Foley and Duménil maintain that the riddles in the transformation problem can be solved in Marx's spirit. In the case of numerical example above, the wage rate remains

1/2 (or 0.5 dollar), and the value added in two sectors remains 20,000 (dollars), both unchanged in the prices of production system through the transformation procedure. Thus we have equations in dollar terms as shown below:

$$p_w = [1 + r]([1/4] p_s + 1/2)$$

$$p_s = [1 + r]([1/2] p_s + 1/2)$$

$$10,000 (p_w - [1/4] p_s) + 10,000 (p_s - [1/2] p_s) = 20,000$$

By solving these equations for p_w , p_s and r , we get the table below in terms of prices of production by the new interpretation:

<i>Sector</i>	<i>c</i>	<i>v</i>	<i>s</i>	<i>c+v+s</i>	<i>p</i>	<i>s/v</i>	<i>r</i> (%)
Wheat	5,520	5,000	3,960	14,480	\$1.448	1(0.79)	37.65
Steel	11,040	5,000	6,040	22,080	\$2.208	1(1.21)	37.65
Total	16,560	10,000	10,000	36,560		1	37.65

In this interpretation, both of two aggregate equalities in Marx's theory of prices of production are true in the following sense. The equality between total values and total prices is reinterpreted to mean that the total values added are represented by total prices of net product, or that total value added divided by the value of money is identical to the total prices of net product. The other aggregate equality between total surplus value and total profit is interpreted to mean that the total amount of unpaid labour or surplus labour is represented by total profit and redistributed through equalized rates of profit. By using the redefinitions of the value of money and the value of labour-power, total nominal value added in national economic accounts is conceived as representing total social living labour time in a period, the total gross profit represents total surplus labour, and the rate of exploitation is directly identical to the aggregate profit-wage ratio. So long as the 'value of money' is defined as monetary expression of living labour time on a social scale, and the value of labour-power is wages multiplied by the 'value of money', the social relations between total profit and surplus labour, or between the aggregate profit-wage ratio and the rate of surplus value, can essentially hold unchanged, not just in the system of equilibrium prices of production to equalize the rates of profit, but also in the non-equilibrium economy with market prices deviating from prices of production, as underlined by Freeman and Carchedi (1996).

In sum, the new interpretation contains interesting contributions to the Marxian labour theory of value and its actual relevance to contemporary capitalism.

2 Issues related to the new interpretation

However, there remain a series of issues concerning how to assess the new interpretation from the view of Marx's own theory of value, especially concerning the redefinition of the value of money.

The first concerns Shaikh and Tonak (1994: 179), who raised a critique that the new interpretation is not new, but is 'nothing more than Adam Smith's second definition of labor value as living labor commanded by price', which Ricardo and Marx decisively rejected. Against this, Foley (2000: 26) argued that Smith defined labour commanded as the amount of labour a commodity could command through its price and wage rate (p/w), whereas, in the new interpretation, 'the definition of monetary expression of labor time as the ratio of the value of the net product at market prices to the living labor expended in a period does not involve the level of money wages (and thus not Smith's conception)'. In my view, Smith's labour commanded theory of value itself is not simple but complex and dual. In one aspect, it defines labour commanded as the amount of labour a commodity can command through its price over wage rate (p/w), as Foley says. However, in another aspect, it defines labour commanded as the amount of labour embodied in commodity products obtainable through exchanges of commodity products at their prices. To this second aspect of Smith's labour commanded theory of value, the value of money in the new interpretation as well as the deduced social relations of labour in its theory of prices of production is rather close. Such a theoretical concern about how much labour time is obtained through the monetary expression of values as prices or wages must be an important point of view also in Marx's labour theory of value as a whole.

The second issue is raised by Fine, Lapavistas and Saad-Filho (2002), who point out that the new interpretation is inspired by the Rubin school in defining the amount of abstract labour through prices. In fact, Foley (1983) notes that 'for a detailed discussion of the labor theory of value see Rubin'. And so far as the new interpretation does not present a theory of determining prices from the labour embodied in commodity products, and concentrates on the *ex-post* social relations of labour time obtained (in the macroeconomy) by prices, it may well go along with the Rubin school. Indeed, there is a clear shortcoming in the new interpretation concerning how to explain the social objective system of determination of prices as an important theoretical aspect of the labour theory of value, against the subjective marginalist theory of prices. However, the theoretical concern in the new interpretation can be separated from the Rubinite theory of value, and can be reoriented as an aspect of development of the traditional non-Rubinite Marxist approach. In particular, the amount of total living labour time in a year in the new interpretation is not defined through prices in a market, unlike in the Rubin school, but defined as the amount of objectively expended labour in the process of production. So long as the new interpretation intends to see the social

relations of distribution of such objective amounts of social labour expended in the process of production through prices in a market, its notions of value of money and value of labour-power may have certain relevance also to the non-Rubinite Marxian theory.

The relevancy of these notions is, however, in estimating approximate social relations of distribution of labour time, and not exact enough in solving the transformation problem, which is the third issue. Let us return to the numerical example already used. As the value of money (a dollar represents an hour of labour time) and the wage rate (0.5 dollar per hour) are kept constant, in the system of prices of production, the total wages (10,000 dollars) seem to correspond to the total value of labour-power (10,000 hours) obtained through the value of money, and the total profits (10,000 dollars) to the total surplus labour. However, as Foley adds, if workers consume only wheat, the constant wage rate of \$0.5 now buys 0.3453 units of wheat (at \$1.448 a unit), which embodies 0.518 hours of labour, instead of 1/3 unit of wheat (at \$1.5 a unit) containing 0.5 hours of labour in the original table of the value-price system. In my view, it means that the exact amount of total social labour time obtained through wages must be 10,360 hours ($20,000 \times 0.3453 \times 3/2$), and not 10,000 hours, so long as the technological basis of production does not change. And the exact amount of labour time obtained through total profits (10,000 dollars) must not be 10,000 hours, but 9,640 hours contained in both 3,094 units of wheat and 2,500 units of steel, which constitute social surplus products.² The exact rate of surplus value must therefore become 0.93, and not 1.0. If 6,906 units of wheat or 10,360 hours of labour time embodied in them are socially necessary to reproduce labour-power to expend 20,000 hours of labour in the economy, then the value of labour-power in the original value table must be rewritten as 5,180 in both sectors instead of 5,000, and the surplus labour must be 4,820 in both sectors from the beginning. Thus, there is a confusing inconsistency in the treatment of real wages and the amount of labour time to be expended and re-obtained as the substance of the value of labour-power in the new interpretation.

Including a similar intention to see the social relations of distribution of living labour time at a macro-level through the monetary expressions, my own solution of the transformation problem by using three tables (showing the substance of value produced in terms of hours of labour time, the prices of production in terms of dollars, and the substance of value acquired through prices in terms of hours of labour time), instead of two traditional

² Moseley's footnote at the end of section 1.5 in chapter 12 of this volume presents an objection on this point. However, Marx's second aggregate equality between total profit and total surplus-value, as well as his first, must be analysed not just in terms of forms of value or 'value of money' in the new interpretation, but more exactly in terms of the substance of value or labour-time embodied in commodities and acquired through prices.

tables (value calculation and price calculation, where units are ambiguous), must serve as a frame of reference to discern more consistently the social relations between the amounts of labour time expended in production and the amounts of labour time obtained through prices of production (Itoh, 1980: ch. 2; Itoh 1988: ch. 7). My treatment can show not just the macroeconomic relations concerning the value added, but also the microrelations concerning the whole substance of value ($c + v + s$) of each product and its monetary expression in the price of production, as well as the substance of value acquired ($c + v + s'$) through prices. What Marx intended to say in his two aggregate equalities can then become more consistently understandable. It must be equalities between the substance of total value embodied in commodities produced and the substance of value acquired through prices, or between total surplus labour as the substance of surplus value produced and the total surplus value in terms of labour acquired through total profit. The theory of prices of production must show such social relations through the theoretical analysis of the substance of value embodied in commodities, prices of production as the concrete form of value, and the substance of value acquired by each industrial sector, capitalists and workers.

From this more exact analytical standpoint, the main conclusions in the new interpretation concerning direct proportionalities between total profit and social surplus labour, between total wages and social labour time obtained by workers, and between the social ratio of profit against wages in value added and the rate of surplus value, can be valid only in very special cases, such as when wages and profit are expended on the same compositions of commodities. However, so long as we are aware of such theoretical inexactness in general cases, the way to see the social macroeconomic relations between the social amount of labour time expended and value added, or between aggregate wages and labour time obtained by workers, and between aggregate gross profit and surplus labour, the new interpretation is a practically useful approximation to interpret the annual national income accounts in the Marxian approach. Independent of the new interpretation, I myself interpreted the Japanese national value added or net national product in 1986 (296 trillion yen) as a result of total social labour time expended in the year (about 100 billion hours = $2,102 \text{ hours} \times 47.6 \text{ million workers}$), or 2,960 yen per hour of labour, or 6.22 million yen a year per worker; and further, since the annual average income of employees is 3.86 million yen, I estimated an approximate rate of surplus value as being 61 per cent $[(6.22 - 3.86) \div 3.86]$: Itoh 1989). Such a way of estimation must in its essence be in accord with the main insights of the new interpretation.

Another shortcoming of the new interpretation is that it lacks a theory of determining the exchange value of money, or inverse of general price level, despite its emphasis on the role of money in a capitalist market economy, and this is the fourth issue I wish to explore. This may be related to its concentration on the macroeconomic relations, by somewhat neglecting

microeconomic price theories in light of the labour theory of value. As a consequence, the value of money is de-linked from the substance of value or the quantity of labour time embodied in a money commodity, and reinterpreted as applicable similarly both to the monetary regime based on the gold standard and to that based on an inconvertible currency system, as an *ex-post* definition. At least one of the important roles of value theory is to explain the social mechanism of determining relative ratios of exchange among commodities. For general commodity products, such ratios are represented by relative prices as a form of value. An important objective of the theory of prices of production, as well as the theory of more concrete movement of market prices, is to analyse the actual forms of value on the basis of the labour theory of value.

For money, which serves as the material for expressing exchange-values of general commodities, the expression of exchange values or form of value is not given by its price, unlike other commodities. The specific relative form of value of money is only given in the endless series of prices of the other commodities. 'We have only to read the quotations of a price-list backwards, to find the magnitude of the value of money expressed in all sorts of commodities' (Marx 1867: 189). The inverse of the general price index must statistically be very close to such a relative expression of exchange value of money. However, it is not easy to explain the social mechanism of the determination of the exchange-value of money. If we ever raise this problem, we have to take into account differences in monetary regimes, as an essential frame of reference.

3 The value and exchange-value of the money commodity

So long as money appears as a general equivalent anarchically chosen by all the other commodities in the process of development of forms of value among commodities, it must originally be one of commodities which are suitable for such a role, like gold. Thus the basic theory of money must be presented in a model of economy with commodity money as in *Capital*.

Although the notion of the value of money in the new interpretation is formally indifferent to the monetary regimes, what does it mean in an economic model of the transformation procedure with commodity money?

Just as the new interpretation holds the value of money unchanged through the transformation from values into prices of production, Moseley (2000), who is sympathetic to the new interpretation, likewise argues that commodity money gold must maintain its exchange value through the transformation procedure. According to him, unlike other commodities gold has no price, and is exempt from transformation of value-prices into prices of production. Since the gold industry obtains its surplus-value directly in the form of money, and does not participate in the sharing of surplus-value, the total price of all other commodities remains unaffected and equal to their total value-price.

Moseley assumes that the organic composition of capital (c/v) in the gold mining industry is lower than the social average so as to obtain a higher than the average rate of profit in the model of value-prices. If the rate of profit of the gold industry is subject to the equalization of the rate of profit as a whole, then the exchange value of a unit of gold must be lowered by a rise in the general price level as in the traditional transformation procedure dating from Bortkiewicz. This would contradict the basic position of the new interpretation, such as the constant relative value of money, or invariable total prices through the transformation procedure. Aligning himself with the new interpretation on this point, Moseley stands for a view that a gold industry with organic composition lower than the social average must always gain extra profit beyond the average rate of profit as a whole, and that equalization of profit rate is applied just to the least productive gold mines utilizable for capitals under the unchanged price level. As he notes, Yaffe (1975) and Naples (1996) presented a similar view on the exchange-value of money commodity with a higher than average rate of profit in the gold industry.

It is, however, theoretically unclear in Moseley's argument why the exchange value of gold is given and fixed in the model of value-prices to realize equal exchange of labour-time, and not affected by the process of competition among capitalists to equalize the rate of profit across industries. Although the gold industry directly obtains its surplus-value in the form of money as a result of production, as he stresses, it does not prove no-sharing of surplus-value in the case of the gold industry. The cost prices in the gold industry to be spent ($M - C$) may well be altered when value-prices are transformed into prices of production so as to change the surplus-value obtained (ΔM) in the same industry. As equal exchange of labour-time is broken in the system of prices of production, it is also highly dubious if the gold industry can obtain the same amount of labour embodied in ΔM through purchasing other commodities, without sharing surplus-value. Moseley's analysis does not explicate the social relations of labour-time behind the price system, unlike the new interpretation, and leaves these as a problem to be investigated further.³ This problem in his analysis can be extended to the

³ In a footnote on page 198 of chapter 12 in this volume, Moseley contrasts my argument against his. Besides negligence of the substantial social relations of labour-time behind the price system, his assertion that 'a definite quantity of surplus gold produced in a given period cannot change to a different quantity in this period' seems to me unsuitable to the problem of how to understand transformation of distribution of surplus-value from the economic model of value-prices into that of prices of production. His analysis of the multi-period process of equalization of profit rate after the footnote must be more appropriate to the issue. His analysis there, however, unlike the ordinary treatment of the transformation problem, introduces both a change of representative technical basis of gold production into the least utilizable mines with average rate of profit, and therefore the issue of differential rent.

interpretation of the substance of value of differential rent, which must be paid by capitalists to use better gold mines, and the substance of a seemingly lower rate of surplus-value in the least fertile mines (see Itoh 1988: 242, on the former issue).

In any case, if the economy with value-prices realizes a social balance of production based upon equal exchange of labour-time embodied in average in various products, the transformed economy with prices of production in Moseley's view must expand production of gold towards the least productive mines with average profit. In the usual land products, such as agriculture, the marginal land to be used is determined by the formation of market value or market price of production, which balances social need and supply of the products (Marx 1894: ch. 10). We have to examine further how such a market mechanism to carry through the law of value works in the case of a money commodity such as gold, as a theory of determination of exchange value of money commodity.

4 The mechanism of determining the exchange-value of gold money

It is, however, not easy to clarify the social mechanism to adjust social demand for and supply of gold, as well as its exchange-value in relation to the working of the law of value. Ricardo's quantity theory of money presented a model where excessive supply of gold directly and proportionally raises the general price level or lowers the exchange value of gold, and vice versa, by assuming all the quantity of gold is used just as means of circulation. Against this, Marx critically argued several points. The necessary quantity of means of circulation is socially determined by the prices based on labour value, quantities of commodities to be exchanged in the market for the period, and velocity of money. Commodity money gold exists not merely in the form of means of circulation, but also as hoards and a stock of bullion to be held as a store of wealth or material for luxurious goods. Thus hoards and stock of gold serve as a social pool to adjust the necessary quantity of means of circulation besides the flow of production of gold, and excessive supply of gold may not necessarily cause a rise in general prices but may be absorbed by an increase of hoards or stock of gold.

In fact, a rise in prices of commodity products in the phase of prosperity and a fall in prices in the phase of crisis and depression in the course of business cycles cannot be explained by alternation from excessiveness to shortage of supply of gold money. They are due to the whole complex mechanism of capital accumulation including the working of expansion and contraction of credit system (Itoh and Lapavistas 1999, ch. 6). In the normal course of business cycles, prices rise in the final phase of the prosperity including the effect of expansion of speculative trading by fully utilizing the flexible credit system, then fall sharply in the crisis with destructive

contraction of the credit mechanism, and stagnate at a low level in the depression due to reduced effective demand for investment and consumption.

As technical conditions of production in the gold industry would not change rapidly in a short period, a rise of prices towards the end of a period of prosperity implies higher input prices and higher per unit costs in the production of gold. Hence the rate of profit in the gold industry must fall. It compels the gold industry to reduce production from the least fertile mines. The reduction of gold output must have two effects. First, it reduces effective demand by the gold industry, which is analogous to the tendency for exports to decline and imports to increase due to a rise in domestic prices. Second, it additionally tightens the availability of reserves to banks and the central bank at a time when credit has greatly expanded, and thus promotes additionally the rise in the rate of interest, which serves as a factor in turning speculative prosperity into crisis.

The subsequent sharp fall and stagnation at a low level of both prices and wages conversely reduce the costs of production in the gold industry, and improve its profitability. Marginal mines that could not be profitably operated previously now come on-stream, and gold output rises. Analogous to the effect of a rise in exports due to a fall in domestic prices, the increase in gold outputs helps to boost the effective demand and partially mitigates the depression. It also helps to augment the reserves of the banking system. Such an effect to expand gold production may remain even in the new upswing, if the prices might be below the level of previous upswing as a result of competitive pressure of technological innovation during the depression. The competitive pressure for innovation is obviously much milder in the gold industry.

The increased supply of gold under the circumstances meets the wide range of flexible demand for gold in a capitalist economy. The social demand for gold comes from circulating money, hoarded money, bullion, and materials of ornaments and other manufactured products. The annual supply of gold adds just a small portion of socially existing stock of gold in these various forms. The perished annual amount of gold is supplied flexibly, not just by newly produced gold, but also from the existing stock. Besides, the credit system elastically economizes means of circulation and payment among capitals. Thus, the balance between the annual supply of gold and the social need for gold for various forms of existing stock is not simple and direct.

Therefore, it would usually take much longer for the law of value to regulate the social reallocation of labour as for the gold industry through the changes in the exchange-value of gold in relation to the labour value so as to adjust the balance between its social demand and supply. The elevated exchange-value of gold expressed in the lowered prices so as to promote expansion of gold production would not rapidly readjust, and may not cancel even through a business cycle if a rise in prices towards the end of a period of prosperity is not strong and lasting enough. In such a case, the

effects of extra profit in the gold industry can be three-fold: continuous increase in investment and production in the gold industry, a rise of absolute rent for landowners of gold mines, and a rise both in the market value of gold and differential rent by opening up less fertile gold mines. However, so long as gold supply continues to expand and eventually exceeds the social demand for raw materials, additions to circulating money and planned additions to the hoards of individuals and other economic agents, the excess is likely to lead to extra commodity purchases and easier credit expansion, resulting in partially boosting effective demand, and pushing the price level even gradually upward. The process might last for several business cycles, and potentially leads to the emergence of protracted secular trends in the price level, forming long waves of prices. In any case, as Vilar (1960) demonstrated in his historical study, the movement of falling prices in the world market in the regime of gold money was a strong factor in the drive to increase gold production, and the whole movement of prices depended on the changes in the value of gold, though its rapidity was different in various historical periods. When the general price level becomes too high and unfavourable to the gold industry, the whole adjustment mechanism turns in the opposite direction. The exchange value of money commodity is thus in principle not stable, but subject to the law of value through anarchical fluctuation in the process of competitive movement of capitals across industries, eventually equalizing the rate of profit of the gold industry (if slowly compared with other industries). In this wider context, a certain relevance of the quantity theory of money may be synthesized with Marx's theory of value and exchange-value of money. (See chapter 10 in this volume for remaining problems in Marx's anti-quantity theory of money.)

5 What happens under non-commodity money

What can we deduce about the contemporary economies with non-commodity money from the analyses above?

There can be a variety of economic regimes with non-commodity money. The regime of non-commodity money under the completely floating international exchange rates since 1973 is one of such instances. In comparison with the previous regime under the Bretton Woods international monetary system with fixed exchange rates, the exchange value of money has obviously become much more unstable. As direct convertibility (in case of dollars) and indirect convertibility (in case of other currencies) with gold were lost, the regulatory role of the labour value of commodity money for adjusting the exchange value of money – even slowly through long waves – disappeared. Supply of central bank notes as a typical non-commodity money and credit largely lost the international discipline based on the necessity to hold certain levels of gold reserves or foreign currency reserves in central banks.

A destructive vicious inflationary crisis thus occurred at the beginning of the 1970s as a result of the much-expanded supply of bank notes and credit in the collapsing process of the Bretton Woods system, which was combined with the impact of overaccumulation of real capital in relation to limitation of supply of both the labouring population in advanced countries and primary products in the world market. It included also the effect of the first oil shock. Stagflation followed, including the effect of the second oil shock. It is clear that contemporary non-commodity money has largely lost its stable anchor for its exchange value, unlike under the regime of gold money where the value of gold served, if not rapidly, as a gravitational anchor for the exchange value of money. A strong bias for inflation or a decline of exchange value of money was thus generated.

When inflation gains and proceeds, structural distribution of income and assets is naturally distorted and altered in real terms. As capitalist firms are usually the main debtors and working households are the main source of savings to lend, inflation favours the former and harms the latter. Keynes's strategy to give euthanasia to wealthy rentiers in favour of industrial investment by means of inflation has become dubious in its effect in this context. When nominal incomes among wage earners, pensioners and irregular workers tend to lag behind the pace of inflation and become stagnant in the period of stagflation, their real incomes, besides their savings and pension funds, are adversely affected by inflation, even though the Keynesian policies mitigate the unemployment problem to some extent. Similarly, when most of the prices of primary goods stagnated and then slid down in the world market from the 1980s, due to both stagnation and economizing technological innovations, the countries exporting primary goods (largely in the Third World) became severely hit by inflation.

Monetary instability has remained even when general inflation has calmed down through neoliberal tightening of monetary policy and by continuously depressed wages and prices of primary products in advanced countries since the beginning of the 1980s. Fully utilizing the more and more efficient informational technologies, speculative trading of foreign currencies and various securities has increased, with all its concomitant instability. The size of speculative trading of foreign currencies in the world, for example, has grown enormously in these two decades and reached more than a hundred times the amount necessary for real trade, travel and so forth.

Speculative trading in shares and real estates caused huge bubbles towards the end of the 1980s in advanced countries, typically in Japan. The destructive bursting of the bubble melted down in the 1990s over a thousand trillion yen of asset value in the Japanese economy. Similar bubbles and their collapse caused the Asian crisis of 1997 in many other Asian countries, and were repeated in the American IT bubble that lasted until 2000.

Including the vicious after-effects of such collapses of bubbles, deflation and continuous depression have become a serious economic problem since

the 1990s. We had tended to assume that an inflationary bias is easily spread under the regime of non-commodity money where Keynesian policies can operate. However, we are realizing that under certain historical conditions Keynesian fiscal and monetary policies are just not effective, but rather counterproductive for economic recovery, by deepening the fiscal crisis of the state and increasing the burden on the shoulders of socially weak persons and workers. Hoarding has increased and has been difficult to mobilize with much intensified liquidity preference due to worries about the future and lack of promising opportunities for industrial investment.

Thus, even under the regime of non-commodity money in our age, the simple quantity theory of money would not work. It is noteworthy that all the monetary instability that causes inflation, speculative trading and depressive deflation is intrinsic to the capitalist market economy, as Marx's theory of money has already shown, though the instability is wildly extended in the contemporary regime of non-commodity money. Mainstream economics in a broad sense, including both Keynesian and neo-liberal economics, as well as confused economic policies guided by them, are blind to this fact.

In retrospect, the definition of value of money in the new interpretation is applicable even to the contemporary non-commodity money as an *ex-post* static notion in relation to the macroeconomic national accounts. However, as a theoretical frame of reference, it is unsuitable to explicate such fundamental monetary instability of capitalist economy, as well as the specific nature of contemporary monetary instability. It can be interpreted as a static and a-historical notion even applicable to socialist 'money' such as the rouble in a planned economy, though such an interpretation may be not intended by the 'new interpretation' theorists. Marx's own theory of money, including its notion of value and exchange value of money commodity, is a more useful theoretical frame of reference to analyse the workings of different monetary regimes, including the current one. In these regards, the definition of the value of money in the new interpretation is of limited use as a convenient supplementary notion from a certain point of view of economies, and should be utilized always upon the ground of Marx's own broader theory of money, not as a substitute for it.

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12

Money has no Price: Marx's Theory of Money and the Transformation Problem

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According to the standard interpretation of the 'transformation problem' in Marx's theory, the money commodity (e.g., gold) is treated as essentially the same as all other commodities. If the first place, it is assumed that the money-commodity has a value-price (price proportional to labour-time)² and also has a price of production, which could be different from its value-price, just like all other commodities. Second, it is argued that, in the transformation of value-prices into prices of production, some surplus-value is transferred from the gold industry to all other industries in order to equalize the rate of profit. Finally, as a result of this transfer of surplus-value from the gold industry to all other industries, the prices of production of all other commodities increase, so that the total price of production of commodities is greater than their total value-price. In this chapter, Bortkiewicz and Sweezy will be considered as the representatives of the standard interpretation of Marx's theory of money and the transformation problem in particular (with the former the originator of the standard interpretation).

This chapter argues that this standard interpretation of the transformation is mistaken on all three of these important points, which concern the role of money and the transformation problem in Marx's theory. I argue that the money commodity has neither a value-price nor a price of production, so that a transformation of the former into the latter is not possible. Further,

¹ Thanks very much to all the conference participants for helpful comments on my chapter, especially to Makoto Itoh and Claus Germer. Remaining errors are of course my own.

² Marx called these prices that are proportional to labour-times (as he assumed in Volume I) simply 'values'. But 'value' is a complicated concept, which includes not only the form of appearance of value – prices – but also the substance and magnitude of value: abstract labour and socially necessary labour-time. Many interpreters of Marx think that 'value' refers only to labour-times, when in fact Marx usually means price. Therefore, I use the term 'value-price' (instead of the simpler 'value') to refer to prices that are proportional to labour-times, in order to emphasize that the aspect of value that I am primarily concerned with here is the *price* of commodities, as the necessary form of appearance of their value.

I argue that in the transformation of value-prices into prices of production, surplus-value is *not* transferred from the gold industry to other industries, but instead the profit received in the gold industry is always identically equal to the surplus-value produced in the gold industry. Finally, I conclude that, since there is no transfer of surplus-value from the gold industry to other industries, the prices of production of other commodities cannot possibly be affected by such a non-existent transfer, and the total price of production of commodities is always identically equal to the total value-price of commodities, as Marx himself concluded.

The first section presents my interpretation of the role of money in Marx's theory in general and in the transformation problem in particular, and then the second section critically examines the Bortkiewicz–Sweezy interpretation of Marx's theory of money and the transformation problem.

1 Marx's basic theory of money and the transformation problem

1.1 Money has no price

Marx's basic theory of money is presented in Part I of Volume I of *Capital*. The most important conclusion of Marx's theory of money in Part I, which is relevant to the role of money and the transformation problem, is that the money commodity (e.g., gold) itself *has no price*.³ According to Marx's theory in Part I, the *price* of a given commodity is the outward, visible expression of the value of commodities (i.e., the socially necessary labour-time contained in commodities) in terms of a quantity of the money commodity (e.g., gold). It follows from this concept of price (e.g., a quantity of gold) that gold itself cannot have a price, because the socially necessary labour-time contained in gold cannot be expressed in terms of gold itself, but can only be expressed in terms of some *other* commodity. Marx emphasized from the very beginning of his theory of money (in the discussion of the 'simple form of value' in section 3 of chapter 1) that the commodity whose value is being expressed and the second commodity which serves as the measure of value of the first commodity are 'mutually exclusive' from each other (i.e., a commodity cannot serve as its own measure of value): 'The same commodity cannot, therefore, simultaneously appear in both forms in the same expression of value. These forms rather *exclude each other as polar opposites*' (1867: 140; emphasis added). And elsewhere:

[M]oney has no price. In order to form a part of this relative form of value of the other commodities, it would have to be brought into relation with itself as its own equivalent.

(Marx 1867: 189; emphasis added)

³ Williams (1975: 23), and Yaffe (1976: 35) also emphasize this point.

Gold has neither a *fixed* price *nor any* price at all, when it is a factor in the determination of prices and therefore functions as money of account. In order to have a price, in other words to be expressed in terms of a *specific* commodity functioning as the *universal* equivalent, this other commodity would have to play the same exclusive role in the process of circulation as gold. But two commodities which exclude all other commodities would exclude each other as well.

(Marx 1859: 75)

The *price* of the commodity which serves as a measure of value and hence as money, *does not exist at all*, because otherwise, apart from the commodity which serves as money I would need a second commodity to serve as money – double measure of value ... *There can therefore be no talk of a rise or fall in the price of money.*

(Marx and Engels 1861–3a: 426; emphasis added,
except for emphasis on ‘price’)

We will see below that, in Marx’s theory of prices of production in Volume III, since gold does not have a price, there is no price of gold that could be transformed from a value-price to a price of production.

1.2 Circulation of capital in the gold industry

Since gold has no price, the circuit of capital is different in the gold industry from all other industries. The value-product of the gold industry is not a commodity with a price, but rather a definite quantity of gold itself. Gold is not like all other commodities, which have to be sold in order to be converted into money. Instead, gold is *already money*, as a result of the production process itself, prior to circulation. Therefore, the circuit of capital in the gold industry is represented by the following unique, abbreviated formula:⁴

$$M - C \dots P \dots M'$$

Notice that the third phase of the circuit of capital in the gold industry is simply M' , instead of the usual $C' - M'$. The price of the commodity-product (C') is missing, because gold has no price. The product of gold production is money itself (M'), not a commodity with a price that has to be converted into money.

Marx discussed this unique form of the circuit of capital in the gold industry in the following passages from Volume II of *Capital*.

⁴ Howell (1975: 53), also emphasizes this unique form of the circulation in the gold industry.

The formula for the production of gold, for example, would be $M - C \dots P \dots M'$, where M' figures as the commodity product in so far as P provides more gold than was advanced for the elements of production of gold in the first M , the money capital.

(Marx 1884: 131)

Let us firstly consider the circuit of turnover of the capital invested in the production of precious metals in the form $M - C \dots P \dots M'$ Let us start by considering only the circulating part of the capital advanced as M , the starting-point of $M - C \dots P \dots M'$. In this case *a certain sum of money is advanced* and cast into circulation in payment for labour-power and in order to purchase materials of production. The money is not withdrawn again from circulation by the circuit of *this* capital, and then cast in afresh. The *product in its natural form is already money*, it does not need to be first transformed into money by exchange, by a process of circulation ... The money form of the circulating capital, that consumed in labour-power and means of production, is replaced not by the sale of the product, but rather by the *natural form of the product itself*.

(Marx 1884: 401–2; emphasis added)

We will see below that, because the value-product of the gold industry is a definite quantity of gold (M'), this quantity of gold remains the same in both the theory of value and surplus-value in Volume I and in the theory of the distribution of surplus-value and prices of production in Volume III.

1.3 Surplus-value in the gold industry

The surplus-value produced in the gold industry during a given circuit of capital (S_G) is equal to the difference between the quantity of gold produced at the end of that circuit (M'_G) and the initial quantity of money-capital advanced at the beginning of the circuit to purchase means of production and labour-power (M_G). Algebraically:

$$S_G = \Delta M_G = M'_G - M_G \quad (12.1)$$

We have just seen that the value-product of the gold industry at the end of the circuit is not a commodity with a price, but is rather a *definite quantity of gold produced* (M'_G). In Marx's theory, this quantity of gold is *taken as given*, as the *actual* quantity of gold produced in the gold industry during a given circuit of capital.

Furthermore, I argue that the initial money-capital advanced at the beginning of the circuit (M_G) is also *taken as given*, as the *actual* quantity of money-capital advanced to purchase means of production and labour-power in the gold industry. This assumption is consistent with my general interpretation of Marx's method of determination of the initial money-capital (taken as

given, as the actual money-capital advanced) in the theory of surplus-value in Volume I, as presented in Moseley (1993, 2000 and 2003). Similar interpretations of the determination of the initial money-capital in Marx's theory of surplus-value have been presented by Yaffe (1976), Mattick (1981), Carchedi (1984) and Ramos (1998–9).

It follows that, since the value-product of the gold industry (M'_G) is the actual quantity of gold produced, and the initial money-capital (M_G) is the actual quantity of money-capital advanced in the gold industry, the surplus-value in the gold industry ($S_G = \Delta M_G$) is equal to the difference between these two actual quantities (i.e., is equal to the *actual* surplus gold produced, over and above the actual initial money-capital advanced). Unlike all other industries, the surplus-value in the gold industry does not consist of a part of the price of the output (since gold has no price), but instead *consists of a definite quantity of surplus gold 'from the start'* (i.e., as the direct result of the production process itself, prior to circulation. Howell (1975: 53) also emphasized that 'the surplus-value contained in gold appears immediately in socially recognized form').

This important point is discussed in the following passages (the first from chapter 17 of Volume II on the circulation of surplus-value, and the second from an earlier draft of this chapter in the *Manuscript of 1861–63*):

The gold-producing capitalists possess their entire product in gold, including the part of it which replaces constant capital, the part which replaces variable capital, and the part which consists of surplus-value. One part of the society's surplus-value thus consists of gold, and not of products that are turned into money only in the course of circulation. It consists of gold from the start and is cast into the circulation sphere in order to withdraw products from this.

(Marx 1884: 410; emphasis added)

[In the gold or silver industry], *surplus-value is directly in gold or silver as a surplus of gold or silver.*

(Marx and Engels 1861–3b: 193; emphasis added. See also p. 191)

1.4 Profit in the gold industry: no 'sharing' of surplus-value

Volume III of *Capital* is about the *distribution of surplus-value*, or the division of the total surplus-value produced in a given circuit of capital into individual component parts: first the equalization of the profit rate across industries (Part II), and then the further division of surplus-value into industrial profit, commercial profit, interest, and rent (Parts IV–VI). The equalization of the profit rate across industries analysed in Part II involves the determination of the *prices of production* of commodities. The transformation of value-prices

into prices of production redistributes the surplus-value produced in a given circuit across industries, in such a way as to equalize the rates of profit in all industries. The result of this redistribution of surplus-value is that the profit received in each industry is in general *not* equal to the surplus-value produced in that industry. In this way, there is a 'sharing' of surplus-value among capitalists, like 'hostile brothers [who] divide among themselves the loot of other people's labour' (1861–3a: 264), or like a form of 'capitalism communism', in which the profit received in each industry is proportional to the total capital invested in that industry, rather than equal to the surplus-value produced in that industry (Marx and Engels 1975: 193; see Moseley 1997 and 2002 for further discussions of Marx's theory of the distribution of surplus-value in Volume III).

However, according to Marx's theory, there is *no sharing of surplus-value between the gold industry and other industries*, because the profit received in the gold industry is *always identically equal* to the surplus-value produced in the gold industry. We have seen above that the surplus-value produced in the gold industry (S_G) is the actual quantity of surplus gold produced that is, it is equal to the difference (ΔM_G) between the actual quantity of gold produced (M'_G) and the actual money-capital advanced in the gold industry (M_G):

$$S_G = \Delta M_G = M'_G - M_G \quad (12.2)$$

Similarly, the profit received in the gold industry (Π_G) is also equal to this *same actual surplus quantity of gold produced* (ΔM_G): that is, it is equal to the same difference between the actual quantity of gold produced (M'_G) and the actual money-capital advanced in the gold industry (M_G):

$$\Pi_G = \Delta M_G = M'_G - M_G \quad (12.3)$$

Since gold has no price, it also has no price of production. There is no price of gold that could be transformed from a value-price to a price of production, in order to share surplus-value and equalize the rate of profit in the gold industry. Instead, as we have seen above, the value-product of the gold industry is a definite quantity of gold produced (M'_G), which is the same for the determination of both the surplus-value produced in the gold industry (equation 12.2) and the determination of the profit received in the gold industry (equation 12.3).

Similarly, the quantity of initial money-capital (M_G) is also *the same* in both of these equations – the *actual* quantity of money-capital advanced in the gold industry at the beginning of the circuit of capital – which is *taken as given* both in the determination of the surplus-value produced and in the determination of the profit received in the gold industry. Again, this assumption is consistent with my general interpretation of Marx's method of

determination of the initial money-capital in the theory of surplus-value in Volume I and the theory of prices of production in Volume III (the *same* quantities are taken as given – the *actual* quantities of money-capital advanced – in both these stages of the theory), as presented in Moseley (1993, 1997 and 2003).

Since both the value-product in the gold industry (M'_G) and the initial money-capital advanced in the gold industry (M_G) are the same in both equation (12.2) and equation (12.3), it follows that *the profit received in the gold industry is always identically equal to the surplus-value produced* in the gold industry (i.e., $\Pi_G = S_G = \Delta M_G$). Thus, according to Marx's theory, *there is no 'sharing' of the surplus-value* produced within a given circuit of capital between the gold industry and all other industries. The surplus-value produced in the gold industry within a given period is a definite quantity of actual surplus gold produced, which cannot change into a different quantity of profit through the sharing of surplus-value with other industries.⁵

This conclusion, that there is no sharing of surplus-value between the gold industry and other industries in the single-period transformation of values into prices of production, does not imply that there is no equalization of the profit rate in the gold industry as the result of an actual multi-period process of adjustment, involving capital flows in and out of the gold industry, the opening and closing of marginal mines, and so on. For example, if the rate of profit in the least productive mines were higher than the average rate of profit, then less productive mines would be opened, and these less productive mines would have a lower rate of profit, because less surplus-value would be produced. This process would continue until the rate of profit in the least productive mines allowed only for the average rate of profit (and vice versa, if the rate of profit in the least productive mines were lower than the average rate of profit).⁶

⁵ Makoto Itoh (chapter 11 above) accepts that surplus-value in the gold industry is a definite quantity of gold produced in a given period, but he denies the conclusion that therefore the profit received in the gold industry cannot be different from the surplus-value produced in the gold industry. But this conclusion follows of logical necessity: a definite quantity of gold produced in a given period cannot change to a different quantity in this period.

Itoh argues that the quantity of surplus-value may change through a change in the input prices from values to prices of production. On the contrary, I argue that the logic is the opposite: since the quantity of surplus-value in the gold industry cannot change (because it is a definite quantity of gold produced), this implies that the input prices must be the same in the determination of both values and prices of production.

⁶ Actually, there is usually not complete equalization of the rate of profit in the gold industry to the average rate of profit, because gold is a privately-owned natural resource, whose production must in general yield a rent for the owners of the gold mines. Therefore, the rate of profit in the gold industry must be greater than the average rate of profit for the economy as a whole. (Similar interpretations of Marx's

However, this actual multi-period process of equalization of the profit rate in the gold industry is different from the theoretical transformation of values into prices of production, which is assumed to take place within a single analytical period of production, with no capital flows, and with fixed quantities of inputs and outputs (i.e., is assumed to take place in a 'long period' of analysis). Even though there is a multi-period process through which the rate of profit is equalized, as described above, it is still nonetheless true that, in Marx's single-period theoretical transformation of values into prices of production, *there is no sharing of surplus-value* between the gold industry and other industries. Marx's single-period transformation analyses the end result of the multi-period process of equalization just described. The single-period transformation assumes that the economy is in 'long-period' equilibrium, with the same quantities of inputs and outputs for the determination of both values and prices of production.

Thus there can be an actual equalization of the rate of profit in the gold industry over multiple periods, but there is no equalization in the single period transformation of values into prices of production. The rate of profit in the gold industry can be equal to the average rate of profit, but this can be true only because the rate of profit *produced* in the gold industry is equal to the average rate of profit (through the multi-period process of adjustment described above), *not* because the rate of profit *received* in the gold industry is different from the rate of profit *produced* in the gold industry (through a theoretical single-period transformation of values into prices of production). The rate of profit *received* in the gold industry is always identically equal to the rate of profit *produced* in the gold industry.⁷

theory of a higher than average rate of profit in the gold industry have been presented by Williams 1975 and Naples 1996.) But this point is not fundamental. Whether or not rent must be paid in the gold industry, there is still a tendency over multiple periods towards the equalization of the profit rate in the gold industry by the process described in the text, either to the average rate of profit or to the average rate of profit plus the average rent.

⁷ In the first draft of this chapter for the conference, I argued that there is no actual multi-period equalization of the profit rate in the gold industry, because at that time I was unaware of the process of equalization described in the text. The only possible process of equalization that I was aware of at that time was the one suggested by Bortkiewicz: that changes in the quantity of gold currently produced would result in a change in the prices of all other commodities.

I argued that Bortkiewicz's equalization mechanism contradicts Marx's theory of money and prices, and in particular Marx's theory of the relation between the quantity of money in circulation and the sum of the prices of commodities. Marx's theory assumes that the quantity of money in circulation is *determined by* the sum of prices, while Bortkiewicz's alleged equalization process assumes the opposite: that the quantity of money in circulation *determines* the sum of prices (as in the quantity theory of money, which Marx severely criticized).

1.5 Total price of production equal total value-price

I have argued previously that *both* of Marx's two aggregate equalities (total price of production = total value-price *and* total profit = total surplus-value) are *always identically true* by the nature of Marx's logical method (see Moseley 1993, 2000 and 2003). These equations are not conditional equalities, which may or may not be true, but rather follow from Marx's method of determination of price of production and profit.

This conclusion is not affected by the consideration here of the nature of money and role of money in the distribution of surplus-value across industries. Since the gold industry does not participate in the sharing of surplus-value, the prices of production of all other commodities cannot be affected by a non-existent sharing of surplus-value in the gold industry. Hence the total price of production of all other commodities is also not affected, and remains identically equal to the total value-price of all commodities. Since the aggregate price level does not change, neither does its inverse, the exchange-value of money. This point will become clearer after the discussion of Bortkiewicz and Sweezy's misinterpretation of Marx's theory in the next section.⁸

I still think that this specific argument is valid, and that the rate of profit in the gold industry is not equalized *in Bortkiewicz's way*. But now I realize – due in large part to discussions at the conference with Makoto Itoh and others – that there is another possible mechanism of equalization of the rate of profit in the gold industry that does not contradict Marx's theory of money and prices (through direct changes in surplus value produced in the marginal mines, as described in the text). I have since discovered that Mandel (1984) presented a similar interpretation of the actual equalization of the profit rate in the gold industry. However, Mandel conflates the actual equalization of the profit rate over multiple periods with the single-period theoretical equalization of the profit rate through the transformation of values into prices of production. These are two distinct processes. The latter analyses the end result of the former.

My main point is that, whether or not there is a multi-period equalization of the profit rate in the gold industry through the opening and closing of marginal mines, the rate of profit cannot be equalized in the single period transformation of values into prices of production, because this single-period theoretical transformation assumes a given quantity of mines in operation, and concludes that the quantity of surplus-value in the gold industry is a definite quantity of gold produced, not a part of a price, which could become a different magnitude in the transformation of values into prices of production.

⁸ Itoh (chapter 11 above) argues that, even if total price of production is equal to total value, it is still true that the total price of surplus goods will not be equal to the total value of surplus goods. The latter inequality is true, but it is not Marx's second aggregate equality. Rather, Marx's second aggregate equality is: total profit = total surplus-value. This equality is always true, according to my interpretation of Marx's theory (as it is in the 'new interpretation' of Foley and Duménil) (please see Moseley 1997, 2000, 2003 for a demonstration of this second aggregate equality).

2 Bortkiewicz and Sweezy's misinterpretation of money in Marx's theory

The rest of the chapter critically examines Bortkiewicz and Sweezy's interpretation of the role of money in the transformation problem in Marx's theory. In general, Bortkiewicz and Sweezy do not understand the uniqueness of the money commodity in Marx's theory and treat the money commodity just like all other commodities. This is their fundamental mistake. It is assumed that the money commodity has both a value-price and a price of production, just like all other commodities, contrary to Marx's theory. It is also assumed that, in the single-period transformation of values into prices of production, the rate of profit in the gold industry is equalized through a sharing of surplus-value, just like all other industries. From these assumptions, Bortkiewicz and Sweezy conclude that the total price of production of commodities is greater than the total value-price of commodities. The following subsections examine these mistakes in turn.

2.1 Money has a price and a price of production

Bortkiewicz and Sweezy assume that the money commodity (e.g., gold) has both a value-price and a price of production that equalizes the rate of profit, just like all other commodities.⁹ The unit of measurement of the value-price of gold is a definite quantity of gold (e.g., one ounce of gold), just like the value-price of all other commodities. Thus, the value-price of 200 ounces of gold is – 200 ounces of gold! But this makes no sense, from the point of view of Marx's theory. The price of gold cannot be a quantity of gold because, according to Marx's theory, price is the measure of value for commodities, and the value of gold cannot be measured or expressed in terms of gold itself. The value of gold can only be measured or expressed in terms of some other commodity. Therefore, the Bortkiewicz–Sweezy interpretation starts off with a fundamentally incorrect concept of the 'price' of gold in terms of gold itself.¹⁰

Similarly, in the Bortkiewicz–Sweezy interpretation, gold also has a 'price of production', whose unit of measurement is also a definite quantity of gold, but whose magnitude *could be different* from the value-price of gold. But how is this possible? How is it possible for the price of production of 200 ounces of gold to be different from 200 ounces of gold? According to

⁹ Bortkiewicz uses the term 'value' to mean 'price proportional to labour-time'. In order to make it clear that 'value' here means a price, I will continue to use the term 'value-price' to refer to price proportional to labour-time.

¹⁰ Yaffe (1976: 35–37) and de Brunhoff (1976: 69–71) have also criticized Bortkiewicz and Sweezy for their failure to understand that the money commodity has no price. De Brunhoff said: 'If money is treated as a unit of account possessing a price, it loses its specificity' (p. 71).

Bortkiewicz and Sweezy, by changing the unit of measurement for the price of production of gold! For example, if the unit of measurement were 1/2 ounce of gold, then the price of production of 200 ounces of gold would be 400 half-ounces of gold! The magnitudes of the value-price and the price of production of 200 ounces of gold would be different, because the same 200 ounces of gold would be measured in different units (Bortkiewicz 1907: 12 and Sweezy 1942: 117).

Such a conception of the 'price of production' of gold is obviously totally foreign to Marx's theory of prices of production. In Marx's theory, the unit of measurement for both the value-price and the price of production of commodities is the same: a definite, given quantity of gold (e.g., 1 ounce of gold). Furthermore, such a conception of the price of production of gold also has no significance in reality. Even though the magnitude of Bortkiewicz and Sweezy's price of production of gold is different from the value-price of gold, the value-product of the gold industry – the quantity of gold produced (M'_G) – *remains exactly the same and cannot change* (200 ounces of gold), as Marx emphasized. This actual 200 ounces of gold is what matters in the real capitalist economy. This magnitude of gold produced is compared with the initial money capital advanced in the gold industry (M_G) in order to determine the surplus-value produced in the gold industry ($S_G = \Delta M_G$), and in order to determine the profit received in the gold industry ($\Pi_G = \Delta M_G$). Bortkiewicz's invention of something called a 'price of production' of gold, that could be measured in different units from the price of gold, has no significance whatsoever for the determination of the actual surplus-value produced and the actual profit received in the gold industry.

2.2 Sharing of surplus-value between the gold industry and other industries

The second and most important mistake made by Bortkiewicz and Sweezy is that they assume that, in the transformation of values into prices of production, the rate of profit is equalized through the *sharing of surplus-value* between the gold industry and all other industries. As a result of this sharing of surplus-value, the profit received in the gold industry is (in general) *not equal* to the surplus-value produced in the gold industry. More specifically, as we have seen, Bortkiewicz and Sweezy assume that the gold industry has a lower than average composition of capital, and thus has a higher than average 'value rate of profit'. Hence, in the equalization of the profit rate, some of the surplus-value (supposedly) produced in the gold industry is transferred to other industries with a higher composition of capital.

The mechanism through which this sharing of surplus-value between the gold industry and other industries is supposed to happen, according to Bortkiewicz and Sweezy, is that the *inputs* of constant capital and variable capital *change* (i.e., these inputs are different in the determination of prices of production from how they are in the determination of value-prices).

According to this interpretation, in the Volume I theory of value and surplus-value, constant capital and variable capital in the gold industry (and elsewhere) are assumed to be equal to the *value-prices* of the means of production and means of subsistence, respectively. Thus we can see that, according to this interpretation, constant capital and variable capital in Volume I are *not* equal to the *actual* quantities of money-capital advanced to purchase means of production and labour-power in the gold industry, but are instead to these *hypothetical* quantities of money-capital, which are equal to the value-prices of the means of production and means of subsistence (C_G^* and V_G^* , where the superscript * indicates these hypothetical quantities of money-capital equal to value-prices).

Furthermore, since constant capital and variable capital in the gold industry are hypothetical quantities, so also is the surplus-value in the gold industry that is determined by these hypothetical quantities. Surplus-value in the gold industry is determined by subtracting these hypothetical quantities of constant capital and variable capital (whose sum is M_G^*) from the value-price of gold, which is equal to the actual quantity of gold produced (M_G'). Algebraically:

$$S_G^* = M_G' - M_G^* \quad (\text{where } M_G^* = C_G^* + V_G^*) \quad (12.4)$$

Thus we can see clearly that S_G^* is a hypothetical quantity of surplus-value because M_G^* is a hypothetical quantity of initial money-capital advanced.

In the Volume III theory of prices of production, according to this interpretation, the inputs of constant capital and variable are *redetermined* as equal to the *price of production* of the given quantities of means of production and means of subsistence, which are in general *not* equal to the value-prices of these goods. These revised quantities of constant capital and variable capital are equal to the *actual* quantities of money-capital advanced to purchase means of production and labour-power in the gold industry. Therefore, these *actual* quantities of C and V are *different* from the *hypothetical* quantities of constant capital and variable capital in Volume I (i.e., $C_G \neq C_G^*$, $V_G \neq V_G^*$, and $M_G \neq M_G^*$). In Bortkiewicz and Sweezy's famous numerical example, $C_G^* = 50$ and $C_G = 64$, $V_G^* = 90$, and $V_G = 96$.

Since $M_G \neq M_G^*$, it follows from equations (12.3) and (12.4) that $\Pi_G \neq S_G^*$. In other words, *the profit received in the gold industry is not equal to the surplus-value produced* in the gold industry, according to this interpretation. There is 'sharing' of hypothetical quantities of surplus-value between the gold industry and other industries, because the inputs of constant capital and variable capital change. In Bortkiewicz and Sweezy's numerical example, $S_G^* = 60$ and $\Pi_G = 40$.

All this is clearly contrary to Marx's theory. We have seen above that, in Marx's theory, the inputs of constant capital and variable capital *do not change* in the transformation of values into prices of production. Instead, the

quantities of constant capital and variable capital are *taken as given*, and furthermore the *same quantities* of constant capital and variable capital are taken as given in the determination of both the surplus-value produced in the gold industry and the profit received in the gold industry: the *actual* quantities of money-capital advanced to purchase means of production and labour-power in the gold industry (M_G).

We have also seen above that the value-product of the gold industry is also the same in the determination of both the surplus-value produced in the gold industry and the profit received in the gold industry: the actual quantity of gold produced (M'_G). Therefore, it follows, as we have seen above, that the surplus-value produced in the gold industry is *always identically equal* to the profit received in the gold industry: that is, $\Pi_G = S_G = M'_G - M_G$. According to Marx's theory, there is *no 'sharing'* of the surplus-value between the gold industry and other industries in the single period transformation of values into prices of production. The surplus-value produced in the gold industry within a given period is the actual quantity of surplus gold produced, which cannot change into a different quantity through the sharing of surplus-value with other industries. It is not a hypothetical quantity of surplus-value (S_G^*) which changes into the actual quantity of profit (Π_G), as in the Bortkiewicz–Sweezy interpretation.

2.3 Total price of production not equal to total value-price

We can now understand why Bortkiewicz and Sweezy reach the erroneous conclusion that the total price of production of commodities is greater than the total value-price of commodities. As we have seen, Bortkiewicz and Sweezy assume that the composition of capital in the gold industry is below average, and thus the 'value' rate of profit in the gold industry is above average. According to their interpretation, in order to equalize the rate of profit in the gold industry, surplus-value is transferred from the gold industry to all other industries (with a higher composition of capital). This transfer of surplus-value from the gold industry to other industries is accomplished by means of an increase in the prices of these other commodities. Therefore, the total price of production of commodities is greater than the total value-price of commodities, because of this alleged transfer of surplus-value from the gold industry to other industries.

However, we have seen above that, in Marx's theory, there is no sharing between the gold industry and all other industries. Surplus-value in the gold industry is a definite quantity of actual surplus gold produced, which has neither a value-price nor a price of production, and which therefore cannot be shared with other industries. Therefore, there can be no change in the prices of production of other commodities as a result of this non-existent transfer of surplus-value in the gold industry.

Consequently, Bortkiewicz and Sweezy's conclusion that the total price of production of commodities is greater than the total value-price of

commodities *does not apply to Marx's theory*, but instead applies only to Bortkiewicz and Sweezy's misinterpretation of Marx's theory. According to Marx's own logic, the total price of production of commodities is always equal to the total value-price of commodities, and the total profit is always equal to the total surplus-value. Neither of these two aggregate equalities is affected by the sharing of surplus-value in the gold industry because, as we have seen, there is no sharing of surplus-value in the gold industry. Both these two aggregate equalities are always true, by the nature of Marx's logical method. They are not conditional equalities which may or may not be true, depending on the composition of capital in the gold industry, or the units of measurement for value-prices and prices of production.

Therefore, I conclude that the standard interpretation of Marx's theory of money and the transformation problem, as represented by Bortkiewicz and Sweezy, is a complete and fundamental misinterpretation, which leads to erroneous conclusions.

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