A SUBSIDIARY PROOF FOR THE TRANSFORMATION SOLUTION.

The pre-occupation with the transformation problem may seem arcane, but as the ideological struggle erupts in inverse proportion to the growing difficulties of capitalism, it will be won only at the highest level, and the transformation problem is of the highest order. The turmoil in the markets this February shows the potential instability of capitalism. During the last six months, the world economy for the first time, appeared to be exiting the tepid conditions formed by the great financial crash of 2008. However, no sooner had the world economy stepped outside this zone, then it was caught by the immobilising trap of higher interest rates. These events once again underline the importance of Marxist theory.

In my previous postings the figures for the redistribution of surplus value were rounded up or down to the nearest whole number. This made the examples less cumbersome but less accurate. The degree of inaccuracy is between 3 and 4%, or in statistical terms, insignificant. This observation is raised because this posting relies on a higher degree of accuracy. For the time being however, in order to maintain continuity, the original figures are retained.

In Marx's example in Chapter IX, 26 of surplus value was redistributed in both directions. The following sums of capital flowed from higher to lower composition: 2 from Capital i, 8 to from iv and 17 from capital v with capital ii receiving 8 and capital iii receiving 18 making 26. In my original posting the total is 26.8 because I used whole numbers for capital and decimal fractions for revenue (profit). This is illustrated in Table 1 below.

Table 1.

	(1) **Repriced Capital**	(2) **More accurately repriced capital**	(3) **Profit**		(4) **Deviation in Profit**
i.	102	101.6	22.4 (102 x22% rate of profit)	+0.4	
ii.	93	93.4	20.5 (93 x 22% rate of profit)	-1.5	
iii.	85	85.2	18.7 (85 x 22% rate of profit)	-3.3	
iv.	106	105.7	23.3 (106 x 22% rate of profit)	+1.3	
v.	114	113.9	25.1 (114 x 22% rate of profit)	+3.1	
Movement	**22**	**21.3 average**			**4.8**

Column (1) is the original repriced capital in whole numbers amounting to 22. Column (3) is the mass of profits falling to each of the repriced capitals yielding 22% and column 4 yields the amounts each mass of profit has shifted from the average of 22. Together columns (1) and (4) add up to a total redistribution of 26.8. Alternatively, if we convert repriced capital from whole numbers to numbers with decimal fractions of the same order as profits, then the 22 is reduced to 21.3 which together with 4.8 yields a total of 26.1 which is sufficiently close to 26 to not matter.

In the posting of the 28th January: "*REVERSING THE TRANSFORMATION PROBLEM. DISTILLING MARKET VALUE FROM MARKET PRICES OF PRODUCTION"* which proposes an alternative proof, the actual movement of capital is modelled to derive market value from prices of production. Here the starting point is not market value but priced capital. The purpose, to show that market value can be deduced from prices of production themselves. If the five capitals are to be reduced back to 100 each, then different market values need to underpin these prices. The relation between these new market values and the prices of capital in Table 2 below, is taken once again from the 28th January posting.

Table 2.

Capitals	Marx's Original Market Value	Repriced Capital	New Market Value	Priced Capital
i.	80c+20v=100	102	78.4c+19.6v=98	100
ii.	70c+30v=100	93	76.4c+30.6v=107	100
iii.	60c+40v=100	85	73.6c+41.4v=115	100
iv.	85c+15v=100	106	79.9c+13.1v=94	100
v.	95c+5v=100	114	81.7c+4.3v=86	100
	390c+110v =500	**500**	**390c+110v = 500**	**500**

The left side is a theoretical construct taken from my first posting two years ago. It shows that the market values of 100 for each capital as recorded by Marx in Chapter 9, would yield capitals that are no longer priced at 100 but 102, 93, 85, 106 and 114 respectively. The right side shows the effect on market values once capitals actually flowed from the higher composition to the lower composition capitals in the order of -14 (capital v), -6 (capital iv) and -2 (capital i). Production in Capitals ii and iii as the recipient of this flow of capital would see their production expand, while the reverse would happen in capitals i, iv and v. Thus. the market value which measures the expenditure of labour would expand and contract accordingly to reflect this change in employment and production.

Now it is important to state, and this has not been emphasised sufficiently up to now, that the total demand remains at 422. Within that 422, the monetary demand for the products exiting each capital is also unchanged. Hence while production has changed demand remains unchanged for the final products exiting each arm of production. The result is that in the sphere of capital ii and iii, the same amount of money now confronts an increased volume of output. This has the effect of reducing the selling prices in these two spheres. In the market spheres of the other three capitals, the same amount of money now confronts fewer products existing production there and the result is their prices are increased.

In other words, the assumption is that the changes in the volume of production is offset by the changes in their prices. In the case of capital i, the reduction in the value of its output of 2 was offset by the rise in total price of 2. Similarly, in the case of capital ii, the rise in the production of value of 7 was offset by a fall in total prices of 7 again repricing its capital to 100. The result is that each capital is now repriced at 100. This is mimics the price effect found in a capitalist economy resulting from changes in demand and supply, in this case changes only on the supply side. (This would not necessarily be as one-sided in the real world.)

The posting then went on to claim that once the capitals were now priced at 100, now mark, priced at 100 not valued at 100, it was a simple matter to solve for cost price and price of production. Clearly here, as all capitals were now priced, so too would be the cost price because input prices are components of capital which themselves are now priced. However, no proof for cost price and profit margin was offered, and in this sense an opportunity was wasted. This matter is now set right.

It needs to be. The capitalist in his domain, surveying all he or she owns, believes themselves to be an independent agent, setting their own profit. "The profit is what I can wrest from the market". They believe that they are a profit maker, not a profit taker. But on the question of profit, they have the same independence as an "organ grinder's monkey." Instead, as Marx demonstrated countless times, the mass of profits is finite. It is only the struggle to divide and re-divide this mass and its effect on prices, that creates the illusion that there is less or more of it. What is about to be revealed, is that buried with the market value is the profit margin itself.

This is shown in Table 3 below. This table replicates the movement of capital to arrive at the new market values. It shows the rates of profit that would prevail under the new conditions of production and output. New elements are introduced. Firstly, the rate of profit that would prevail if the commodities sold at their market value. Additionally, a potential rate of profit is added. This is the sum of the surplus value produced by each capital plus the additional money they receive when either selling their commodities above or below their market values. This additional money

or loss of money is the product of the movement of capital and its effect on demand and supply. We immediately note the significance of the potential rate of profit which tends to the average of 22%.

Table 3.

	(1) Original Market Value	(2) Movement of Capital	(3) New Market Value	(4) Surplus Value	(5) Rate of Profit	(6) Potential Rate of Profit	
(i)	80c + 20c = 100	-1.6c and -0.4v	78.4c + 19.6v = 98	19.6	20%	(19.6+2)/98	= 22%*
(ii)	70c + 30v = 100	+6.4c and + 0.6v	76.4c + 30.6v = 107	30.6	28.6%	(30.6-7)/107	= 22%
(iii)	60c + 40v = 100	+13.6c and 1.4v	73.6c + 41.4v = 115	41.4	36%	(41.4-15)/115	= 23%
(iv)	85c + 15v = 100	-5.1c and -0.9v	79.9c + 14.1v = 94	14.1	15%	(14.1+6)/94	= 21.4%
(v)	95c + 5 v = 100	-13.3c and -0.7v	81.7c + 4.3v = 86	4.3	5%	(4.3+14)/86	= 21.3%
	390 +110 = 500		**390c + 110v = 500***	**110s***			**=21.9%***

(* Due to the use of only one decimal point there is a rounding off error.) (**22 surplus value redistributed**)

The important column is column 6. It comprises, the profit produced by each capital plus the benefit of or loss of profit resulting from price changes. In the case of capital iii, which is intrinsically the most profitable capital, its loss of profit due to a fall in the price of its output of 15, yields a rate of profit of 23%. On the other hand, the least profitable capital, capital v enjoys a boost to its profit of 14 due to the higher price of its product and it achieves a rate of profit of 21.3%. However only capitals i and ii enjoy a profit rate of 22%. The other three capitals deviate between 3 and 5% from it. Nonetheless, what is seen is a clear trend towards the equalisation of the rates of profit between the 5 capitals and therefore for a general profit margin to be added to cost price even before the price of production is established. In short, the margin is almost fully formed.

The deviation of the rate of profit from 22% is due to two factors. The fact that 22 is used for the redistribution of capital rather than 21.3. Secondly and more importantly, the absence of the 4.8 of profit revenue redistributed to enable the mass of profits to differ between capitals which were no longer equal in order to yield a rate of profit of 22%. As each capital is now priced at 100 yielding equal sums of profit, the 4.8 movement in profits is now reversed.

Unlike capital which recirculates, that is, it is reinvested, profits (revenue) never returns to production. It is consumed by the capitalist outside production. Hence the mass of profit withdrawn per capital is a one-off event and therefore transient. It therefore takes the form of a balancing item carried forward from the previous cycle of production. These balancing items change whenever the price of capitals changes between cycles due to change for example, and one which will not be considered, in sectoral demand. Once again this illustrates the importance, as Marx stressed, of the differentiated treatment of capital versus revenue.

Table 4.

	(1) Original Market Value	(2) New Market Value	(3) Balancing item	(4) Market value & balance c/f	(5) Rate of Profit	
i.	80c + 20c = 100	78.4c + 19.6v = 98	-0.4	**98 – 0.4 = 97.6**	(19.6+2)/**97.6**	= 22%*
ii.	70c + 30v = 100	76.4c + 30.6v = 107	+1.5	**107+ 1.5** = 108.5	(30.6-7)/**108.5**	= 22%
iii.	60c + 40v = 100	73.6c + 41.4v = 115	+3.3	**115 + 3.3 = 118.3**	(41.4-15)/**118.3**	= 22%
iv.	85c + 15v = 100	79.9c + 14.1v = 94	-1.3	**94 – 1.3 = 92.7**	(14.1+6)/**92.7**	= 22%
v.	95c + 5v = 100	81.7c + 4.3v = 86	-3.1	**86 – 3.1 =82.9**	(4.3+14)/**82.9**	= 22%
	390 +110 = 500	**390c + 110v = 500***			**500**	**=22%**

(* Due to the use of 22 rather 21.3 figure is rounded off.) (**26.1 surplus value redistributed**)

The important column is column 4. To arrive at the totals in column 4, the addition or subtraction of profit once needed to yield 22% on unequal capitals (as detailed in Table 1), in the previous cycle, is either added to, or subtracted from, the New Market Value in the current cycle. This provides the denominator measured in value terms, over which to divide the surplus value produced by each capital plus the change in selling price. Capitals priced at 100 will now yield

the same profit rate of 22%. What Table 4 shows, and here lies the subsidiary proof, is that it is market value together with the movement of capital that yields the profit margin.

This profit margin of 22% on capitals all priced at 100 now provides the profit margin found in Table 5. Unlike the Table in Chapter 9 capital is now priced. The input prices derived from the expenditure of capital are themselves priced. So too are the selling prices. There is no longer any incongruity between input and output prices and thus it is legitimate to describe selling prices here as "market prices of production".

Table 5.

	Price of capital	share of capital consumed.	Total cost Price.	+ Total profit margin.	=Market prices of production.	*Original prices* of *production, Table 1.*
i.	100	70%	70	22	92	*94.4*
ii.	100	81%	81	22	103	*94.5*
iii.	100	91%	91	22	113	*94.7*
iv.	100	55%	55	22	77	*84.3*
v.	100	15%	15	22	37	*54.1*
Totals	500		312	110	422	*422*

If we view this in the round, the following corollaries apply: Firstly, aggregate market value, based on a given rate of exploitation, yields the mass of profits. Secondly, because it creates unequal rates of profit in the first instance, due to unequal compositions, it creates the slope for the movement of capital. Thirdly, by setting the differential between the individual rates of profit, it precipitates, as we have shown, the amount of capital that will slide down the profitability slope until that slope is eroded away and that this amount of capital can be determined a priori. Finally, once profit rates are equalised, the correspondence between the rearranged market values and the price of capital is once again re-established.

It may be argued that the modelling remains lopsided as it does not take into account changes in sectoral demand. Clearly changes in sectoral **supply** should lead to changes in sectoral **demand**. In turn changes to sectoral demand, but within the total demand of 422, would lead to an alteration in market prices, hence to changes in profitability, hence to renewed movements of capital. In sum it would yield a more circuitous and elongated resolution of market prices, but in the end, the point of equilibrium, an average rate of profit would result based on different market values and different market prices of production. It would still equal 22% based on an unaltered mass of profit of 110 and that of capital of 500.

The only condition that can alter these two absolute values is the transition from simple reproduction to expanded reproduction. In this case some of the 110 of revenue, formally unproductively consumed as profit, is reinvested back into production. In this case the total capital will rise above 500 in subsequent periods and similarly the mass of profits should also rise above 110 as a greater quantity of labour is employed and exploited. This will add an extra degree of complexity to the modelling, but it would not alter the fundamental relation between market value and market prices of production.

Conclusion.

By showing that specific prices of production can only be yielded by a given set of market values, and, by showing that market values can themselves be derived from repriced capital, the indissoluble and incontrovertible relationship between value and price has been established. That is the essence of the Transformation Problem and its solutions.

The capitalist may consider themselves independent agents of production, but they simply personify the needs of capital, or in more vulgar terms, they are the sock puppet of capital. The fact that they choose to invest in areas of higher rates of profit, begs the question, why profit rates differ in the first place. The reason why only X amount of capital rather than Y is needed to level the rate of profit does not prevent them joining the stampede to invest and over-invest. If market value did not regulate production and through it the pattern of investment, the chaotic capitalist system would tear itself apart. If left to the personal devices and prejudices of individual capitalists, the system would

also tear itself apart. The capitalist class may be the beneficiary of the capitalist mode of production, but it would be an act of hubris on their part, to believe they are the master of their economy.

This posting completes the series of postings on the "transformation problem". It has addressed all the major issues related to this problem. For those yet to read the postings, the suggestion is to read them in date order. The top link is the first posting and the others succeed it in date order.

"*REVERSING THE TRANSFORMATION PROBLEM. DISTILLING MARKET VALUE FROM MARKET PRICES OF PRODUCTION"*

https://theplanningmotivedotcom.files.wordpress.com/2015/09/transformation-solution-pdf.pdf.

THE TRANSFORMATION OF VALUES INTO PRICES OF PRODUCTION. Some additional comments and insights.

https://theplanningmotivedotcom.files.wordpress.com/2018/01/the-transformation-problemadditional-notes-pdf.pdf

REVERSING THE TRANSFORMATION PROBLEM. DISTILLING MARKET VALUE FROM MARKET PRICES OF PRODUCTION

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