All Value-Form, No Value-Substance: Comments on Moseley's New Book, Part 4

Andrew Kliman, July 14, 2016

Fred Moseley is now flailing around, engaged in the intellectual equivalent of throwing spaghetti against the wall in the hope that a strand or two will stick.

In *Reclaiming Marx's "Capital": A Refutation of the Myth of Inconsistency* (Kliman 2007, pp. 172–4), I showed that Moseley's equilibrium rate of profit is quantitatively identical to (other) physicalists' equilibrium rate of profit, because it is

> determined by the same technological and real wage coefficients that determine all other [physical] theorists' rate of profit, and in exactly the same manner. That he expresses his rate of profit as the ratio of surplus-value to capital value advanced, instead of as a ratio of physical coefficients, makes no difference. It is all value-form and no value-substance.

His *first* response to this demonstration was to complain that I had assumed a one-good economy and to allege that, in a multisector context, his "macro-monetary" interpretation of Marx could not be shown to be physicalism in disguise. "[The one-good-economy] assumption, *and only this assumption*, makes it possible to cancel the λ's (labour-values) on p. 173 and arrive at Kliman's conclusion" (Moseley 2016a, p. 307, emphasis added).

In Part 1 of this series of comments on his new book (Kliman 2016a), I showed that this allegation is false: Moseley's equilibrium rate of profit is quantitatively identical to (other) physicalists' equilibrium rate of profit in a two-good context as well.

His *second* response was that I had once again succeeded in showing him to be a closet physicalist "*only* because there is *only one capital good* (Sector 1) and *only one wage good* (Sector 2). ... [E]quation (1″) cannot be derived from equation (1) if there are more than one capital goods and wage goods [sic]" (Moseley 2016b, p. 2, emphases in original).

In Part 3 of this series of comments (Kliman 2016b), I showed that this allegation is also false: Moseley's equilibrium rate of profit is also quantitatively identical to (other) physicalists' equilibrium rate of profit when there are *two* "capital goods" as well as a "wage good."

His *third* response abandons the effort to dismiss my demonstrations by demanding more and more sectors and distinct goods. He now tries to dismiss them on the grounds that they supposedly proved nothing! Didn't I predict, at the start of my series of comments, that responding to Moseley's new book "will prove to be a waste of time and effort" (Kliman 2016a, p. 1)?

Instead of proving anything, Moseley now alleges, what I put forward in Part 1 was a "clear case of circular reasoning":

> Kliman says that he "worked backward" to derive equation (1) from equation (1″). But then he turned around and also worked forward to "derive" equation (1″) from equation (1). Symbolically: (1″) → (1) → (1″). A clear case of circular reasoning. That circular reasoning is what enables him to cancel out the price ratios in equation (1) and have only physical quantities in (1″), no matter how many commodities (1, 2, 3, etc.) are assumed —because he converted the physical quantities in (1″) into the price ratios in (1) to begin with. [Moseley 2016c]

There are so many errors—of fact, omission, mathematics, and logic—packed into this statement that unpacking them all would be exceedingly difficult, tedious, and confusing to the reader. I shall instead explain why my demonstration that Moseley is a closet physicalist does not convert physical quantities into "price ratios" and does not employ circular reasoning.

Let me begin by noting the most obvious error Moseley makes when he alleges that I "converted the physical quantities in (1″) into the price ratios in (1) to begin with" and "cancel[led] out the price ratios in equation (1)." The error is that *equation (1) contains no price ratios!* It instead contains ratios of what I called "macro-monetary" "givens" (Kliman 2016a, p. 3):

$$\left[\left(\frac{C_1}{P_1}\right)\left(\frac{V_2}{P_2}\right)-\left(\frac{C_2}{P_2}\right)\left(\frac{V_1}{P_1}\right)\right](1+r)^2-\left[\left(\frac{C_1}{P_1}\right)+\left(\frac{V_2}{P_2}\right)\right](1+r)+1=0 \tag{1}$$

When I wrote that "the price ratios, $\left(\frac{p_1}{p_2}\right)$ and $\left(\frac{p_2}{p_1}\right)$, cancel out" (Kliman 2016a, p. 4) and that "I cancelled out the price ratios" (Kliman 2016b, p. 3, n1), I was not referring to the ratios of "macro-monetary" "givens" in equation (1), but to $\left(\frac{p_1}{p_2}\right)$ and $\left(\frac{p_2}{p_1}\right)$, which clearly do not appear in equation (1).[1]

What underlies Moseley's "circular reasoning" allegation is that he does not understand equation (1). It doesn't look familiar, and he has no idea why it holds true. But instead of asking *why it holds true*, he asked *how I derived it* and, misinterpreting my response (Kliman 2016b, p. 3, n1), wrongly concluded that it holds true only if we assume that the rate of profit is physically determined.

If that were the case, the "circular reasoning" allegation would be justified. I would have assumed that Moseley's rate of profit is physically determined in order to obtain equation (1), and then I would have used equation (1) in order to "show" that his rate of profit is physically determined.

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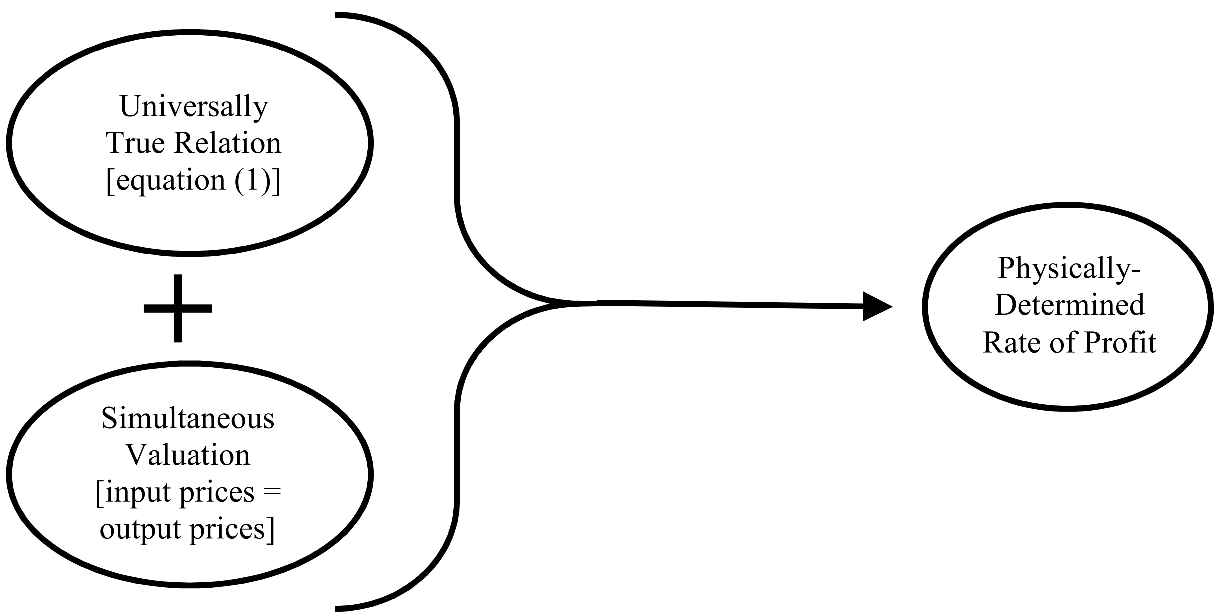
[1] *C* and *V* stand for constant capital and variable capital. $P = C + V + \pi$ is the price of production of the sector's product, where π is the sector's average profit. r is the uniform (equalized) rate of profit. p_1 and p_2 are simultaneously determined per-unit prices of the two sectors' products.

But it is simply not the case that equation (1) holds true only if we assume that the rate of profit is physically determined. As I noted when I first presented this equation, it "holds true in general" (Kliman 2016a, p. 3). In other words, if there are two sectors, no fixed capital, and the rate of profit is equalized across sectors, then equation (1) *always* holds true. This equation does *not* assume that the rate of profit is physically determined, and the ratios of "macro-monetary" variables in the equation are *not* ratios of physical quantities "converted into" ratios of monetary variables.

It is easy to prove this, but somewhat tedious, so I have put the proof in Appendix 1, below. The proof assumes that the rate of profit is equalized and it assumes the laws of algebra, but it makes *no other assumption*.

There was therefore no circularity in my demonstration that Moseley's rate of profit is physically determined. I began with a relation—equation (1)—that holds true in *every* price-of-production system in which there are two sectors and no fixed capital. I then showed that *the combination of* this universally true relation *plus* Moseley's stipulation that per-unit input and output prices must be equal implies that the rate of profit is physically determined. The reasoning moves in one direction, not in a circle (see Figure 1).

Figure 1



Furthermore, the rate of profit is physically determined if *and only if* input and output prices are constrained to be equal to one another. If input and output prices are not equal, the combination of equation (1) and the price information does not lead to the result that the rate of profit is physically determined. It leads to the result that the actual rate of profit does not equal the physicalists' rate of profit. This is proved in Appendix 2, below. A numerical example that illustrates the key points made above follows in Appendix 3.

Moseley's latest response to me also takes issue with a portion of my Part 1 that "analyze[d] exactly why Moseley's rate of profit falls from 50% to 25%" (Kliman 2016a, p. 5). His response to this is error-ridden as well, but there is no need to discuss the errors at length, because Moseley completely misunderstands what I was doing in that portion of Part 1. He thinks I was trying to "*prove that* [his] monetary rate of profit is the same as the actual physical rate of profit" (Moseley 2016c, emphasis added). But that portion of Part 1 actually only "analyze[d] … why" his rate of profit fell. The proof that his rate of profit is the physicalist rate of profit in "macro-monetary" clothing had already been completed before I turned to that issue. The proof was complete when I showed that equation (1) and the equality of input and output prices, taken together, result in the standard physicalist equation for determination of the uniform rate of profit.

In conclusion, Moseley's "circular reasoning" allegation is baseless and it results from misunderstandings on his part. My proof that his rate of profit is physically determined therefore stands. That he expresses his rate of profit as the ratio of surplus-value to capital value advanced, instead of as a ratio of physical coefficients, makes no difference. It is all value-form and no value-substance.

Appendix 1

<u>Theorem 1</u>:
If there are two sectors without fixed capital, and the rate of profit r is equalized across sectors, then equation (1)

$$\left[\left(\frac{C_1}{P_1}\right)\left(\frac{V_2}{P_2}\right)-\left(\frac{C_2}{P_2}\right)\left(\frac{V_1}{P_1}\right)\right](1+r)^2-\left[\left(\frac{C_1}{P_1}\right)+\left(\frac{V_2}{P_2}\right)\right](1+r)+1=0 \qquad (1)$$

always holds true. That is, (1) does *not* assume that r is determined by "physical quantities" and the fractions in (1) are *not* ratios of physical quantities converted into ratios of monetary variables.

<u>Proof</u>:

1. Note that the left-hand side of equation (1)

$$\left[\left(\frac{C_1}{P_1}\right)\left(\frac{V_2}{P_2}\right)-\left(\frac{C_2}{P_2}\right)\left(\frac{V_1}{P_1}\right)\right](1+r)^2-\left[\left(\frac{C_1}{P_1}\right)+\left(\frac{V_2}{P_2}\right)\right](1+r)+1$$

can be rewritten as

$$\left(\frac{C_1}{P_1}\right)(1+r)\cdot\left(\frac{V_2}{P_2}\right)(1+r)-\left(\frac{C_2}{P_2}\right)(1+r)\cdot\left(\frac{V_1}{P_1}\right)(1+r)-\left(\frac{C_1}{P_1}\right)(1+r)-\left(\frac{V_2}{P_2}\right)(1+r)+1 \qquad (2)$$

2. Since r is the equalized rate of profit, common to both sectors,

$$1+r=1+\frac{\pi_1}{C_1+V_1}=\frac{C_1+V_1+\pi_1}{C_1+V_1}=\frac{P_1}{C_1+V_1} \tag{3.1}$$

and

$$1+r=1+\frac{\pi_2}{C_2+V_2}=\frac{C_2+V_2+\pi_2}{C_2+V_2}=\frac{P_2}{C_2+V_2} \tag{3.2}$$

where π_1 and π_2 are the profits received in sectors 1 and two respectively.

3. We may therefore replace 1 + r in expression (2) with the right-hand side of equation (3.1) wherever 1 + r is multiplied against a Sector 1 fraction. And we may replace 1 + r with the right-hand side of equation (3.2) wherever it is multiplied against a Sector 2 fraction. After doing so, we obtain

$$\begin{aligned}&\left(\frac{C_1}{P_1}\right)\left(\frac{P_1}{C_1+V_1}\right)\cdot\left(\frac{V_2}{P_2}\right)\left(\frac{P_2}{C_2+V_2}\right)-\left(\frac{C_2}{P_2}\right)\left(\frac{P_2}{C_2+V_2}\right)\cdot\left(\frac{V_1}{P_1}\right)\left(\frac{P_1}{C_1+V_1}\right)\\&-\left(\frac{C_1}{P_1}\right)\left(\frac{P_1}{C_1+V_1}\right)-\left(\frac{V_2}{P_2}\right)\left(\frac{P_2}{C_2+V_2}\right)+1\end{aligned} \tag{4}$$

which reduces to

$$\left(\frac{C_1}{C_1+V_1}\right)\left(\frac{V_2}{C_2+V_2}\right)-\left(\frac{C_2}{C_2+V_2}\right)\left(\frac{V_1}{C_1+V_1}\right)-\left(\frac{C_1}{C_1+V_1}\right)-\left(\frac{V_2}{C_2+V_2}\right)+1 \tag{5}$$

4. Expression (5) can be rewritten as

$$\frac{C_1V_2-C_2V_1-C_1(C_2+V_2)-V_2(C_1+V_1)+(C_1+V_1)(C_2+V_2)}{(C_1+V_1)(C_2+V_2)} \tag{6}$$

or, by fully multiplying out the numerator of (6), rewritten as

$$\frac{C_1V_2-C_2V_1-C_1C_2-C_1V_2-C_1V_2-V_1V_2+C_1C_2+C_1V_2+C_2V_1+V_1V_2}{(C_1+V_1)(C_2+V_2)} \tag{7}$$

5. Now, the numerator of expression (7) can be rewritten as

$$(C_1V_2 - C_1V_2) + (C_2V_1 - C_2V_1) + (C_1C_2 - C_1C_2) + (C_1V_2 - C_1V_2) + (V_1V_2 - V_1V_2)$$

which clearly sums to 0. Hence, (7) equals 0 as well (since its denominator is positive).

6. But expression (7) is just the original expression, the left-hand side of equation (1), written in a different way. Hence

$$\left[\left(\frac{C_1}{P_1}\right)\left(\frac{V_2}{P_2}\right) - \left(\frac{C_2}{P_2}\right)\left(\frac{V_1}{P_1}\right)\right](1+r)^2 - \left[\left(\frac{C_1}{P_1}\right) + \left(\frac{V_2}{P_2}\right)\right](1+r) + 1 = 0 \qquad (1)$$

Note that this result has been derived *without* assuming that r is determined by "physical quantities" and *without* converting ratios of physical quantities into ratios of monetary variables. Hence, Theorem 1 has been proved.

Appendix 2

Theorem 2:

The equality

$$\left[\left(\frac{C_1}{P_1}\right)\left(\frac{V_2}{P_2}\right) - \left(\frac{C_2}{P_2}\right)\left(\frac{V_1}{P_1}\right)\right](1+r)^2 - \left[\left(\frac{C_1}{P_1}\right) + \left(\frac{V_2}{P_2}\right)\right](1+r) + 1 = 0 \qquad (1)$$

can be rewritten as (and therefore is equivalent to) the standard physicalist equation for the determination of the uniform rate of profit

$$[a_1b_2 - a_2b_1](1+\boldsymbol{r})^2 - [a_1 + b_2](1+\boldsymbol{r}) + 1 = 0 \qquad (8)$$

if and only if one constrains per-unit input prices to equal per-unit output prices (as Moseley and all other simultaneists do). That is, the monetary rate of profit r in (1) is identical to the physicalist rate of profit $\boldsymbol{r}$ in (8) if per-unit input and output prices are equal, but not if per-unit input and output prices differ.

Proof:

1. In Part 1 of this series of comments, I proved that (1) and (8) are equivalent if per-unit input prices are constrained to equal per-unit output prices. What still needs to be proven is that they are *not* equivalent otherwise.

2. When per-unit input and output prices can differ, the *C*s*, V*s*, and P*s can be rewritten as follows:

$$
\begin{aligned}
\frac{C_1}{P_1} &= \frac{p_{1t} a_1 X_1}{p_{1t+1} X_1} = \left(\frac{p_{1t}}{p_{1t+1}}\right) a_1 \\
\frac{C_2}{P_2} &= \frac{p_{1t} a_2 X_2}{p_{2t+1} X_2} = \left(\frac{p_{1t}}{p_{2t+1}}\right) a_2 \\
\frac{V_1}{P_1} &= \frac{p_{2t} b_1 X_1}{p_{1t+1} X_1} = \left(\frac{p_{2t}}{p_{1t+1}}\right) b_1 \\
\frac{V_2}{P_2} &= \frac{p_{2t} b_2 X_2}{p_{2t+1} X_2} = \left(\frac{p_{2t}}{p_{2t+1}}\right) b_2
\end{aligned}
\qquad (9)
$$

where per-unit input prices take the subscript *t* and per-unit input prices take the subscript *t* + 1.

3. Replacing the left-hand side terms in (9) with the right-hand side terms, equation (1) can be rewritten as

$$
\left[\left(\frac{p_{1t}}{p_{1t+1}}\right) a_1 \left(\frac{p_{2t}}{p_{2t+1}}\right) b_2 - \left(\frac{p_{1t}}{p_{2t+1}}\right) a_2 \left(\frac{p_{2t}}{p_{1t+1}}\right) b_1\right](1+r)^2 - \left[\left(\frac{p_{1t}}{p_{1t+1}}\right) a_1 + \left(\frac{p_{2t}}{p_{2t+1}}\right) b_2\right](1+r) + 1 = 0 \qquad (10)
$$

4. If per-unit input and output prices differ, then $p_{1t} \neq p_{1t+1}$ and/or $p_{2t} \neq p_{2t+1}$ and equation (10) therefore cannot be reduced to equation (8). Hence the (temporalist, or non-simultaneist) monetary rate of profit *r* in equations (1) and (10) is not the same as the physicalist rate of profit ***r*** in (8). This completes the proof.

Appendix 3: Numerical Example

Assume the following physical data. Sector 1 produces means of production (MP) while Sector 2 produces a consumer good (CG) that both workers and non-workers consume. Sector 1 uses 192 units of the means of production and 48 hours of living labor to produce 240 units of the means of production; Sector 2 uses 24 units of the means of production and 96 hours of living labor to produce 120 units of the consumer good. In each sector, the real wage is 5/12 of a unit of Good 2 per hour of living labor; thus the wages of the workers in Sectors 1 and 2 allow them to buy 20 and 40 units of Good 2, respectively. The data are summarized in the following table.

Sector	Input of Good 1	Real Wages	Output	Living Labor
1	192 MP	20 CG	240 MP	48 labor-hrs
2	24 MP	40 CG	120 CG	96 labor-hrs
Total	216 MP	60 CG		144 labor-hrs

It follows that $a_1 = \frac{192}{240} = 0.8$, $a_2 = \frac{24}{120} = 0.2$, $b_1 = \frac{20}{240} = 0.0833$, and $b_2 = \frac{40}{120} = 0.333$.[2] Substituting these numbers into equation (8), we find that the smaller of the two solutions for ***r*** is ***r*** = 0.2 = 20%. This is the uniform physicalist rate of profit.

Now let us assume that the monetary expression of labor-time equals 1; each hour of living labor creates 1 unit of new value in monetary terms (e.g., $1). Let us also assume that per-unit input prices happen to be $p_{1t} = 1.75$ and $p_{2t} = 0.7$. The temporal single-system table of values and prices of production is[3]

sector	*C*	*V*	*S*	*W*	*π*	*P*	*r*
1	336	14	34	384	85	435	24.29%
2	42	28	68	138	17	87	24.29%
total	378	42	102	522	102	522	24.29%

The per-unit output prices, $p_{1t+1} = \frac{435}{240} = 1.8125$ and $p_{2t+1} = \frac{87}{120} = 0.7250$ differ from the per-unit input prices.

Equation (1) holds true, since

$$\left[\left(\frac{C_1}{P_1}\right)\left(\frac{V_2}{P_2}\right) - \left(\frac{C_2}{P_2}\right)\left(\frac{V_1}{P_1}\right)\right](1+r)^2 - \left[\left(\frac{C_1}{P_1}\right) + \left(\frac{V_2}{P_2}\right)\right](1+r) + 1$$

,

$$= \left[\left(\frac{336}{435}\right)\left(\frac{28}{87}\right) - \left(\frac{42}{87}\right)\left(\frac{14}{435}\right)\right](1.2429)^2 - \left[\left(\frac{336}{435}\right) + \left(\frac{28}{87}\right)\right](1.2429) + 1 = 0$$

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[2] a_1 and a_2 are the amounts of good 1 needed to produce one unit of goods 1 and 2; b_1 and b_2 are the real wage (units of good 2) per unit of goods 1 and 2.

[3] The *C* figures are the inputs of Good 1 multiplied by its input price; the *V* figures are the real wages multiplied by Good 2's input price. *S* is surplus-value; the *S* figures are the amounts of new value created (equal to the living labor figures, since the monetary expression of labor-time equals 1) minus *V*. $W = C + V + S$ is the value of the sector's output. Each sector's average profit, *π,* equals its advanced capital (C + V) times the average rate of profit, i.e., total S divided by total $C + V$. $P = C + V + \pi$ is the price of production of the sector's output. $r = \pi/(C + V)$.

However, the physicalist equation (8) is not satisfied. The temporalist rate of profit, 24.29%, differs from the physicalist rate of profit, which is 20%. Thus, if we plug in the input-output coefficients and the *temporalist* rate of profit into the left-hand side of (8), we get

$$[a_1 b_2 - a_2 b_1](1+r)^2 - [a_1 + b_2](1+r) + 1$$

$$= [0.8 \cdot 0.3333 - 0.2 \cdot 0.0833](1.2429)^2 - [0.8 + 0.3333](1.2429) + 1$$

$$= -0.0224 \neq 0$$

In contrast, Moseley, like all other simultaneists, refuses to accept that per-unit input and output prices of production can differ. Thus, he refuses to treat the input prices $p_{1t} = 1.75$ and $p_{2t} = 0.7$ as givens (data). He makes no use of them. His per-unit prices are instead $p_{1t} = p_{1t+1} = 2$ and $p_{2t} = p_{2t+1} = 0.8$, since this is the *only* set of prices that satisfies the conditions that (a) the rate of profit is equalized, (b) total price equals total value, *and* (c) per-unit input and output prices are equal.

His table of values and prices of production is therefore not the one above, but[4]

sector	C	V	S	W	π	P	r
1	384	16	32	432	80	480	20%
2	48	32	64	144	16	96	20%
total	432	48	96	576	96	576	20%

Once again, equation (1) holds true, since

$$\left[\left(\frac{C_1}{P_1}\right)\left(\frac{V_2}{P_2}\right) - \left(\frac{C_2}{P_2}\right)\left(\frac{V_1}{P_1}\right)\right](1+r)^2 - \left[\left(\frac{C_1}{P_1}\right) + \left(\frac{V_2}{P_2}\right)\right](1+r) + 1$$

$$= \left[\left(\frac{384}{480}\right)\left(\frac{32}{96}\right) - \left(\frac{48}{96}\right)\left(\frac{16}{480}\right)\right](1.2)^2 - \left[\left(\frac{384}{480}\right) + \left(\frac{32}{96}\right)\right](1.2) + 1 = 0$$

[4] The figures in the following table have been computed in the same way as the figures in the immediately preceding table, except that they use simultaneously determined instead of temporally determined per-unit prices.

But now, the physicalist equation (8) is also satisfied. Moseley's rate of profit, 20%, is exactly equal to the physicalist rate of profit. Thus, if we plug in the input-output coefficients and Moseley's rate of profit into the left-hand side of (8), we get

$$\left[a_1 b_2 - a_2 b_1\right](1+r)^2 - \left[a_1 + b_2\right](1+r) + 1$$

$$= [0.8 \cdot 0.3333 - 0.2 \cdot 0.0833](1.2)^2 - [0.8 + 0.3333](1.2) + 1$$

$$= 0$$

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