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# REJOINDER TO DUNCAN FOLEY AND DAVID LAIBMAN

Andrew Kliman and Alan Freeman

## IMPLICATIONS OF THE DEBATE

Our dialogue with Duncan Foley has produced gratifying progress. We note his agreement that “Okishio’s theorem as literally stated is wrong because it is possible for the money and labor rates of profit to fall under the circumstances specified in its hypotheses” and welcome his generous recognition of our examples “as establishing this possibility.”

David Laibman more grudgingly acknowledges the same point by negating its opposite. Okishio, he states, has proved *only* that viable innovation must cause the “new *material* rate of profit [to] be higher than the old one.” Though he strives to avoid the implication of this concession, it is unavoidable: no conclusions concerning the tendencies of the monetary or labor-time profit rates can validly be drawn from Okishio’s theorem.

A result of historic proportions has thus emerged: Marx’s law of the tendential fall in the profit rate is rigorous as stated, free from the “logical errors” that have been attributed to it for more than a century. The theorem that is almost universally held to prove his error does no such thing. In plain words, Okishio’s theorem has been refuted. The claim that Marx’s law is “simply wrong” (Roemer, 1988, p. 2) is itself simply wrong. If the law’s critics still wish to reject or “correct” it, they must now find another rationale.

Something does need to be corrected, however: the myth that the Okishio theorem proves Marx’s law was wrong. Foley suggests that Okishio himself

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thought he was only proving that the “output” (i.e. “material”) rate of profit must rise as a consequence of viable technical change. Even if this were the case, it is simply not how the subsequent literature understands or has ever understood his theorem.

Recent articles in the physicalists’ *Review of Radical Political Economics*, for instance, continue to promulgate the incorrect claim that the theorem proves something about *the* rate of profit. Thompson (1995, p. 100) asserts that “Okishio shows that viable technical change raises the equilibrium rate of profit.” Laibman (1996, p. 37, emphases omitted) asserts that “the viability condition [. . . and] the falling rate of profit condition . . . cannot be fulfilled at the same time; this result is the famous Okishio Theorem.” Baldani and Michl (2000, p. 105) inform us that “If the real wage remains constant, the Okishio Theorem states that the profit rate will rise,” without also informing us that what it states is wrong. These statements all mislead the reader into thinking that the fictitious material rate of profit is the only rate of profit, that it is therefore the actual rate of profit, and therefore that the actual profit rate must rise. Such practices should cease and the record should be set straight. If the journals are to conduct themselves in a scholarly manner, the debate clearly needs to be re-examined *ab initio*. We hope that Foley and Laibman will draw, with us, this obvious conclusion from our agreement.

Yet the ramifications of the present discussion extend far beyond the tendency of the profit rate, as important as it is. The source of error in the Okishio theorem – the false postulate that input prices must equal output prices – is the source of much else as well. It is the crucial underpinning of the entirety of the “physical quantities approach.” It is the means by which the use-value configuration of the economy is “shown” to be the sole proximate determinant of value, price, and profit, irrespective of the extraction of living labor in capitalist production. Once we free ourselves from this false postulate, as all participants in the present discussion have, we free ourselves from every important tenet of physicalism, all of which depend crucially upon it.

We also free ourselves from the century of problems and paradoxes created by the postulate of simultaneous valuation. A host of research programs arose as attempts to solve or elude these problems.<sup>1</sup> With their disappearance comes the disappearance of these research programs’ underlying rationale. The time has come for an elemental re-examination of the issues, from the beginning, without recourse to the false presupposition that input prices must equal output prices. Research effort will be expended in a more fruitful manner when it is directed toward the solution of real problems rather than problems created by an imaginary theoretical construct.

## DOES ANY ROLE REMAIN FOR THE MATERIAL RATE OF PROFIT?

While we recognize that theorists are entitled to pursue their own lines of inquiry, including study of the “material rate of profit,” we do not think continued study of this rate would be fruitful. We do affirm the importance of use-value, of productivity growth and technical change, to the movement of capital. Individual capitals enhance their own profit rates and beat out their competitors by adopting technological advances, and this quest for what Marx called surplus profit drives the process of capital accumulation. Productivity growth also influences profitability through its effect on the value of wages. What we question are the physicalist propositions that greater net output implies a greater value added in the aggregate, and that technological advance raises the *general* rate of profit apart from its effect on wages. In other words, we question the claim that the material rate of profit governs the actual rate.

No causal relation between the material rate and the observed rate of profit has ever been established empirically. The causal role of the material rate is rather something the physicalist tradition has simply presupposed, by virtue of its claim that the monetary rate of profit is identical to the material rate. All participants in the present debate agree that this claim is incorrect.

Contrary to what our critics initially claimed, moreover, there is no *a priori* reason to suppose that the material rate of profit governs movements in the actual rate. We have demonstrated time and again during the course of this debate that no *a priori* law compels the monetary or labor-time rates to “track” the material rate. Indeed we have shown that the divergence of the labor-time rate from the material rate is a general and systematic phenomenon. Marx’s profit rate cannot therefore be reduced to the material rate; it is an ontologically distinct entity.

The way is now clear to an entirely different discussion, one which examines the actual movement of the profit rate from the standpoint of *real causation*, not “logical” necessity. Questions that the physicalist tradition has ruled out of court must now be addressed without prior prejudice. In particular, how do the movements of use-value and value in fact interact? How do they and other factors act to determine the observed rate of profit? What governs the actual movement of capital?

We deny that the material rate (or its multisector counterpart, the “rate of profit” computed on the replacement cost of means of production) governs investment decisions, that it is the “*potential* profit rate” (Laibman, 1999a, p. 223). Businesses and investors make their investment decisions on the basis

of measures such as the internal rate of return and net present value. Whereas the “replacement cost profit rate” values current investment expenditures and future receipts simultaneously, using a single set of prices, these measures use current prices for the former but expected future prices for the latter.

Capitalists employ these measures because what they seek, must seek, to maximize is the rate of self-expansion of their value, not the rate of self-expansion of use-value that the material rate measures. Consider a firm that produces computers by means of computers. Computer prices plummet markedly year by year. In computing its potential profit rate, only the most naive firm would overlook or be indifferent to the fact that a unit of its output will be worth less than a unit of its input, physically identical though they may be.

For this reason, we disagree with Foley’s suggestion that, because it is the “real” rate of profit, the “output” (material) rate of profit is a fruitful object of analysis. Even if the material rate is the “real” rate in a definitional sense, it is not what firms seek to maximize. Nor is it a meaningful measure of their purchasing power, their command over real resources. Imagine that our computer firm borrowed \$1000 a year ago, and used it to buy one computer in order to produce two computers, completed today. If the new computers are worth \$500 each, the firm’s net worth has increased not a whit. (Since interest is due, its net worth has in fact declined.) Its earnings are zero, not only in money terms, but also in real, physical, terms: it has no resources with which to expand its production. The rate of profit that reflects this situation accurately is the 0% monetary rate, not the 100% material rate.

The decline in the value of goods and services relative to the denominated value of debt that we have depicted – debt deflation – is a crucial determinant of economic crises, as the recent Asian crisis has made clear. Marx (1968, p. 496) was acutely aware of this, as are both Laibman and Foley. What we wish to stress here, in regard to the real/nominal distinction, is a point that Mervyn King (1993, emphasis added) of the Bank of England has made: “debt deflation is a *real not monetary* phenomenon, and is concerned with a change in relative prices. It is the change in the distribution of net worth from debtors to creditors which leads to a fall in demand and output.”

### THE REALITY OF VALUE

We do concur wholeheartedly with Foley that the monetary rate of profit is not the only thing that matters. “[I]t would not be very satisfactory to argue that the falling rate of profit is not a problem for capitalist economies because the monetary rate of profit can be raised to any level through inflation.” The real rate of profit is also important. We suggest, however, that the appropriate way

to measure the real rate is not to use the material rate, but instead to employ Marx's method. He decomposed price changes into their real and nominal sources. The real source of price changes is changing costs of production. Thus Marx's real rate of profit is the rate that would obtain if changes in the aggregate price of output were accurately to reflect changes in real production costs, i.e. changes in productivity. It is the average rate of profit that would tend to result under competitive conditions, conditions that tend to force prices into line with production costs.

Since an aggregate price that reflects changes in productivity is what Marx meant by aggregate value, his *real rate of profit is the value rate*. It is, in other words, the particular monetary profit rate associated with a constant monetary expression of labor-time, or, equivalently, the labor-time profit rate. Contrary to Laibman's claim that the value rate of profit subsists in some "subterranean world," it exerts its influence in the real world whenever rising productivity leads to a falling price level, or even to a declining inflation rate. Both deflation and disinflation lower the monetary rate of profit. The law of value likewise exerts its influence whenever factors that may offset deflation and disinflation cause crises to take somewhat different forms. For instance, although excessive credit expansion can prop up prices artificially and thus cause the nominal rate of profit to rise above the real rate, it leads to debt crises and fiscal crisis.

Yet Laibman's chief gripe against the law of value is that it supposedly implies that, because capital does not benefit from rising productivity – a worker produces no more value just because she produces more use-values – capitalists lack an incentive to drive their workers ever harder. "It might even be fun to be a proletarian" in an economy dominated by the law of value. What Laibman has forgotten, however, is that the law of value implies that individual units of capital suffer from below-average productivity and intensity. Even though they face higher production costs, they cannot sell their products for more than other producers do. The falling tendency of the rate of profit and crises only exacerbate the problem. *These* are the incentives to drive workers ever harder, as well as to innovate.

The economy in which it would be fun to be a proletarian is instead the physicalist one. Viable technological advance would provide ever more goodies for workers and capitalists alike to share. With real wages rising in line with productivity, the economy would go on indefinitely in its merry, crisis-free way. Backward producers would not suffer from technological changes, nor make their workers suffer, because they are producing just as much corn as before, and of course the corn "price" of corn can never fall.

Just which of these conceptions describes the visible world, and which the "subterranean" one?

### **A REFUTATION OF MARX'S LAW OF THE FALLING MATERIAL RATE OF PROFIT?**

As we noted above, although Okishio's theorem is almost universally taken to prove that Marx's law of the falling rate of profit was wrong, all participants in the present debate now reject this view. We all agree that the theorem actually proves only that viable innovation causes a rise in the material rate of profit, nothing more. In an effort to absolve the physicalist tradition of error, however, both Foley and Laibman have now suggested that nothing more was ever intended.

We have been called "orthodox" and "scholastic" followers of Marx for trying to identify what he "really said." At the risk of being called orthodox and scholastic followers of Okishio, we will approach his work in the same manner. Let us try to identify what he really said.

What Okishio (1993, p. 369) really said was that his "conclusions are negative to [the] Marxian *Gesetz des tendenziellen Falls der Profitrate* [law of the tendential fall in the profit rate]." And what Marx (1981, pp. 322, 325) really said, in stating his *Gesetz* in Chap. 13 of *Capital* III, was that it refers to a ratio of value magnitudes (measured in monetary terms and determined by labor-time), not a ratio of physical quantities or use-values. It is the

law of a progressive fall in the rate of profit, or the relative decline in the surplus labour appropriated in comparison with the mass of objectified labour that the living labour sets in motion. . . . We entirely leave aside here the fact that the same amount of value represents a progressively rising mass of use-values and satisfactions, with the progress of capitalist production and with the corresponding development of the productivity of social labour.<sup>2</sup>

Did an eminent scholar like Okishio not know this? Did he believe that Marx's law referred to the tendency of the material rate instead of the value rate? That simply is not credible.

Just like the business that did not intend to be a nonprofit corporation, Okishio and his successors did not intend to prove a theorem on the material rate of profit . . . it just turned out that way. They thought they were proving a theorem on the actual "price" rate of profit – the literature is chock-full of such references – and they misled themselves into thinking that the material rate was the actual rate. The main source of this error was that they conflated two senses of the term equilibrium; they wrongly assumed that an equilibrium (uniform) rate of profit implies that prices are in equilibrium (stationary). Roemer (1981, pp. 97–98), for instance, noting that viable innovation "produces a disequilibrium," asserts that "after prices [!] have readjusted to equilibrate the rate of profit again, the new rate of profit will be higher than the old rate." Yet to

“prove” this assertion, he “equilibrated” not only the rate of profit but input and output prices as well.

Textual fidelity is not a matter of scholasticism. On the contrary, it is important to get right what the Okishio theorem really says for the same reason it is important to get right what Marx’s law really says: if one does not, it is impossible to assess the truth-value of either one. Okishio’s findings would refute Marx’s law *only if* the material and value or “price” rates of profit were identical. But this is exactly what our new agreement recognises to be a false presumption. It therefore follows that what Okishio himself says about Marx is wrong. We do not agree with Foley that this is just a matter of semantics. It is a matter of basic integrity in discourse.

### LAIBMAN’S LAST STAND

Laibman now attempts to deny his historic recognition that the material rate of profit differs from the actual rate, which is determined temporally. He says he was merely pursuing an “immanent critique” of the temporal single-system (TSS) interpretation. Yet his break with a century of physicalism, including his own past, was unmistakable: “assuming  $r^M$  [the material rate] to be the actually accruing profit rate amounts to assuming that the *entire* capital stock is replaced in each period; this is not likely to be the case, and we can thank the TSS theorists for pointing that out” (Laibman, 1999b, pp. 252–53). If he now wishes to regress and claim that the material rate *is* the actual rate, we can answer him with three little words: he is wrong. Everything he has written, however, makes clear that Laibman’s critique of temporalism in fact rests on the assertion that the material rate somehow *governs* the actual rate.

His attempts to support this assertion have not been successful. Laibman chastizes us for having “failed to address the core of my criticism,” but we can find no core. We find only a series of disparate criticisms. When the original criticisms are shown to be wrong, they are quietly dropped, only to be replaced by different criticisms that are also wrong. He has given up trying to defend his original claims regarding the value rate of profit (Laibman, 1999a), *all* of which we have disproved:

- It must eventually rise or fall along with the material rate.
- Rising productivity makes it “converge toward” the material rate (pp. 216, 223–24). His own latest paper (Laibman, 2000a) shows – but neglects to mention – that this claim is the exact opposite of the truth.
- Given any scrapping of fixed capital, it must “progressive[ly] approximat[e]” the material rate (p. 216). His new argument about the pace of innovation

relative to turnover time has *nothing* to do with scrapping; he assumes all capital is circulating.

- Unless new capital stocks “are . . . never removed from their crates,” it cannot fall to zero as a result of stagnant extraction of living labor (p. 222). Part c) of his “Tracking Theorem” implicitly concedes this claim is false.<sup>3</sup>

There are, to be sure, still passages in which Laibman *gives one the impression* that the material rate of profit governs the value rate. Yet if one reads his latest paper (Laibman 2000) and his response to us carefully, one sees that his simulation results and even his verbal discussion of these results contradict that claim.<sup>4</sup> Supposedly, his Tracking Theorem holds that the value rate “must eventually follow the trend” of the material rate. The actual text of his theorem, however, states that the value rate of profit can fall *forever* (part b)) – and even fall to zero (part c)) – while the material rate rises *forever!* And all this can occur without any fixed capital. What a powerful refutation of the specious temporalist claims! To call this a “Tracking” Theorem is to abuse the English language in Orwellian fashion. In truth it is a Systematic Divergence Theorem.

The slight residue of physicalism that the “Tracking” Theorem does retain is easily shown to be wrong. *The following counterexample employs none of the “extreme and unlikely assumptions” of part c) of Laibman’s theorem, yet the value rate of profit falls to zero while the material rate rises unboundedly.*  $V_t$  denotes period  $t$ ’s unit output value.  $X$ ,  $M$ , and  $L$  are output, the means of production, and living labor, respectively; they change only in the *non-contiguous* periods when technical changes occur. In these periods,  $X_t = (1 + r_0 + f(t))M_t$ ;  $M_t = a_{t-1}X_{t-1}$  (to ensure that some output is *not invested*,  $a < 1$ ); and  $L_t = a_{t-1}V_{t-1}X_{t-1}r_0 \cdot g(t)$ , a *variable* magnitude. In such periods, the maximum material profit rate is  $r_t^M \equiv (X_t - M_t)/M_t = r_0 + f(t)$ . It increases unboundedly if  $f$  does. Yet the maximum labor-time profit rate is  $r_t \equiv L_t/(V_{t-1}M_t) = r_0 \cdot g(t)$ . If  $g$  (initially = 1) approaches 0 over time, so does  $r$ .

The upshot is that, as we have shown repeatedly throughout this debate, there is simply no sense whatever in which the material rate of profit governs the value rate.

## NOTES

1. A partial list includes the attempts to show that value somehow governs the economy even though it is “redundant”!; that price-value deviations are negligible, that the problems disappear once market (“value-form”) relations replace labor-time as the determinant of value, that an aggregate of use-value can replace abstract labor as the substance of value, and that the decline in the rate of profit is due to capitalists’ adoption of non-viable innovations that lower the physical output-capital ratio.

2. Laibman keeps demanding that we cite a passage in which Marx distinguishes “between a ‘material’ and a ‘value’ rate of profit.” We have just done so. Surely Laibman does not expect Marx to have written the *phrase* “material rate of profit,” since it is an oxymoron, and one of recent vintage.

3. Laibman has also given up defending the result of his “marginal valuation” case – the equality of the material and value rates – against our claim that it derives from inconsistent accounting. He now concedes precisely what we have demonstrated: *all* output was sold at one value, but one *portion* of that same output, capital goods, were also bought at a “different, lower, unit value.” This is a nice trick, and it is indeed a trick.

4. Laibman (2000) also attempts to show that, unless productivity growth is very rapid, the value rate of profit cannot *fall much* below the material rate. Yet his numbers are all derived from exceedingly unrealistic examples – ones without any fixed capital. In more realistic cases, the value rate of profit can fall far below the material rate.

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