A COMMENT ON TAKEDA'S "A NOTE ON THE FUNDAMENTAL MARXIAN THEOREM"

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Takeda's note [10] in a recent publication of this journal seems to be based on a queer combination of two strands of thoughts: Kaldor-Pasinetti's super long-run theory (or description) of distribution and 'a' Marxian theory of exploitation. Since the exploitation theory *a la* Marx also forms a basis of distribution theory after 'transformation', the note is thus trying to combine two theories of distribution, which I think are inconsistent with each other. Before entering into this point, let us first point out some mathematical slips.

The assertion, $r_m > 0$ ([10], p. 68), is inaccurate. If Assumption 1 ([10], p. 67) is required to hold under *all* semi-positive prices, $r_m > 0$ is true, but Assumption 1 becomes quite restrictive. For, this implies *a prior* exclusion of 'unproductive' processes, and such an exclusion damages the generality of a von Neumann model in equilibrium analysis. On the other hand, if Assumption 1 holds only under some prices, $r_m > 0$ is false. It is not difficult to raise an example. It would have been desirable to assume simply the productiveness condition, that is, the existence of an activity vector x such that $Bx > Ax + D$, instead of Assumption 1. Morishima's Assumption 2 ([5], p. 619) is indispensable for his results in [5] and is quite restrictive.

Next, concerning Proposition 1. There it is asserted that if $e > 0$, then $r > 0$. This is logically incorrect. Suppose $E_c \leqq 0$, then the reduced system of eqs. (3), (4) and (5) has no economic meaning simply because the condition (1) and the relation $g = s_c r$ have no economic meaning, and we have to think in terms of the *actual* and *original* system written in the middle of page 68 of [10]. The author, however, *proved* that $e \leqq 0$, when $r = 0$, using the reduced system, which is meaningful only when $E_c > 0$ (Note that $E_c > 0$ implies $r > 0$). In the original system, we can imagine a *classless* economy which is in a steady state with $g > 0$ while $r = 0$. It is easy to see that $g > 0$ implies $e > 0$ *mathematically*. The last part of Proposition 1 should have been simply, "Thus, when $E_c > 0$, $e > 0$," which the author himself remarked just after the proposition. Rewritten in this way, the proposition might convey a flavour of the FMT. The same kind of inaccuracy is found on page 73 line 3.

Now we proceed to discussions on more fundamental issues. First, concerning the definition of necessary labour when workers own properties and gain some part of profits. I do not believe the explanation given in the footnote 5 is persuasive enough. But if we adopt Takeda's definition, the FMT is almost tautological in a Kaldor-Pasinetti world. If $r > 0$, then $g = s_c r > 0$. The positiveness of growth rate means that 'something', other than the total consumption by workers of the present period, is produced, thus exploitation exists (because 'something' includes the consumption baskets for the coming generation of workers). In short, surplus products, which have a positive value, is the result of exploitation. This is clearly stated by Okishio [8; 9, Ch. 3, §5]

without using much mathematics.

The second point is that the combination of Marxian exploitation theory with Kaldor-Pasinetti world may be against the *Second*(?) Fundamental Marxian Theorem, i.e., the capitalist system is unstable. Certainly, most papers dealing with the FMT presuppose a kind of equilibrium state, namely the uniformity of profit rate among industries. Such an offence does not seem to be so serious. How about assuming a super long-run equilibrium *a la* Kaldor-Pasinetti in a Marxian exploitation analysis? I think it is a queer and illegitimate combination. Here note that Morishima's dynamic transformation problem [4, Ch. 12] deals with non-steady states.

The last notice is related to the second point above. Since the author assumes no technical progress, the growth rate g may safely be regarded as the natural (or biological) rate (Note it is easy to incorporate labour-augmenting technical progress). For, if the rate g is different from the natural one, it is impossible for an economy to stay in a steady state. Thus the rate of profit r must be g/s_c in a Kaldor-Pasinetti equilibrium; an 'alternative theory of distribution' or simply a 'description' of a *necessary* relation in equilibrium (See Nuti [7] and Dobb [1], Ch. 9). Kaldor and Pasinetti close the system by giving the rate of steady growth and try to explain how large the profit rate should be. Marx, on the other hand, tried to explain the size of general profit rate by transforming the rate of exploitation.

Now, the author's solution (10) on page 72 of [10] for the so-called transformation problem is in fact a transformation from the natural rate of growth into the rate of exploitation, a solution for an *inverse*-transformation problem! This is surely an 'acrobatic feat' or somersault to use a Meek's phrase [3]. The reader should also be careful about the fact that in the Takeda's formula (13) ([10], p. 74) both the *actual* equilibrium price vector and the *actual* activity vector are used, making the formula almost nonsensical *as a transformation equation.* If one were allowed to use the actual price vector in the transformation problem from the exploitation rate to the profit rate, then he could compute the profit rate directly from the price vector without an 'unnecessary detour' of labour theory of value. Indeed no transformation problem could exist. This would undoubtedly be destructive of the Marx's framework. Anyway, Takeda's eqs. (10) and (13) are simply a *description* of a necessary relation in *steady state* and cannot be regarded as a *transformation* formula, though (13) becomes *formally* the same as the Morishima-Seton formula ([4, 6]) when $s_c = 1$.

The FMT goes far naturally with a disequilibrium analysis. Such I have tried in [2] using a von Neumann framework.

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