Marx After Sraffa and the Open Economy

(Some Notes)

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Abstract

Bruce Philp has asked me to 'reflect' on Marx after Sraffa (1977) after twenty-five years. My reflection falls into three parts. In the first, certain major themes of the book are recalled and emphasized. In the second part some brief thoughts are offered on certain subsequent approaches to Marx's value and exploitation theory, in particular the so-called 'new solution'. The final part turns to a major gap in Marx after Sraffa (and in many other approaches), namely the matter of international trade and how it affects Marx's theory.

I. Marx after Sraffa

Twenty-five years on, the following themes are perhaps still worth bearing clearly in mind:

1) If one is attempting to explain prices and the profit rate then 'labour theories' are simply REDUNDANT. No matter how cleverly labour quantities can be worked into such an explanation, they never need to be so worked in. 'Sraffa' will do the trick. This is all true *a fortiori* when there is a choice of methods, i.e. always!

Note that Simon Mohun (1994) accepts this wholeheartedly (he just thinks that explaining (r,p) is not the main task at hand).

2) A focus on physical input and output quantities most certainly does not rule out close attention to the labour process. Indeed, how could such attention really ignore them?

3) Heterogeneous labour is a reality (never denied by Marx) and no theory is worthwhile that cannot handle it. Sraffian theory can – and makes 'reduction' redundant. Each putative alternative approach must deal with it explicitly. Can 'abstract labour' be defined independently of money wages? (H.O.P.E., 1985)

4) Fixed capital and joint production are central, brute facts about reality and no theory is worthwhile that cannot cope with them (without completely ad hoc assumptions). Sraffian theory can cope (to a significant degree at least).

II. Other Approaches

Most (not all) attention here will be given to the 'new solution' of Duménil, Foley and Lipietz. (Mohun, 1994, objects to the name 'new solution' on the grounds that the 'old problem' is being rejected, not a new solution offered). We focus here on the question whether such an approach is useful, leaving entirely aside the question whether it bears much relation to what Marx wrote. Consider the price system

$$pB = (1 + r)(pA + wl)$$

or

$$p = rpA(B - A)^{-1} + (1 + r)\, wl\, (B - A)^{-1}$$

or

$$p = rpH + (1 + r)\, wv$$

A crucial step in the 'new solution' is, of course, to impose the condition

$$py = vy$$

where y is the net output vector. It follows that

$$w = \frac{(vy)}{(1+r)v(I-rH)^{-1}y} \qquad \text{(i)}$$

and

$$p = \left[\frac{(vy)\, v(I-rH)^{-1}y}{v(I-rH)^{-1}y}\right] \qquad \text{(ii)}$$

In (i) the variable w is not just 'a wage rate' but, rather, the <u>share</u> of wages in national income.

Two formal points may be noted at once. The first is that if v and/or H contain(s) one or more negative elements then there is no guarantee that a given w in (i) will determine a unique, positive value of r or, therefore, a unique p in (ii). Setting that aside now, the second point is the 'oddity' that for a given w, r varies as y changes. Even in a constant-returns-to-scale economy, the rate of profit is said to depend on the composition of net output! (Febrero Paños, 2000, came close to recognizing this but gave it a different twist, noting that if r is constant then the share of wages changes with y; that would seem to step outside the usual 'new solution' interpretation, however). It follows in turn that, even with constant returns, relative prices depend on the composition of net output!

These are but minor technicalities, however, compared to the central objection to (i) and (ii). Mohun (1994, p. 408) makes it clear that (i) is used, with given $w < 1$, to determine r and that (ii) then determines prices. Now it seems likely that (most) 'new solution' adherents would endorse the 'Keynesian' objection to any identification of the real wage rate with the 'marginal product of labour'; namely, that money wages and money product prices are determined in quite separate markets and that there simply is no locus for the determination of 'the real wage rate'. Whether they endorse it or not, they should certainly acknowledge that there simply is no locus for the determination of 'the share of wages in national income' and that to take it as exogenously determined is to engage in completely empty talk. The wage share is nothing more (or less) than an ex post statistical artefact – just like the aggregate capital-output ratio for example. There is nobody and nothing that sets out to determine this magnitude; it simply emerges ex post as the result of innumerable decisions about other things. Talk about 'the class struggle over the share of wages in national income' is the sheerest hot air in any normal capitalist economy. (There may be (have been) exceptions – in Australia? Austria? Sweden? – where there is (was) in fact a real forum for bargaining about the wage share). In general, however, to take w as given in (i) is to engage in empty rhetoric, in armchair-radical fantasizing.

It may also be urged that, like any other economic theory, the 'new solution' is of no genuine interest until it has been set out explicitly in an open economy context. Fortunately, we may leave it to others to define the wage share and the 'value of money' in an open economy and to explain how 'the struggle over shares' takes place in an economy with unbalanced trade!

[(a) Roberto Veneziani on TSS. (b) Roberts (1997) as one of the more interesting 'other approaches'. How would Roberts take the openness of the economy into account?]

III. International Trade

Following the work which it criticized, Marx after Sraffa almost ignored foreign trade. (The only exception came in a footnote on p.200!) This was a serious lacuna, since there is no such thing as a significant closed capitalist economy. Capitalist economies are open, often hugely so and often increasingly so. No theory can be taken seriously when it has only been shown to work for a closed economy! (Marx, of course, expressed his intention to write on international trade and on the world market and crises but never in fact got around to doing so). Note that one could never (responsibly) claim that a closed economy theory gave much the same results as the open economy equivalent, without having first worked out the latter! But that having been done, the only reason for concentrating on the closed economy version (if the results were much the same) would be that it was significantly more simple – and, in fact, open economy theory is sometimes the more simple.

The implications of foreign trade for the determination of labour values and for measures of exploitation will now be considered. We use only a very simple model with circulating capital, no joint production, a single exported commodity and a single imported commodity (used as an input and perhaps also as a real wage good). Wages are paid in advance and the rate of profit is uniform. We would not wish to defend all of these simplifications, needless to say; they here serve the sole purpose of emphasizing that our conclusions concerning the effects of foreign trade are quite independent of any complications introduced by joint production, heterogeneous labour and so on.

Let A_0 be the domestic input-output matrix, l the row vector of (homogeneous) labour inputs and m_0 the row vector of imported inputs. If w is the vector of domestically produced real wages (per unit of labour) and ω the scalar quantity of the imported commodity entering the real wage rate then we may define the 'augmented' matrix and vector, $A \equiv (A_0 + wl)$ and $m \equiv (m_0 + \omega l)$. The vector of domestic production prices, p, is given by

$$p = (1 + r)(pA + \varepsilon fm) \qquad (1)$$

where ε is the exchange rate and f the foreign currency price of the import. From (1),

$$p = (1 + r)\, \varepsilon fm\, [I - (1 + r) A]^{-1}$$

Let the export be commodity 1 and its foreign currency price be ø; then

$$\varepsilon f (1 + r)\, m\, [I - (1 + r) A]_1^{-1} = \varepsilon ø \qquad (2)$$

and (2) determines the (positive) value of r, provided that

$$\text{fm}\,(I - A)^{-1}_{1} < ø \qquad (3)$$

In words, condition (3) requires that the direct and indirect foreign exchange cost of producing one unit of commodity 1 be less than ø. Or, in other words, that it takes less than one unit of foreign exchange to obtain one unit of foreign exchange. (Cf the Marxian idea that it takes less than one unit of labour to obtain one unit of labour; (vw) < 1, where v is the row vector of labour values). Whilst it would no doubt be rather silly to explicate (3) by saying that 'the rate of profit is positive if and only if foreign exchange is exploited', foreign exchange is playing a formally analogous role to labour here.

Note, from (2), that for given (A_0, l, m_0, w, ω) the rate of profit is an increasing function of (ø/f), the terms of trade. For given conditions of production and real wages, the profit rate depends on – and increases with – a price ratio.

(A technicality: the above argument is hardly affected by the introduction of heterogeneous labour, with given real wage rates, or by the replacement of vector m_0 by a matrix M_0, f then being a row vector. Much more significant would be the recognition of multiple exports).

We turn now to the calculation of labour values, v, in an open economy. It is easy enough to stipulate that

$$v = l + v A_0 + v^* m_0 \qquad (4)$$

where v^* is the labour value of the imported commodity. And (4) could of course be developed as, say,

$$v = l\,(I - A_0)^{-1} + v^* m_0\,(I - A_0)^{-1}$$

or

$$v = \bar{v} + v^* \mu \qquad (5)$$

where $\bar{v}$ shows what the labour values would be if imports were not used in production and μ represents vertically integrated imported-input use. But neither (4) nor (5) gives any indication of how v^* is to be determined – which naturally leaves v undetermined.

One possible way forward would be to stipulate that the export and import commodities 'exchange at value', so that

$$(v^*/v_1) = (f/ø) \qquad (6)$$

This is indeed the route we shall follow here – but only after making two observations. The first is that, while replacing vector m_0 by matrix M_0 makes almost no difference to the 'Sraffian' analysis of (1) – (3) above, it makes an enormous difference to the line of thought embodied in (6). If there are two or more imports then even with a single export and balanced trade, just how is the labour value of the export to be 'allocated' amongst the imports? Until that question is given a reasonable answer, no labour value can be determined! Our second remark is that anyone wishing to reject (6) must either provide a reasonable alternative or accept that labour values are simply indeterminate in an open economy.

If (6) is accepted then it implies, with (5), that

$$v^* = \left(\frac{\bar{v}_1 f}{ø - \mu_1 f}\right) \quad \text{and} \quad v_1 = \left(\frac{\bar{v}_1 ø}{ø - \mu_1 f}\right) \qquad (7)$$

It is clear from (7) that both v^* and v_1 depend on the terms of trade (ø/f), a price ratio, both in fact decreasing as (ø/f), increases. (Naturally, (7) makes good sense only if $\mu_1 < (ø/f)$ but this is a weaker condition than that already given in (3).) More generally,

$$v = \bar{v} + \left(\frac{\bar{v}_1 f}{ø - \mu_1 f} \right) \mu \qquad (8)$$

Relation (8) shows that the labour value of every domestically produced commodity depends not only on the conditions of production (A_0, l, m_0) but also on the price ratio (ø/f), being a decreasing function of the terms of trade. (As (ø/f) increases without limit, v falls towards $\bar{v}$.)

In a closed economy the 'rate of exploitation' of labour, e, is often defined by (1 + e) (vw) = 1. But in our simple open economy this will have to be changed to (1 + e) (vw + ωv^*) = 1. A little calculation shows that this may be written as:

$$(1 + e) \left[(\bar{v}w) + \left(\frac{\bar{v}_1 f}{ø - \mu_1 f} \right) (\mu w + ?) \right] = 1 \qquad (9)$$

Unsurprisingly, as (ø/f) increases without limit (9) reverts to the closed economy result (1 + e) $(\bar{v}w)$ = (1 + e) (vw) = 1. More significant, however, is the fact that for finite (ø/f) the condition $(\bar{v}w)$ < 1 is no longer sufficient for e > 0.

Note that, in (9), the rate of exploitation depends on a price ratio, e being on increasing function of (ø/f)

Relation (3) gave the condition for r > 0 and, in (9), e > 0 clearly depends on the 'square bracket' being less than unity; the two conditions are not obviously one and the same! However, some manipulation reveals that the two conditions are in fact equivalent and that each of r and e is positive if and only if

$$(ø/f) > \mu_1 + \left[\frac{\bar{v}_1 (\mu w + ?)}{(1 - \bar{v}w)} \right] \qquad (10)$$

While the r.h.s. of (10) depends only on conditions of production and real wages, the condition for r > 0 < e involves a price ratio.

In economists' jargon, the above argument treats only of a 'small open economy.' Would the consideration of a large open economy, or of the complete world economy prove to be any more congenial to the preservation of traditional Marxian analyses and conclusions? Presumably not in the case of a single, large economy argument. When the whole world economy is considered, it will necessarily be true that no (commodity) price ratio is taken to be exogenously given and hence that the 'r, v and e depend on a price ratio' results obtained above will not appear in that form. More fundamentally, however, it almost certainly will be found once again that labour values are <u>at best</u> redundant theoretical magnitudes and that, at worst(?), they cannot be determined. And to repeat, no theory – explanatory or normative – that works only for a closed economy is worth the paper it is written down on.