Marxian Rate of Exploitation and Keynesian Income Determination: A Mini Review

Mario De Marchi[*]

Department of Economics, Istituto di Ricerca Sulla Crescita Economica, Roma, Italy

Abstract

In this article (developing a previous contribution on the analyses by Marx and Sraffa) it is suggested that, when one tries to integrate the surplus approach with the Keynesian perspective, an ideal choice is to take as given circumstance the rate of labor exploitation rather than wage. The reason for this decision rests on the features of Sraffa's Standard Commodity in the context of joint production, a technological-economical setting which in turn, it is argued, cannot be neglected as a special, unusual and, perhaps, prima facie negligible case but is and has always been the normal condition for economic systems.

Keywords

Marx • Keynes • Sraffa • Standard commodity • Cooperation

Introduction

Giving up tales à la Robinson Crusoe

Production of goods by using fixed capital is a basic characteristic of economic systems, as simple and primitive they are, since at least the stone age fixed capital being then, that is, carved stone [1].

To assume, "for the sake of simplicity", that we are studying an economy working just by circulating capital, even more a modern economy, could at first sight seem tantamount to tell what Karl Marx jokingly used to define "tales à la Robinson Crusoe". But there is an understandable reason why such a choice is often made by economists: the devilish difficulty one might encounter analyzing the case of joint production [2].

the Standard Commodity, the ingenuous theoretical instrument devised by Sraffa in order to solve the problem of finding an ideal measure of values put forth by Ricardo, perhaps would surprisingly prove to be a possible basis for setting up a Neo-Smithian economics. The key for this unexpected result is in the nature that Sraffa attributed to his Standard Commodity: the recursive characteristic of the proportion between each layer of product and the previous layer of means of production encountered in the reduction of the Standard Commodity's final price into the prices of its layers of means of production, that Sraffa defines as the only necessary property of the Standard Commodity. Such recursive feature appears suddenly within the rigorous reasoning of Production of Commodities by Means of Commodities, with a twist which should have puzzled most readers of the book and instead seem to have been noticed by very few if anyone.

Herein we will consider one such difficulties, namely that arising when, following the Sarafian approach, the attempt is made at attributing a tangible meaning to the assumption of a wage measured in Standard Commodity ("S.C."); this assumption is often considered very important because it could pave the way to a crucial analytical conclusion, namely the

*Address for Correspondence: Dr Mario De Marchi, Department of Economics, Istituto di Ricerca Sulla Crescita Economica, Roma, Italy, E-mail: mario.demarchi@ ircres.cnr.it

proof of an inverse (linear) relationship between the rate of profit and wage.

We will argue that the wage can as well be replaced by the rate of labor exploitation as a given circumstance, and this solves a problem of interpretation brought about by the mathematical properties of the Standard Commodities in the general context of joint production [1].

In this new article (where symbols in italics refer to labour-values), it will briefly be asserted that the Standard Commodity, along with the ideal economic system which purportedly generates it, the Standard System, could play a role as well as an "analytical passepartout" for the long investigated issue concerning the existence of a relationship—postulated by Karl Marx—between the rate of profit, on the one hand, and the rates of labour exploitation and organic composition of capital on the other.

Generally, the labour-value of each commodity's is determined by the its idiosyncratic production method and those of its (direct and indirect) production means, whereby the quantities of any two commodities do not exchange proportionally to their labour-values, nor do two of any aggregates of commodities, because they normally will be heterogeneous to each other. An exception to this rule, though, clearly holds for the relative prices of reciprocally homogeneous aggregates, namely aggregates made up by the same commodities taken in the same relative proportions.

Besides, by choosing the rate of exploitation as the given circumstance rather than the wage, it seems that a neat symmetry may be outlined between the surplus approach followed by Marx and Sraffa and the scheme devised by Keynes for the determination of income and employment.

A Problem of Interpretation

When releasing Production of Commodities by Means of Commodities, a baffling aspect of the Standard Commodity in the context suitable to the analysis of the production employing fixed capital, namely joint production: the basket of commodities making up the composite S.C. might not include strictly positive items. He believed that such would not necessarily pose an insurmountable problem of interpretation, proposing that negative and positive items could be interpreted likewise double-entry book keeping ones are. But soon afterwards, new theoretical results indicated that even magnitudes multiplied by complex number can enter the basket of S.C.; and the way out initially suggested in appeared to be blocked [3].

The situation, though, seems not desperate. In other disciplines somewhat similar puzzles have arisen and they have reasonably been resolved. Let us consider the case of Physics: in quantum mechanics, imaginary or complex numbers show up at various stages of calculations. Scientist do not bother too much with this seeming trouble, provided that the uncomfortable hosts of their equations are only temporary and they disappear at the end of the calculations.

We suggest here that, thanks to the concept of "Rate of Labor

Exploitation", put forward by Marx, the same way out may apply to the problem of measuring income distribution through the S.C., while maintaining one of main results Sraffa obtained by this ingenuous theoretical tool. Moreover, we will attempt at integrating further analytical development by setting up a symmetry between the Marxian-Sarafian perspective and the Keynesian one.

Eliminating a Troublesome Feature

Of course, every economist would find it problematic to assume that workers are paid by "complex" quantities of commodities. But, when undertaking a classical theoretical path, our analysis is not necessarily constrained within the nexus between wage and rate of profit. Karl Marx proposed a neat, very meaningful alternative to wage: the rate of surplus-value over the value of the labor-force. Let us call this rate as "X" (as in exploitation).

When the w wage and the (1-w) surplus are expressed in S.C., the "$X=(1-w)/w$" quota, given by a rate between homogenous quantities, clearly is a positive pure number. This remains true regardless of the composition of the S.C., may it include negative, imaginary or complex quantities [4]. Therefore, this is a solution to the problem posed by the joint production to the analysis of income distribution, and specifically, to the determination of the "r" rate of profit.

We know that, in terms (where R is the maximum rate of profit):

i) $r = (1-w)/(1/R+w) = ((1-w)/w)/((1/R)/w+1)$

Therefore, the rate of profit in terms of X will be:

(ii) $r = (RX)/(R-X)$

which would be a formulation perfectly equivalent to the Marxian one provided that we assumed that one commodity only (the S.C.) was produced in the economic system.

Searching for a Possible Complementarity

As it is well known, according to the Keynesian approach once the investments "I" are fixed, the income "Y" will be determined through the mechanism of the multiplier – whereby Y will be equal to I divided by the "s" propensity to savings. For this to be granted, the saving habits are taken as a given circumstance [5,6]. Below, we are going to propose a formal equivalence, derived from Sraffa's equations, slightly modified by assuming that wages are paid in advance (as in Marx's surplus equation). In it the expenses for buying the means of production (the constant capital 1/R) and the expenses for paying the wages (the variable capital) are expressed in terms of the rate of r.

Some straightforward calculations allow us to work out that the variable capital amounts to "$w=((1-(r/R))/(1+r)$". As a consequence, the total gross investment I results to be:

(iii) $I = (1+R)/((R(1+r))$

Then, it is immediate to obtain the income as a function of the rate of exploitation.

By replacing r by h X, we find out:

(iv) $Y = I/s = (1+R)/((R(1+r))/s = (1+R)/R(R-((RX)/(R-X)))/s$

Whereby, when X grows towards the infinity, then Y tends to its minimum $(1/R)/s$, while, reciprocally, if the rate of exploitation tends to zero then the income grows towards its maximum $(1+R)/(R)/s$.

Conclusion

FThis way, at first, a clue of a (logically derived from Marxian analysis) inverted relationship between X and Y shows up.

Moreover, the empirically based observation about the effect of individuals' incomes on their propensities to savings (whereby the consumer propensity will normally be higher for workers than capitalists, just as Keynes assumed) would clearly strengthen the upended nexus between X and Y.

It seems therefore that a bridge between the Keynesian and Marxian perspectives could be built; then, a fruitful merging of the two theoretical points of view may be attempted.

References

1. Marchi, Mario de. "Making Marx's Surplus Equation Work (Within Sraffa's Standard System)." *American Journal of Industrial and Business Management* 11 (2021): 293-296.

2. Sraffa, Piero. "Production of Commodities by Means of Commodities." Cambridge: Cambridge University Press,USA (1960).

3. Lai, Tiefeng. "The Basic Characteristics of Marx's Political Philosophy." *J Soc Sci* 8 (2020): 313-319.

4. Batabyal, Amitrajeet A. "Making an Arranged Marriage Work: A Game-Theoretic Analysis." *Theor Econ Lett* 6 (2016): 416-419.

5. Junaid, Muhammad Rizwan and Khadija Naz. "Marx's Religious Dilemma: An Islamic Reply." *Open Access Library Journal* 5 (2018): 1-26.

6. Han, Ruyu. "The Enlightenment of Marx's Economic Thought on China's Economic Reform and Construction." *Open Access Library Journal* 5 (2018): 1-6.