

Open Letter to BN Archives

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Dear Jonathan Nitzan and BN archives readers

I have read with interest the open letter from Open Letter from Stefanos Kourkoulakos and the reply Leo Panitch, I would like, if you allow, to add some comments on the following part of the exchange.

- *Do Marx's value categories and the theory built upon, and by means of, them hold water?*
 - Not without a lot of leaks, and yet there is much that is valuable in Marx's theory that is not built on them, or by means of them alone.

The principle thrust of criticism of the labour theory of value within orthodox economics has been from the dominant subjectivist theory of value which locates the origin of prices in the relative subjective utility of commodities to the consumer. This is what is taught in all elementary economics textbooks, and the rise of this school of value theory can be seen as a late 19th or early 20th century response to the political influence of Marxian socialism[3].

A subsequent round of criticisms [11, 7, 6] claimed that the labour theory was not so much wrong as redundant, since the work of Sraffa [10] apparently showed that a non-subjectivist theory of price could be formulated without recourse to labour value.

If a theory purports to be scientific rather than a dogma, it must produce testable predictions. It must be possible to make observations or carry out procedures that would either confirm or undermine it. In this sense the labour theory of value starts out from a much stronger position than the subjectivist theory. Whilst there may be some questions of how one measures labour input, these pale to insignificance compared to the problem of providing an objective measure of subjective utility. One can propose mechanisms for the labour theory to be confronted with evidence which might refute it. It is much harder to see how the same might be done with the utility theory of value, whose scientific status is thus questionable. The alleged discrediting of the labour theory of value in orthodox economics has entirely been based on a-priori theoretical arguments. It has not been discredited by the the discovery of empirical evidence that was inconsistent with the theory. In science competing theories are

supposed to be evaluated on the basis of their ability to explain observed data. Economics does not proceed in this way. The practical political implications of different economic theories are so great that it is very difficult for scientific objectivity to take hold. Whilst people build political parties on the basis of different economic theories, they don't fight in the same way over alternative theories of galactic evolution.

It was not until the 1980s that a serious scientific effort was made to test whether or not the labour theory of value actually held in practice. The pioneering work was done by Anwar Shaikh [8, 9] and his collaborators [5, 4] at the New School in New York. Following this, there is now a considerable body of econometric evidence in favour of the proposition that relative prices and relative labour values are highly correlated, or in other words, in favour of the law of value.

Even prior to this empirical work, the ground breaking theoretical investigations of Farjoun and Machover [2, 1] had undermined the assumptions which underlay deterministic approaches to value theory. Their work, employing the formalisms of statistical mechanics, was a response to the impasse reached by the input-output method of representing an economy, in particular when applied to the theory of economic value. Farjoun and Machover's innovations include the systematic introduction of probabilistic modelling, statistical mechanics, and probabilistic laws to the field of political economy. They rejected the adequacy of deterministic models to capture essential features of a dynamic and distributed market economy, which they viewed as a complex system characterised by a huge number of degrees of freedom. Employing probabilistic arguments, Farjoun and Machover developed a broad model of the capitalist economy that, in contrast to deterministic approaches, had a more immediate connection to empirical reality and yielded important and theoretically distinct, macroeconomic conclusions, including probabilistic laws governing the relationship between price and labour-content and the distribution of the profit rate. The conclusions in their book have, by subsequent econometric work, been found to be broadly correct.

The key to testing the labour theory of value, and in particular to testing the predictions of Farjoun and Machover, has been the use of input-output tables.

It is possible to use input output tables to work out how many hours of labour went into producing the total output of each industry.

If the labour theory of value is empirically correct, then if you spend a dollar on any product you get back roughly the same quantity of labour. What happens when you look at a real economy?

The work of calculating labour contents would have been daunting prior to the ready availability of computers for economic research. This may be why nobody seriously investigated the matter until the 1980s. But when Shaikh and others tried, they obtained promising results.

The general procedure in these studies has been to use data from national input-output tables to calculate the total labour content of the output of each industrial sector, and then to see how closely the aggregate money value of sales from each industry match their total labour content. Various different

Tab. 1: Average percentage deviations between market prices and labour values for the USA over selected years. Figures extracted from (Shaikh 1998).

Year	1947	1958	1962	1967	1972	Average
Deviation	10.5%	9.0%	9.2%	10.2%	7.1%	9.2%

Tab. 2: Comparing the correlation of prices to labour values in different countries

Country	R^2	Source
United States	0.974	(Ochoa 1989)
United Kingdom	0.955	(Cockshott, Cottrell and Michaelson 1995)
Greece	0.942	(Tsoulfidis and Maniatis 2002)
Sweden	0.971	(Zachariah 2004)

ways have been devised to measure the correspondence between the prices and the values. Shaikh (1984) explains the details of the process, and also offers a theoretical argument in favour of a logarithmic specification of the price-value regressions. Table 1 shows some results from Shaikh and his collaborators.

As you can see, the average error you get when predicting United States prices using the labour theory of value is only about 9%. This has proven to be the case across many industries and several decades.

An alternative way of measuring the similarity of prices to labour values is to draw a scatter plot relating the two and then try to fit a straight line to the data. If the labour theory of value is true, then the observations will tend to fall close to this line, and the line will pass through the origin. How close the observations are to the line is measured by what is termed the R^2 value of the data. If the $R^2 = 1$ then all points fall on the line and the line perfectly predicts the results. If the $R^2 = 0$ then the line is of no use at all in predicting the observations.

Studies utilizing data from the United States, Sweden, Greece, Italy, Yugoslavia, Mexico and the UK have produced remarkably consistent results, with strong correlations observed: R^2 s of well over .90. It also seems to be the case from the literature that the larger the population of the country, the closer is the fit between observed prices and labour values, (Table 2). This may be an example of the way that statistical regularities become more apparent the larger the population on which the observations are performed.

I would say that correlations in prediction of the order of 95% are pretty good for an economic theory. The only scientifically convincing criticism of a theory is the presentation of a better theory – one that is more elegant in the sense of not having ‘epicycles’ and is also able to make more accurate predictions. The critics of the labour theory of value have yet to present such a theory. In fact they have neglected the most basic scientific procedure : the need to make empirical tests of any theory advanced.

Yours sincerely,
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References

- [1] E Farjoun, "*production of commodities by means of what?*", 1984.
- [2] Emmanuel Farjoun and Moshe Machover, *Laws of chaos, a probabilistic approach to political economy*, Verso, London, 1983.
- [3] J.P. Henderson, *The Retarded Acceptance of the Marginal Utility Theory: Comment*, *The Quarterly Journal of Economics* (1955), 465–473.
- [4] E. M. Ochoa, *Values, prices, and wage–profit curves in the us economy*, *Cambridge Journal of Economics* **13** (1989), 413–29.
- [5] P. Petrovic, *The deviation of production prices from labour values: some methodology and empirical evidence*, *Cambridge Journal of Economics* **11** (1987), 197–210.
- [6] J. Roemer, *Should marxists be interested in exploitation?*, Cambridge University Press, Cambridge, 1986.
- [7] P. A. Samuelson, *Reply on marxian matters*, *Journal of Economic Literature* **11** (1973), 64–68.
- [8] A. M. Shaikh, *The transformation from marx to sraffa*, Ricardo, Marx, Sraffa – the Langston Memorial Volume (Ernest Mandel and Alan Freeman, eds.), Verso, London, 1984, pp. 43–84.
- [9] ———, *The empirical strength of the labour theory of value*, *Marxian Economics: A Reappraisal* (R. Bellofiore, ed.), vol. 2, Macmillan, 1998, pp. 225–251.
- [10] Piero Sraffa, *Production of commodities by means of commodities*, Cambridge University Press, Cambridge, 1960.
- [11] Ian Steedman, *Marx after sraffa*, Verso, London, 1981.