

THE VALUE THEORY OF LABOR BASED ON MARGINALIST PRINCIPLES

Romar Correa

Romar Correa is the former Professor of Economics from University of Mumbai, India. He works in monetary macroeconomics and explores the tension between micro and macro foundations therein. He published (with Amelia Correa) a book titled *Stock-Flow-Consistent Models and Institutional Variety* in 2017 (Vernon Press). Email: romarcorrea10@gmail.com



Abstract: Our treatment of the theme is inspired by the formulation of Hiroshi Onishi. Professor Onishi establishes the labor theory of value by deriving a proportionality between labor power and output. We engage with the Professor's marginalist treatment and proceed to the dialectical approach to Marx's theory of value. Accordingly, money is an integral part of the subject.

Key words: value; money; banks

Introduction

Hiroshi Onishi (2019) has rendered yeoman's service to Marxian economics using the simplicity and clarity of marginalist analysis to illuminate an arena of discussion that remains complex and contentious. We expand his neoclassical treatment of the subject in the following manner. The category neoclassical rather than marginalist is used without quibble. Professor Onishi's analysis derives entirely from the optimization problem of the representative worker to the extent that even the production function is loaded there. We suggest that the cause of Marxian economics is not best served by offering the laborer a work-leisure choice. Famously, a worker has nothing to sell but her labor power. In scrupulous empirical studies, the connection between nonemployment and wages is found to be tenuous even in conditions of high unemployment duration and flexible employment (Jäger et al. 2018). True, a microeconomic treatment must rigorously derive a labor supply function but that solution to the worker problem must be matched by the labor demand function of an

employer in equilibrium. The extension of Professor Onishi's non-neoclassical discussion of production is a full characterization of the Leontief-type production function. Borrowing the Professor's notation for the labor input, l , with k standing for the capital input, A and B parameters representing the productivity of each of the attached inputs respectively, and γ and ε being positive constants, we have

$$y = \min(A l^\gamma, B k^\varepsilon).$$

The inclusion of the choice problem of the entrepreneur or businesswoman in the capitalist dynamic would naturally introduce nominal variables into the discussion. The maximand of the firm in the textbook is profits, not surplus, with the price and the wage rate given exogenously. A window is opened for the introduction of money. Indeed, Professor Onishi's intuitions might have been more richly borne out if the producer was introduced because, under the standard conditions, the resultant is price equals marginal cost and, consequently, zero profits *ex post*. What remains is the positive wage and employment along with productivity and other parameters defining their relationship concluding with worker consumption. In terms of Marxian scholarship the following balance is sought to be struck (Itoh 1979). Two theories of market value can be distinguished. The average of different values of individual commodities produced under varying conditions of production, Professor Itoh calls the "technical average" theory of market value. We are concerned with the second determination of market value as the outcome of the forces of demand and supply not unlike the "marginalist" theory of price determination. The resolution is the mechanics of competition which delivers the "market prices of production" in the language of Marx.

Our treatment is all of a piece with current scholarship across the board. Thus, Marx's method is claimed to be an open systems theoretical approach (Foster 2018). His contribution was *histoire raisonnée* or reasoned history which is the contribution of rational-dialectical form to material reality. The scholar Geoffrey Ingham (2018a, 2018b) tars the "substance" theory of value of Marxian economics and the money neutrality and dichotomy theorems of mainstream economics with the same brush. Money is coterminous with production and exchange. Money is as "real" as wages and value is actualized in the prospect of production and consumption. For this purpose, capitalists must borrow from banks creating money thereby which is still abstract value in its possibility. The quantity of money goes hand in glove with the production of commodities which must be consumed.

The Dialectical Approach to Value

The current theory of the value form traces the following sequence in Marx (Arthur 2002). The commodity is the salient form in which the product emerges in capitalism. In itself, it is the unity of use value and exchange value. Thus, circulation

must be grasped first and then production attended to because it is only in valorization that the value form is actualized. In the movement from the former to the latter, the essence of the relation between capital and labor is realized. Money is the mediator. Money and abstract labor are forms arising from the forces of production and the productivity of labor oriented toward exchange. Money is the measure of value between labor and price. It represents the universal aspect of commodities, their identity with each other as values effected through exchange. In money, distinct from commodities, value assumes real substance and can function as means of payment, medium of exchange, and store of value. Furthermore, exploitation in capitalism can only be understood through the mediation of money (Elson 1979). Surplus labor under capitalism cannot be expropriated in the form of the immediate product of labor. The product has to be sold. Capitalists make their calculations *ex ante* in money terms because they are in competition with other capitals in the labor and product markets. If a product of labor is a value, it must be reflected in some attribute of the product that is visible. The natural form of this correspondence is given by another commodity that stands in a relation of equivalence with the first commodity and serves as the representation of abstract labor. Money is this universal equivalent, directly exchangeable with all commodities. The form of value is indistinguishable from price.

In our formulation of M–C–M' below, money is self-referential. Originating and closing the circuit with money, the possibility of the renewal of capital is open-ended. Differing from neoclassicals and Ricardians, money represents utilities or labor according to Marx. Coming to contemporary theorizing, it is not a social convention but emerges unplanned from historical processes. It can be gold or digital currency.

The Value Theory of Labor

The choice problem of the firm or producer is given as follows. We use the first argument in the Leontief-type production function specified above, $y = Al^{\gamma}$. With w the wage rate,

$$\max_l pAl^{\gamma} - wl$$

Solving, we get

$$l^* = (A\gamma)^{-\frac{1}{\gamma-1}} \left(\frac{w}{p} \right)^{\frac{1}{\gamma-1}} \quad (1)$$

We may regard the equation as a representation of the labor theory of value according to Professor Onishi, this time emerging from the producer exercise. We have a proportionality between labor input (the left-hand side) and output (on the

right-hand side), output being represented by the parameters of the production function. The proportionality is introduced by means of the real wage.

The program of the consumer-worker is as follows:

$$\begin{aligned} & \max_{c,l} \alpha \log c \\ & \text{subject to } pc = wl \text{ and } c \leq y \leq Al^\gamma. \end{aligned}$$

The first order conditions are

$$pc^* = wl^* \quad (2)$$

That is to say, workers spend their entire income on Basics. The budget constraint binds.

In addition, the technological constraint is assumed to bind.

$$c^* = Al^{\gamma*} \quad (3)$$

The output of Basics is determined by the technique of production.

We have three equations but four unknowns, w, p, l, y . In our final nod to neo-classical macroeconomics, we introduce money so as to pin down the value of nominal variables. In mainstream macroeconomics, the quantity theory of money is required to fix a determinate price level. In our formulation, reverting to the exegesis of Chris Arthur, value moves freely in its own element in Marx and Hegel in the sphere of circulation, in the phenomenon of price, p , and the metamorphoses of the commodity, y , and money, m . A critical point in *Capital* is reached when the general formula of capital must include the category money but where the sphere of circulation alone is unable to determine its origin. At this juncture, Marx advises that we must exit circulation and enter the sphere of production. This potential bifurcation point is crucial because the store of value function of money emerges as a result. With money, the possibility of the renewal of the circuit is presented. The renewal, in turn, depends on the reproduction of the conditions of demand and supply of commodities and labor. Capital must transform use values through the employment of labor, l , at a wage, w . In short, money is called upon to determine the value, the product of quantity and price, in both the product and labor markets. Our fourth equation, accordingly, is

$$m = py = wl \quad (4)$$

The following propositions can, therefore, be regarded as equivalent. Money, m , is the only measure of value although labor is its source. Value mediates between labor, l , and price, p . Value, m , and labor, l , at a wage rate, w , are categories arising from a process of production geared toward exchange, py . By the definition of

the atomistic process of the capitalist dynamic, socially necessary labor time, wl , works “behind the backs” of producers but market exchange, py , connects independent capitalists by constraining them uniformly.

We move to the second argument in the Leontief-type production function, $y = Bk^\epsilon$. In order to hire machines and factories, the entrepreneur would need to approach capitalists who rent out capital equipment. It might be simpler to conceive of financial institutions like leasing companies intermediating in the market for capital. They would write up an asset account on their balance sheets while simultaneously creating a deposit account of the same amount for the new client. The important difference from our earlier treatment is that a financial institution is a profit-maximizing entity and there would be a spread between the loan rate charged on the advance and the deposit rate due on its liabilities. Otherwise, we can conceive of banking in neoclassical terms as the worker-consumer depositing her savings, k , and the bank routing that “capital” to productive uses. Deposits make loans. The rate of return on her deposits is the inducement to the worker-saver and the difference between the loan and deposit rate is the inducement to the bank to implicitly contract with borrowers and lenders.

We claim that this spread cannot be nonzero in equilibrium. With the introduction of two new prices into the model, we would need to write down and solve the problem of a financial intermediary. However, here as well, the zero-profit condition would apply ex post and the spread would vanish. Secondly, with the clearing of the loan market imposed as part of the solution of the overall maximization exercise, loan and deposit rates would be equal. As a final reason why a positive spread cannot be sustained and to connect with our algebra, denote the loan and deposit rates by r^L and r^D . Consider the maximand of the producer at the beginning of this section. Apart from the expression for total revenue changing to reflect the “second leg” in the Leontief production function, in place of wl we have $r^L k$. In the budget constraint of the worker-rentier, likewise, $r^D k$ takes the place of wl . A straight translation of equations 1, 2, 3, is

$$B\epsilon k^{(\epsilon-1^*)} = \frac{r^L}{p} \tag{1'}$$

In the schemata of Professor Onishi, we have a proportionality, this time between embodied labor and output, mediated by the real rate of return on loans.

The “deposit market” clears. The supply of liability contracts equals the demand for a saving instrument. Formally,

$$\frac{c^*}{k^*} = \frac{r^D}{p} \tag{2'}$$

$$c^* = Bk^{\epsilon^*} \tag{3'}$$

Once more, the consumption of workers-savers is determined by the production technology.

These equations can only hold if $r^L = r^D$. In sum, at the end of the day we have the zero profits resultant of standard microeconomics. In order to generate positive profits, we would need to set up a dynamic optimization problem. Onishi and Kanae (2015) set about pioneering such a process, thereby providing an account of the subsumption of the rental price of capital in profit.

Let r denote their common value of the two interest rates above. The financial institution has collapsed and what remains is the ether of freely floating finance. Rates of return need only be decimal points or tiny margins or “haircuts” but are computed on tranches of billions of dollars. Indeed, it is precisely a regime of low interest rates that induced risk love during the epoch of the Great Moderation. Balance sheets of banks and nonbanks went awry precipitating a collapse of the system. The tension between the entrepreneur and the worker-saver evaporates as both are transformed into rentiers. A “capital theory of value” or, more to the point, a “value theory of capital” cannot be sustained. Returning to the dialectical perspective once more, we reiterate that the Marx’s theory of value originates in the commodity and proceeds to value, the substance of which is objectified abstract labor. Money emerges as a universal equivalent in history through the market process. Its generalized acceptance naturally depends on its social role as an equivalence. Even bilateral bargains between commodity owners cannot determine the universality of the equivalent form. All commodities must have their abstract labor objectified in money. Furthermore, the completion of the exchange process required the universal equivalent to be unique.

Since the rate of return in the financial circulation dominates the zero rate of return on money, the consequences over the past decades continue to be played out. Since the late 1980s, financial enterprises have crowded out nonfinancial enterprises in the United States at least, not in terms of employment but in terms of value added (Ho 2018). Merchant enterprises that produce nothing earn high ranks in the Fortune 500 list. In contrast to the merger waves prior to the 1980s, those thereafter are driven entirely by speculative motives and new financial instruments. The “financialization of everything” has invaded the poor and developing world as well (Storm 2018). Innocent people have become trapped in the mesh of international finance through devices like micro-loans, micro-insurance, and M-Pesa-like institutions like “correspondent banking.” The global span of predatory finance embraces food, primary commodities, health care, education, energy. The prey is collateral. Micro-credit arrangements are important because of the access the contracts provide to the underlying collateral in the form of land or high-risk microfinance loans made low-risk through peer pressure. The wings of cash pools roving worldwide cannot be clipped and domesticated in irrigation

projects and agricultural innovation because they are uninsured. They are too massive to fall under the umbrella of traditional deposit-insurance systems offered by banks. In the context of low interest rates, the global “asset management complex” uses “money to make more money” or $M-R-M'$. The ratio of dividends to gross profits has been steadily rising in the period. A great and increasing proportion of assets in National Income held by the FIRE (finance, insurance, real estate) sector means that interest payments are being dumped into the “sinkhole of leakages” from which they cannot be salvaged to drive the demand and supply for commodities (Wray 2018).

The dialectical approach to money is both abstract and concrete. The constructive portion of our discussion is to highlight the unique status of banks in the origination of production and the support of the circulation of commodities. In equation 4, banks are behind the loans to produce goods (the left-hand side of the equation) and the deposits to buy them (the right-hand side of the equation). Analytically and historically, there is no need to distinguish between commercial and central banks in this regard.

Conclusion

Professor Hiroshi Onishi has offered an imaginative microeconomic treatment of the labor theory of value of great pedagogic value to students. We are inspired to extend his analysis to embrace the theory of value as arising from interlocking optimization exercises conducted by two classes. Quantities and prices are determined in a structural or general equilibrium. Money is the substratum of the model. In our presentation of finance, capitalist and worker collapse into a rentier. Finance is orthogonal to money. Our impulses are guided by the contemporary dialectical theory of value which promulgates the unity of the production and exchange moments in the capitalist dynamic.

Acknowledgements

I am thankful to the incisive comments of two referees for saving me from formal mistakes. A debt of gratitude goes out to Professor Hiroshi Onishi for extricating me from substantive errors as well. All remaining faux pas on both fronts are entirely mine.

References

- Arthur, C. A. 2002. *The New Dialectic and Marx's Capital*. Leiden; Boston; Köln: Brill.
- Elson, D. 1979. “The Value Theory of Labor.” In *Value: The Representation of Labour in Capitalism*, edited by D. Elson, 115–180. London: CSE Books.
- Foster, J. B. 2018. “Marx’s Open-Ended Critique.” *Monthly Review* 70 (1): 1–16.

- Ho, T.-H. 2018. "The Institutionalist Theory of the Business Enterprise: Past, Present, and Future." MPRA Paper, No. 84036, June.
- Ingham, G. 2018a. "A Critique of Lawson's 'Social Positioning and the Nature of Money'." *Cambridge Journal of Economics* 42 (3): 837–850.
- Ingham, G. 2018b. "Finance and Power." *New Left Review* 109: 127–139.
- Itoh, M. 1979. "Marx's Theory of Market Value." In *Value: The Representation of Labor in Capitalism*, edited by D. Elson, 102–114. London: CSE Books.
- Jäger, S., B. Schoefer, S. G. Young, and J. Zweimüller. 2018. "Wages and the Value of Nonemployment." Working Paper, No. 25230, NBER, Cambridge, MA.
- Onishi, H. 2019. "A Proof of Labor Theory of Value Based on Marginalist Principle." *World Review of Political Economy* 10 (1): 85–94.
- Onishi, H., and R. Kanae. 2015. "Piketty's $r > g$ is Caused by Labor Exploitation: A Proof by Marxian Optimal Growth Theory." *Marxism* 21 12 (3): 319–330.
- Storm, S. 2018. "Financial Markets Have Taken Over the Economy: To Prevent Another Crisis, They Must Be Brought to Heel." Commentary, Institute for New Economic Thinking, New York, February 13.
- Wray, L. R. 2018. "Functional Finance: A Comparison of the Evolution of the Positions of Hyman Minsky and Abba Lerner." Working Paper, No. 90, Levy Economics Institute of Bard College, New York.