# FORUM

## A BERNOULLIAN'S GUIDE TO THE POLITICAL ECONOMY OF POVERTY

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Physical factors such as inadequate education and substandard health commonly characterize poverty. Sociological reasons for poverty have also been advanced—"When measured against a middle-class psychological norm, the poor are distinctly abnormal" [2, p. 19].

This focussing of attention on attributes of the poor in analyses of poverty seems to suggest that poverty is only caused by the poor being deficient in something. Consequently it is implied that the necessary and sufficient conditions for alleviating or eliminating poverty are concerned solely with helping the poor overcome their "deficiencies".

Such an emphasis on the peculiarities of the poor has been criticized by sociologists from Monash University [3, 4]. They suggest that the reasons for poverty can be found as much in the characteristics of the non-poor, as in characteristics peculiar to the poor. They conclude:

> The problem with most enquiries into poverty, including the current Commonwealth Commission, is that they study the poor rather than the society that creates poverty. In fact, the poor are usually victims of the economic and value system of society [3, p. 2].

The argument below demonstrates that the existence of poverty can be related to forces that are remote from the lives of the poor. It is therefore concluded that the elimination of poverty requires economic policies involving the non-poor as well as, or even instead of, policies solely directed at the poor. Although this note refers explicitly to the wage-earning poor, no essential modification is required to show that poverty associated with unemployment is caused by characteristics of the non-poor, as well as by characteristics of the unemployed poor.

The marginal productivity theory of factor prices [1, Chapter 9, 6, Chapters 2, 3] explains the wage rate of labour—indeed, the price of any factor of production—in terms of the value of the marginal product of that factor. Although contemporary labour economics has attempted to modify this theory by analyses involving, among other things, a theory of bargaining [6, Chapters 18, 19], the marginal productivity theory of wages is still the most commonly accepted explanation of the level of factor prices.

The marginal productivity theory of factor prices uses the principle of profit maximization to explain the underlying principles of factor rewards.

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Given

$$\pi = P_F \,.\, F(X_1, \ldots, X_m) - \sum_{i=1}^{m} P_i X_i \qquad \ldots \ldots (1)$$

where $\pi$ is profit, $X_i$ are $m$ inputs to the production process $F$, $P_i$ are the costs of inputs, and $P_F$ is the value of output, profit maximization leads to the following determination of all factor prices

$$P_i = \frac{\partial F}{\partial X_i} \,.\, P_F \quad \text{for each } X_i \qquad \ldots \ldots (2)$$

The reasoning that is used to determine how to effect increases in the wage rate of workers is obvious. Since output price is considered fixed—as it would be at general equilibrium—the only variable in (2) above which can be changed is the marginal product of labour. Two general methods are available to bring about changes in this variable.

By increasing the amount of capital (or other non-labour factors of production) employed, the marginal product of labour will rise. At general equilibrium, however, the amount of capital (and other factors) employed is endogenous to the level of output of the economic system. Those who control the employment of these factors will find no profit-related motive for changing the use of non-labour factors of production merely to increase wages.

As the profit motive will not induce changes in factor employment necessary to increase the marginal product of labour, it is implied that wage rates can only be increased by improving the working capacity of the poor. By improving education levels, standards of health and levels of aspiration, the marginal product and hence the wage rate of workers including the poor will be increased.

This conclusion, while obvious from the marginal productivity theory of value, contrasts with that which can be derived from an analysis suggested by Bernoullian decision theory.

The marginal productivity theory of factor prices assumes profit maximization as the only motive for economic decision-making. Bernoullian decision theory suggests that, since utility maximization is a better approximation to the motives behind economic decision-making [7, pp. 8–9], such decision-making derives from all the variables impinging on a decision, not merely the profit variable. In the framework of Bernoullian decision theory, an entrepreneur makes decisions about his business based not only on its financial return, but on the risks of achieving different levels of return. Having extended the principle of utility to include risk, it would seem desirable to include other non-profit factors. These could include the "way of life" of farming, the desire to remain solvent or the minimization of the rate of ulcer development.

If business decisions are not based solely on the profit motive, but are based on the utility function of an entrepreneur, the appropriate decision making function is

$$U = f(R_1, \ldots, R_n) \qquad \ldots \ldots (3)$$

In order to maximize $U$ in (3) it is not necessary that any of the $R_i$ variables be at its maximum level. The necessary conditions for maximising $U$ (subject to appropriate second-order conditions) are that

$$\frac{\partial U}{\partial R_i} = 0 \qquad \text{for all } i \qquad \ldots \quad (4)$$

Now if profit is not maximized, the conclusions of the marginal productivity theory as instanced by equation (2) are no longer valid. Even if a particular mix of utility-forming variables is chosen—say the point $U_1 = (R_1', R_2', \ldots, R_n')$—the value of any particular factor of production is still undetermined. This occurs because there is an infinite number of solutions to the equation

$$R_i' = P_F \, . \, F(X_i, \ldots, X_m) - \sum_{i=1}^{m} P_i X_i \qquad \ldots \quad (5)$$

Only if the non-profit $R_i$ variables or social conditions external to the firm determine the values of all variables in equation (5) except one input price, can equation (5) be used to determine the remaining input price. Hence the only general result which relates wage levels to business decision-making is that if the level of wages is so high that profits can no longer be made, the business will cease operation. Thus the level of wages and corresponding employment of labour are determined independently of profit maximization. Consequently, the other decision variables of business, since they are inter-related with the profit variable, will have an important bearing on wage and employment levels.

To alter the wages of workers, and in particular those of the poor, there will be therefore avenues open other than simply the improvement of the working capacity of the poor. The wages of the poor could be increased by changing certain attributes of the non-poor, such as their attitudes to poverty and the wage-earning class as well as, or as a substitute for, increasing the working capacity of the poor.

The conclusions of the Monash sociologists based on observation and sociological theories and insights, can be established using an extension of Bernoullian decision theory. Both analyses suggest that, in attempting to ameliorate poverty, it is as important to study the society which helps create poverty as it is to study the poor themselves.

## REFERENCES

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