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## CAPITAL VALUATION AND THE "PSYCHOLOGICAL SCHOOL"

It may seem to some economists hardly worth while to discuss the problem of capital valuation. This problem, they may feel, is a simple one and its solution not in doubt. If I venture here to discuss it, my reason is the continued widespread existence of a view which I believe to be seriously one-sided and wrong.

Economists, like people of less intellectual pretensions, tend to be influenced greatly by those views which have acquired prestige, sometimes through being traditional, sometimes through being brilliantly new. There are fads and cults within the craft which not to accept is to lose high rank as an economist in good standing. One of the relatively recent fads or cults is the idea that all capital value is arrived at solely through the process of discounting. Book after book comes out which is written from this point of view. Their authors may not insist that cost of production has no effect, either direct *or indirect*, on capital. But the existence of any direct effect is either ignored or denied.

Sometimes it is definitely acknowledged that present cost of production (cost of reproduction) has an *indirect* effect on capital value. Reduced cost, it is said, will increase the supply of any given kind of capital. This will presumably increase the supply of the future services of this capital. Would-be buyers and sellers of this capital therefore calculate on a lower value of the so plentiful future services. And through this avenue of estimates and calculations they arrive at a lower value at which they are willing to buy—or to sell—the capital.

The only other way in which, according to a theorist of this school, cost can affect the value of any capital already constructed, is through the fact that this capital may have to be repaired; and the prospect of having to meet these repair costs must be set off against the capital's future services. The value of the future services, such a theorist would say, must be discounted, and from the sum so arrived at must be subtracted the discounted future repair costs. The remainder will be, he would assert, the value of the capital.

It may seem a bit surprising, but it is none the less true, that the refusal to admit any *direct* dependence of capital value on *present* construction costs is found even in the textbooks of a number of writers who adhere, in other respects, to the idea of opportunity cost. Perhaps this is because these writers fail to note the application of opportunity cost to *demand* as well as to supply. In the matter of the valuation of capital such application is of considerable significance. The problem cannot be understood without it.

The idea that capital can be valued only by discounting the value of its future services permeates the work of the noted Austrian economist, Böhm-Bawerk. In my opinion it is the point of view which is implied in this idea that is responsible for the chief shortcomings in Böhm-Bawerk's theory of interest.

This view that the value of capital is to be arrived at by the single route of discounting the values of its future services has become so widespread in academic circles, has been so forcefully presented by economists of distinction, and is so sedulously taught in many colleges and universities, that it may prove as hard to dislodge as the old idea that rent does not enter into cost, an idea which, some sixty years after Jevons showed its fallacy, still occupies a prominent place in several of our most popular and widely-used textbooks.

Let us present the problem regarding capital valuation with the aid of a simple illustration. Nowell is a fisherman. His usual catch is \$40 worth of fish a week. His boat, a necessity of his business, is wearing out. He needs a new one very soon. He is, however, a pretty good carpenter. He can build himself a satisfactory boat in a week's time. Kelleher, a dealer, offers to sell him a boat for \$100. Nowell and other fishermen similarly situated refuse to pay such a price. Thus the *demand* for Kelleher's boats is affected by the opportunity *cost* to Nowell and to others of building their own boats. Nowell refuses to pay Kelleher \$100 for the boat.

Now what economic theorist will insist that this fact is due to Nowell's discounting the expected future value of the prospective services of the boat? Will it be said that Nowell foresees more numerous boats because he and others like him can construct such boats at a cost of \$40; that he therefore anticipates more plentiful future services of these boats; that this leads him to foresee lower future values of the anticipated services; that, discounting these lower future values, he arrives at a lower present value for fishermen's boats; and that, *because* his mind has gone through these calculations, and *only* because of this fact, he will not pay \$100 for Kelleher's boat?

This sort of thing has been said and is still being said. Such economists as say it would perhaps be referred to as interest theorists of

the psychological school. If so, I suggest that the chief trouble with interest theorists of the "psychological school" is *the wrongness of their psychology*.

What if such an economist were to present the above series of mental steps to the fisherman, Nowell, saying to him: "I suppose that's how you decided not to buy Kelleher's boat for \$100?" Nowell would probably reply: "Why no, professor. I really didn't think about all that. I only thought I could make my own boat a lot more cheaply."

Is it not, as a matter of fact, perfectly obvious that we have here a *direct* effect of cost on value? What it would cost Nowell to make his own boat (opportunity cost) affects *directly* the amount Nowell is willing to pay for Kelleher's *already-built* boat. As Nowell's demand is part of the total demand, and as other potential buyers may be similarly circumstanced, there is here a direct influence on the *value* of Kelleher's boat or boats.

Obviously our story must have a place for alternative uses of land and capital as well as of labor. It is undoubtedly true, also, that time preference, operating through the process of discounting, does have some relation to capital value. A steamship of too great draught to enter the harbors of the lake it is built to navigate, will not have high value just because it was expensive to construct or just because it would be expensive to duplicate. The discounted value of its expected future services clearly sets a maximum price for which an owner could expect to sell it. Furthermore, when all the value-determining forces in relation to any piece of capital are in equilibrium, we should ordinarily have a value for the capital (assuming it to be worth constructing and not yet depreciated) which would be the same as its marginal cost and also the same as the discounted value of its future services. But to say this is certainly *not* to say that cost affects capital value *only through first* affecting the prospective value of the future services of the capital, which prospective value is then discounted to find the present value of the capital!

If the above contention is accepted, there is certainly no justification for the view that interest is determined only *through* the intermediation of time preference. Nor is there any justification for the hackneyed claim that productivity theorists can show only physical and not value productivity of capital. For if capital, which has its value *directly* (and not merely indirectly) controlled by opportunity cost, is able to add to production, in its lifetime, goods in excess of those which measure its cost (on the opportunity-cost basis), then it can be made obvious that capital is productive in an interest-causing sense, and that its productivity influences the interest rate *directly* and not merely *through first* affecting the distribution of income in time and thereby affecting time preference.

I do not intend to discuss that problem here.<sup>1</sup> But it may be noted that the idea that the productivity of capital (or the net gain from roundabout production) has a *direct* effect on the interest rate, and not merely an indirect effect, goes logically with the idea that cost has a *direct* effect on capital value. On the other hand, the idea that capital value is determined only *through* discounting is part and parcel of the idea that the interest rate is affected only through time preference.

Corporations, like individuals, may refuse to pay a high price for capital because they can construct it themselves. While they must hire men to do the actual work of constructing, the wages which have to be paid will presumably be related to the wages which must be paid for producing consumption goods. Indeed, the same men, already in the employ of the corporation, may be diverted in part from the latter task to the former. Thus, the value of the capital desired by the corporation tends to be held down to the level of the value of the consumable goods or services which the same labor, etc., can produce.

The same principle is applicable to the valuation of the shares of stock of a corporation. Suppose a company owns a factory. The factory is profitable. It is, however, one of many companies, the plant can be duplicated, and there is no appreciable element of monopoly in its business. What are the shares of stock worth? Is the solution solely a matter of discounting prospective dividends? Not, at any rate, in the case of a large buyer or syndicate of buyers who might contemplate acquiring the stock. For they have the option of duplicating the factory. If they can duplicate it (and we might mention also the possibility of soon duplicating a going value in the form of an established clientele) for \$500,000, they will hardly consent to pay \$800,000 for the stock of the company they contemplate purchasing. It is futile to reply that in duplicating the plant, the investors are really paying to the builders wages, etc., based on the discounted value of the future services of the duplicate. For these wages, etc., are determined directly, in large part, by the alternative possessed by the laborers and others involved, of turning to the production, instead, of more immediately consumable goods. Indeed, their very employers may, to some extent, merely change the lines of work of men they were already hiring, so as to have them produce capital having a long life instead of goods for quicker use. And some of the very investors might, if the capital they desire to buy were offered at too high a price, turn their own attention to constructing parts of such capital, or capital

<sup>1</sup> I have tried in Chapter 4 of Part II of *Economic Science and the Common Welfare*, 4th ed. (Columbia, Mo., Lucas Bros., 1929), to make clear the reasons for my belief that productivity has a *direct* influence on the interest rate.

of the same kind on a smaller scale, or other kinds of capital, in place of producing, as they may now be doing, goods for more immediate consumption. There are, in short, many alternatives, of many persons, which act both indirectly *and directly*; and a formula that requires them all to act only *through* time-preference and discounting is seriously devoid of the requisite catholicity.

Consider, now, finally, the distinction between land and capital and between their respective incomes. The value of land, like that of bonds or of a secure monopoly, bears no relation to cost of duplication.<sup>2</sup> It is arrived at solely by a process of discounting or capitalizing the prospective income from it at the current interest rate. Capital value, however, depends not only indirectly, but also *directly*, on present cost of production (or of duplication).

There is a notion current among certain contemporary American economists that the only distinction of importance in the case of incomes from the various factors of production is a distinction between income from all property and income from labor. With these economists, income from land and income from capital are supposed not to be different in any important respect. *Nor is land itself supposed to be significantly different from humanly-constructed capital.* The distinction between them has even been declared to be an "imagined" and a "spurious" one. The view is put forth that the habit of distinguishing between land and capital is really but the result of historical accident and not the consequence of an apprehension of any basic unlikeness. It just happened, so the contention runs, that classical economics developed in Britain in a period when the principal classes in rural life were three, *viz.*, landowners from whom the land was hired, capitalists who provided machinery and stock, and laborers who were hired by the capitalists. Since in America the person who owns land commonly (though not always) owns both the improvements and the other capital used on the land, it is supposed by the economists under discussion that, had economics got its start in America, the classical economists' distinction between land and capital would never have been emphasized—perhaps would never have been thought of!

One wonders whether, had it not been for the peculiar organization of English agriculture a century and more ago, the arithmetical principles by which the expected future rent of land is capitalized into a present salable value would be different from what they now are! Perhaps the rules of addition, subtraction, multiplication and division are also an outgrowth of the historically accidental organization of eight-

<sup>2</sup> Of course, a buyer of land or bonds may choose whether to buy of A or B or C. So may a buyer of capital. But a buyer of capital has, *in addition*, the option of himself duplicating it.

centh and nineteenth-century English agriculture! Or, possibly, the dependence of the value of capital on its cost of construction was peculiar to English economic institutions of a century ago, while in America the value of capital has no slightest discoverable relation to the cost of building or constructing it!

Unless such are to be our conclusions, we can hardly deny that there is some difference between land and capital—even though the idea of a distinction does occur in the works of the pitifully benighted classical economists—and it may possibly turn out that the distinction is significant.

It is sometimes said that the rent of land is no less interest than the return on capital since the return on land can be viewed as a given percentage on a given valuation, while, on the other hand, the interest on capital (as distinguished from bare land) can be viewed as an absolute amount in dollars per machine or factory, just as land rent is viewed as so many dollars per building lot or per acre a year. But more fundamentally there is a difference, despite the superficial resemblance, between situation rent and capital interest. The return on land should be looked at as an absolute amount measured and determined by the surplus over production at the margin. It is not determined by the value of the land. Neither has the value of land, as such, *e.g.*, its situation value as distinguished from improvements, any appreciable relation to any cost of production since the land is not, practically, reproducible. On the contrary, the value of the land can be arrived at only by discounting its expected future rents or returns at some previously found rate of interest.

In short, the matter of significance in the case of return on capital is the gain from roundabout production as compared with the gain from relatively direct production. This is naturally and properly expressed as a ratio or per cent of the surplus gain per year, from making production relatively roundabout, to what the production would have been had immediately consumable goods been produced instead. Surely, the per cent which the rent of a piece of land bears to a value which can be arrived at only by capitalizing this rent at this same per cent interest, is of no such independent significance. And those self-styled “modern” economists who affect to despise the leading economists of an earlier generation for failure to note specifically a purely surface likeness, are themselves far more worthy of criticism for failure to recognize a basic distinction, the understanding of which is of the greatest importance for the best ordering of our economic system.

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