The Anti-Samuelson

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Chapter 18: Marginal Productivity Theory (S's Chapter 27)

In advanced industrial countries it is more meaningful to think of the machine as the main determinant of output, with the worker attached to it, rather than the other way round. . . .

—E. Domar, "Full Capacity vs. Full Employment Growth: Comment," *Quarterly Journal of Economics*, LXVII, No. 4 (November, 1953), 559

INTRODUCTION

Part 4 of S's textbook is largely devoted to demonstrating that Marx's overly simple labor theory of value, while providing "persuasive terminology for declaiming against the 'exploitation of labor,' . . . constituted bad scientific economics" (7th ed., p. 29). Our earlier, brief encounter with the theory of marginal productivity made us aware of its close relationship to the "vulgar-economic" nineteenth-century theories whose object of interest Marx dubbed the Holy Trinity (Land, Labor, and Capital). We are, therefore, hardly surprised when S states that the key to how the factors of production "get priced in the market place" will be the "economic theory of production" (534). For we have also become acquainted with this approach: the quantity theory of money which claims that commodities enter the market place without prices, and money without value. Adherence to this tenet makes a theory vulnerable to an arbitrary view of price determination as a process analogous to an auction. It will also come as no surprise that S's

economic theory of production reveals itself to be a technologically based theory.

"DERIVED DEMAND" AND MARGINAL UTILITY

S starts his discussion with a few words about "derived demand." Now in Chapter 22 he skilfully avoided the matter of utility with respect to means of production; now he must face the music, or rather cacophony. We are told that capitalists buy machines and raw materials not for the good vibes they directly receive but for the "production and revenue" they hope to gain indirectly (557). The "and" here is gratuitous. If the capitalists could gain revenue without producing anything (which is done millions of times daily by bank capitalists, stock market speculators, et al.), they gladly would.

Then we are told that consumer "satisfactions . . . help to determine" how much the final product can be sold for and thus "*ultimately* determine the firm's demand for inputs" (ibid.). As we never grow tired of repeating, satisfactions, utilities, and the like can never determine prices quantitatively; insofar as demand can affect the deviations of market prices from value (or price of production), only solvent demand is relevant here. S takes this into consideration by inserting the phrase "are willing to pay for" between satisfactions and desires.

But then we are merely told that consumer demand can influence only capitalist *demand* for factors of production; the *pricing* of the factors is then in a sort of backhanded way "determined" by their supply and demand.

Obviously bourgeois economics is in a bind. Factor price is determined by nonprice factors; the only possibility for the fitting of such a rule within the "orthodox" theory is marginal utility. This it is supposed to do by explaining the commensurability of marginal products on the demand side and supply on the commodity markets. But because marginal utility itself depends on prices, it cannot serve to explain homogeneity and commensurability in commodity prices. On the micro level, factor incomes are not only

physical but also value products; on the macro level, prices appear as the element of commensurability. Supply and demand cannot be the explanation of these prices, for they can explain only changes of prices and costs of production but not the genesis of commensurability in prices.

Since we have just mentioned how marginal utility disqualifies itself as price explainer because it itself rests upon price factors, we should develop this point further (incidentally, the objection is valid for marginal utility in its totality).

Within the labor theory of value labor plays the role of creating value although it itself has no value (that is in Marx's conception of the theory, which purges the classical theory of its "logical" inconsistency of referring to labor as the commodity the worker sells). In a purely subjectivistic theory, utility or vibes or whatever would play this role. But the subjectivists are not consistent; at some point the unmediated jump is made from moneyless, priceless utilitarians to commodity production, thus rendering utility invalid in its role as constant determiner, insofar as it becomes dependent on that which it is supposed to determine—prices.

To return to the question of factor-pricing. Here S in his wonted ahistorical fashion spares the student the tortuous tale of the development of the subjectivistic approach toward the price of the means of production. Let us look at the brilliant solution proffered by Carl Menger, the founder of the Austrian school. He maintains that the value of the means of production is equal to the prospective value of the final products plus a "margin for the value of the capital use and the entrepreneurial activity."[1]

This "solution" solves nothing. It merely confirms the existence of the phenomena of interest and profit in the capitalist mode of production. Moreover, it merely repeats the century-old mistake of Malthus criticized by Marx: namely, Menger like Malthus absorbs profit into the definition of value, so that the value of the commodity and the self-expansion of value of capital become confused and identified. What we then get is the value of a commodity

equaling its value plus an excess over its value. This happily puts to rest the notion of the exploitation of labor in the exchange between capital and the commodity labor power and leads us to the familiar profit-upon-alienation theory (i.e., profit becomes a mark-up).

The factor-demand theory corresponds to a very undeveloped stage of capitalism, which in any case lost its validity (if it ever had any) at least two hundred years ago. As Menger puts it, only when our need for a final product cannot be met does a mediate need arise for means of production to produce this good.[2]

But as we have had occasion to point out before, that although in developed capitalism the commodities in Department II must ultimately be sold to the consumers, production in Department I maintains an independent existence in the phases of the cycle leading to crisis. With the ever-increasing organic composition of capital, the notion of Department I as being merely a derived demand for Department II becomes ever more unrealistic.

In general, then, we can say that marginal utility as applied to the means of production becomes self-contradictory. The "utility" of a production factor lies solely in its contribution to surplus value; marginal utility theory derives this utility "at the margin" of the finished commodities, although these can be of no utility to the capitalist producing them. At best one can say that if the marginal utility of the finished product is a price that includes costs, interest, and profit, then the utility imputation implies that the productive marginal utility depends on the contribution to the realizable value inclusive of surplus value.[3]

One last point before we leave this topic. S informs us that "effort involved in making coats . . . is of no interest to society for its own sake; we pay men . . . to sew because of the satisfaction to be gained from the finished product" (558). This may well be true of capitalist society: Production itself is not oriented at the self-expression of the immediate producers. But we must keep in mind that S claims to be dealing with the problems of "every economic society," with "technological facts." So without getting involved in

moralizing, we might just note the hidden assumptions S builds into his "technological" models, a standard approach for bourgeois economists.

Far from being a precise statement about any economic system, S's remarks do not even apply to capitalism insofar as "society" as such has no interests. In fact, the only social formations for which the assertion would hold would be a slave or feudal society in which production is directed at satisfying the needs of the masters while the immediate producers do not work for the fun of it.

THE "TECHNOLOGY" OF PRODUCTIVE FACTORS

The next section introduces us to the technology of factor demand. Here we are told that since it is technologically difficult to dig building foundation without a shovel, an "obvious consequence is this: The amount of labor demanded will depend on its wage rate, but the labor demanded will depend also upon the price of machines" (534). How the transition from hands and shovels to wages and prices is to be effected remains S's secret. But once we are there, he cannot refrain from adding this gem: "By raising miners' wages, John L. Lewis created good business for power tools" (*ibid.*). The implication of course is that *technology* places wage workers in this dilemma: Either be happy with your lousy wages or we'll replace you with a nonunionized machine!

Now we get to the tricky matter of how to separate the physical products of the various factors given their interdependence. This is done allegedly "by the processes of supply and demand, operating in perfectly or imperfectly competitive markets and modified by government laws" (535). As we shall see, supply and demand play only a subordinate role in the general formulation of the solution, while in chapters 28-30—devoted to particular solutions of land, labor, and capital—marginal productivity, which in the general formulation is supposed to play the determining role, disappears, to be replaced by a meaningless supply-and-demand theory.

Although we will go into this greater detail in Chapter

21, let us stop here to discuss the notion of capital productivity. S does not bother to define it at this point, although this does not stop him from measuring it. In Chapter 30 he states that the productivity of capital goods is a "technological fact" (609). What is this productivity?—"that annual percentage yield which you could earn by tying up your money in it. What is the same time . . . net productivity is that market rate of interest at which it would just pay to undertake" the investment (599). Thus, what does S mean when he says that the "average rate of improvement" of capital productivity is one or two percent a year? That the interest rate rises annually by this amount? Hardly. (We will return to this in Chapter 27, but we merely want to point out here that S is mystifying his readers by withholding the definitions themselves from them.

Before he picks up the microscope again S explains why the "return per unit of capital" (Is this physical revenue? Rate of profit? Interest rate?—we are not told) has not diminished as a result of the reduced labor it has to work with. The answer: technology, the "offsetting" factor. In fact, "Technical improvements by themselves would probably have raised profits on capital had not the diminishing returns to increasing capital per laborer been taking place as an offset" (537).

This is truly a textbook example of S's lack of understanding of the dialectic of the falling rate of profit. The "would have . . . if had not" shows that S does not see that technical improvements and the more rapid growth of constant over variable capital are inseparable: they are two sides of the same process. It is ironic that although S claims technology as the field par excellence of bourgeois economics, it is invariably inserted as a theoretically unmediated deus ex machina.

In other words, it is precisely the accumulated surplus value previously produced by workers which enables them to produce the next round of capital even more productively; and the more productive they are in this sense, the more surplus value can be accumulated and employed by the capitalists *against* (and not "in cooperation" with) them

in order to extract even more surplus value the next time round.

> The connection here to the falling rate of profit is close: . . . That the procedures for the production of relative surplus value by and large amount to: on the one hand transforming as much as possible of a given mass of labor into surplus value, on the other hand to employ in relation to the capital advanced as little labor as possible; so that the same reasons which permit raising the degree of exploitation of labor, forbid exploiting with the same aggregate capital as much labor as before.[4]

In other words, the mass of capital is not increasing more quickly than the mass of labor "because of thrift on the part of society" (537)—whatever that is supposed to mean—but because increasing productivity in capitalism is expressed by the ability of a given mass of labor to put in motion ever larger masses of capital.

Now we arrive at the crucial link in the marginal productivity story: marginal products of the factors. This is turned into an adaptation of the diminishing returns of Chapter 2 and dubbed "the law of diminishing marginal-physical-product." Thus we get: "the extra product or output added by one extra unit of that factor, while other factors are being held constant" (537 f.).

It seems appropriate to elaborate on our earlier critique of diminishing returns. First of all, as Lenin emphasized, added increments of labor and capital presuppose changes in the level of technology; in order to increase significantly the amount of capital invested in the land, for example, it is necessary to invent new machines, new systems of farming, etc. In comparatively small measures, added increments can come about without changing techniques; and in this sense the so-called law of diminishing returns would be valid—namely, that unchanged technical conditions allow for very narrow limits (relatively) to increments.[5]

For as we pointed out in Chapter 2, and as S verified for us, this so-called law abstracts from technological change.

This, as we shall soon see, is integral to J. B. Clark's argument.

Even within its own framework the so-called law doesn't do much in the way of explaining. Thus one of its major postulates holds that the increments taper off—that is, not that absolutely less is produced, but rather more is produced but the size of the additions diminishes. Let us look at the conditions under which this is supposed to take place. How are we to arrive at, say, an increased number of workers with the same amount of capital? We could of course assume that two workers rather than one will use the same saw; since only one is necessary, the productivity of each would decline. This is of course an extreme case; but in general, if we, as S & Co. do, attribute maximization drives to the capitalists, it is not clear why any machine would have fewer workers on it than is optimal. Any increase then in the number of workers should lead to a decline in each individual worker's productivity. If the number of workers previously hadn't been optimal, then we must assume that the capitalist wasn't behaving rationally.

J. B. Clark avoids this problem by assuming that the value of the capital goods remains unchanged, but that it changes its shape: "Capital . . . lives, as it were, by transmigration, taking itself out of one set of bodies and putting itself into another, again and again."[6] More specifically, Clark assumes that the given value of the capital goods remains unchanged but that the means of production are replaced by more, cheaper, and less efficient ones, so that the increased number of workers have enough machines, but that they are less efficient.

Under these circumstances it is not at all clear that what we will get would be a series of diminishing increments; in fact, it is very likely that we would get an *absolute* decline in the production of use values. That is, the increasing number of workers is not enough to compensate for the diminishing productivity. In any case, this is a quantitative problem which in the abstract is indeterminate and in no way represents a technological law.

Historically, an increased number of workers without a

concomitant increase of capital is a rarity. This is valid both for the situation of an unchanging organic composition of capital, and even more so for the case of an increasing organic composition, in which the number of workers declines relative to the constant capital, so that an increasing number of workers would be possible only where the physical volume of means of production increased even more rapidly.

In fact, the "law" of diminishing productivity is refuted by all possible variants of the relations between labor and capital: (1) with unchanged technique both factors can increase only simultaneously—labor productivity does not decrease; (2) with a rising level of technology the number of workers decreases relatively—labor productivity rises; (3) "only under the pathological 'variant' of lowering the level of technique can the number of workers grow with an unchanged capital, but even in this case the productivity of labor is not lowered as a result of the growth of the number of workers, but, just the reverse, the number of workers increases . . . as a result of the lowering of the productivity of labor."[7]

Having established the essentially shaky basis of the law of diminishing productivity, we can procede to J. B. Clark's theory, which, according to S, can show "how to allocate two (or more) cooperating factors among the total product they *jointly* produce" (589).

Clark wrote his major works during a critical juncture in the development of U.S. capitalism. His magnum opus appeared in 1899. The years 1898-1902 represent the high point in the monopolization process that began after the Civil War. And it was also the time of the Spanish-American War, the more or less official entry of the U.S. into the imperialist camp.

But let us listen to Clark himself:

> The welfare of the laboring classes depends on whether they get much or little; but their attitude toward other classes—and therefore the stability of the social state—depends chiefly on the question, whether the amount that they get, be it large or small, is what they produce. If they create a small amount of wealth and get the whole of it, they may not seek to re-

> volutionize society; but if it were to appear that they produce an ample amount and get only a part of it, many of them would become revolutionists, and all would have the right to do so. . . . If this charge were proved [exploitation—ML], every right-minded man should become a socialist; and his zeal in transforming the industrial system would then express and measure his sense of justice.[8]

Although Clark emphasizes the need to "enter the realm of production," his conception of production in capitalist society is something less than realistic: "Think of society as an isolated being, turning its collective energy to the making of one thing till it has enough of it and then making another . . . we find it doing what a solitary man would do under the influence of the law of diminishing utility."[9] And he expresses his essentially antiproduction standpoint clearly: "The man as a consumer is the owner of the man as a producer."[10]

So despite a veneer of production, Clark gives us the usual Crusoe-type harmonistic interpretations of capitalism.

Excursus on a Left-Wing Bourgeois View of the Factors of Production These remarks should not under any circumstances lead us to conclude that the main difference between capitalism and socialism or communism consists in income distribution.

The bourgeois economist Erich Preiser[10a] writes that the major defect of marginal productivity is its view of income distribution as determined primarily by natural and technical factors and its neglect of the social conditions which first explain the relative magnitude of the incomes flowing to the various social classes.[11]

In Chapter 51 of the third volume of *Capital* Marx speaks of a more critical bourgeois consciousness which admits the historical viability of the forms of distribution but clings firmly to the historically unchanging nature of production. He had in mind John Stuart Mill. Today we might compare Preiser to Clark; for the latter specifically claims to have discovered a "natural law" controlling the distribution of income "of society."[12]

But although Preiser critically offers the notion of private property in the means of production without which the personal agents would receive no income, what he is really saying is that given this private property, the production-factor theory is basically correct. In a socialist society the same factors would be at work, but, since there is no private ownership of the means of production, income would be centrally redistributed. In other words, these distributional free spirits as Marx points out, ban history from production, whereby behind our backs bourgeois relations are assumed as eternal laws of nature of society in abstracto.

The point is that neither in capitalism nor in socialism can one ignore that production determines distribution, and that since production relations change historically, distribution relations do as well. If there were no difference in the production relations between capitalism and socialism, it would be difficult to understand why the distribution relations should be different.

The change in property relations from capitalism to socialism mentioned by Preiser is not enough. Here we get an analogy of sorts with piracy or plunder: capital(ism) continues to reproduce itself, but some bad guys come and take the produce as a tribute (whereby they may act like Robin Hoods).

Regardless: land, labor, and capital continue to produce a specifically identifiable and imputable *value*; the manner of its distribution is another (nonnatural) matter.

Thus reads this theory in its enlightened version. But we know that in capitalism only labor creates value. Here we have the confusion of the simple labor process with a specific societal production process as well as the confusion of the *sources* of production and distribution.

Once labor has been confused with wage labor, the product of labor with wages, and the value created by labor with the value component represented by wages, "the other value components, profit and rent, appear over against wages just as autonomously and must result from sources specifically different from and independent of labor."[13]

Marx admits that the ownership of labor power, capital, and land *causes* the various value components to fall to the share of the owners of these factors and transforms them into revenues for these owners. Is Marx merely saying what Preiser said? No—because Marx calls the existence of revenue as being value-creating a *semblance*. The point of the entire seventh section of the third volume of *Capital* (as well as of the chapters on wages in the first volume) is the mediation of this semblance with the essential production relations of the capitalist mode of production.

Thus Preiser cannot fulfill his promise to supply the social conditions which explain why "an economic subject receives income altogether," because he himself, like Clark, conceives of the autonomization of the means of production over against the worker as a property inherent in the former as objects, as a characteristic immanent in the means of production as such.

In other words, the rational kernel of Preiser's approach is that the class monopolization of the means of production enables the capitalist class to appropriate (to get distributed to itself) the product of the surplus labor. The quantitative extent of surplus labor is increased under the capitalist mode of production; by this we mean that part of exploitation consists not only in the fact that nonworkers function as representatives of general social needs, but also in the fact that the quantitative determination of necessary labor is depressed below what it would be in a socialist society. For example, in a post capitalist society the direct producers would individually consume a larger portion of what they produce—they would eat better, would have better clothes, dwellings, etc.

What Preiser & Co. do not understand is that when Marx says that it is private ownership of the Trinity that causes the various value components to fall to their owners, this is in a sense a tautology, inasmuch as these value components represent production relations which presuppose or imply private ownership. Marx is *not* saying that the value components are there, and that it is merely the private ownership that causes them to fall to different classes. The

two are merely two sides of the same expression of the relations of production.

THE MATERIALISTIC BASIS OF CLARK'S THEORY

Let us now turn to a more detailed analysis of how Clark goes about "unscrambling the separate contributions."

We have noted some of the more important developments which took place during Clark's creative years. We must add one more: the new wave of intensification and "rationalization" of the capitalist labor process that began about that time. In the 1880s meat factories introduced assembly-line production; in 1884, the first business-management school opened at Wharton. And also at that time Frederick Winslow Taylor started his experiments to increase labor productivity "scientifically."

Since Clark experienced only the beginnings of this process, his theory is flawed by an essential ambiguity, or rather by two self-contradictory views: the first, or primitive, view, from the standpoint of the calculating entrepreneur whose factory apparatus consists nonuniformly of modern and overaged machines; and the second, or progressive view, which reflects the development of assembly-line production. Since Clark did not foresee the enormous technological development, he arrived at the law of diminishing marginal productivity.

CLARK'S FIRST, OR PRIMITIVE, THEORY

Under the conditions outlined above, Clark's theory of additional workers being hired to tend the same amount of capital in different but less efficient form becomes understandable. Having established the background against which Clark's theory must be seen, let us procede to his search for a case "in advanced society" in which labor gets its entire product. For, "If there are marginal laborers, in the sense in which there are marginal quantities of wheat, cotton, iron, etc., then these final or marginal men are likewise in a strategic position; for their products set the standard of every one's wage."[14] Clark conjectures that there is no point in searching for a "rude state" where men

have "not capital enough to complicate the problem of wages."[15] The fact that he has no qualms about speaking of wages in a society in which there is no capital would indicate that he has some difficulty in grasping the essence of capitalism. And in fact the entire marginal-productivity theory is characterized by a confusion of simple commodity producers who after completing production own the result and capitalist wage labor.

Clark believes he has found men who have masters but need share nothing with them:

> There are mills and furnaces so antiquated . . . that their owners get nothing from them; and yet they run, so long as superintendents can earn their salaries and ordinary workers their natural wages. There are machines that have outlived their usefulness to their owners, but still do their work and give the entire product that they help create to the men who operate them. . . . Everywhere, in indefinite variety and extent, are no-rent instruments; and if labor uses them, it gets the entire product of the operation. . . . So long as an *entrepreneur* can keep such an instrument in his service, and gain anything whatever by so doing, he will keep it. When he loses something by its presence, he will abandon it.[16]

Thus in order to find a wage worker who gets the entire product he produces, Clark selects one who works with machines that are already completely amortized. This being so, Clark reasons, no interest need be reckoned for this machine and deducted from the value of the remaining commodities produced with its aid.

Here we must interject that Clark assumes a static situation—that is, one in which there is only interest and no profit. But Clark's concepts of interest and profit are more akin to those of profit and extra profit respectively, the latter being a temporary gain. His confusion on this matter (which is now more or less accepted by all bourgeois economists including S) was probably conditioned by the enormous growth of trusts and fictitious capital in his time.

To return to Clark's worn-out machines: even within the bourgeois framework it ought to be clear that despite the

(probably fictitious) lack of fixed capital, the capitalist still has to make expenditures on circulating capital. The bourgeois concept of "working" capital does not include Marx's variable capital (i.e., wages), but it does include raw materials (also finished goods and warehoused goods). Thus "interest" would still have to be made on the circulating capital, for as Paul Douglas states, "working capital of course normally 'produces' value for its owner"[16]—unless Clark wishes to make the absurd assumption that this production process takes place without raw materials.

To summarize Clark's primitive view: he has constructed a superficial parallel to the theory of rent; on the "macro" level additional workers can be employed only on worn-out machines (in the rent theory this would be equivalent to the worst land) or on already fully utilized machinery. This construct leads to the notion of diminishing marginal productivity.

CLARK'S SECOND, OR MORE PROGRESSIVE, THEORY

Later in his book Clark admits that the margin of employment offered by an existing particular stock capital goods is but a fraction of what could be offered by the same amount of capital in a different physical form.[17] As mentioned above, Clark assumes that the new capital will be cheaper and less efficient. On this basis he erects his second, or more progressive, view.

Here he pictures an "isolated community" with a 100 million of capital and a thousand workers. Now he adds a second group of one thousand workers. In order to accommodate them, the capital structure (with the value remaining constant) must be altered; thus each worker now operates with only $50,000 of capital instead of the earlier $100,000. Thus the productivity of *all* the workers diminishes.

Then Clark proceeds to calculate:

> The product that can be attributed to this second increment of labor is, of course, not all that it creates by *the aid of the capital that the earlier division of workers has surrendered to it*; it is only

> what its presence adds to the product previously created. With a thousand workers using the whole capital, the product was four units of value; with two thousand, it is four plus; and the plus quantity, whatever it is, measures the product that is attributable to the second increment of labor only. There is a minus quantity to be taken into account in calculating the product that is attributable to the final unit of labor. If we take, first, all that it creates by the aid of the capital that is surrendered to it, and then deduct what is taken from the product of the earlier workers and their capital by reason of the share of capital that they surrender to the new workers, we shall have the net addition that the new workers make to the product of industry. . . . Two facts are now clear . . . (1) The difference between what the first division of workers created by the use of the whole capital and what they now create is an amount that is solely attributable to the extra capital which they formerly had. (2) The difference between what one increment of labor produced, when it used the whole of the capital, and what two increments are now producing, by the aid of that same amount of capital, is attributable solely to the second increment of labor.[18]

Extremely important changes have obviously taken place in this second view. First, all workers are equally productive because the apparatus has been adapted to the increased labor supply. Secondly, as a result the notion of the marginal product itself disappears: the value of the marginal labor is no longer equal to the marginal product created by it, for the marginal product is equivalent to the product of any unit. The value of the marginal labor equals the difference between the present and the previous product.

In any event, Clark is faced with this dilemma: if the productivity of all workers is not equal, then "interest" must obviously result from exploitation of the nonmarginal workers who receive the wage resulting from the lowest productivity of the marginal workers; if on the other hand the productivity of all workers is equal, then it becomes impossible for Clark to explain the existence of "interest" as a residue.

Although the second view destroys the primitive notion of the indifference zone and the stability of the capital

structure, it is self-contradictory; for although it recognizes the technological adaptability of the capital structure, it denies technological progress by insisting upon replacing good equipment with worse. The "law" of diminishing marginal productivity does not flow from this conception, but rather is imposed upon it.

The absurdity of this version can be seen on the "micro" level: if, during the transition to mass production along assembly-line methods (which is the process the second version reflects) the capitalists were to replace their machinery with inferior models, they would be destroyed by their competitors.

THE CONNECTION BETWEEN CLARK AND MODERN PRESENTATIONS

As will be noted S (537-40) sticks to the primitive version Clark developed. This is only natural since Clark's diagrams also applied this version. S admits that rent (or interest) is a residue resulting from the fact that the non-marginal workers do not receive the products they produce. In other words, S here avoids developing a theory of capital productivity. On the other hand, he finds it necessary to exonerate the landowner (or entrepreneur) from the charge of "profiteering" in the usual sense of the word" (whatever that is): "Whether fair or unfair, all men are alike; all landlords are free competitors who can demand or not demand as they like; so it is inevitable that all the workers get paid the MP of the last worker" (540). This boils down to the following: (1) capitalists can "demand" the difference between the products of the least efficient worker and those of all other workers because they have a monopoly on the means of production; (2) if there is a consumer's surplus equivalent to the difference between the price one is willing to pay and that which one actually pays, there is a producer's surplus equal to the difference between what one is willing to pay a worker and what one is willing to force the worker to be willing to produce.

S claims that marginal-productivity determination of

wages flows from the rules of free competition, but as Crosser points out, this notion appears to belong to the feudal era. And contrary to S's assertion that Ricardo would have acknowledged Clark's advance beyond him and seen Clark's scheme as agreeing with his own theory of rent (541), it must be pointed out that classical rent theory took as its point of departure given wages and profits and determined rent as the remainder, whereas marginal productivity can only lead to optimal-factor maximization when factor prices are assumed as given, even though Clark's theory is supposed to explain these prices.

Significantly, in the first edition of his textbook S admitted this latter point; he emphasized that marginal productivity "is not a theory that explains wages, rents, or interest; on the contrary, it simply explains how factors of production are hired by the firm, once their prices are known" (526). Beyond this he asserts that "the problem of distributing social product by identification of factor shares" is a "false" one (528).

One element in Clark's theory of distribution is that of imputation. This theory is supposed to tell us how large the contribution of each factor is. Notice: this is not at all what the first element was supposed to do. Nevertheless Clark is under the delusion that the theory of marginal productivity and that of specific productivity (or imputation) coincide or answer the same question. But this is patently false; for the maximum "demand price" is a determinate magnitude, whereas factor contributions to value production are not. By determining specific productivity as the product of marginal productivity times the number of units of the factor, Clark arrives at the coincidence of the demand price of a given quantity of labor (power) and its absolute productivity. There is no exploitation.

As we see, the Clarkian theory of distribution rests upon two contradictory principles: the theory of marginal productivity implies that labor productivity depends on the relation between labor and capital, and that, therefore, it depends on the quantity of capital it works with; the theory of specific productivity on the other hand assumes that labor productivity is solely dependent on the character

(quality) of labor, and is, therefore, the same for different units of labor.

It is not clear why the obviously more apologetic second version has been largely dropped by contemporary bourgeois economists, especially in light of the fact that they are at least as interested in defending capitalism as was Clark.