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Rejoinder to an Antimarginalist

In his note[1] Professor Lester replies to certain critical comments which I made in a recent article[2] on antimarginalist prejudices and misunderstandings of the type exhibited by him.[3] I avail myself of the traditional right of rejoinder.

I begin with a concession. I readily concede to Professor Lester that I did not know whether he had asked his questions of Southern industrialists on one sheet of paper or on separate sheets; at one time or at different times. Thus I spoke of each of three sets of questions as a "questionnaire." Now I learn that they were "parts of one questionnaire" (although there had been

[1] "Marginalism, Minimum Wages, and Labor Markets," pp. 135–48 above. Cited hereafter as "Marginalism."

[2] "Marginal Analysis and Empirical Research," *Amer. Econ. Rev.*, Vol. XXXVI (Sept., 1946), pp. 519–554.

[3] "Shortcomings of Marginal Analysis for Wage-Employment Problems," *Amer. Econ. Rev.* Vol. XXXVI (Mar., 1946), pp. 63–82. Cited hereafter as "Shortcomings."

"two questionnaires").[4] I wonder what difference that makes. The inconsistencies between the answers to Professor Lester's questions on employment and adjustments are neither eliminated nor explained but rather emphasized by the fact that they were given in response to "one" questionnaire.[5]

I am sorry that with all the expository efforts invested in my article I did not succeed in making clear to Professor Lester what marginal analysis means and what it does not mean. Had I succeeded, he could not have reiterated several statements of his earlier article.

It would be wasteful of time and space if I countered reiteration with reiteration. It may be desirable, however, to restate the issues concisely in the order of the "tentative conclusions' 'which Professor Lester enumerated at the end of his earlier article.

1. "*Market demand is far more important than wage rates in determining a firm's volume of employment.*"[6] If "important" means that market demand is a more *variable* variable than wage rates in the determination of employment, Professor Lester is absolutely right and I know of no one who has ever said anything to the contrary.[7] Economists cannot but be aware of the fact that market demand (orders, sales, sales expectations) is subject to seasonal and cyclical variations while wage rates are usually settled by contract for specific periods such as a year; and that market demand may be halved or doubled in these fluctuations while wage rate variations of as much as 20 per cent in one year are an extraordinary occurrence (except in countries with heavy inflation). Hence, there is absolutely no argument about the fact that "variations in the total volume of employment in a modern manufacturing plant already constructed are primarily the result of actual and anticipated changes in the volume of sales or orders for the products of the plant."[8] Professor Lester makes it appear as if this were *his* "position" and as if it were inconsistent with marginal productivity theory. In fact, sales expectations are an integral part of marginal productivity, as I explained patiently in my article.

2. "*Most manufacturing concerns apparently are considered by their executives to be operating at decreasing unit variable costs all along the scale between 70 and 100 per cent of plant capacity. Consequently, it is seldom practical for a firm to curtail output (and, therefore, employment) simply in response to an increase in wage rates.*"[9] Decreasing unit variable costs have always been

[4] Marginalism," p. 137.

[5] "Marginalism," p. 137. On the basis of one set of questions Professor Lester had concluded that substitution between labor and machinery is rare; on the other set of questions he had reported that in firms with high labor costs the introduction of labor-saving machinery was the most important form of adjustment to increased wage rates. Instead of explaining the contradiction, Professor Lester now declares that my mistake of thinking of separate questionnaires instead of only one "may help to explain why so much of [my] criticism miscarries."

[6] "Shortcomings," p. 81.

[7] If "important" should mean that demand is in some sense a more fundamental variable, the statement would be meaningless. The significance of the concept of demand for the product of a single firm lies in the juxtaposition to costs.

[8] "Marginalism," p. 138.

[9] "Shortcomings," p. 81.

included among the possible assumptions for marginal analysis; their effects neither contradict nor qualify any of the general propositions of marginal productivity theory. That certain manufacturing industries operate under decreasing unit variable costs has been assumed in conventional theory. Professor Lester states that "consequently" output reductions in response to wage rate increases are "seldom practical." This is a *non-sequitur*, and no amount of reiteration can make it a correct inference. To be sure, manufacturing firms may not "curtail output" in *direct* response to wage increases; they are more likely to raise selling prices, which in a given market situation will reduce sales—so that it would be the sales volume rather than the wage level that appears as the "direct" cause of any output reductions. (In this case the reduced sales volume is, of course, not a reduced demand in the sense of conventional terminology.)

3. "*In modern manufacturing, a firm's level of costs per unit of product is influenced considerably by its scale of output; the reverse, as assumed by conventional marginalism, is not generally true.*"[10] "Costs" may mean either a series of points on a curve or the level of the whole curve. It is not clear which "cost" Professor Lester has in mind when he says that the "reverse" —that is, output influenced by cost—is not generally true. His statement may mean at least three things. If it is to mean that the volume of output produced by the firm is usually not influenced by the shape of the cost curve, it is clearly incorrect, or producers would in good times produce far above "capacity" and might in slack times curtail output even more than they do. If it is to mean that there are situations in which a change in the level of the cost curve need not result in a change in output, it is a correct statement; indeed such situations, far from being inconsistent with marginal analysis, can be most conveniently described by it. If, finally, it is to mean that changes in the cost level will *usually* be without influence upon output, then the statement is not supported by any evidence and should be considered as false until such evidence is furnished.

4. "*For many manufacturing concerns it is not feasible, or would prove too costly, to shift the proportion of productive factors in response to current changes in wages, in the manner suggested by marginal analysis.*"[11] If "current" is to suggest "immediacy," there is nothing wrong with this statement, except the last clause. Marginal analysis of the general equilibrium has often assumed absence of substitutability between factors in a given plant. This assumption of fixed coefficients of production was made for the sake of simplicity. In reality the elasticity of technical substitution is probably much greater than most "marginalists" have assumed. To be sure, a continuous, gradually sloping, short-run marginal productivity curve for a productive factor employed in a single firm implies a considerable elasticity of substitution between factors, but not a greater one than that which Professor Lester confirms as existing when he permits variations in the utilization of plant capacity between 70 and 100 per cent. Substitution between

[10] *Loc. cit.*

[11] "Shortcomings," p. 82.

capital and labor does not have to take the form of changes in the machinery of the plant; marginal productivity curves may be relatively elastic over certain ranges without any such variability of equipment. It goes without saying that there is much more substitution in the long run than in the short run.

5. *"The practical problems involved in applying marginal analysis to the multi-process operations of a modern plant seem insuperable, and business executives rightly consider marginalism impractical as an operating principle in such manufacturing establishments."*[12] This is a misunderstanding of the meaning of marginalism. Professor Lester relied on the ability of his industrialists to know their "unit variable cost" at various scales of output. Yet, calculations of unit costs, in a single-process plant as well as in a multi-process plant, are much more complicated than estimates of marginal cost. Incremental costs and revenues can be known without any knowledge of average costs and revenues; the reverse is not true. (For example, one may know the *additional* expenses caused by increases in output without bothering to allocate and calculate the *total* expenses before or after the increase. Those totals are needed for a calculation of averages; of course, whenever the totals are known the differences between the totals are given implicitly. In cases of joint products—multi-product plants—incremental (marginal) cost is the only cost that is separable and determinate.)

6. *"Of the three adjustments stressed by business executives to meet a rise in wages relative to those paid by competitors, two—better management practices and increased sales efforts—are neglected by conventional marginalism; whereas the adjustment stressed by marginalism—curtailment of output—is considered so unimportant and exceptional as to be mentioned in only one out of every 11 replies."*[13] Professor Lester refers here to an item in his questionnaire in which the respondent business man should state that he would "reduce production by deliberately curtailing output." Such wicked conduct Professor Lester represents as the one "adjustment stressed by marginalism." As if marginalist theorists had never said anything about adjustments through higher selling price, greater selling efforts, changes in quality and type of product, different production methods, substitution between factors, etc. Professor Lester, however, adds this to his last conclusion: *"Indeed, experience seems to indicate that, on an individual-firm basis, the adjustments considered important by the business executives may, at times, even result in larger firm employment at a higher wage level."*[14] No marginalist theorist will deny that this ("at times") is a *possibility.* But in order to justify putting it as the final proposition in a set of conclusions supposedly "drawn from the data contained" in his study, Professor Lester should have offered some support for the *probability* of the occurrence. Yet, he has furnished not even the thinnest scrap of evidence, not the vaguest suggestion of plausible reasons in support of the proposition.

[12] *Loc. cit.*

[13] *Loc. cit.*

[14] *Loc. cit.*

I have the impression that Professor Lester is fighting against marginal productivity theory chiefly because it appears to establish a presumption that changes of wage rates result in inverse changes of employment in the single firm. I must say that there is nowhere an explicit statement to that effect, neither in his earlier article nor in his present communication, and I must beg his pardon if my impression is incorrect. But Professor Lester repeatedly refers to "cases" in which increased wage rates need not result in reduced employment and may result or did result in increased employment. (Unfortunately, he does not bother to say whether the demand for the product was unchanged in these cases. But he does not hesitate to refer to experiences between 1939 and 1941—defense boom!—to support his argument.) If my impression about the chief aim of the attack is correct, Professor Lester could have served his purpose by showing under what conditions the presumption would not hold and by proving that such conditions actually prevail in a number of industries. Instead, he set out to fight against "marginal analysis" in general and to prove *its* "shortcomings." Yet, of his six "tentative conclusions" the first four are perfectly consistent with marginal analysis, and the sixth—at least in the cautious way in which it is formulated—is not inconsistent with it. Only the fifth proposition—that marginalism is "impractical"—would, if true, contradict marginalist theory of business conduct (or at least one of its interpretations).

What is Professor Lester's alternative theory of business conduct and employment? I take it that Professor Lester does not accept the anti-marginalist "full-cost" theory of pricing which was advanced by Hall and Hitch.[15] This theory would suit the purpose of proving insensitiveness of the firm's output to wage increases much worse than marginal analysis; it holds that wage increases as a rule are shifted forward in full to the consumer—which would reduce output by more than the marginal principle usually calls for.

According to marginal productivity theory employment depends on several variables: anticipated selling prices and sales quantities with their potential variations; technological possibilities; conditions of supply of complementary and substitutable factors; and conditions of supply of the factor in question. Is it perhaps Professor Lester's theory of employment in the individual firm that of the several variables considered by marginal productivity theory only one counts, namely, the demand for the product? This interpretation is suggested by the fact that his proposition on the importance of market demand is reiterated several times in his foregoing note. He varies the formulation of the proposition by the use of the modifiers "primarily," "generally," "simply," "independently." Thus, after having emphasized the primacy of selling possibilities in the determination of employment—see the sentence quoted above with Professor Lester's first conclusion—and after minimizing the importance of the principle of maximizing business profits, he says that "*on the contrary*, the volume of output and employment in the individual firm *generally* varies *simply* and directly with

[15] R. L. Hall and C. J. Hitch, "Price Theory and Business Behavior," *Oxford Econ. Papers*, Vol. 2 (1939).

the volume of present and prospective demand for products of the plant."[16] And again: "The existing and expected volume of product sales appears to be a factor in firm employment that operates *independent* of the principle of equating its marginal net revenue productivity and marginal labor cost."[17] If this were all, the difference between Professor Lester and the marginal productivity theorists would boil down to the question whether or not it is true that employers take account of anything besides the selling possibilities for their wares. Professor Lester, guarded by a few adverbs, denies it. Marginal productivity theorists believe that other variables count too, although in certain well-defined situations one or another variable may be neutralized.

Professor Lester tries to show why these other variables are of no importance. His favorite point, that conditions of "declining unit variable costs up to 100 per cent capacity"[18] somehow interfere with the operation of the marginal principle, is untenable. Another of his points concerns cases where "product prices and demand elasticities remain unchanged with variations in actual or anticipated demand."[19] We know several cases in the theory of imperfect competition in which selling prices remain unchanged in spite of changes in demand. Perhaps Professor Lester thinks of the case of tacitly fixed prices under oligopoly in which the sales curve breaks off at the volume of sales expected at the given price. (Since under the oligopolistic conditions price reductions are regarded as impractical, there is no practical possibility of expanding sales.) We all have learned that in such a case the marginal revenue curve exhibits a vertical drop. If there should also be no possibility of technical substitution for labor, the marginal productivity curve will, of course, reflect that condition and have the vertical range over which changes in wage rates (or marginal labor cost) are without any effect upon employment in the firm. This is nothing new to the marginalist. Does Professor Lester wish to regard it as the "general theory" of employment in the firm? To me it is a special case.[20]

Other points brought up by Professor Lester refer to the cost of changing the size of the work force. To reduce employment may be costly for several reasons: deteriorated "morale of the remaining workers"; possible slowdowns; increased "employer's tax rate under experience rating in unem-

[16] "Marginalism," p. 138. Emphasis supplied.

[17] "Marginalism," p. 148. Emphasis supplied.

[18] "Marginalism," p. 138.

[19] *Loc. cit.*

[20] The vertical range in the marginal productivity curve of labor employed in the firm will make the firm insensitive to changes in the wage rate *only if these changes are confined to that firm*. If the competitors of the firm must pay the same or similar wage increases, the situation is altogether different: the oligopolistic sales curves will shift because each producer is apt to expect his competitors to follow suit when he raises his selling price in line with the increased production cost; hence, the "break" of the "imagined demand curve" will occur at a higher price; but at this increased price the physical sales volume will be smaller, and employment will have to be reduced. Propositions about oligopoly situations making selling prices inflexible and employment in the firm insensitive to increased cost must not be generalized: they are not likely to hold when the costs of competing producers are also increased.

ployment compensation," etc. Every "marginalist" will agree with Professor Lester that "such factors . . . must be taken into account in discussing employment adjustments to wage changes."[21] (Are there, after all, "employment adjustments to wage changes"? Does then employment vary also on account of other things than demand? If Professor Lester grants all this, what is left of his case against marginal productivity theory?) Professor Lester is mistaken in thinking that to take account of such matters is "troublesome to a marginalist." No trouble at all. The cost of changing the work force is one of the causes—besides the smaller elasticity of the short-run sales curve and the difficulties of certain types of technical substitution—why marginal productivity curves are less elastic in the short run than in the long run. (Or, if one prefers to look at change-over costs of this sort as part of the conditions of labor supply, they will make the marginal factor cost curve less elastic in the short run than in the long run.) The "mental ruts of the marginalists"[22] are equipped to take care of all the economic considerations which Professor Lester has mentioned as factors in business decisions. This makes marginal analysis less simple but more revealing than a theory which tries to explain the volume of employment in the firm solely with reference to its sales possibilities.

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[21] "Marginalism," p. 147.

[22] "Marginalism," p. 148.

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