The Real Wage And The Marginal Product of Labor

by

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The opening section of the Summer 1987 issue of the Journal of Post Keynesian Economics contained a symposium on the question of the significance of the concept of the marginal productivity of labor to Post Keynesian economics. This took the form of a discussion surrounding John Maynard Keynes's statement that his theory of employment in Chapter Two of the General Theory did not reject "the first classical postulate" of equality between the real wage and the marginal product of labor. Though there were a number of interesting points raised and insights made, the discussion was hardly conclusive. I would like to add another intervention on the subject.

I begin by noting Paul Wells's (1987) discussion, which I think very clearly points out the first and perhaps most important divergence of Keynes's theory from the neoclassical theory of employment. That is, Keynes's acceptance of the proposition that the real wage is equal to the marginal product of labor should not be taken as Keynes's saying that the level of employment is determined by the real wage, at that level where the real wage equals the marginal product of labor. Rather, Wells notes, for Keynes the level of employment is determined by the level of effective demand. Given "perfect" competition, at the point at which the level of employment rests, which point is uniquely determined by the level of effective demand (as long as we are below full employment) and not by anything else, the real wage will happen to be equal to the marginal product of labor.

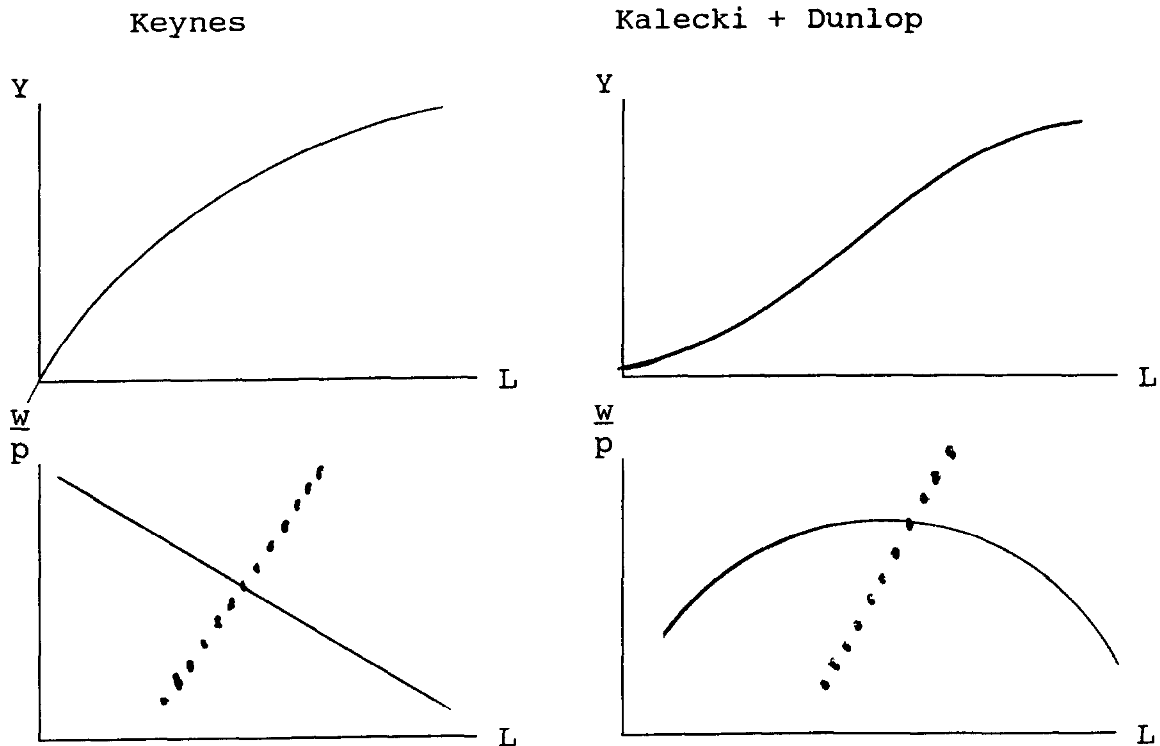
What then is problematic about Keynes's discussion of the matter? I believe that the other important issues raised in the JPKE symposium can be summarized under the following four headings: (1) the incorrectness of the inverse relation between real wages and employment posited by Keynes, (2) the issue of the nature of competition in a capitalist economy, (3) the question of whether the logic of the critique of the notion of a marginal product of capital applies to the notion of a marginal product of labor, and (4) the question of the appropriateness of differing conceptions of equilibrium in determining the level of employment.

Real Wages and Employment

Problem (1) was confronted by Keynes himself. In the General Theory Keynes (1964 [1936], pp. 9-10, 17-18) postulated that real wages would normally fall with increased employment in the short period. This hypothesis was due to Keynes's acceptance of the notion of diminishing returns to increments of labor with a given capital stock. Subsequently Keynes (1939) acknowledged in response to evidence gathered by John Dunlop (1938) and Lorie Tarshis (1939) that movements in the real wage were more often procyclical than countercyclical. Dunlop's explanation of the evidence relied, following points set forth by Michal Kalecki (1938), on the absence of rising marginal cost until near the peak of a boom and on the countercyclical behavior of the "degree of monopoly." He added to Kalecki's story procyclical movements in labor productivity due to more efficient working of existing capacity and to the increasing installation of newer, better equipment in the cycle upswing.

Kalecki's (1938, 1971, pp. 62-77) own analysis ignored this procyclicality of productivity and added the countervailing factor of rises and falls of the prices of raw materials with the cycle. He thus surmised that the approximate constancy of the share of wages in national income in the U.S. and Great Britain should be explained by offsets between the countercyclicality of the degree of monopoly and the procyclicality of the rise in (imported) materials prices relative to money wages.

Diagrammatically Keynes's General Theory view of the relation among employment, output, and real wages *versus* Kalecki plus Dunlop should look roughly as follows:



For Keynes we have a quadratic relation[1] between output (Y) and employment (L), showing diminishing returns in output to increasing employment of labor with a given capital stock. This then gives us a downward-sloping linear marginal product of labor curve, which under perfect competition in the labor market and the diminishing marginal productivity of labor, will furnish the relation between the real wage (w/p) and employment in the short period and would be the demand curve for labor in the standard neoclassical story. Keynes's alteration of the standard neoclassical story about this was to remove any effect of the supply of labor on real wages and employment below full employment. Workers bargain for a money wage, and there is thus no way for them to achieve a real wage equal to the marginal disutility of employment (Keynes, 1964 [1936], Chap. 2)[2] Whatever happens to

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[1]The relations here drawn between Y and L should properly not be thought of as "production functions" but as "utilization functions" (see Joan Robinson, 1975 [1965], p. 42), giving output produced with varying utilization of a given capital stock. It is true that the Keynes diagram exhibits the properties (like diminishing returns to the increase of labor given capital) associated with the notion of a neoclassical production function, but we are not in the neoclassical long run where given amounts of capital and labor can be adjusted to one another by changing techniques as if one could remold the capital like putty. Are we in a neoclassical short-run (if such a thing exists)? That is the issue the critics have felt troubled about in examining Keynes's formulation.

[2]In Chapter Nineteen of the <u>General Theory</u> Keynes dealt with the effect of changes in money wages on employment and argued that the only beneficial effect from workers' willingness to lower money wages on employment would be if lower money wages by leading to lower prices (the real wage again determined solely by productivity) would increase the real quantity of money and so lower the rate of interest and increase aggregate demand. Keynes didn't see much to hope for in this. See also Kalecki (1944), Frank Hahn (1965), and James Tobin (1980), among others, for

money wages, real wages will be determined by productivity and the degree of competition. Thus we draw a dotted line or shadow curve for labor supply to indicate that its relevance is only to indicate the point of full employment, that point at which workers who can't find work fail to find it because their real wage demands are too high and so are "voluntarily unemployed."[3] Up to that point employment and real wages are solely demand-determined, and so unemployment is "involuntary." Over longer periods of time with additions to the capital stock which increase the productivity of labor real wages will rise. If the capital stock remains unchanged over the business cycle, and so cyclical movements in employment represent only changes in utilization, diminishing marginal productivity of labor and perfect competition mean that, no matter what is going on with money wages, real wages must move countercyclically.[4]

For Kalecki plus Dunlop I suggest a cubic, or third-degree polynomial, relation between output and labor employed with a given

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arguments against deflation as a means of increasing employment.

[3]What shape the labor supply curve has and what happens to real wages above full employment I do not venture to speculate upon at this time.

[4]Paul Davidson (1983a, 1983b) has argued that the marginal product of labor curve is not the demand curve for labor, but his argument really amounts to no different from what is presented here (and argues against some incorrect expositions of Keynes's labor market theory), since he argues that aggregate effective demand determines the demand for labor and the marginal product determines the real wage. He is arguing against the view that <u>shifts</u> in the marginal product curve cause shifts in the demand for labor but not against the view presented here that shifts in aggregate demand cause <u>movements along</u> the marginal product curve.

stock of capital. Here labor's product increases with employment at an increasing rate up to the point of optimal utilization of existing capacity (the inflection point in the diagram) and beyond at a decreasing rate.[5] If Y is a third-degree function of L, $\partial Y/\partial L$ will be a second-degree polynomial with its maximum Y at the value of L coincident with the inflection point in the third-degree function. With no influence from supply of labor considerations, following Keynes's argument, the real wage now will move procyclically as long as the relevant range of movement is to the left of the inflection point.[6] A vigorous upswing carrying aggregate demand and so production beyond the optimal point of capacity utilization would drive real wages down, though such a strong expansion might also enter a period of labor shortages, in which assuming away labor supply influences might not be valid.

Keynes (1939, p.50) noted that Dunlop's and Tarshis's evidence actually strengthened his argument that employment is determined by demand, since it eliminated any need for real wages to fall to get an increase in employment. The notion that output is not limited by diminishing returns to the use of scarce factors is

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[5]Kalecki's view by itself should probably be graphed as a straight line relating Y to L up to the point of full capacity working. Kalecki's graph of w/p against L should be a horizontal line, though in his view this is not due merely to a noncyclicality of productivity but also to a countercyclicality of mark-ups offset by a procyclicality of imported materials prices.

[6]Again, Dunlop's argument for the procyclicality of w/p is not only due to procyclical productivity with unchanged capacity but also to adding more efficient capacity in the upswing and to countercyclical mark-ups (following Kalecki).

moreover a problem for neoclassical economics.

Over the intervening years many empirical studies of the behavior of real wages and productivity over the business cycle have been undertaken. The conclusion that productivity is procyclical has been widely accepted, but the evidence on real wages has been mixed. (See, for example, Arthur Okun, 1981, p. 16, and Jonathan Michie, 1987, pp. 32-56.) Mark Bils (1985), following Alan Stockman (1983), has argued that aggregate data may bias studies of the cyclical behavior of real wages in the countercyclical direction due to the omission of those who have lost their jobs in downturns, since these may be lower wage earners than the average of the population. Bils (1985) and Michie (1987, pp. 99-110) report some procyclical real wage results on disaggregate data, though both allow that their results may be simply unique to a particular place and time. Michie (1987, p. 2) specifically concludes from his survey of the literature and his own regression analysis of the cyclical behavior of wages in six OECD countries from 1950 to 1982 "that there is no evidence of a systematic empirical regularity in the cyclical pattern of wage movements."

Robert Hall (1986) has argued that much of the accepted procyclicality of productivity could be explained by the existence of imperfect competition, given the way changes in productivity are derived. For example, in work like that of Robert Solow (1957), productivity changes are defined to be the residual resulting when regressing changes in output on changes in employment multiplied

by labor's share in national income assuming perfect competition. And indeed, Bils (1987) has presented a study recently that agrees with Kalecki's view on the matter presented above, i.e., that we have not so much procyclical productivity but rather countercyclical mark-ups.[7]

If we want to believe in the procyclicality of productivity as the quantity of labor employed varies relative to a given stock of capital, there are a few supportive stories we can tell. Of course overhead labor is being used on a higher level of utilized capital, but it is the higher productivity of direct labor, which varies over the cycle, that we have to explain. Dunlop's story, as mentioned above, works by a combination of some additions of more technologically efficient capital coming on stream in the cycle upturn (which would shift the curve relating Y to L up) and of some hoarding and otherwise less efficient use of direct labor in the downturn so that even direct labor is given more or less better-utilized equipment to work with as the cycle expands and contracts (which justifies the shape of the curve). A recent survey of this matter and some further supportive evidence can be found in Jon Fay and James Medoff (1985). Hall (1986) has pointed

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[7]If we have procyclical productivity or countercyclical mark-ups, why have researchers not found invariably procyclical real wages? Apart from the aggregation bias in the data mentioned above, if the movements in productivity or mark-ups are not pronounced, changes in import prices can swamp the movements of the other factors affecting the real wage. Perhaps this is why in Michie's (1987) study, the United States (the least open of the six countries examined) displayed the most procyclicality of real wages.

out that this and all stories supporting the procyclicality of productivity necessitate as well the existence of imperfect competition.

In any event, the procyclicality of real wages and/or labor productivity goes quite well with a theory that sees demand as creating supply, rather than the other way around. Keynes's idea that the real wage is equal to the marginal product of labor then need have not only no conflict with the determination of employment by aggregate demand but also no conflict with a positive relation between employment and the real wage, other than the problem that we are about to discuss under issue (2)--the nature of competition--that such behavior is not compatible with perfect competition.

The Nature of Competition

It is only under perfect competition that the real wage will equal the marginal product of labor. If there is a positive degree of monopoly, of course the real wage will be below the marginal product of labor. As was noted by Jan Kregel (1987) and by Michael Lawlor, William Darity, and Bobbie Horn (1987) in the JPKE symposium, Keynes wanted to assume perfect competition so that his theory would be clearly seen as a theory of employment based on effective demand and not on imperfect competition. After all, unemployment of labor and underutilization of capital are quite compatible with imperfect competition in the theory Keynes was arguing against.

It is worthwhile to establish a logical separation of the theory of effective demand from the degree of competition, but for

those of us who take "perfect" competition to be a limiting, exceptional case of a "degree" of competition, or monopoly, the degree of monopoly will drive a wedge between the product of labor and the real wage. The marginal product of labor thus will equal the real wage plus the mark-up on direct labor costs, this mark-up being determined (in some way into which we shall not go here) by the degree of monopoly.[8]

The notion that the marginal product of labor equals the real wage plus profits per unit at the margin of production of course was that of David Ricardo (1951 [1817]; see also Nicholas Kaldor, 1956, pp. 84-87). The major difference between our analysis and Ricardo's is that we are not following Ricardo's postulate of diminishing returns. Since we have not assumed diminishing returns to the addition of labor and indeed have increasing returns if we are producing to the left of the inflection point on our "Kalecki plus Dunlop" graph, a real wage equal to the marginal product of labor would also more than exhaust the product. A real wage less than the marginal product and also less than the average product of labor (If average product is rising, marginal product will be above it.), however, will allow the real wage to be correlated with the marginal product of labor and so to be procyclical if labor productivity is and mark-ups are not procyclical but will keep the real wage less than the total product.

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[8]As mentioned above, in an open economy the real wage can also be affected by the prices of imported goods which are consumed by workers or used directly or indirectly in the production of goods consumed by workers.

Another difference between our analysis and the Ricardian or classical then is the following. In Ricardo's system wages are determined independently by the tendency of population growth to maintain the real wage at the (historical and moral) subsistence level, leaving profits as a residual given the productivity of labor. In the analysis presented here, however, the profit margin or mark-up is determined independently by the degree of monopoly, and the real wage is the residual given the productivity of labor. This has long been recognized as a difference between classical and post-Keynesian theories of distribution. (See Kaldor, 1956.)

Another similarity between this analysis and classical economics is our conception of profits as a deduction from the product of labor.[9] "Imperfect" competition in a neoclassical model of course will give the same result, though interest income would not be a deduction from labor's product in the neoclassical conception. The results of the Cambridge capital critique, however, may make the classical view--that labor produces value and capital increases the productivity of labor--the correct way of understanding the production of value.[10] A discussion of this

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[9]This need not imply that wages and profits are inversely related. If we are below full employment and workers do not save, for example, a rise in real wages due to a cut in the mark-up will increase demand by a sufficient amount to leave total profits unchanged. (See Kalecki, 1971, Chap. 14.)

[10]This may have been the way Keynes saw it, as he wrote, "I sympathize, therefore, with the pre-classical doctrine that everything is produced by labour, aided by what used to be called art and is now technique, by natural resources which are free or cost a rent according to their scarcity or abundance, and by the results of past labour, embodied in assets, which also command a price according to their scarcity or abundance." (Keynes, 1964

point may also shed some light on issue (3) listed above--does the critique of the notion of a marginal product of capital also apply to the notion of a marginal product of labor?

The Capital Critique

One conclusion of the capital controversy was that there is no basis for establishing the existence of a magnitude of value called capital which is independent of income distribution but contributes to determining income distribution. That capital, both as a number of heterogeneous goods that assist in the production of other goods and as sums of money used to hire capital goods and labor, contributes to the production of value-added is indisputable. The way in which it contributes, however, is best seen as increasing the productivity of labor. Certainly profits, the return received for advancing capital, bear no quantitative relation to the magnitude of capital determinable by the "productivity" of capital, as both the capital critique and Keynes's arguments about effective demand showed.[11] Profits then should be seen as the ability of owners of capital to realize a share of value by marking-up prices over wage costs, given sufficient effective demand to sell the products at those prices.

[1936], p. 213.) Note that this need not imply that only labor determines value. That is another question.

[11] "It is much preferable to speak of capital as having a yield over the course of its life in excess of its original cost, than as being productive....If capital becomes less scarce [One could substitute 'less utilized' for 'less scarce.'], the excess yield will diminish, without its having become less productive--at least in the physical sense" (Keynes, 1964 [1936], p. 213; see also Paul Davidson, 1978 [1972], pp. 228-230).

The capital critique showed that heterogenous capital cannot be aggregated as a value-free magnitude. Does this critique also apply to labor? If we were talking about an artisan economy, in which each laborer furnished a unique skill, we would have a problem analogous to the problem with heterogeneous capital. In an economy in which labor is unrelated to ownership of the means of production and in which skills are more a matter of what equipment one is working with and of social conditions and training rather than individual talent, however, labor becomes homogenized, as workers are to a large degree interchangeable. Labor, or better, labor-power, since that is what is sold in the market, is here not specific to a particular task but is the power to do work in general. With capital value-free aggregation is an impossibility because capital can only be aggregated by means of value. Labor (labor-power) does not have to be valued prior to aggregation if it is all the same "stuff." This is not to say that all labor gets the same wage but that the differences in wages are not a matter of differences in skills given by nature to a particular person or group or by the sui generis nature of one's craft.[12]

A theory of relative wages consistent with this reasoning would hold that differences in wages across industries were due to differences in productivity across industries to the extent that

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[12]See David Levine (1977, pp. 235-241) for a fuller discussion of this issue. The case of the unique voice and persona of, say, Elvis Presley or Frank Sinatra is of course properly treated under the theory of rent.

conditions of competition among firms and among workers in each industry enforced these differences. This, however, would not be because more productive workers were "naturally" more skilled than others. And, a Keynesian-Kaleckian view of this matter emphasizes that competition among workers is mainly important in determining money wages, while competition among firms sets the ratio of prices to money wage costs. Thus labor supply considerations matter for setting relative real wages but not (below "full employment") for setting the aggregate average real wage, around which relative wages are dispersed.

In any event, our explanation of the determinants of the aggregate return to labor again is simply saying that labor produces all the net product but gets a share of it less than that by the amount of the aggregate mark-up. Thus, unless changes in the mark-up are severe enough to offset it, real wages will move with productivity. This really requires nothing about the ability to aggregate labor. Joan Robinson (1973, pp. 145-146) has agreed with our notion that the marginal product of labor equals wages plus profits but says that this "destroys the doctrine that wages are regulated by marginal productivity." Remember, though, that our argument, as stated above, is not that the real wage equals the marginal product of labor but that it is correlated with the marginal product of labor.

Alternative Conceptions of Macroeconomic Equilibrium

And this leads us into a discussion of issue (4)--are we relying on an incorrect notion of equilibrium in making our claim

about the relation between real wages and productivity? The article by Edward McKenna and Diane Zannoni (1987) in the JPKE symposium suggests that we look at the classical theory of competition with its emphasis on equalizing rates of return across industries as a way to avoid any need to talk about a marginal product of labor.

It is true that the classical theory of distribution, especially as explicated by Piero Sraffa (1960), has no need to talk of marginal products. The classical theory of distribution is independent of changes in the scale of output. It merely requires a rule for distributing the surplus produced over replacement between wages and profits. But it also requires that the division or bargain be made in terms of a basket of goods. This ignores Keynes's key insight, mentioned above, that workers bargain over a money wage rather than a real wage and Kalecki's key insight that the real wage is more affected by the degree of monopoly in the product market than by the money wage bargain (Keynes, 1964 [1936], Chap. 2; Kalecki, 1939; 1971, Chap. 14; Donald Harris, 1978, pp. 281-282.).[13]

If the wage bargain does not determine the real wage, then whatever determines the mark-up must, given the level of productivity. As a logical matter, one may postulate some sort of "long-run" in which rates of return on all physical and financial assets are equal and this determines the share of income going to

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[13]This should certainly not be taken to imply that workers do not care about the real wage (i.e., suffer from "money illusion").

profits. What then is to determine the rate of return at which they are all equal? If this "long-run" rules out the relevance of a degree of monopoly because all capital is mobile, is this not the long-run in which we are all dead? If it is to be a "center of gravitation" for short-period profit rates, what meaningfully determines this center?[14]

In any event, none of this can negate the correctness of our story for the short-period, in which capital is not very malleable or mobile. But to return to the issue of the capital critique for a moment, Robinson (1975) noted that the critique established that as a matter of a logical experiment in examining the neoclassical conception of long-period equilibrium there might be reswitching or capital reversals, but she insisted that the really substantive point that should be made was that the long-period equilibrium conception itself was problematic.

The article in the symposium by Lawlor, Darity, and Horn (1987) raises a criticism of formulations of the relation between wages and productivity which rest on "imperfections" or "disequilibria" in a basically neoclassical portrayal of the economy. I agree with this, but I don't feel it applies to the framework presented here or to Keynes's Chapter Two of the General Theory. Lawlor, Darity, and Horn point out the problems inherent

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[14]See Harris (1988) for a thorough discussion of the problems involved in the conception of an equalizing tendency in the rate of profits and in the classical theory of competition. See Levine (1980) for a critique of the theory of the firm in the classical model of prices of production. See Geoffrey Harcourt (1981) for a critique of the notion of centers of gravitation.

in a supply and demand analysis of the labor market (or indeed of any market), both in itself and as used to describe unemployment as either a disequilibrium problem or a matter of wage rigidities. The framework presented here, however, does not describe the level of employment as having anything to do with disequilibrium in the sense of a temporary departure from an equilibrium. It does describe the level of employment and the real wage as determined by the level of aggregate demand, which is in equilibrium in the sense of being determinate but not at equilibrium in the sense of being at rest, since the level of aggregate demand is subject to fluctuations. "Disequilibrium" explanations of employment and wages (e.g., Robert Barro and Herschel Grossman, 1971) suffer from the problem that they are generally not determinate and so not very explanatory. I hope that this has been avoided as much as possible in this paper. Nor does the framework presented here rely on imperfections within a neoclassical framework, other than the notion of "imperfect" competition. We have argued, however, that the idea that "perfect" competition is the natural state of a capitalist economy and "imperfect" competition a rigidity or friction or abnormality is to put things backwards.

Conclusions

As I see it, the errors in Keynes's analysis in Chapter Two of the <u>General Theory</u> were his acceptance of diminishing returns in the short-period relation between output and labor employed and of perfect competition in the product market. These "errors," however, are easily corrected and do not alter Keynes's basic and

correct ideas--that employment is determined by aggregate demand, that real wages are determined by aggregate demand given the degree of competition and the level of capital utilization and other determinants of the productivity of labor, and that the supply of labor, at least below full employment, has no effect on either employment or real wages.

I would like to reiterate that the formulation we have established here is "Ricardian" rather than neoclassical. Basically all we have said is that the mark-up represents a deduction from the product of labor and that since the mark-up is certainly not procyclical[15] and productivity probably is procyclical, as the "margin" of production is extended, real wages rise. Sraffa (1960, pp. v-vi) has argued that such a use of the term "marginal" is spurious, since the true application of the term "requires attention to be focused on change," while this use of the term, as in Ricardo's discussion of the margin of cultivation, need only be a matter of differences in quality among existing productive facilities rather than changes in scale or in input proportions. We have come a long way from the neoclassical idea of a marginal product of labor, but this should not make either us

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[15]The best evidence is that whatever variation there is in the mark-up over the cycle is slight and certainly not procyclical. See K. Coutts, W. Godley, and W. Nordhaus (1978), Geoffrey Moore (1983), and Bils (1987).

or Keynes embarrassed about Chapter Two of the General Theory, one of the most interesting and important chapters in the book.[16]

Lawlor, Darity, and Horn (1987) noted that Sraffa (1926) had pointed out that the determination of prices and quantities by the interaction of supply and demand necessitates an independence between supply and demand which does not obtain except under very restrictive conditions. Sraffa (1960) extends this argument by showing that scarcity, as in scarce factors of production, is not necessary to determine value and in fact cannot determine value independently of income distribution. Keynes's and Kalecki's work shows that when we take effective demand into account, output is determined solely by demand and distribution by the conditions of competition. Kalecki's and Keynes's work can thus be taken as an Hegelian "supersession" of classical and neoclassical economics when we realize that workers cannot bargain in terms of a real wage and that output not saleable will soon no longer be produced.

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[16] I have had some success in using Chapter Two in my undergraduate classes to get across the idea that unemployment is not due to downward rigidity in wages.

REFERENCES

Barro, Robert, and Grossman, Herschel (1971). "A General Disequilibrium Model of Income and Employment," American Economic Review 61, pp. 82-93.

Bils, Mark (1985). "Real Wages over the Business Cycle: Evidence from Panel Data," Journal of Political Economy 93, pp. 666-689.

__________ (1987). "The Cyclical Behavior of Marginal Cost and Price," American Economic Review 77, pp. 838-855.

Coutts, K., Godley, W., and Nordhaus, W. (1978). Industrial Pricing in the United Kingdom, Cambridge, Eng.: Cambridge University Press.

Davidson, Paul (1978 [1972]). Money and the Real World, London: Macmillan.

______________ (1983a). "The Dubious Labor Market Analysis in Meltzer's Restatement," Journal of Economic Literature 21, pp. 52-56.

______________ (1983b). "The Marginal Product Curve Is Not the Demand Curve for Labor and Lucas's Supply Function Is Not the Supply Curve for Labor in the Real World," Journal of Post Keynesian Economics 6, pp. 105-117.

Dunlop, John (1938). "The Movement of Real and Money Wage Rates," Economic Journal 48, pp. 413-434.

Fay, Jon, and Medoff, James (1985). "Labor and Output over the Business Cycle: Some Direct Evidence," American Economic Review 75, pp. 638-655.

Hahn, Frank (1965). "On Some Problems of Proving the Existence of an Equilibrium in a Monetary Economy," in The Theory of Interest Rates, ed. Frank Hahn and F. Brechling, London: Macmillan.

Hall, Robert (1986). "Market Structure and Macroeconomic Fluctuations," Brookings Papers on Economic Activity 2, pp. 285-338.

Harcourt, Geoffrey (1981). "Marshall, Sraffa, and Keynes: Incompatible Bedfellows?" Eastern Economic Journal 7, pp. 39-50.

Harris, Donald (1978). Capital Accumulation and Income Distribution, Stanford, CA: Stanford University Press.

______________ (1988). "On the Classical Theory of Competition," Cambridge Journal of Economics 12, pp. 139-167.

Kaldor, Nicholas (1956). "Alternative Theories of Distribution," Review of Economic Studies 23, pp. 83-100.

Kalecki, Michal (1938). "The Determinants of Distribution of the National Income," Econometrica 6, pp. 97-112.

______________ (1939). "Money and Real Wages," in Essays on the Theory of Economic Fluctuations, London: Allan and Unwin.

______________ (1944). "Prof. Pigou on 'The Classical Stationary State.' A Comment," Economic Journal 54, pp. 131-132.

_______________ (1971). Selected Essays on the Dynamics of the Capitalist Economy, 1933-1970, Cambridge, Eng.: Cambridge University Press.

Keynes, John Maynard (1964 [1936]). The General Theory of Employment, Interest, and Money, New York: Harcourt, Brace, and World.

____________________ (1939). "Relative Movements of Real Wages and Output," Economic Journal 49, pp. 34-51.

Kregel, Jan (1987). "Keynes's Given Degree of Competition: Comment on McKenna and Zannoni," Journal of Post Keynesian Economics 9, pp. 490-495.

Lawlor, Michael; Darity, William; and Horn, Bobbie (1987). "Was Keynes a Chapter Two Keynesian?" Journal of Post Keynesian Economics 9, pp. 516-528.

Levine, David (1977). Economic Studies, London: Routledge and Kegan Paul.

_____________ (1980). "Production Prices and the Theory of the Firm," Journal of Post Keynesian Economics 3, pp. 88-99.

McKenna, Edward, and Zannoni, Diane (1987). "On the Nature and Use of the Concept of the Marginal Physical Product in Post Keynesian Economics," Journal of Post Keynesian Economics 9, pp. 483-489.

Michie, Jonathan (1987). Wages in the Business Cycle, London: Frances Pinter.

Moore, Geoffrey (1983). Business Cycles, Inflation, and Forecasting, Cambridge, MA: National Bureau of Economic Research.

Okun, Arthur (1981). Prices and Quantities, Washington, DC: The Brookings Institution.

Ricardo, David (1951 [1817]). On the Principles of Political Economy and Taxation, ed. Piero Sraffa, Cambridge, Eng.: Cambridge University Press.

Robinson, Joan (1975 [1965]). "Solow on the Rate of Return," in Collected Economic Papers, Vol. III, Oxford: Basil Blackwell.

______________ (1973). "Capital Theory Up-to-Date," in Collected Economic Papers, Vol. IV, New York: Humanities Press.

______________ (1975). "The Unimportance of Reswitching," Quarterly Journal of Economics 89, pp. 32-39.

Solow, Robert (1957). "Technical Change and the Aggregate Production Function," Review of Economics and Statistics 39, pp. 312-320.

Sraffa, Piero (1926). "The Laws of Returns under Competitive Conditions," Economic Journal 36, pp. 535-550.

______________ (1960). Production of Commodities by Means of Commodities, Cambridge, Eng.: Cambridge University Press.

Stockman, Alan (1983). "Aggregation Bias and the Cyclical Behavior of Real Wages," Conference Paper, National Bureau of Economic Research, Cambridge, MA.

Tarshis, Lorie (1939). "Changes in Real and Money Wages," Economic Journal 49, pp. 150-154.

Tobin, James (1980). "Real Balance Effects Reconsidered," in Asset Accumulation and Economic Activity, Chicago: University of Chicago Press.

Wells, Paul (1987). "Keynes's Employment Function and the Marginal Productivity of Labor," Journal of Post Keynesian Economics 9, pp. 507-515.