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On Keynesian Economics and the Economics of the Post-Keynesians

By JANET L. YELLEN*

This paper compares the new Post-Keynesian economics of Paul Davidson, Alfred Eichner, Geoffrey Harcourt, Jan Kregel, Hyman Minsky, Sidney Weintraub, and others with the standard Keynesian macro-economic model which these authors have criticized. Sections I–IV concern, respectively, Post-Keynesian views on pricing, output and income distribution, inflation, and money and finance.

I. Post-Keynesian Price Theory

According to Post-Keynesians, competitive firms for which price equals marginal cost are the exception rather than the rule. Post-Keynesians point to the prevalence of “megacorps” and “administered prices,” concluding that realism demands a scrapping of the perfect competition paradigm. Following Michal Kalecki and Joan Robinson, the progenitors of their movement, most Post-Keynesians assume that firms’ prices are a markup over unit production cost. Many Post-Keynesians have argued that prices are insensitive to demand fluctuations but sensitive to permanent cost changes, one explanation being that many large firms have marginal and average variable costs which are virtually constant over large ranges of output. Since profit-maximizing monopolists set price equal to marginal cost times a factor which depends on the elasticity of demand, this explanation makes sense if the perceived elasticity of demand also remains constant over the business cycle. An alternative hypothesis is that firms simply engage in “normal cost pricing” and their pricing decisions ignore temporary changes in unit costs or demand elasticities. Despite Post-Keynesians’ claim that their view of the pricing decision is in sharp con-

flict with standard analysis, empirical evidence on normal pricing has been provided by such Keynesians as Otto Eckstein, Robert Gordon, William Nordhaus, Arthur Okun, and George Perry.

In contrast, Eichner’s view is novel. According to Eichner, the external cost of borrowing exceeds the cost of using retained earnings. Firms that set prices below the short-run-maximizing level (as a deterrent to entry or in fear of government intervention) will tend to raise their prices in the short run to finance profitable investments. The next section explores the macro-economic implications of Post-Keynesian pricing.

II. Distributional Effects and Aggregate Demand

The Post-Keynesian theory of output, employment, and income distribution starts from the assumption that the average savings propensities of workers and capitalists (or alternatively, out of wage and profit income) denoted s_w and s_p differ. Just as in the *IS-LM* model, the Post-Keynesian model requires as a condition of short-run equilibrium that desired expenditures be equal to output, or equivalently, that savings equal investment. Formally, this requires that

$$(1) \quad s_w \left(\frac{wN}{P} \right) + s_p \left(Y - \frac{wN}{P} \right) = I$$

where w and P denote the money wage rate and price level, N and Y denote employment and real output, and I denotes real investment. In most Post-Keynesian work, investment is treated as exogenous, said to be governed by “animal spirits.” An alternative hypothesis is that $I/Y = \alpha$, and the rate of investment α is exogenous. Naturally,

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employment is a function of output produced. Most Keynesians would assume diminishing marginal productivity of labor. It is common in Post-Keynesian models, however, to assume a proportional relationship of the form $N = nY$, which follows from the assumption of a fixed-coefficients technology.

Equation (1) is the Post-Keynesian equivalent of the *IS* curve. Instead of giving alternative values of output and the interest rate consistent with equilibrium in the commodity market, it gives alternative combinations of output and the real wage consistent with commodity market equilibrium. Taking *I* as exogenous and assuming $s_w < s_p$, an increase in the real wage raises aggregate demand and output; hence the Post-Keynesian *IS* curve relating *Y* and w/P , which is depicted in Figure 1, is upward sloping. Under the alternative hypothesis that $I/Y = \alpha$, however, equation (1) can be reduced to

$$(2) \quad \frac{w}{P} = \frac{s_p - \alpha}{n(s_p - s_w)}$$

The *IS* curve in this case is horizontal. This conclusion needs to be modified of course when there is other autonomous spending or when *n* depends on *Y*.

Taken alone, equation (1) is an incomplete model which determines nothing at all, although some Post-Keynesian literature suggests otherwise. Post-Keynesians close this model in a variety of ways, some of which I believe to be inconsistent and so will discuss the various alternatives briefly.

One way of closing the Post-Keynesian model is by specifying that output is set exogenously at some level, $Y = \bar{Y}$. The result is the Kaldor model. One possible rationale for this assumption is that, with fixed coefficients technology, firms would want to hire labor in sufficient quantity to fully utilize existing capital as long as the real wage is no greater than the average product of labor, $1/n$. In essence, one adds to Figure 1 a second curve called *MM*, which relates the output firms would choose to supply to the real wage they face. Implicit in the Kaldor model is a kinked *MM* curve, indicated by the broken line *MM*₁ in Figure

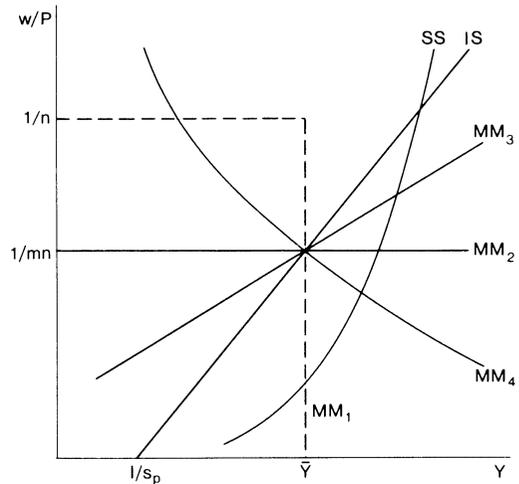


FIGURE 1

1. As long as the real wage which satisfies (1) is less than $1/n$, capital, if not labor, will be fully employed. With a fixed money wage rate, this equilibrium can be achieved via price flexibility with output prices rising whenever aggregate demand exceeds \bar{Y} and vice versa. The Kaldor model has the characteristic emphasized by most Post-Keynesian writers that the level of profits, denoted Π , and the share of profits in output are directly related to *I* or I/Y :

$$(3) \quad \frac{\Pi}{Y} = \frac{\frac{I}{Y} - s_w}{s_p - s_w}$$

In the extreme case which Post-Keynesians are fond of analyzing in which $s_w = 0$ and $s_p = 1$, $\Pi = I$ and “capitalists get what they spend while workers spend what they get.” If $s_w = 0$ and $s_p < 1$, $\Pi = I/s_p$ and the more capitalists spend, that is, the lower s_p , the higher the profits earned.

A second way of closing the Post-Keynesian model which is more Keynesian in spirit, since it permits outcomes with less than full employment, is to drop the Kaldorian flexible markup assumption and instead postulate a fixed markup *m* of prices over unit labor cost so that $P = mwn$ or $w/P = 1/mn$. In this case, the *MM* curve, indicated by the solid line *MM*₂ in Figure 1

is horizontal. Here, firms' pricing policies determine the real wage and share of output accruing to workers and the multiplier determines the level of output as follows:

$$(4) \quad Y = I / (s_p - (s_p - s_w) / m)$$

The denominator of (4) is the economy's average propensity to save and an increase in investment raises output by the standard Keynesian multiplier, while an increase in the markup lowers output and the real wage. Again, profits are positively related to investment but for the usual Keynesian reason that an expansion of output with a fixed profit margin augments total profits.

The postulation of a fixed markup and a fixed level of investment produces a consistent model. Suppose, however, that $I/Y = \alpha$. This small switch in assumption produces a model which, although widely discussed, is nevertheless inconsistent. With proportional savings propensities, constant labor productivity and no autonomous spending other than investment, the IS curve is horizontal. If the markup is a constant determined by the "degree of monopoly," the MM curve is horizontal too, and output is indeterminate while the real wage is overdetermined. Post-Keynesians are fond of stating that (3) determines Π/Y as a function of I/Y and that this holds regardless of how Y is determined. But this is clearly incorrect, for if the markup is fixed and the resulting real wage differs from that given by (2) the model has no solution at all. This problem is responsible for a great deal of confusion by Weintraub, Kregel, and others.

A variant of the fixed markup model is the target return pricing model which relates the markup to "normal" output. The markup may be chosen to yield a target rate of return on capital of ρ^* or total profits of $\Pi^* = \rho^* K$ at a standard operating rate Y^n . In this case, the required markup depends inversely on normal output.

$$(5) \quad \Pi^* = \left(1 - \frac{wn}{P}\right) Y^n = \left(1 - \frac{1}{m}\right) Y^n$$

Firms may leave m unchanged in the face of

transitory changes in Y , but in equilibrium, if output expectations are satisfied we have that $Y^n = Y$. The combinations of Y and w/P which satisfy (5) for a given profit target lie on a positively sloping line such as MM_3 in Figure 1, which can be shown to be flatter than the IS curve unless $s_w = 0$, in which case the curves either coincide everywhere or nowhere and the model is again inconsistent. If $s_w = 0$, profits are identical at all $Y, w/P$ combinations on the IS curve. If entrepreneurs are satisfied with this profit level, output is indeterminate and if not, their demands cannot be satisfied. Even if $s_w > 0$, the model has no equilibrium if entrepreneurs are too greedy. Maximum profits of $\Pi = I/s_p$ occur at $w/P = 0$ on the IS curve. If the firm tries to generate profits in excess of I/s_p , the model is again inconsistent. In terms of Figure 1, the relevant MM_3 lies everywhere below the IS curve in the positive quadrant.¹

When well behaved, the model with target return pricing differs significantly from the standard Keynesian model with perfect competition. Under target return pricing, an increase in investment raises output but it also lowers the markup or raises the real wage. In contrast, an increase in investment raises output but lowers the real wage in the textbook model. The difference occurs because the textbook model assumes smooth factor substitutability and perfect competition or marginal cost pricing so that the supply of output and demand for labor are inversely related to the real wage. The result is an MM curve like MM_4 in Figure 1 which is smoothly downward sloping and is the neoclassical analogue of the kinked MM_1 obtained from fixed coefficients. Alternatively, the aggregate supply curve,² which is

¹ If we assume, following Eichner's suggestion, that firms wish to finance investment solely by retained earnings and interpret $s_p \Pi$ as retained earnings, then retained earnings are equal to investment at all points on the IS curve if workers save nothing and only at the point $w/P = 0, Y = I/s_p$ if $s_w > 0$ and there is no other autonomous spending.

² To avoid possible confusion it is important to note that the terms "aggregate supply curve" and "aggregate demand curve" refer to standard textbook relations between real output and the price level, in contrast to the alternative Post-Keynesian usage of these same terms.

assumed by Keynesians to be upward sloping, is negatively sloping under target return pricing.

Further variations on the themes outlined above are possible. Following Eichner's suggestion, the desired markup may depend on the level of investment so that an increase in investment shifts both the *IS* and *MM* curves down in Figure 1. Depending on how large the response of the markup is to a change in investment, a variety of outcomes are possible. In analyzing a similar model, Harcourt has shown that an increase in investment can cause output to fall if the effect on the markup is sufficiently strong. But if firms try to augment profits by an amount no larger than the change in desired investment, this perverse output effect is ruled out. The model could be dynamized by postulating a relationship between investment and lagged profits or sales à la Kalecki. The resulting model would be a variant of the usual multiplier-accelerator model and the cyclical possibilities inherent in such a mechanism are obvious.

III. Labor Supply, Inflation, and the Money Wage Rate

One thing notably absent from the Post-Keynesian model is a labor supply function. The *SS* curve in Figure 1 shows the output which would be produced if all labor wishing to work at a given wage were hired. It is upward sloping because higher real wages raise labor supply so that more output can be produced. There is no reason for the intersection of the *IS* and *MM* curves to coincide with the full-employment equilibrium, given by the intersection of the *MM* and *SS* curves, unless further considerations are brought into play.

In the neoclassical model, all markets are assumed to clear continuously and the real wage is determined in the labor market, that is, by the intersection of the *SS* and *MM* curves. Monetary adjustments move the *IS* curve to their mutual intersection point. According to the textbook Keynesian model, the labor market may be out of equilibrium; output and the real wage are determined by the *IS* and *MM* curves in the

short run, although monetary considerations also play a role via the standard *LM* curve. But in this model, a money wage rate sufficiently low will permit a full neoclassical equilibrium. (This is the consequence of the neoclassical synthesis.) In the standard Keynesian model, money wages and hence prices change when the economy is away from full equilibrium. Of course, the full-employment equilibrium may be unstable or the path to it, even when stable, may be slow and tortuous.

In contrast, according to Post-Keynesians, the real wage and output are determined in the commodity market—at the *IS-MM* intersection—and no mechanism exists in the Post-Keynesian model which can bring the system to a full equilibrium. Post-Keynesians typically argue that labor cannot determine the real wage via money wage bargains because the commodity market determines a unique market-clearing real wage and money wage cuts just lead to proportional price changes.

Labor supply behavior does matter to Post-Keynesians in determining money wages and, in turn, inflation. They argue that money wage bargains are largely unpredictable and are made infrequently, so they should be modelled as exogenous, a sentiment shared by many standard Keynesians, being the motive for the textbook "fixed" or "predetermined" money wage model. In the Post-Keynesian model, the mood of labor and historical and institutional factors play a role when powerful unions bargain with powerful corporations. Nevertheless, Post-Keynesians believe that a wage-price spiral will ensue whenever labor regards the real wage as "unacceptably low." Inflation is a struggle over the appropriate distribution of income and it can be set off by factors which tend to increase the markup. Eichner stresses that inflation will occur if firms raise their markups to finance higher investment.

In the Post-Keynesian model, higher money wage demands necessarily lead to higher prices without raising the real wage and so there is nothing to stop inflation once it begins. Why inflation in these circumstances should not accelerate continu-

ously I cannot understand. And since the real wage which is determined by the commodity market is only acceptable to labor by accident, it is hard to fathom why such an economy should not perpetually experience either inflation or deflation.

Post-Keynesians conclude from their analysis of inflation that the solution lies in incomes policy. What is needed is societal agreement concerning the appropriate distribution of income. This policy conclusion is supported by all Post-Keynesians, and Weintraub in particular has done pioneering work on tax-based incomes policies. With markup pricing, taxes might be passed along into prices, so if the Post-Keynesian model is correct, the policy could well be pro-rather than anti-inflationary. These ideas are innovative and worthy of exploration, although the Post-Keynesian gap here between theory and policy is quite large.

IV. Money and Finance

Although Minsky and Davidson have discussed monetary factors at length and have developed a model resembling Tobin's "q" theory of investment, no Post-Keynesian has shown how money should be incorporated into their model of distribution and growth. But the inclusion of money in the model described above makes it all but indistinguishable from standard Keynesian theory. Add to the model of Figure 1 the standard *LM* curve, some interest sensitivity of investment or saving and possibly some wealth effects and what is obtained? The *IS* curve now depends on the interest rate as well as the real wage and together with the *LM* curve it determines *Y* and *r* corresponding to any price level and money wage. Vary the price level, holding the money wage fixed to trace out a standard downward-sloping aggregate demand curve. A cut in *P* raises *w/P* and reduces saving; but a cut in *P* also raises *M/P*, lowering *r* and raising *I* and induces wealth effects which may stimulate consumption. The *MM* curve relates prices and output for a fixed money wage, so it is just the usual aggregate supply

curve in disguise. Under fixed markups, the aggregate supply curve is flat instead of upward sloping; under target return pricing the slope is *negative*. Together, these pieces determine short-run equilibrium values for *Y*, *r*, and *P*. Are there values of the money wage and price level which permit the full-employment equilibrium to be attained? The answer is clearly affirmative, for with monetary factors included, there must exist a price level sufficiently low that the full-employment output can be sold at the full-employment real wage. This is the conclusion reached by the neoclassical synthesis and there is nothing in the amended Post-Keynesian model to deprive that synthesis of its validity, however much they may despise it. Will a cut in money wages in the presence of unemployment raise the equilibrium levels of employment and output? As Weintraub stresses, a cut in *w* shifts *both* the aggregate supply and demand curves down, because any change in the money wage influences saving. But it is straightforward to show that the new equilibrium occurs at a higher output level as long as the slope of the aggregate supply curve exceeds that of the aggregate demand curve.

Various perversities can, of course, arise under target return pricing. In the unlikely event that the aggregate supply curve is steeper than the aggregate demand curve a cut in the money wage will *lower* equilibrium output, so the full-employment equilibrium is likely to be unstable. Furthermore, if the implicit labor demand curve *MM* is steeper than the labor supply curve *SS*, money wages may rise rather than fall when output and employment are below their full-employment levels. With respect to stability and disequilibrium behavior, the Post-Keynesian model could differ significantly from the standard textbook case, at least under certain conditions. Just what these conditions are however, we do not yet know, because Post-Keynesians have argued that events take place in "historical" rather than "logical" time and therefore have been unwilling to conduct the standard dynamic analysis.