Interpreting Keynes

Allan H. Meltzer
Carnegie Mellon University, am05@andrew.cmu.edu

Follow this and additional works at: http://repository.cmu.edu/tepper
Part of the Economic Policy Commons, and the Industrial Organization Commons

Published In
Journal of Economic Literature, 21, 1, 66-78.

This Response or Comment is brought to you for free and open access by Research Showcase @ CMU. It has been accepted for inclusion in Tepper School of Business by an authorized administrator of Research Showcase @ CMU. For more information, please contact research-showcase@andrew.cmu.edu.
Interpreting Keynes

by

Allan H. Meltzer

1983

Carnegie-Mellon University
PITTSBURGH, PENNSYLVANIA 15213
Some Current Reprints


900. The Effects of Uncertainty on Investment Under Risk Neutrality with Endogenous Information. Alex Cukierman.


911. The Cognition of Discovery: Defining a Rhetorical Problem. Linda Flower and John R. Hayes.


916. Turnpike Horizons for Production Planning. Gerald L. Thompson and Suresh P. Sethi.


918. Adjacent Vertices of the All 0-1 Programming Polytope. Egon Balas and Manfred W. Padberg.


925. Should Accounting Standards be Set in the Public or Private Sector? Robert S. Kaplan.


(continued on inside back cover)
Interpreting Keynes*

By ALLAN H. MELTZER
Carnegie-Mellon University

My interpretative essay on "Keynes's General Theory" (1981) stimulated a large number of responses both before publication and after. Many of the comments were generous. Several expressed broad agreement. A few correspondents went beyond such agreement to indicate their pleasure at finding an interpretation of the General Theory that clarified aspects that had puzzled them heretofore. Only one person expressed what I interpret as thorough disagreement, although the nature of the disagreement is not entirely clear from his comment, published as part of this exchange.

Three of the comments published here—by Sidney Weintraub, Paul Davidson and Don Patinkin—were available to me prior to completing my essay. Each of these authors has written extensively about Keynes. My interpretation differs from theirs on several points. Some of the differences are substantive; others are clearly less so, and some are not at all substantive.

Weintraub and Davidson confine their comments to some differences that remain after several private exchanges. Both comment on aspects of the labor market. Weintraub concentrates on the constancy of the wage share, a subject that is familiar to all his readers. Davidson challenges my use of the marginal product of labor as the aggregate demand curve for labor under conditions of underemployment equilibrium. His comments are best considered after I have restated my interpretation of the General Theory and the meaning of underemployment equilibrium in my response to Patinkin, so my response to Davidson follows my response to Patinkin.

A fourth comment, by James Crotty, develops from one of my concluding remarks. Crotty offers his explanation of what I called "a puzzling aspect" of the General Theory (1981, p. 62)—Keynes' neglect of the capital flight that would follow an effort by a single country to expand the capital stock and drive the (real) rate of interest to zero within a generation. Crotty's comments raise issues about the relation of Keynes' theory to policy views he offered before, during and after publication of the General Theory. Crotty reminds us that Keynes' support for tariffs and trade restrictions was more than a passing fancy. I neglected this aspect of the General Theory and, for that reason, neglected also the post-Keynesian interpretation of Keynes often identified as "new Cambridge." Crotty's comment permits me to consider briefly the relation of this version of the General Theory to my interpretation and to the policy recommendations that, I believe, should be called "Keynesian."

PATINKIN

This that I offer is, therefore, a theory of why output and employment are so liable to fluctuation. It does not offer a ready-made remedy as to how to avoid these fluctuations and to maintain output at a steady optimum level. But it is, properly speaking, a theory of employment because it explains why, in any given circumstances, employment is what it is. Naturally I am interested not only in the diagnosis, but also in the cure; and many pages of my book are devoted to the latter. But I consider that my suggestions for a cure . . . are not meant to be definitive . . . But my main rea-

* Helpful comments were received from David Laidler. See p. 47, above for publication information.

1 Several issues were resolved and do not appear in their published comments or in my reply. The issue raised in Davidson's comment was not a central point of our exchange.
sons for departing from the traditional theory go much deeper than this. They are of a highly general character and are meant to be definitive.

I sum up, therefore, the main grounds of my departure as follows:

The orthodox theory assumes that we have a knowledge of the future of a kind quite different from that which we actually possess... In a system in which the level of money income is capable of fluctuating, the orthodox theory is one equation short of what is required to give a solution. Undoubtedly the reason why the orthodox system has failed to discover this discrepancy is because it has always tacitly assumed that income is given, namely at the level corresponding to the employment of all the available resources. In other words, it is tacitly assuming that the monetary policy is such as to maintain the rate of interest at that level which is compatible with full employment...

(2) The orthodox theory would now have discovered the above defect, if it had not ignored the need for a theory of the supply and demand of output as a whole... [JMK 14, 1973b, pp. 121-23. Italics in the original.]

In these few paragraphs, Keynes restates many of the substantive points required for my response to Patinkin's comments. Specifically, Keynes emphasizes: (1) the relation of his policy conclusions to his General Theory; (2) his concern with two issues, avoiding fluctuations and maintaining the optimum level of output; (3) that his theory is a theory of the demand and supply of output, not just the demand for output; (4) that the classical theory is "one equation short"; (5) that classical economists assume that the monetary authority keeps the rate of interest at the (natural) rate compatible with full employment; in Keynes' words (1936, p. 242) "for every rate of interest there is a level of employment for which that rate is the 'natural' rate in the sense that the system will be in equilibrium..."; (6) that the neglect of uncertainty not only makes the classical theory of interest incomplete but prevents classical economists from recognizing that an equation is missing; the missing equation determines the actual position of equilibrium; (7) and that his reasons for rejecting classical theory are, in his words, "definitive."

This summary statement, and similar statements that Keynes made repeatedly, are the basis for my interpretation of the General Theory. Near the start of my essay, I restated the familiar theme of the General Theory, putting some key words of that theme in italics, then wrote: "The problem in interpreting the General Theory is to understand what Keynes meant by these words" (1981, p. 35). The italicized words are: (1) limiting point, (2) equilibrium and (3) involuntary unemployment. A few paragraphs later, I defined Keynes' full employment as maximum employment, the level of employment reached when the economy is on the (dynamic) production frontier, and I defined Keynes' involuntary unemployment as "the difference between maximum employment and equilibrium employment" (1981, p. 36). I pointed out that Keynes repeated many times that the economy's equilibrium remained stable, at less than full—i.e. maximum employment—because investment and the capital stock were smaller than the (social) optimum. Then I added:

... The equilibrium position is stable; everyone expects the equilibrium position to persist. The problem is not that people do not know and cannot learn the equilibrium values of the money wage, the rate of interest, and the level of investment. The problem is that they know these values and cannot change them. [1981, p. 36. Italics in the original.]

This identifies Keynes' theory as a theory of (relatively) stable equilibrium output at less than maximum output. I repeated the main theme, using very similar words, in the conclusion. In a section called "The Central Thesis," I developed this interpretation and related Keynes' theory to his policy views, to his statements about the difference between his theory and classical theory and later to his explanation of the relation of wage changes to investment, expectations and maximum employment. I restated Keynes' main arguments algebraically and called attention to "Keynes' principal innovation on the supply side... a claim that the economy's equilibrium position is at less than the maximum output attainable with the available labor force, tastes and customs" (1981, p. 53).

I am baffled by Patinkin's inability to find this theme in my essay or, for that matter, in Keynes. He writes that the points on which...

---

I am explicit about the difference between my interpretation and various "standard interpretations" concern wage rigidity and the liquidity trap. The latter has a minor role in my discussion, while the former is important for some of the standard interpretations but not for others. Patinkin and I agree that wage rigidity is not central to the General Theory but, as Davidson's comments show, neither his treatment of Keynes' labor market nor mine has found universal acceptance.

Keynes believed, and said repeatedly, that the average level of output fluctuates around a (stable) level that is less than the maximum attainable. In Keynes' words, "we oscillate . . . round an intermediate position appreciably below full employment . . . " (1936, p. 254). The difference between the maximum and the average level, measured in employment units, is "involuntary unemployment." Keynes understood that employment is a real variable, so he did not rely on changes in money, money wages or any other nominal value to increase equilibrium employment. He believed that

I am explicit about the difference between my interpretation and various "standard interpretations" concern wage rigidity and the liquidity trap. The latter has a minor role in my discussion, while the former is important for some of the standard interpretations but not for others. Patinkin and I agree that wage rigidity is not central to the General Theory but, as Davidson's comments show, neither his treatment of Keynes' labor market nor mine has found universal acceptance.

Keynes believed, and said repeatedly, that the average level of output fluctuates around a (stable) level that is less than the maximum attainable. In Keynes' words, "we oscillate . . . round an intermediate position appreciably below full employment . . . " (1936, p. 254). The difference between the maximum and the average level, measured in employment units, is "involuntary unemployment." Keynes understood that employment is a real variable, so he did not rely on changes in money, money wages or any other nominal value to increase equilibrium employment. He believed that

Although I do not claim to offer a comprehensive review of the literature on the General Theory, I discuss several standard interpretations. Each highlights certain aspects and neglects others. My discussion makes clear some main points on which I differ from each. My discussion of rigid wages (1981, p. 49) names authors who rely on wage rigidity and does not include those, like Patinkin, who do not.

Elsewhere Patinkin (1976, p. 101) describes the issue about the use of rigid or flexible wages as "one of the most debated issues." There are many similar statements in the General Theory and in Keynes' later writings. In my paper, I give several examples. One of these, written to Abba Lerner, brings out the importance of supply as well as demand for the definition of equilibrium. "It was an important moment in the development of my own thought when I realized that the classical theory had given no attention at all to the problem at what point the supply of output as a whole and the demand for it would be in equilibrium. When one is trying to discover the volume of output and employment, it must be this point of equilibrium for which one is searching" (JMK 29, 1979, pp. 215).

Keynes insisted on the importance of supply for the actual equilibrium position in his distinction between the natural and "neutral" rates of interest (1936, pp. 242-44), in his definition of full employment (1936, p. 26), in his policy discussion and elsewhere (JMK 14, 1973b, pp. 104, 131, 161-62).

He wrote to Hicks that the classical theory had become "an inconsistent hodge-podge" (JMK 14, 1973b, p. 79). The reason for the inconsistency, he said, arises "as soon as it becomes generally agreed that the increase in the quantity of money is capable of increasing employment." The reference to employment is a reference to equilibrium employment. In the General Theory (1936, p. 142) he distinguished between anticipated and unanticipated changes. "... if it (the change in the value of money) is not forseen, there will be no effect on current affairs; whilst, if it is forseen, the prices of existing goods will be forthwith so adjusted that the advantages of holding money and of holding goods are again equalised ...". It is difficult to read these passages and hold to the view that Keynes' equilibrium at less than full employment depends on misperceptions or money illusion.

Chapters 11 and 24 make clear that Keynes meant the stock of capital. Additional references are in my article. One of the better expositions is Keynes' Galton lecture reprinted in JMK 14 (1973b, pp. 124-33). The importance of increased capital, relative to cyclical changes in investment, is clear also in Keynes' expressed belief that capital could be satiated within twenty or twenty-five years.
ployement. Full employment has a precise definition in the General Theory and in Keynes' later writings. Full employment is "a situation in which aggregate employment is inelastic in response to an increase in the effective demand for its output" (1936, p. 26). He wrote to Hicks: "If I were writing again, I should indeed feel disposed to define full employment as being reached at the same moment at which the supply of output in general becomes inelastic." Then, he added: "[A] great part of my theory ceases to be required when the supply of output as a whole is inelastic" (JMK 14, 1973b, p. 71). Generally, as in the quotations above, Keynes believed that equilibrium employment was less than full employment, as he defined the term. The difference is involuntary unemployment.

The three preceding paragraphs are a brief restatement of my interpretation of the main argument of the General Theory. They do not capture all of the argument, and they are deficient particularly, but not only, because they concentrate on Keynes' theory of the equilibrium or optimum level of output much more than on his theory of fluctuations. I do not discuss here the relation of the rate of interest, the marginal efficiency of capital, the demand for money and expectations, topics which Keynes emphasized repeatedly in his letters to Robertson, Hawtrey, Ohlin and many others, in some major papers published after the General Theory, and in the book itself.*

Any brief discussion of a book like the General Theory runs the risk that brevity will be mistaken for oversimplification. References and quotations to support many of the statements must remain in my earlier paper. My purpose in writing a succinct summary here is not to supplant my longer discussion but to bring out some principal differences between my interpretation, Patinkin's and other well-known interpretations that differ from ours and from each other.

Patinkin refers to Chapter 19 as "the apex of the General Theory" (1976, p. 106). I believe that I provided a brief but accurate summary of his interpretation of Chapter 19 by reprinting (1981, p. 38) his claim that "the essence of Keynes' argument in Chapter 19 is that because of a relatively high interest elasticity of the demand for money interacting with a relatively low interest elasticity of demand for investment—both of whose effective magnitudes are very much influenced by the state of expectations—this automatic adjustment process is not very efficacious ..." (idem.). I included a summary of the adjustment process that Patinkin outlined in the adjacent pages and concluded by noting that Patinkin's diagram, (1976, p. 106), shows equilibrium output "as constant once full employment output is reached" (Meltzer, 1981, p. 38).

Neither the discussion nor the diagram distinguish between equilibrium output and full employment output. In these pages, Patinkin does not mention the missing equation or the persistence of involuntary unemployment at the equilibrium level of output that the economy reaches and maintains. The level of output accommodates aggregate demand up to equilibrium at full employment. Keynes' emphasis on the position of aggregate supply, as in the quotation at the start of this section or in his restatement (1936, esp. pp. 246-49), is neglected. Although Patinkin labels as "commonplace" my statement that "full employment is rarely achieved and does not persist" I find nothing in his analysis to show that the economy sustains a stable equilibrium at less than full employment, and there is no reason given for full employment not to persist once it is achieved.* On the contrary, the equilibrium

The central roles of investment and risk (or uncertainty) in the General Theory repeat two of Keynes' familiar themes. As early as 1913, Keynes offered an over-investment theory of the business cycle (JMK 13, 1973a, pp. 2-14, esp. p. 4). In his Tract on Monetary Reform, (1924, pp. 39-42) Keynes discussed the importance for employment of the risk arising from monetary instability. The interpretation is changed in the General Theory, however. A main change from the earlier works is that Keynes linked investment to the equilibrium supply of output through its influence on the capital stock. I am indebted to Mr. Steve Borg who called my attention to the passage in the Tract.

My belief that Patinkin misses this point—a central point of the difference in our interpretations—is reinforced by his statement: "I have interpreted the General Theory, not as a static theory of unemployment equilibrium, but as a dynamic theory of unemployment disequilibrium" (1976, p. 113 emphasis in the original). Later, Patinkin (ibid. p. 140, n. 4) notes that Keynes wrote: "short-period expectations are always fulfilled," "but he does not attempt to reconcile this statement with the conclusion about
position from which Patinkin starts and to which the economy gradually returns is the point at which Patinkin's supply curve or output became vertical. The equilibrium in my Figure 1, reproduced above, is at less than full employment.

Patinkin's neglect of aggregate supply is a main reason that our interpretations differ. It is not the only difference, however. Patinkin's discussion of fluctuations or cycles in the same section of his book (1976, pp. 102-07) treats Keynes' comparative statics propositions and speculations about the determination of the position of equilibrium, as a discussion of cyclical dynamics. An example is Patinkin's p. 103. Here, Patinkin begins by citing parts of Keynes' analysis of the formation of long-run expectations and the interrelation of interest rates, expectations and the demand for capital and for money. He then chides Keynes for failing at times to distinguish "precisely, if at all, between the properties of a given demand curve and those due to a shift in the curve itself" (ibid. p. 103). The illustrative example is a reference to Keynes' discussion (1936, p. 172) of some circumstances in which the demand curve for money becomes relatively insensitive to changes in interest rates (a near liquidity trap) and the effect of the "trap" on the stability of the (comparative statics) equilibrium position. Keynes' discussion is not at all concerned with cyclical dynamics in the section that Patinkin cites.

Keynes' discussion of fluctuations, starts by noting that the preceding chapters show "what determines the volume of employment at any time" (ibid. p. 313). Earlier chapters are about comparative statics and the determination of the equilibrium position. Keynes' discussion of cycles, in Chapter 22, begins in the "late stages of the boom" (1936, p. 315). The "predominant explanation of the crisis is . . . a sudden collapse of the marginal efficiency of capital" (idem.). Keynes is not open to Patinkin's criticism. A footnote on the same page makes clear that the reference is to the schedule, and not a movement along the schedule. Keynes then discusses why business cycles last as long as they do and why the duration is relatively constant. His explanation highlights the role of the marginal efficiency schedule and explanations about future returns. In these pages, he recognizes the importance of a decline in interest rates but stresses the factors changing expectations. To quote, again:

If a reduction in the rate of interest was capable of proving an effective remedy by itself, it might be possible to achieve a recovery without the lapse of any considerable interval of time and by means more or less directly under the control of the monetary authority. But, in fact, this is not usually the case; and it is not so easy to revive the marginal efficiency of capital, determined as it is, by the uncontrollable and disobedient psychology of the business world [1936, pp. 316-17].

Patinkin's discussion of the recovery never mentions the revival (change) in expectations. Instead, Patinkin relies upon the interest elasticities of the investment schedule and the demand for money to explain why the interest rate does not fall to the level required to restore full employment. His discussion fails to
separate the shift in the investment schedule, that Keynes expected to follow an eventual reduction in pessimism, from the movement along the investment schedule induced by a cyclical decline in interest rates (Patinkin, 1976, pp. 103–4 and 106).10

Patinkin's interpretation of the General Theory is illustrated also by his comment on Keynes' "failure to adopt the appropriate general-equilibrium view of his own theory" (1976, p. 140). He gives two references. The first is open to different interpretations. The second refers to a section of the General Theory (pp. 177–81) in which Keynes discusses the difference between his theory of interest and the classical theory. Keynes quotes Walras and cites Marshall as representatives of the classical view that the real rate of interest is determined by saving and investment. In these pages, Keynes states (and restates) his own view that a sustained increase in the level of investment cannot be discussed without also analyzing the (permanent) increase in the level of output. He agrees that "if the level of income is assumed to be given" the rate of interest is determined by saving and investment (called here the demand for capital) as stated by the classical theory (1936, p. 178).

The following pages discuss the error in the classical position, summarize the argument in a diagram and conclude (1936, p. 181) that the missing element in the classical theory is the failure to specify the level of (permanent) income or, in his terms, the position of supply. Therefore, according to Keynes, we cannot know at which level of income the saving and investment schedules intersect. Once we are given the schedule of liquidity preference and the quantity of money, "the whole position becomes determinate" (1936, p. 181). This is a general equilibrium argument—later made familiar to everyone as Hicks' (1937) IS-LM model. The equilibrium rate of interest and equilibrium level of income are determined simultaneously, not sequentially as in Patinkin's account. But, Keynes insists, the level of equilibrium income is not unique, and his diagram shows two different intersections. The "missing equation" determines which equilibrium is sustained.11

It is not surprising that Patinkin's interpretation leads him to conclude (1) that Keynes' views about state control of investment are not of major concern to Keynes and (2) that one can interchange public works spending and socialization of investment without any loss of meaning. My interpretation leads me to a very different view. First, Keynes opposed state ownership as he made clear in the exchange with Durbin (JMK 29, 1979, pp. 233–34, cited in my paper, 1981, p. 39), and in the General Theory, (p. 378, for example). Keynes' theory led him to conclude that institutional change is required to increase investment and achieve the optimum capital stock, but he favored state direction not state ownership. Second, in the opening paragraph of my paper, (1981, p. 34) and elsewhere, I recognize that Keynes favored public works spending and cite examples, written before the General Theory, of Keynes' advocacy of counter-cyclical spending policies. Patinkin's citations do not establish that he considered the two to be equivalent. On the contrary, Patinkin quotes the memo to Meade, written in 1943, that distinguishes between the stability of investment, enhanced

10 Patinkin's discussion starts from a position of full employment (1976, pp. 105–6). A wave of adverse expectations lowers the demand function for investment. The economy slowly returns to Q, described as full employment output, through a process in which money wages decline so that money per unit of wages rises. This rise in real money balances reduces interest rates and increases investment. The restoration of equilibrium at full employment by lowering interest rates is contrary to Keynes' repeated statements.

11 Later, (1936, pp. 242–44) Keynes describes the classical theory as a theory of the neutral rate of interest. In a letter to Hicks, Keynes accepted the IS-LM model with one main qualification. He told Hicks that expected, not actual, income entered the investment function. (JMK 14, 1973b pp. 80–81). I interpret Keynes' emphasis on expected income as expected long-term (or permanent) income. When Keynes discusses the error in the classical theory of the rate of interest (1936, pp. 178–79), he makes clear that the error lies in assuming that the demand for capital can shift without modifying the equilibrium level of income or employment. Compare Patinkin's claim (1976, p. 114) that Keynes' "chronic condition of sub-normal activity is not, strictly speaking, one of 'unemployment equilibrium.' " (Italics added.) See, also, my response to Davidson, below, where I quote from Keynes' comments on the difference between his theory and the disequilibrium theories of Robertson, Hawtrey and the Swedish economists (JMK 14, 1973b, pp. 181–82).
by state control, and the clumsiness of public works. Third, for Keynes, the difference between public works spending to damp fluctuations and his proposal that $\frac{1}{2}$ to $\frac{3}{4}$ of total investment be determined by regular, steady state institutions is meaningful. I believe that is why he discussed the latter and largely omitted his earlier proposals for public works spending in the *General Theory* and in his proposals for postwar reconstruction. Postwar proposals are discussed in my paper (1981, p. 42), so I do not repeat them. They are relevant because Keynes favors policy rules and opposes short-term changes to stimulate consumption.

The relation of the policy recommendations to the theoretical chapters becomes clearer if we read Keynes' theoretical argument as the statement of the hypothesis that uncertainty imposes an excess burden on the economy. Uncertainty raises the demand for real money balances and reduces the demand for investment relative to the social optimum. The equilibrium rate of interest is higher, and the equilibrium stock of capital is lower, than is consistent with a social optimum. The equilibrium is stable and is expected to persist. But, the equilibrium that is reached is not the only possible position and it is not the optimal position. Hence, Keynes said, create an institutional structure that removes or reduces the excess burden that society bears.

Chapter 24 discusses the social philosophy toward which the theory leads. The title, and opening pages, indicate that the *General Theory* offers a new perspective, a way to increase wealth, make the system more stable and shift the distribution of income away from capital. There is no mention here of Keynes' familiar proposals to vary public works spending cyclically. The entire emphasis is on the satiation of the capital stock and the "euthanasia of the rentier."

These are not disjointed ramblings. They are, in Keynes' words, "moderately conservative" implications of the theory (1936, p. 377). In letters, papers and comments published after the *General Theory*, Keynes recognized, as in the quotation at the start of this section, that his policy recommendations are "not definitive." This is clearly not a reference to his advocacy of public works spending.

In his chapter on the trade cycle, Keynes distinguishes between counter-cyclical policies and state control of investment in a way that reappears with changed emphasis in the memos to Meade, written in 1943 and cited in Meltzer (1981, p. 42). In the *General Theory* Keynes wrote:

... in existing conditions ... where the volume of investment is unplanned and uncontrolled, subject to the vagaries of the marginal efficiency of capital as determined by the private judgment of individuals ignorant or speculative, and to a long-term rate of interest which seldom or never falls below a conventional level, these schools of thought [underconsumptionists] are, as guides to practical policy, undoubtedly in the right. For in such conditions there is no other means of raising the average level of employment to a more satisfactory level. If it is impracticable materially to increase investment, obviously there is no means of securing a higher level of employment except by increasing consumption [1936, pp. 324-25].

There are, then, two distinct policies. The first is to increase consumption. This is the only alternative where investment is unplanned. In the chapter on the propensity to consume, where Keynes discusses public works, government spending on public works triggers the multiplier and increases current consumption. There is nothing new about his advocacy of public works and other policies that mainly increase consumption. The second type of policy is to increase "the stock of capital until it ceases to be scarce" (ibid., p. 325). This is a distinct policy, one that had been neglected. Keynes makes this clear by introducing his recommendation with the claim that advocates of increased consumption "are open to the criticism of neglecting the fact that there are two ways to expand output."

There can be no doubt that Keynes saw the two policies as distinct. He followed his discussion of the two policies with these words: "I should readily concede that the wisest course is to advance on both fronts at once. Whilst aiming at a socially controlled rate of investment with a view to a progressive decline in the marginal efficiency of capital, I should support ... policies for increasing the propensity to consume" (ibid., p. 325). The remainder of the paragraph makes clear that the second set of policies shifts the allocation of output toward investment.
Patinkin's view that the two policies are the same is difficult to reconcile with Keynes' statement that his views about the control of investment are "not definitive." Are we to believe that Keynes harbored doubts about the effectiveness of the public works policies he and others, had advocated for years? Why would he describe his long-time advocacy of public works spending as a policy option that was not available in "conditions which existed until lately" (1936, p. 324)? My answer is that he viewed public works spending and state monitoring or control of investment as different options.

Patinkin gives considerable space to issues that I regard as unimportant. These include whether Keynes ever denied that he was a Keynesian, the meaning of Keynes' 1946 reference to "sour and silly," and whether my argument is as novel as, he alleges, I claim. A critic who makes insinuations about my "way with texts" might be expected to notice, however, that I made no claim to novelty and, I believe, used the word "novel" only in a reference to Keynes' views of his own work (Meltzer 1981, p. 60).

The substantive issues about "sour and silly" are more closely related to the points raised by Crotty, so I turn to them briefly, below.

Keynes' comments on the labor market are a helpful starting point. In my earlier paper, I reproduced (1981, p. 35) parts of Keynes' letters to Gottfried Haberler and Bertil Ohlin and (ibid., pp. 51-52) his discussion of the evidence that John Dunlop and Lorie Tarshis produced in response to Keynes' suggestion in Chapter 2 of the General Theory (1936, p. 10).

The letters to Harberler and Ohlin make explicit that Keynes analyzed the labor market as a competitive market subject to diminishing marginal productivity. Ohlin (JMK 14, 1973b pp. 195-96) wrote (1) that Keynes "accepts the crude form of marginal productivity in terms of physical units" . . . ; (2) that Keynes did not give enough attention to imperfect competition in the labor market; and (3) that prices remain unchanged, following an increase in employment, only under conditions of perfect competition in the product market.

Keynes made detailed comments on Ohlin's paper. He rejected imperfect competition but accepted diminishing marginal physical productivity as the main explanation of short-period wage changes. "The reference to imperfect competition is very perplexing. I cannot see how on earth it comes in . . . I have always regarded decreasing physical returns in the short period as one of the very few incontrovertible propositions of our miserable subject" (JMK 14, 1973b, p. 190).13

Portions of Keynes' 1937 lecture notes contain comments on a related issue—his assumption that the labor market is in equilibrium. In these notes, Keynes makes three relevant points (JMK, 14, 1973b, pp. 181-82). First, "the theory of effective demand is substantially the same if we assume that short-period expectations are always fulfilled." Second, he discusses Robertson, Hawtrey and the Swedish theorists as examples of disequilibrium theories in which "the whole explanation lies in the differences between effective demand and income; . . . they do not notice that in my treatment this is not so." (Italics in the original.) Third, "The main point is to distinguish the forces deter-

13 Keynes added that the facts were on his side. The fact he cites is the negative relation between changes in employment and changes in the real hourly wage. Keynes insisted on the use of hourly wages in his response to Dunlop and Tarshis (Keynes, 1939).
mining the position of equilibrium from the technique of trial and error by means of which the entrepreneur discovers where the position is." Keynes interest is in the statics, not the adjustment.

These comments and others in the General Theory to the effect that short-period expectations are always fulfilled leave little doubt that Keynes believed his theory is a competitive, equilibrium theory. I can find little in Keynes' writings that suggests a disequilibrium theory. Further, Keynes' comment about diminishing marginal physical productivity suggests, contrary to Davidson, that Keynes' demand for labor is obtained from the first-order condition of the neo-classical production function. I have found nothing in the General Theory that denies my proposition and, as noted here, some statements that support it.

My (designedly) conventional analysis of production and the labor market has four equations, numbered here as in (1981, p. 53):

\[ \frac{Y}{W} = F(K, N) \] (5)
\[ \hat{N} = f\left(\frac{W}{P}\right) \] (6)
\[ N^* = g(W) \text{ or } g(W, P) \] (7)
\[ N = N_d \leq N^* \] (8)

\( Y, W \) and \( P \) are respectively, nominal output the money wage and the price level. \( K \) and \( N \) are capital stock and labor force. Following Keynes, real output is measured in wage units. The production function is neo-classical, and so is the demand for labor, equation (6). I have cited the relevant sections of Keynes' discussion to support my interpretation.

Equation (8) may have misled Davidson and others, despite my references to Keynes' full employment as the employment compatible with maximum output and my use of a diagram showing two equilibrium positions. One equilibrium shown in the diagram is at full—maximum output—denoted \( \frac{Y^*}{W^*} \); the other is the stable level of output that the economy typically reaches and is denoted \( \frac{Y_0}{W_0} \).

I now see that it may be clearer to define, explicitly, two levels of equilibrium employment, \( N^*—full \) employment at \( \frac{Y^*}{W^*} \)—and \( N— \)equilibrium employment at \( \frac{Y_0}{W_0} \). Equation (8) can be rewritten, without any change in substance, as

\[ N = N_d = N^* \] (8a)
\[ N < N^* \] (8b)

The restatement in (8a) ignores cyclical and other temporary departures from equilibrium and redefines the supply of labor as the equilibrium supply compatible with equilibrium at less than full employment. Equation (8b) shows that employment can increase to \( N^* \) if Keynes' optimum capital stock is achieved. Figure 1 reproduces the diagram.

Equation (7) allows wages and prices to influence labor supply separately. Alternately, if (7) is homogeneous of first degree in \( P \), the amount of labor supplied depends only on the real wage. We can, therefore, find two alternative solutions for output, called the SS curve—or supply of aggregate output.

My previous procedure, eq. (8), defines labor supply to show that equilibrium in the labor market is at less than full employment, as Keynes used the term, because workers have more than optimal leisure. Now, \( N^* \) is the optimal position. Another useful step is to make explicit that the demand for labor depends on the stock of capital. This is implicit in the derivation of (6) from (5), but my argument emphasizes that an increase in capital that follows a reduction of risk increases equilibrium employment. I would now write (6) as

\[ N_d = f\left(\frac{W}{P} ; K\right) \]
Meitzer: Interpreting Keynes

\[ \frac{Y}{W} = F[K, N(W/P)] \]  
(11a)

\[ \frac{Y}{W} = F[K, N(W/P)] \]  
(lib)

Keynes’ discussion of wages and the price elasticity of the supply of output leads me to prefer (11a) as the more accurate statement of his view, but the system can be solved for the alternative (lib), as he claimed. Using the latter, the labor market is in a real wage equilibrium. The real wage equilibrium generally is not compatible with full employment, \( \frac{Y^*}{W^*} \), in Figure 1.

To complete the system, I derived IS and LM equations based, in part, on Keynes’ response to Hicks (JMKE 14, 1973b pp. 80–81). The IS and LM equations are:

\[ IS: \frac{Y}{W} = A(r, \frac{Y}{W}, E) \]  
(9)

\[ LM: \frac{Y}{W} = B(r, r^*, \frac{M}{W}) \]  
(10)

Keynes’ system is reduced to three equilibrium relations—(9), (10) and either (11a) or (11b). These relations determine \( r, \frac{Y}{W} \) and \( P \) as functions of \( M, r^*, K, E \) and either \( W \) or \( W/P \). \( E \) and \( r^* \) are expected aggregate demand and the expected rate of interest. \( M \) is the nominal stock of money. Keynes treats \( M \) as a policy variable that does not affect equilibrium real values. He takes \( K \), the capital stock, as a given that differs with each pair of equilibrium \( Y \) values for \( \frac{Y}{W} \) and \( r \) but remains fixed as long as the economy is expected to return to some stable equilibrium value.

To determine \( E \) and \( r^* \), take expectations of the equilibrium values of output and the interest rate—the permanent values to which the system returns. These values are expected to persist; the economy fluctuates around these stable values, so \( E \) and \( r^* \) are long-run expectations. \( E, r^*, K \) and \( W \) are related, however, by

\[ E = \frac{Y_0}{W_0} = N_0 \frac{W_0}{P_0} + r^*K_0. \]

The “missing equation” of the classical theory is the equation that keeps the expected equilibrium level of output at \( Y_0/W_0 \). Everyone expects the equilibrium value to be maintained; the equilibrium money wage is the wage consistent with \( E \) and \( r^* \) which is to say with the equilibrium values of \( N_0 = N(Y_0/W_0) \) and the associated equilibrium values of \( Y/W \) and \( r \).

Suppose that instead of acting on the belief that the equilibrium money wage is \( W \), workers believe that the equilibrium real wage is \( W/P \). This set of equations determines \( r, Y/W \) and \( P \) for given \( M, r^*, K, E \) and \( W/P \). The dynamic path by which the economy departs from, and returns to, the equilibrium values of \( Y/W \) and \( r \) differ in the two cases. Keynes appears to have been aware of the difference in dynamics, but his main point is unaffected: the economy fluctuates around a stable equilibrium that is, in general, not the full employment equilibrium.

Contrary to Davidson’s claim, there are no inconsistencies in my interpretation of Keynes’ theory as an equilibrium theory with constant \( W \). Either constant expected equilibrium real wages or constant expected equilibrium money wages reproduce the same stable equilibrium at less than (Keynes’) full employment.14 To achieve full employment, both systems require a reduction in risk that lowers \( r^* \), increases \( E \), raises \( K \) and shifts the equilibrium value from an underemployment equilibrium such as \( Y_0/W_0 \) to full employment, \( Y^*/W^* \).

Keynes believed that as \( E \) increased from \( Y_0/W_0 \) to \( Y^*/W^* \), income from capital would fall, with \( r \), toward zero. Labor income is higher at full employment, and equilibrium

14 Keynes’ discussion abstracts from what he calls absolute inflation—or (1936, p. 303) true inflation—a condition in which prices rise continuously in response to increases in aggregate demand. Keynes’ discussion of prices (1936, Chapter 20) makes clear that his discussion of prices as constant (or of constant real or nominal wages) is not meant to be taken literally (see esp. 1936, pp. 300–03). Keynes treats some variables in the general equilibrium system as constant to direct attention to magnitudes that change relatively more cyclically—e.g. employment and real output.
employment is higher. This appears to be the reason for his claim that, at \( Y_0/W_0 \), the real wage is not equal to the marginal disutility of labor. The claim suggests that real wages do not rise as the economy moves to a sustained equilibrium at \( Y^*/W^* \). The quotation Davidson reproduces from the *General Theory*, p. 30, sustains this interpretation.\(^{17}\) My equations imply that real wages rise when \( K \) increases to its optimum.\(^{18}\)

The resolution of another of Davidson's difficulties is straightforward. Real wages change cyclically because prices and money wages change at different rates. The marginal product of labor changes as production and employment change. He quotes me, correctly, as saying: "Keynes relied on wage inflexibility to explain why output fluctuates" (1981, p. 49, italics added here). To prevent him and others from misinterpreting this sentence, I have added emphasis. My restatement is a restatement mainly of the equilibrium theory, not the theory of fluctuations. This should be clear from my use of equilibrium relations such as the IS and the LM curves, from the development of the SS curve as an equilibrium relation and from the references to equilibrium in my discussion of the model (1981, pp. 52-57). Davidson appears to confuse the discussion of fluctuations around the (stable) equilibrium with the equilibrium position.

Sidney Weintrub calls attention to the constancy of the wage share. I do not doubt that Keynes believed that the wage share is stable. In his words, (1939, p. 48) "the stability of the proportion of the national dividend accruing to labour, irrespective apparently of the level of output as a whole and of the phase of the trade cycle" is well known. Keynes described the stability (idem.) "as one of the most surprising, yet best-established facts in the whole range of economic statistics . . ."\(^{19}\) The only issue that I have with Weintraub is whether, in Weintraub's words, I have "introduced another implicit variable." Neither my model of Keynes' equilibrium output nor my discussion of fluctuations requires any assumption of constancy, either implicit or explicit.

From the market equilibrium relations, equations (9) and (10), we can find the solution for output

\[
\frac{Y}{W} = Z(E, r, \frac{M}{W})
\]

From the labor market, we have,

\[
N = N\left(\frac{W}{P}\right), \quad \text{or to be more explicit,}
N = N\left(\frac{W}{P}; K\right).
\]

As is well known, Keynes believed that aggregate real wages vary inversely with aggregate employment (1936, p. 10). Instead of \( N\left(\frac{W}{P}\right) \), use the reciprocal \( N'\left(\frac{P}{W}\right) \); combine \( N' \) and \( Z \) to get the reciprocal of the wage share,

\[
\frac{Y}{WN} = \frac{Z(E, r, \frac{M}{W})}{N'\left(\frac{P}{W}; K\right)}
\]

For Keynes \( E \) and \( r \) change only when the long-run equilibrium position and long-run expectations change, so we may take them as fixed for periods during which output fluctuates around an unchanged equilibrium position. If cyclical changes in money wages are small enough to ignore, constancy of the wage share reduces to

\[
\frac{Y}{WN} = \frac{Z(M)}{N'(P)}
\]

\(^{17}\) Note that in the quotation Keynes emphasizes the word "maximum." Maximum employment is the only level of employment at which he asserts that the real wage is equal to the marginal disutility of labor.

\(^{18}\) I am puzzled by Davidson's claim that I cannot reproduce Keynes' discussion in Chapters 1-17 when prices are assumed constant. I showed (1981, p. 54) that my eqn. (9) to (11) reproduce Keynes' equations and are consistent with his statement that, in this case, output depends only on employment.

\(^{19}\) The data help us to understand what Keynes meant by "stable" or, as Weintraub prefers, constant. The ratios show maxima and minima at 43.0 and 40.7 for Britain and at 39.3 and 34.9 for the U.S. In a footnote, Keynes suggests that the "stability" existed for fifty-five years. We know that stability, or constancy, was not part of the theory. Keynes believed that his policy would reduce the rate of interest and, therefore, increase the share of wages.
or, in words, constancy of some function of real money balances.

From the definition of real output, we have

\[ \frac{Y}{W} = \frac{W}{P} N + rK \]

where \( K \) is fixed. Constancy of \( \frac{Y}{WN} \) implies that the sum

\[ \frac{W}{P} + \frac{rK}{N} \]

is constant. The capital ratio, \( K/N \), rises as employment falls. If real interest rates rise and fall with output and employment (measured in hours of labor), \( \frac{K}{N} \) varies less than \( r \) and \( N \). Keynes claimed that \( \frac{W}{P} \) moves inversely to \( N \). Some restrictions of this kind, or alternatively the assumption of a constant function \( \frac{Z(M)}{N'(P)} \) are necessary to obtain constancy of the labor share as an implication of the general equilibrium system summarized by equations (9), (10) and (11). I have followed the principle of parsimony by not imposing restrictions that are not required to reach the implications I draw. The restrictions are not "there," and I do not accept Weintraub's claim that they are.

**Crotty**

Keynes, and many of his contemporaries, favored policies to reduce the unemployment that persisted in Britain throughout the twenties and in many countries during the thirties. Before the *General Theory* and before the *Treatise on Money*, Keynes offered proposals to expand output and increase employment. At times he embraced trade restrictions, as is well known.

Crotty quotes from several places at which Keynes discussed restrictions on trade. He overlooks the fact that the same ideas are in Keynes' discussion of mercantilism in Chapter 23 of the *General Theory*. There, Keynes is

more careful than Crotty would have us believe. He does not argue against free trade. He distinguishes between the inadequacy of the theoretical foundations of free trade and the arguments for and against trade restrictions (1936, p. 339).

A main conclusion that Keynes draws is that interest rates should not be used to adjust the balance of payments, as required by the gold standard (e.g., 1936, pp. 339, 348-49). The reason is that higher interest rates reduce employment and fluctuations in interest rates reduce the average level of investment and income. He favored, "the policy of an autonomous rate of interest, unimpeded by international preoccupations, and of a national investment programme directed at an *optimum* level of domestic employment . . ." (p. 349, italics added). This policy, Keynes believed, was in the interests of each country separately and of the world as a whole.

The Bretton Woods agreement provided for exchange rate adjustments and created an agency empowered to lend to deficit countries. Keynes believed that the new arrangement would produce greater stability of output and employment, hence higher investment, growth of the capital stock and a higher level of real income. Keynes favored the agreement for these "Keynesian" reasons.

Nevertheless Crotty sees what Patinkin fails to see: Keynes' views on tariffs and the control of investment cannot be separated from his recommendation that risk premiums in interest rates should be reduced to lower actual and expected interest rates. I believe Keynes' ultimate rejection of trade restrictions and support for Bretton Woods and freer trade is consistent with his earlier view that institutional change was required to raise investment to an optimum level. The earlier recommendations were "not definitive." He believed the new international arrangements would reduce fluctuations in output and increase investment. Experience during the first fifteen or twenty years of Bretton Woods, but not the later experience, supports his view.21

21 I read the reference to "modernist stuff, gone wrong and turned sour and silly" (1946, p. 186) as a reference to proposals for tariffs and quotas to promote domestic employment. Keynes believed that given the new arrangements for balance of pay-
Crotty interprets Keynes as a proponent of a "new international economic order." If we give this phrase a contemporary meaning, it places Keynes on the side of those who favor, inter alia, world income redistribution, commodity agreements, subsidies and other inefficient arrangements. I find nothing in the General Theory to support this interpretation. Crotty gives no basis for reading Keynes as a proponent of world income redistribution and other sub-optimal policies. Crotty's interpretation cannot be reconciled with Keynes' support for policies to increase investment, output and standards of living.

The problem I discussed remains. If a country succeeds in reducing the risk premium in interest rates, interest rates fall without generating a capital outflow. The capital outflow can be avoided only if the market believes that the policy will succeed—that output will be more stable and risk lower. Learning about the success or failure of the policy takes time. During the transition, capital flows out. Keynes' hints about tariffs may suggest the transitional policy Keynes would have offered before Bretton Woods. If so, he was unusually reticent about saying so.

Epilogue

I find in Keynes' General Theory an economic argument based on the belief that fluctuations in output impose social costs that can not be removed by private action. Keynes proposed to lower social cost by having the state stabilize the rate of investment. One way to stabilize investment, he suggested, is to allow the state to control the rate of investment. Another way is to reduce excess risk by creating a social institution. He saw in Bretton Woods and the beginnings of GATT the development of institutions that he believed (or perhaps hoped), would reduce fluctuations and increase domestic and international economic efficiency. He believed that, if this occurred, real output would move closer to the (dynamic) production frontier.

There are many interpretations of Keynes. Mine differs from others in several ways that I have tried to elaborate. I would be misinterpreted, however, if I failed to repeat my earlier statement that "no single set of statements is the correct re-statement" of the General Theory (Meltzer, 1981, p. 37). And, I would mislead the reader if I failed to suggest that I believe I have offered an explanation that sees the General Theory in much the same way that Keynes saw it—as a book in which theory (or diagnosis) and policy (or cure) are closely linked.22

References


22 I would like to take the opportunity to point out an important omission from my earlier discussion of alternative interpretations, Hicks (1974). Hicks' discussion of inflation and expectations (especially 1974, pp. 59-61 and pp. 72-73), is similar to mine in some respects. I believe a perceptive reader will find differences, e.g., in the treatment of equilibrium and the meaning of involuntary unemployment. I regret my failure to discuss the similarities and differences in the earlier paper.
948. An Introduction to Corporate Accounting Standards: A Review. Yuji Ijiri.
952. Some \( n \) by \( dn \) Linear Complementarity Problems. Ikuyo Kaneko and Jong-Shi Pang.

(continued on back cover)
973. The Implications of Competition Among Jurisdictions: Does Tiebout Need Politics? Dennis Apple and Allan Zelenitz.
982. Integer and Fractional Matchings. Egon Balas.
983. Conflict Objectives in Regulating the Automobile. Lester B. Lave.
990. Are Product Attribute Beliefs the Only Mediator of Advertising Effects on Brand Attitude? Andrew A. Mitchell and Jerry 0. Olson.


The Employment Game . . . Where Do You Fit? C. Douglas Mintmier, GSIA. Price: $5.95