WOULD KEYNES BE A NEW KEYNESIAN?

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The principle of a truth in labeling law that protects consumers[1] from false and misleading claims is often violated by economics textbooks. Under the truth in labeling law, a minimum quantity of beef is required in a patty before society permits anyone to sell it as a hamburger. Similarly some minimum quantity of Keynes's logical analysis should be an essential ingredient in any theory sold as Keynesian, especially in textbooks to yet uneducated consumers. Paraphrasing a famous slogan of the 1988 Democratic presidential primary, "Where's the Keynesian beef in New Keynesian economics?".

This paper demonstrates that (1) New Keynesian Economics (hereafter NKE) does not contain any of Keynes's logical building blocks, and (2) NKE leads to policies that are the opposite of what Keynes advocated as solutions to the major problems facing real world economies.

WHAT IS NEW KEYNESIAN ECONOMICS?

In his article "What is New-Keynesian Economics?", Gordon [1990] claims that Parkin [1984] was the first to use the term "New Keynesian".[2] Parkin [personal fax, 6 June 1991] claims that his original definition of NKE was "A class of models of the labor market that assume rational expectations and fixed term multiperiod possibly but not necessarily overlapping wage contracts." Parkin contrasted this with his original definition of New Classical Economics (NCE): "A class of models of the labor market based on rational expectations and market clearing." NKE is a "theory of aggregate supply" [Parkin, 1984, 74]; it puts an *ad hoc* constraint on the classical aggregate supply curve by assuming a short-run fixity of nominal wages.

Parkin indicates that he would now propose new and different definitions for both NKE and NCE. He now defines NCE as "a research program that seeks to explain aggregate fluctuations as the consequence of perfectly coordinated Pareto efficient intertemporal substitution," and NKE as "a research program that seeks to explain aggregate fluctuations as the consequence of impediments to the coordination of the choices of rational agents who are individually maximizing but who are collectively prevented from achieving a Pareto efficient allocation" [personal fax, 6 June 1991]. This new set of definitions changes the NKE emphasis from a *per se* fixed money wage system to one where coordination failures can induce (short-run?) nominal fixities and thereby cause underemployment equilibrium.[3]

Gordon defines NKE as "research *within the Keynesian tradition* that attempts to build the microfoundations of wage and price stickiness" [1990, 1115, italics added]. Gordon insists that "price setting behavior is the essence of Keynesian economics. Any attempt to imbed it in microfoundations must begin from monopolistic or imperfect competition" [Gordon, 1990, 1136]. The NKE game plan "is to tease a failure of macro markets to clear from a starting point of rational expectations and the maximization of profits and individual welfare at the micro level" [Gordon, 1990, 1137]. "Any satisfactory explanation of business cycles that warrants the label Keynesian must incorporate not just price stickiness, but ... [must also recognize that] the necessary condition for

non-market clearing is a barrier to the full adjustment of nominal prices" [Gordon, 1990, 1138-9]. Finding rationales for the short-run stickiness of nominal values imbedded in an aggregate supply function is apparently the *sine qua non* for New Keynesian analysis!

Colander agrees, indicating that "an under-full-employment equilibrium can occur only if wages and prices are less than perfectly flexible" [1992, 446]. He claims that coordination failures are the sole rationale for explaining unemployment in NKE. Colander expands a traditional Neo-Classical production function to include "a new term *coordination* in the production function...[where] $X = f(K,L,C)$... The New Keynesian research agenda is to examine and understand that coordination function and how it relates with markets"[Ibid., 446].[4]

If one accepts these NKE definitions, then, in the absence of any wage or price stickiness, it is theoretically impossible to experience a lack of aggregate demand. Gordon rationalizes this NKE view that it is supply failures and not a demand fault that causes unemployment when he claims that the *complete research agenda* for macroeconomics is circumscribed by "Lucas' famous paper" [1990, 1118]. In asserting that "demand side topics can be omitted, simply because they are not at the heart of the conflict between New-Keynesian and new-classical macroeconomics," Gordon [Ibid., 1117] is throwing out Keynes's baby with the NCE bathwater!

Mankiw [1990, 1647] agrees that the NKE research agenda is solely a response to Lucas. In NCE, short-run unemployment is the result of "imperfect information regarding prices" [Ibid., 1652] as agents confuse movements in the price level with changes in relative prices. Consequently, involuntary unemployment is at most an ephemeral phenomenon due to incorrect expectations. Unemployment can never persist [Mankiw, 1990, 1652-3] in the long run as long as rational expectations are assumed (since by definition, persistent expectational errors are not possible).

NCE explanations of unemployment, according to Mankiw, are at odds with the "common presumptions...[and] the strong prior beliefs of many economists ... [and are] unlikely to be plausibly reconciled with observed economic fluctuations" [Ibid., 1653-4]. Apparently, the Latter Day NKE Saints reject the inevitable logical conclusion of "theory" based on classical axioms as inconsistent with their native good judgment (i.e., prior beliefs). For example, Gordon exclaims that "any satisfactory explanation of the business cycle that warrants the label *Keynesian* must incorporate not just price stickiness, but in addition some element that explains the evident unhappiness of the employed in recessions and depressions" [1990, 1138]. Gordon's common sense tells him that during a recession even the remaining employed experience an uneasiness as they fear for their jobs. Moreover, unemployed workers neither prefer the enforced leisure compared to the dignity of working for a living, nor are they confusing general price movements for relative price changes.

In uncritically accepting Lucas's view of the scope of macroeconomics, NKE is embracing the classical axioms as the basis of an economic theory which holds that markets are *the* instrument of coordination. The common sense beliefs of these New Keynesians, therefore, require scientific justification in terms of market failure. Mankiw states that the "grand scale" market failure "most frequent in Keynesian theories is the failure of wages and prices to adjust instantaneously to equilibrate supply and demand [i.e., clear the market]" [1990, 1654]. Mankiw declares the NKE research agenda is to develop "a cogent theoretical foundation of *hard-headed* microeconomic reasoning" to explain the failure of market wages and prices to adjust instantaneously "to clear the market" [Ibid., italics added].

NKE proponents are continually invoking the need for a "hard-headed" approach by which they mean an analysis that is compatible with the fundamental postulates of NCE. Since NKE and NCE are founded on the identical axiomatic base, the basic litmus test of NKE is the presumption of some *ad hoc* constraint to the classical aggregate supply conditions to temporarily fix nominal magnitudes so that the classical neutrality of money axiom is, in the short run, inoperative.

If fixities due to coordination failures are the sole basis of any so-called Keynesian research agenda, then these "Keynesians" are in the position of a defendant trying to respond to the classic "when did you stop beating your wife?" cross-examination. By claiming that NKE research is limited to finding "barriers to the full adjustment of nominal prices" [Gordon, 1990, 1139], the NCE presumption that a free, unregulated market with flexible prices and no coordination failures "is for the best in the best of all possible worlds provided we will let well enough alone" [Keynes, 1936, 33] is implicitly accepted. If, as a matter of faith[5], the axioms of classical economics are believed to be the basis for *all* theory, then the only substantial difference between NKE and NCE analysis for policy purposes is the time it takes to remove all impediments to coordination so that all nominal values (wages, prices, exchange rates, etc.) are fully flexible. In that long period, the economic system will achieve the Panglossian, Pareto-efficient equilibrium where everyone stops beating their wives. After all, in the long run when we are all dead, no one can lift a hand to strike one's spouse!

It is only common sense that prevents New Keynesians from accepting the NCE fable that efficient markets will bring the capitalized value of the future's Panglossian bliss to today's economic markets. To prove their scientific manhood, however, New Keynesians are forced to "tease out" the special cases within the microfoundations of NCE that Lucas used to circumscribe the acceptable research agenda for macroeconomics. To step outside the Lucas-drawn boundaries would be to expose New Keynesians to charges of non-scientific thinking by the Economics Establishment.

New Keynesians envy the attribute of "hard headedness" associated with the intellectually prestigious results forged in the axiomatic ovens of the New Classical analysis. *New Keynesians seek to demonstrate that their heads are just as hard as those of New Classical economists*. They attempt to forge different results from the same axiomatic ovens and thereby deflect attention from the nakedness of their soft hearts (or what Mankiw calls their "strong prior beliefs") which recognize that, in the real world, the unemployed who lose their jobs during recession are neither maximizing intertemporal utility in the labor market nor confusing absolute price changes for relative price changes. *Ad hoc* constraints (fixities induced by market supply failures) are the NKE spanners thrown into the NCE axiomatic machine to show that short-run fluctuations in employment and output are not "the Pareto-efficient response of the economy to changes in tastes and technology, but rather some sort of market failure on a grand scale" [Mankiw, 1990, 1654]. Hiding behind the fig-leaf claim that NCE axioms are the only foundation for scientific inquiring minds, New Keynesians profess that their "hard heads" have developed a "tough-minded economics for a just society" [Blinder, 1987].

Ever since Ricardo, mainstream economists have believed that classical economics is *the* general theory, where full employment is the inevitable long-run outcome. Keynes noted that true classical believers such as Ricardo "offered us the supreme intellectual achievement, unattainable of weaker spirits, of adopting a hypothetical [classical] world remote from experience as though [as if?] it was the world of experience and then living in it consistently" [1936, 192]. From time to time, however, there were

some orthodox economists who still accepted classical axioms as the foundations of "theory" yet whose native good judgment told them that, even in the competitive environment of the nineteenth and early twentieth centuries, unemployed workers were not enjoying voluntary leisure. These pre-Keynesian "reasonable" classical economists attempted to explain unemployment as short-run maladjustments due to wage and price rigidities, frictions, erroneous expectations, etc., which lengthen the time until free markets produce the long-run full-employment equilibrium outcome. Those who tried to explain unemployment in this manner were, "weaker spirits" whose "common sense cannot help breaking in — with injury to their logical consistency " [Ibid.].

In order to demonstrate that Say's Law "was not the true law relating the aggregate demand and supply functions" Keynes [Ibid., 26] believed it was essential to demonstrate that even in the absence of *all* market imperfections, underemployment equilibrium was possible.[6] Otherwise, policy prescriptions would get hung up on how to remove the market failures which prevent price flexibility rather than focusing on the essential nature of an entrepreneurial, money-using economy where insufficient aggregate demand was a sufficient cause of the system's failure "to provide full employment" [Ibid., 372]. Aggregate supply constraints *per se* are neither necessary nor sufficient to demonstrate an underemployment equilibrium. The fundamental cause of unemployment is not nested in imperfect competition. Unemployment is a structural fault of a money using, laissez-faire market system.

New Keynesians, however, stress only aggregate supply factors — not demand — as the sole cause of unemployment equilibrium. What Mankiw and Gordon claim is the essence of the New Keynesian research agenda, therefore, is conceptually unnecessary to explain Keynes's analysis of unemployment. NKE diverts attention from Keynes's logical analysis of the necessary and sufficient conditions for the existence of underemployment equilibrium in both the short and long run *and the policy decisions necessary for restoring and maintaining full employment to an economy in recession.*[7]

New Keynesians are unwilling to challenge Lucas's vision that demand *per se* can never be insufficient with perfectly flexible supply conditions. Only postulated constraints on Lucas's supply analysis can short-circuit the power of supply to create its own demand. In the absence of such *ad hoc* constraints in a Lucas world — one which Lucas [1981, 563] describes as "a patently artificial world" — Say's Law would prevail. If New Keynesians read Keynes's analysis of aggregate supply and demand, however, then they would realize they can not claim Keynes as an intellectual forefather.

KEYNES'S TREATMENT OF AGGREGATE SUPPLY AND DEMAND

If we accept the NKE agenda, then a more honest title for Keynes's book would have been *The Special Case Theory of Employment, Interest and Money; (Why Market Failures Prevent Flexible Wages and Prices From Doing their Job).* All the definitions of NKE lay the emphasis on some difference between classical supply conditions and the supply environment assumed by NKE. Keynes, on the other hand, claimed that his aggregate supply function "is simply the age old supply function" [1973, 513] derived from Marshall's "ordinary supply curve" [1936, 45] and which can be associated with any degree of competition including pure competition.[8] In a further explanation to Dennis Robertson, Keynes stated that he spent so little time developing aggregate supply conditions because the aggregate supply function "is only a reconcoction of our old friend

the supply function. Virtually the whole rest [of *The General Theory*]...is, therefore, directed to discovering what determines D [aggregate demand]" [1973, 513]. In other words, Keynes insisted that the assumed conditions of supply were *not* what distinguished his approach from the "old" classical analysis of his day. The fundamental difference was that Keynes recognized the possibility of an "insufficiency" of demand no matter what the conditions of supply [1936, 33].

What is more important, from a truth in labeling history-of-thought context, Keynes specifically denied that fixed nominal wages and prices were a necessary condition for underemployment equilibrium.[9] One complete chapter[10] of *The General Theory* demonstrates why the existence of instantaneously flexible money wages can not assure full employment — even if no coordination failures exist. "For the Classical Theory has been accustomed to rest the supposedly self-adjusting character of the economic system on the assumed fluidity of money-wages; and, when there is rigidity, to lay on this rigidity the blame of maladjustment ...My difference from this theory is primarily a difference of analysis" [Ibid., 257]. In the fourth section, it will be shown that Keynes's use of wage units to measure his aggregate functions brings to the foreground this "difference of analysis" by requiring the feedback effects of flexible wages be traced on components of aggregate demand. These feedback effects had nothing to do with coordination failures!

Keynes's chapter 19 analysis demonstrates that complete wage (or price) flexibility was neither a necessary nor a sufficient condition for full-employment equilibrium. Keynes's two major conclusions regarding the effect of instantaneously flexible money wages — even in condition of purely competitive supply — are that "there is, therefore, no ground for the belief that a flexible wage policy is capable of maintaining a state of continuous full employment" [Ibid., 267] and that "to suppose that a flexible wage policy is a right and proper adjunct of a system which on the whole is one of laissez-faire, is the opposite of the truth" [Ibid., 269].

Consequently, anyone selling New Keynesian theoretical patties, in which the fixity of nominal wages or prices is the main ingredient, to students (or uneducated policy makers) would not get a franchise to use his name from the originator of Keynesian economics.

KEYNES ON EXPECTATIONS AND POLICY IRRELEVANCE

Keynes recognized the possibility of policy irrelevance long before Lucas. In the chapter on long-term expectations, Keynes warned that economic prosperity "is excessively dependent on the political and social atmosphere which is congenial to the average businessman. If the fear of a Labour Government or a New Deal depresses enterprise" [Ibid., 162] then policy interventions may be offset by entrepreneurial reactions. The basis for Keynes's conclusion that policy actions can induce offsetting private expectations about the future, however, is just the opposite of Lucas's on this very practical point. For Keynes, "human decisions affecting the future ... cannot depend on strictly mathematical expectations, *since the basis for making such calculations does not exist*; and that it is our innate urge to activity that makes the wheels go round" [Ibid., 162-3, italics added] rather than rational expectations and flexible wages and prices.

It is this crucial difference on how expectations are formed in an uncertain world that distinguishes Keynes and Keynes's economic analysis from both Old and New Classical economists and Old (i.e., Neo-Classical synthesis) and New Keynesians.

Elsewhere, [Davidson, 1984; 1986; 1991] I have developed Keynes's view on expectational formation in an uncertain world and the implications of such expectations for the long-run non-neutrality of money in an entrepreneurial market-oriented economy. Such an analysis provides a more general theory than one where the classical axioms of money neutrality and ergodicity-induced rational expectations characterize a special case. "The characteristics of this special case assumed by the classical theory happen not to be those of the economic society in which we actually live with the result that its teaching is misleading and disastrous if we attempt to apply it to the facts of experience" [Ibid., 3]. To the extent that New Keynesians allow Lucas's "patently artificial world" to operate "as if" it was the general case and hence circumscribe the macroeconomic research agenda, the policy implications derived from such research can be misleading and disastrous to the world of experience.

WOULD A GOVERNMENT POLICY TO END COORDINATION FAILURE PROMOTE FULL EMPLOYMENT?

We have seen that the concept of coordination failure is the basis of the new New Keynesian research agenda. In fact, Gordon [1990, 1139] insists that "coordination problems represent the core problem in economics."[11] Colander introduces "coordination" as an additional production factor input to explain NKE. Following this logic, these "coordination failure" New Keynesians should support *all* public policies that promote better coordination.

For example, at a 1982 press conference, President Reagan presented a proposal for solving the unemployment problem that then was approaching 10.7 percent of the labor force. In response to a question regarding what could be done to reduce unemployment, the President stated that the unemployment problem could be solved if each business firm immediately hired one more worker. The solution was, of course, statistically accurate as there were more operating firms than unemployed workers.

New Keynesians who attribute unemployment solely to a coordination failure should have applauded Reagan's clarion call for the coordinated increased hiring by all private enterprises. Keynes, on the other hand, would never have endorsed Reagan's Say's Law supply-side solution to the unemployment problem![12] Unless the employment of these additional workers created an additional demand (at a profitable price) for the increased output produced by the newly employed (additional supply-creating *pari passu* additional demand), however, it would not be profitable for entrepreneurs to hire additional workers.

WHAT ABOUT MONEY AND NEW KEYNESIAN ANALYSIS?

Neither Parkin, Mankiw, Colander, nor Gordon associated the existence of unemployment directly and explicitly with the use of money *per se* in any market system. The rationale for this textual omission is suggested by Blanchard [1990]. Oblivious to what Keynes wrote, Blanchard asserts at the very beginning of his paper "economic theory does not lead us to expect" that the existence of money *per se* can cause fluctuations in output and employment; "indeed it [theory] holds that, with flexible prices, money should be approximately neutral" [1990, 780]. In other words Blanchard accepts the classical neutrality of money axioms as basic to *all* economic theory. Keynes, however, explicitly rejected the classical postulate of the short-run *and* long-run neutrality of money, even with flexible prices as a fundamental tenet of his *General Theory* [Keynes, 1936].

Blanchard, like the others, sees the NKE agenda solely as "why prices do not adjust fully and instantaneously to nominal money...to focus on the reasons for and the implications of imperfect price adjustment" [1990, 780].[13] Blanchard insists that all NKE models must be based on "hard-headed" microfoundations that "impose long-run neutrality of money as a maintained presumption. This is a matter of faith, based on theoretical considerations rather than on empirical evidence" [Ibid., 828]

In 1933, on the other hand, Keynes specified his research agenda when he wrote,

> In my opinion the main reason why the problem of crisis is unsolved, or at any rate why the theory is unsatisfactory, is to be found in the lack of what may be called a monetary theory of production. An economy which uses money as a neutral link between transactions in real things and real assets and does not allow it to enter into motives or decisions might be called — for want of a better name — a real exchange economy. The theory I desiderate would deal ... with an economy in which money plays a part on its own and affects motives and decisions and is, in short, one of the operative factors in the situation, so that the course of events cannot be predicted either in the long period or in the short, without a knowledge of the behavior of money between the first state and the last. And this is what we ought to mean when we speak of a monetary economy....*Booms and depressions are peculiar to an economy in which ... money is not neutral*...I believe the next task is to work out in some detail a monetary theory of production...that is the task on which I am now occupying myself in some confidence that I am not wasting my time. [1973, 408-10, italics added]

In contradistinction to the New Keynesian presumptions, Keynes believed that there is a fundamental analytical difference between a money-using production economy (where even "in the long period" money is not neutral) and the real exchange economy of classical economics where the long-run neutrality of money is a matter of faith. In Keynes's monetary theory of production, the absence of flexible wages and prices is not the fundamental criterion upon which the nonneutrality of money depends. Even if prices are perfectly flexible in the long period the existence of money *per se* can cause "booms and depressions". In Keynes's general theory, there is no self-adjusting mechanism built into a laissez-faire market system that assures the clearing of all markets including the labor market if only nominal wages and product prices are perfectly flexible.

If the absence of instantaneous and full price adjustments is not a necessary condition for underemployment equilibrium, then one might ask what are the essential conditions for unemployment in Keynes's analysis and why is his analysis a more general theory than the classical analysis? A response to this query will be provided in the fourth section *infra*. First, however, it should be emphasized that the absence of any of Keynes's beef in NKE is important, not only from a history of economic thought — truth in labeling — prospectus, but also in terms of determining public policy.

SO WHAT IF THERE IS NO KEYNESIAN BEEF IN NKE?

In presentations of an earlier draft of this paper to some audiences, one response often encountered was "So what if NKE has a different logical foundation than Keynes's analysis? The NKE research would still exist in the literature even if they had taken an epithet more in keeping with a truth in labeling law, for example, NMCCE — Non Market Clearing Classical Economics."

Although a rose by any other name is still a (sweet smelling) rose, it does not follow that calling the foul smelling fruit of the ginkgo tree a rose will make it smell any better for policy making purposes. Since economists offer policy advice, they bear a responsibility to the public as well as to their students to refrain from using misleading labels for their policy nostrums.

The NKE and Keynes's *General Theory* approaches have significantly different — and often conflicting — domestic and international policy implications for important economic questions facing the real world in which we live. Keynes argued that "the tacit assumptions [of classical economics] are seldom or never satisfied, with the result that it cannot solve the economic problems of the actual world" [1936, 378]. If one builds an analysis on the classical axioms, then the only logical long-run role of government is to promote wage and price flexibility (including exchange rate flexibility). In the short run, New Keynesians can merely prescribe that government act merely as (1) a coordinator (e.g., Reagan's 1982 suggestion for curing unemployment) and (2) an instrument for encouraging competitive market solutions to all our economic maladies.

Keynes, however, believed that one of the "outstanding faults of the economic system in which we live" is "its failure to provide full employment" [Ibid., 372]. Unemployment involves the "public scandal of wasted resources" [Ibid., 380-81]. Nevertheless, Keynes's "theory is moderately conservative in its implications" [Ibid., 377] in that in the *long run* "[A]part from the necessity of central controls to bring about an adjustment between the propensity to consume and the inducement to invest, there is no more reason to socialise economic life than there was before" [Ibid., 379]. In other words, we should not permit the public scandal of a waste of resources in order to rely on a competitive market solution to assure a full-employment level of effective demand — even in the long run. Government has a permanent role in adjusting aggregate demand to its full-employment potential without getting bogged down in the nitty-gritty of production planning. The latter is best left to the private sector *after* government has assured that there is never a significant lack of aggregate demand [Ibid., 380-81].

NKE, on the other hand, implicitly accepts the "public scandal of wasted [unemployed] resources" as an inevitable short-run outcome of the inherent fixities and lack of perfect coordination in an imperfectly competitive capitalist system. Colander [1992, 445] for example, hypothesizes a situation with two full-employment equilibria — one with 400 widgets produced and one with 1,000 widgets produced. He hypothesizes that if the economy gets stuck at the 400 output level, then any institutional coordinating rearrangement that limits wage and price flexibility while increasing output to 600 widgets (due to a higher C in Colander's production function) is preferred. Colander fails to explain, however, why once the higher C level is reached, the economy will not prefer to produce a full-employment level of 1,000 widgets. To assume the economy can not reach the 1,000 level of full employment at the higher C level is to assume away the demand problem by hypothesizing some unspecified barrier to full employment.

By accepting the classical axioms, the long-run logic of NKE implies that prosperity is just around the long-run corner. Only short-run, unexpected shocks, for which a coordinated equilibrating reaction is not instantaneously available, prevent the system from maintaining continuous full employment.

What are the policy implications of this New Keynesian logic? Securing continuous full employment is unlikely — except in the most stationary of worlds that never experiences any shocks. A competitive, flexible price, laissez-faire system is the best of all possible worlds. The role for government should be to encourage more rapid wage and product price flexibility through freeing-up domestic markets and, in an open system, requiring exchange rate flexibility. There can be *no permanent* positive role for government fiscal policy, or cooperative regulatory policy in order to create and maintain a full-employment demand environment. Because of the postulates underlying NKE, the private sector can never suffer from a long-run deficiency in effective demand.

Clearly, the NKE prescription pill box contains medicines that Keynes would have labelled as dangerous to the health of the economic system in which we live. Moreover, Keynes would have argued that the NKE pill box does not contain the necessary medicine to insure a prosperous capital economy — in either the short run or the long run!

PROVIDING A TRUE GENERAL THEORY VIA A TAXONOMIC ATTACK ON SAY'S LAW

Keynes became convinced that the axioms of classical economics were too restrictive to explain why an economy might become mired in unemployment. By developing an expanded demand-category classification system requiring fewer classical axioms [Davidson, 1984], Keynes produced a more general theory than the classical analysis. As a result Say's Law could be shown to be applicable only if one imposed additional axioms to produce a specific case of Keynes's general theory. As we will demonstrate in this section, in the absence of the additional classical axioms, Keynes could demonstrate that Say's Law "is not the true law relating the aggregate demand and supply functions...[and therefore] there is a vitally important chapter of economic theory which remains to be written and without which all discussions concerning the volume of aggregate employment are futile"[Keynes, 1936, 26].

Say's Law specifies that all expenditure (aggregate demand) on the products of industry is always exactly equal to the total costs of aggregate production (aggregate supply) including gross profits. Letting D symbolize aggregate demand and Z aggregate supply, if

$$D = f_d(N) \tag{1}$$

and

$$Z = f_z(N), \tag{2}$$

then Say's Law asserts that

$$f_d(N) = f_z(N) \tag{3}$$

"for *all* values of N, i.e., for all values of output and employment" [Ibid., 26]. In other words, in an economy subject to Say's Law, all costs of production incurred by firms (whether in pure competition or not) are recouped by the sale of output. There is never a lack of effective demand. The aggregate demand and aggregate supply curves coincide (see Figure 1). In a Say's Law economy there is no obstacle to achieving the full-employment level of N_f^a in Figure 1.

To challenge the applicability of Say's Law, Keynes had to develop a model where the aggregate demand and aggregate supply functions, $f_d(N)$ and $f_z(N)$, are not coincident (see Figure 2). The equilibrium level of employment could be N_1^b rather than the full-employment level of N_f^b. Keynes accepted the "age-old" classical supply function that could be associated with pure competition (or any degree of monopoly)[14] as the micro-basis for the aggregate supply function of equation (2). The existence of monopolistic power in the product and/or the labor markets is, therefore, not a necessary condition for the existence of a barrier to full employment.

The existence of a possible less than full-employment equilibrium is due to the fact that the determinants of the aggregate demand function are not identical with the determinants of aggregate supply. Keynes specifically differentiated his theory from classical economics solely via the concept of aggregate demand which he split into two classes — i.e.,

$$D = D_1 + D_2 = f_d(N) \quad (4)$$

where

$$D_1 = f_1(N) \quad (5)$$

and

$$D_2 \neq f_2(N) \quad (6)$$

D_1 represents *all* expenditures which "will depend on the level of aggregate income and, therefore, on the level of employment N" [Ibid., 28]. D_2 represents *all* expenditures *not* related to income and employment. Since classical theory does not recognize the possibility of a D_2 category, Keynes's taxonomy provides an inherently more general theory, where the classical system is a special case where, among other things, D_2 is always equal to zero.

The axioms of ergodicity, gross substitution and neutral money underlie the expenditure decisions of utility maximizing agents in the classical model. Because of these postulates, the only reason people will exert the necessary distasteful effort to earn income (aggregate supply) is to spend it all (aggregate demand) on the only things that are expected to provide utility — the products of industry. In the simplest classical analysis, therefore, there can be no D_2 spending. Aggregate demand consists entirely of D_1 expenditures, and for utility maximizing individuals, the marginal propensity to spend on D_1 must be unity; Say's Law implies $f_d(N) = f_Z(N)$ and Figure 1 is relevant.[15]

To assure that Keynes's second expenditure category, D_2, is neither an empty cell nor always equal to the "planned" savings function $[f_Z(N) - f_1(N)]$ in either the short or long run, Keynes had to reject the ergodic axiom that presumes that the future is merely the statistical reflection of the past and therefore market price data are statistically

FIGURE 1

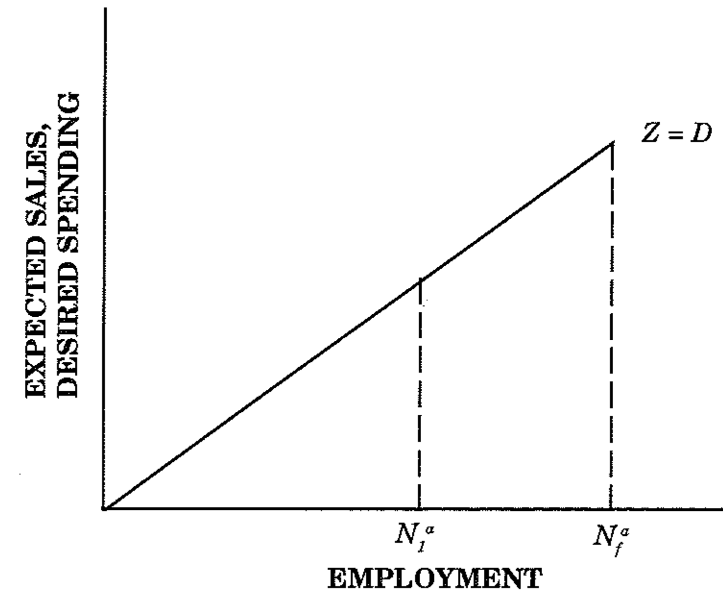
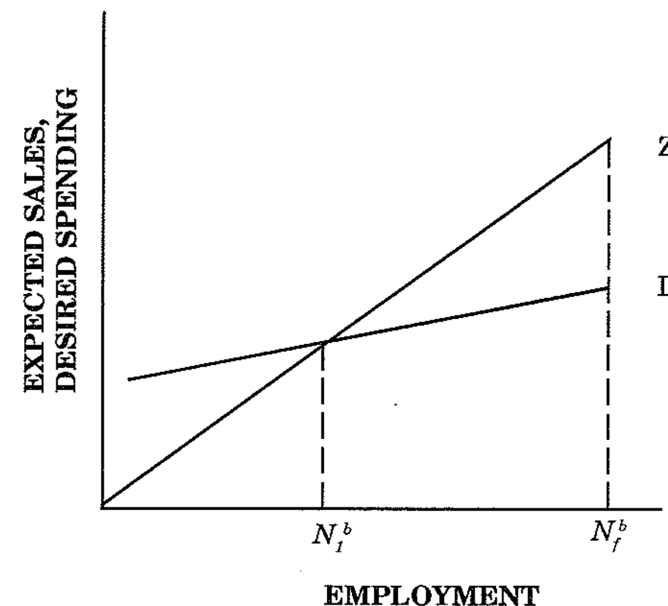


FIGURE 2



reliable indicators of future events. Rejecting the ergodic axiom means recognizing the existence of an uncertain future that can not be predicted reliably by analyzing past and current market price signals. In a nonergodic environment, expectations of future profits (the basis for investment spending, D_2) can not be statistically forecasted from existing market data. Neither can any current information regarding the "planned" savings function $[f_Z(N) - f_1(N)]$ be used to provide the basis for formulating rational expectations regarding each future period's aggregate D_1 spending in a nonergodic, uncertain world [Davidson, 1991]. In a general theory, therefore, expected future profitability of current investment projects can not be determined endogenously by the current propensity to save and/or past or current spending patterns. Rather, investment expenditures depend on the exogenous (and therefore, by definition, sensible but not rational) expectations of entrepreneurs, or what Keynes called "animal spirits".

Keynes's analysis is a more general theory than classical theory because (1) it requires fewer axioms and (2) it explicitly recognizes the possibility of two different classes of current demand for producible goods and services, with each class having some different and independent determinants. Classical analysis ultimately presumes that supply $[f_Z(N)]$ is the sole determinant of demand and therefore creates its own identical demand so that all markets clear. The latter becomes "a special case and not...the general case" [Keynes, 1936, 3] where

$$D_2 = 0 \tag{7}$$

and

$$D_1 = f_1(N) = f_z(N) = Z \tag{8}$$

for all values of N.[16]

Keynes's most important task, however, was not merely to provide a general theory. Rather it was to demonstrate that "the characteristics of the special case assumed by classical theory happen not to be those of the economic society in which we actually live" [Ibid, 3]. In other words, Keynes had to demonstrate that even if $D_2 = 0$, the D_1 function would not be coincident with his macroanalogue of the age-old supply function. To accomplish this, Keynes dropped the classical axioms of gross substitution and money neutrality. This permitted utility maximizing agents to withhold some portion of their aggregate income from the purchase of the products of industry — i.e., the marginal propensity to spend of D_1 on currently produced goods and services is less than unity.

Instead of planning to spend all of their aggregate income on the products of industry, self-interested agents might purchase (with their savings) liquidity by possessing money. Liquidity implies the ability to discharge one's contractual obligations when they come due. In an economy that uses money contracts to hire inputs and organize production and exchange, only money can discharge contractual obligations under the civil law of contracts. (In a civilized society where slavery is illegal, enforcement of labor employment contracts in real terms is not permitted.) The ability to be liquid requires holding sufficient money (or other liquid assets that are readily resalable in a well-organized, orderly spot market for money) to meet all known upcoming contractual obligations plus, in an uncertain world, sufficient liquid assets to meet currently unknown but potential future contractual obligations.

The "attribute of 'liquidity'", Keynes [Ibid., 241, Note 1] insisted required that money and other liquid assets had to be nonproducible[17] and non-substitutable for producible

goods. As long as the possession of liquidity provides agents with utility, then the mere existence of non-producible liquid assets for which (*for liquidity purposes*) producible goods are not good substitutes is a necessary *and* sufficient condition for involuntary unemployment equilibrium to develop whenever private sector demands for additional liquidity out of their full-employment income exceed planned investment $[D_2]$ spending. Or, in the words of Hahn, involuntary unemployment equilibrium requires *demand* conditions such that people can find "resting places for savings other than reproducible assets" [1977, 31].

In Keynes's general theory the demand for liquidity and the existence of a nonproducible supply of money for which producible durables are never a good liquidity substitute assures a nonneutral monetary system, even if prices are completely flexible. "Unemployment develops, that is to say, because people want the moon; — men cannot be employed when the object of desire (i.e., money) is something which cannot be produced and the demand for which cannot be readily choked off" [Keynes, 1936, 235] — and not because imperfect competition creates a nonflexible price environment.

Assume that the gross substitution between nonproducible liquid assets (including money) and producible goods for liquidity purposes is approximately zero[18] [Keynes, 1936, Ch. 17; Davidson, 1984]. If the demand for liquidity increases, then the induced rise in the relative price of liquid assets can neither induce employers to hire workers to produce more liquid assets including money nor induce demanders of liquidity to accept the relatively cheaper producible (nonliquid) goods instead. In other words, the existence of *nonproducible and nonsubstitutable* liquid assets (including money) for which producible goods are *not* a good liquidity *substitute* can affect employment — in both the short and long run. These essential properties of liquid assets are independent of the degree of competition, price flexibility and coordination failures .

Thus, a general theory of a monetary economy which emphasizes liquidity needs in an uncertain world and therefore rejects the axiom of nonneutral money implies that

$$D_1 = f_1(N) \neq f_Z(N) \tag{9}$$

whenever that portion of income that people earn that is not spent on producible goods — i.e., that is used instead to demand nonproducible money and other liquid assets as a store of value (saved). By proclaiming a "fundamental psychological law" associated with the detailed facts of experience "where the marginal propensity to consume was always less than unity," Keynes [1936, 96] finessed the possibility that equation (8) was applicable to the "facts of experience". If the marginal propensity to consume is always less than unity, then $f_1(N)$ can never coincide with $f_z(N)$. Even if $D_2 = 0$, equation (9) holds and Say's Law is not applicable to "the economic society in which we actually live" [Ibid., 3].

CONCLUSION

If economists would only take up the challenge of Keynes's revolutionary general theory and investigate the properties of a system of microeconomic demand and supply functions that throw out the axioms of ergodicity, ubiquitous gross substitutability, and nonneutral money, then a truly New Keynesianism — dare I call it Post Keynesian economics — could be developed which could again permit economists to provide useful and realistic guides to both micro and macroeconomic policies.[19] This would be a New Keynesianism that Keynes could readily endorse.

Unfortunately, the moral of the history of the development of New Keynesianism vs. New Classicism when compared to the dichotomy of views in the Economics Establishment between old classical economists such as Ricardo and other "weaker spirits" before 1936 can be summed up in a quote from Dennis Robertson who wrote "Now as I have often pointed out to my students, some of whom have been brought up in sporting circles, high brow opinion is like the hunted hare; if you stand in the same place, or nearly the same place, it can be relied upon to come around to you in a circle" [1956, 81]. No wonder mainstream economists provide policy advice which does not differ significantly from that offered by classical economists and their weaker spirit brethren more than 60 years ago. No wonder that more than a half century after Keynes published his *General Theory*, the world's major economies are enmeshed in ubiquitous unemployment conditions. Given the research agenda of mainstream economics, no wonder economics has again become the dismal science.

NOTES

1. Our primary consumers are students who, by definition, are looking to the professors of economics to tell the truth.
2. Independently, Colander began using the New Keynesian terminology in 1985 [Colander and Koford, 1985].
3. Parkin's old and new definitions of NKE are designed to contrast with his benchmark old and new definitions of NCE. This implies that NCE is the general theory and NKE is a special case. NK economists are a subset of Classical economists who accept the axioms of NCE as the foundation for "theory". NKE adds onto the classical system one or more *ad hoc* supply constraints in terms of fixities and/or coordination failures to explain short-term unemployment and aggregate output fluctuations. In the long run, as prices and wages are flexible and coordination failures are overcome, free markets will find the classical solution.
4. Colander claims that improvements in "coordination", *ceteris paribus*, increase output, i.e.,$dX/dC>1$. Any increase in coordination might lower actual employment while it can, by construction, result in higher marginal physical products of labor and capital. Colander argues that a less than full-employment level on a more coordinated production function can be socially preferable to full employment at a less coordinated level. Although I can sympathize with Colander's attempt, I do not believe it captures Keynes's logical analysis. I think it diverts attention from the fundamental causes of underemployment equilibrium.
5. As the quote from Blanchard ion page 454 *infra*, classical axioms are accepted by all "theorists" as a matter of faith.
6. When Dunlop and Tarshis provided empirical evidence to suggest that wage movements were incompatible with the classical theory of aggregate supply, Keynes [1939] noted that he had accepted the classical supply conditions as a generalization that had widespread support, even though this made his task more difficult. He was willing to concede "a little to the other [classical]view" [1939, 50] in order to emphasize that the unemployment fault lay basically in a lack of effective demand.
7. Keynes argued that as a general case long-period underemployment equilibrium can be a normal outcome of a market economy, even with freely flexible prices and pure competition. This was not because Keynes thought that real world markets were necessarily competitive and/or possessed instantaneously and fully flexible prices. Rather Keynes [1936, 245] wanted to demonstrate that a general theory of employment did not require any unique specification for either the degree of competition or the magnitude of price flexibility to demonstrate the existence of an involuntary unemployment equilibrium, even in the long run.
8. Keynes [1936, 245] took any "degree of competition" as a given. Hence his aggregate supply curve could be formulated in terms of purely competitive supply, or in terms of any constant degree of monopoly mark-up over the supply schedule of the competitive firm. (For the measure of the degree of monopoly see A. P. Lerner [1933/34].)
9. His initial assumption of fixed wages which was a " simplification, with which we will dispense with later, is introduced solely to facilitate the exposition. The essential character of the argument is precisely the same whether *or not* money wages, etc. are liable to change" [Keynes, 1936, 27, italics added].
10. Twenty-three pages or 6 percent of the entire text.
11. Any market failure is ultimately due to no single private agent having an incentive to respond fully "unless it believes that all other agents will do likewise" [Gordon, 1990, 1138].
12. For a detailed analysis see Davidson [1984] and pages 457-61 *infra*.

13. Blanchard [1990, 780] claims unanticipated changes in the money supply "are mere intellectual curiosities."
14. Keynes specifically indicated [1936, 245] that any degree of competition was compatible with his generalized aggregate supply function.
15. In an intertemporal setting with gross substitutability, etc., over time, agents plan to spend their lifetime income over the life cycle before they die, i.e., the long-run marginal propensity to spend is unity, and Say's Law, at least in the long run when we are all dead, holds.
16. Technically, even if D_2 were also to be defined in some way to be related to aggregate income, i.e.,
    (7') $D_2 = f_2(N)$
    so long as
    (8') $f_1(N) + f_2(N) \neq f_Z(N)$
    for all values of N, then Say's Law is not applicable. Hence, even if D_2 is defined to be related to employment, Neo-Classical theory is still a special case where $f_1(N) + f_2(N) = f_Z(N)$.
17. The nonproducibility attribute of money and other liquid assets [Keynes, 1936, Ch. 17, especially pages 230, 235, 241] means that, for Keynes, the supply of money is embedded in the old adage that "money does not grow on trees" and hence is not harvestable by the employment of labor. If money were harvestable then as long as the marginal utility of money picked from the classical money tree exceeded the marginal disutility of labor necessary to reach up to pick the fruit of the money tree, unemployed workers could always find employment.
18. In other words, gross substitution is not a ubiquitously applicable axiom in a money-using production economy.
19. Interestingly, none of the New Keynesian expositors ever questions whether classical microeconomics is a "correct" foundation for macroeconomics. Is it necessarily the case that self-interested individuals will automatically attempt to achieve an intertemporal optimality via their expenditure patterns? In his Nobel Prize lecture entitled "On Maximizing Principles in Economics" [1972, 235] Samuelson warns that the insistence that individuals who know how to maximize their utility can easily degenerate into "a sterile tautology", as the Austrians economists "when challenged... found themselves replying circularly that however people behaved, they would presumably not have done so unless it maximized their satisfaction" [Ibid., 235].

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