New Keynesian Economics in Perspective*

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In the 1990s the term, New Keynesian macroeconomics, is being used with increasing frequency, leading some economists to question whether their profession has gone classification crazy. At a minimum it has left many in the profession wondering what the term, New Keynesian, as opposed to neoKeynesian or Keynesian, means. To some extent, I agree with this view; the way many economists, especially Mankiw and Romer (1991), have used the term New Keynesian is confusing and does not help clarify important distinctions among macroeconomists. New terms should clear up confusion, not add to it; they should direct nonspecialists to the central issues at debate. But initial terminological confusion can often lead to clarification, and can be part of the process by which our understanding of the issues advances. *New Classical* is such a term; it was added to economists' vocabulary in the 1980s because the work it described made a fundamental shift away from neoclassical thinking. The term made clear the major shift in thinking that was inherent in New Classical work.

Elsewhere (Colander 1992a, b) I have criticized Mankiw and Romer's use of the term, New Keynesian, arguing that it is subject to a similar type of criticism as that made by Frank Knight of Keynes. Knight argued that some things that Keynes said were new and some things that he said were true, but, unfortunately, the things that were new weren't true, and the things that were true weren't new. Similarly, I argued that while some of what Mankiw and Romer call New Keynesian is new, and some of it is Keynesian; unfortunately the things that are new aren't Keynesian, and the things that are Keynesian aren't new.[1]

In those articles I offered an alternative definition of New Keynesian economics that I claimed was worth the trouble of learning and should enter economists' vocabulary for the same reason that the term New Classical

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[1] Mankiw is not a strong advocate of his definition; in private correspondence to me he stated that he is now somewhat disparaging of all nomenclature issues, including his use of the term New Keynesian. In his recent paper "The Reincarnation of Keynesian Economics" (Mankiw 1992) he writes that "With new Keynesians looking so much like old classicals, perhaps we could conclude that the term 'Keynesian' has out-lived its usefulness."

economics entered into economists vocabulary.[2] The emerging New Keynesian work requires a new label because it makes a fundamental shift away from neoKeynesian thinking. The emerging work I called New Keynesian is work in which the central NeoKeynesian/Neoclassical issue of wage/price flexibility is almost irrelevant; instead in New Keynesian work institutional coordination failures, macroexternalities, and interdependencies lead to the existence of multiple equilibria or what might be called X-inefficiency. Recognizing that multiple equilibria might exist changes the nature of the macro debate.

New Keynesian economics opens up a whole new front in the Classical/Keynesian debate, a front in which it is not Keynesians who are seen as adding ad hoc assumptions to the more general New Classical model, but it is New Classicals who are adding ad hoc assumptions to the more general New Keynesian model. In this emerging literature New Classicals are directly engaged by New Keynesians in their own general equilibrium terms. Thus, the nomenclature issue is more than a terminological debate; it is a debate about what is the central issue at dispute between Keynesians and Classicals.

My previous articles were written primarily for macroeconomic specialists who are familiar with the traditional groupings of macro thought. Hence, those articles assumed significant previous knowledge, and left many non-macro specialists in the dark about where this New Keynesian literature differs from other Keynesian schools. In this paper I provide a simple statement for the non-specialist of what my definition of New Keynesian economics is, why its emergence is an important development in macro theory, and what its relation to other schools of macro is.

To do so I first provide a brief summary of the key elements of various schools of macroeconomics. This summary supplies the necessary background information to place the recent use of the term, New Keynesian economics, in perspective, and to see why it is important to separate New Keynesians from neoKeynesians. Then I expand upon the distinctive elements of New Keynesian economics, trying to give a sense to the non specialist of what is unique in New Keynesian economics and why, although it is still in its infancy, it has the potential of reinvigorating the Keynesian view of macroeconomics.

In this paper I concentrate only on the broadest conceptual issues involved in New Keynesian economics, since the following paper nicely covers many of the details and unanswered questions. In that paper Hans van Ees

[2]I claim a certain right to discuss the meaning of the term, New Keynesian, since I was one of its originators (Colander and Koford 1985, Colander 1986).

and Harry Garettsen (pp.) discuss the literature that I am including under the New Keynesian classification, and some of the historical predecessors of the New Keynesians.

The Various Macroeconomic Schools

Most non-macroeconomic specialists recognize two schools of macro: the Classical and Keynesian. Most also have heard about the subclassifications neoclassicals, New Classicals, and neoKeynesians, although most of those I have interviewed have been hard pressed to differentiate between a neoclassical and a New Classical, or a (no prefix) Keynesian and a neoKeynesian. Among macrospecialists, at least those with a view that macroeconomics captures a substantive intellectual debate, those terms has specific meaning which capture what issues are being disputed. Since the concept, New Keynesian, has meaning only in juxtaposition with these other macro schools, in order to give the non-macrospecialist a sense of the development of New Keynesian economics is important, it is necessary to first discuss the meaning of the existing terminology. What is the difference between a neo and a no prefix Keynesian or classical, and what is the difference between a neoclassical and a New Classical?[3] The chart on the following page provides a brief summary.

[3]This table is a modification of tables in Colander (1986), pp.

Macroeconomic Schools

	No Prefix (Post)		*Neo*		*New*	
	Classical	***Keynesian***	***Classical***	***Keynesian***	***Classical***	***Keynesian***
Modeling Techniques	Informal; based on Quantity Theory and Say's Law	Informal; based on simple income expenditures model	Semiformal; focused on IS/LM model	Semiformal; focused on IS/LM model	Formal; based on general equilibrium, Say's Law, Quantity Theory, rational expectations and market clearing	Formal; based on general equilibrium with macro externalities, rational expectations and multiple equilibria
Institutional Backdrop	Informal; contextual	Informal; contextual	Semiformal; semicontextual	Semiformal, semicontextual	Noncontextual; analytic	Noncontextual, analytic; although it employed the importance of context in deciding which equilibria will be arrived at
Monetary Theory	Quantity Theory; dichotomy between real and nominal sectors	Unclear how monetary sector is integrated into real sector	Formal money market analysis with LM curve rather inelastic; Quantity Theory dichotomy broken by Pigou effect	LM curve rather elastic; dichotomy broken by Keynes effect	Quantity Theory; dichotomy between real and nominal sectors; no formal analysis of money	Money is part of production function; dichotomy inherently broken
Explanation of Unemployment	Wage rigidities	Cyclical fluctuations; shortfall of demand	Wage rigidities	Wage rigidities combined with shortfall of demand	Model precludes unemployment; wage rigidities would cause unemployment	Initial model focuses on aggregate inefficiency, not unemployment

As you can see, it divides the debate between Keynesians and Classicals into three separate debates, a *no prefix* debate, a *neo* debate, and a *new* debate. Let's consider these three debates individually.

The "No Prefix" Debate

When used in juxtaposition to neo or new the terms "Keynesian" and "Classical" (without prefixes) convey a debate which is much wider and less technical than the other debates. This use of the term became part of the literature in the writing of Joan Robinson (who called the neoKeynesians Bastard Keynesians), Paul Davidson (who created the term Post-Keynesian to try to separate out the economics of Keynes from neoKeynesian economics), and Axel Leijonhufvud, who also differentiated the economics of Keynes from neoKeynesian economics. Through these economists' work the no prefix/neo distinction has become a standard distinction.

Classical macroeconomics (no prefix) refers the macroeconomics of such writers as David Ricardo and John Stuart Mill. It centers around Says Law (Supply creates its own demand) and the Quantity Theory of Money (MV -> PQ); it does not focus much on unemployment. Inflation is seen as a monetary phenomenon which, because of an assumed dichotomy between the real and nominal sector, can be considered separately from the real economy. The arguments in Classical economics are generally not formally presented, and those arguments often combine political and philosophical issues with economics issues; classical thought is contextual thought which can only be understood in relation to the institutional context in which it is written. It was macroeconomics until the late 1920s.

Keynesian macroeconomics (no prefix) generally refers to the macroeconomics found in *The General Theory* (Keynes 1936). It is an informal contextual treatment of macro issues similar to the informal contextual treatment of Classical economics. It rejects both Says Law and the Quantity Theory of Money, and hence comes to different conclusions about macro policy than does Classical economics. It argues that under-full-employment equilibria can exist. It incorporates some type of a multiplier process in the analysis, but does not relate that process to individual choices. It contends that fixed wages are not the cause of recessions or unemployment but does not formally show how, without that assumption, recessions and unemployment can exist. There are probably eight or nine different interpretations of Keynes' ideas, so what Keynesian economics really is is subject to dispute.

The "Neo" Debate

The historical debate between the Keynesians and the Classicals had many dimensions—political, policy, behavioral—in the 1950s and 1960s and seemed to continue without end. A variety of attempts to formalize that debate, and hence say precisely what it was that differentiated Keynesians from Classicals, led to the adding of the "neo" prefix to both Keynesians and Classicals. Thus, the terms *neoclassical* and *neoKeynesian* developed as the Classical/Keynesian debate focused on certain aspects of the broader Keynesian/Classical debate which could be presented in a formal model.

By adopting a common formal model, the neoKeynesians and neoclassicals came to an agreement on what issues they disagreed upon. Thus the "neo" prefix refers to Classical and Keynesian ideas translated into a specific formal model. NeoKeynesian and neoclassical variants of that formal model are what most non-macrospecialists think of as Keynesian or Classical economics, but to a macrospecialist, they represent a debate which is of much narrower scope than is the Keynesian/Classical debate.

Neoclassical macroeconomics is similar to Classical macroeconomics (Keynes grouped the two together), but it is more formally presented (i.e., it can be reduced to a relatively simple set of equations) and it is less reliant on political and philosophical insights. Nonetheless it retains a contextual flavor, and some knowledge of institutions is necessary to put the model in perspective. It combines partial equilibrium analysis with the two Classical propositions--Says Law and the Quantity Theory of Money--to arrive at the same formal conclusions as does the Classical school.

Although the Classical school in the work of Dennis Robertson and A.C. Pigou was evolving into the neoclassical school before Keynes, what is now called the neoclassical model developed as a juxtaposition to neoKeynesian macroeconomics. In a sense, Hicks' famous article *Keynes and the Classics* (Hicks 1937) created both neoclassical and neoKeynesian macroeconomics.

NeoKeynesian macroeconomics is a semiformal representation of Keynesian ideas centered around Hicks' IS/LM model. It corresponds to neoclassical economics. The neoKeynesian model differs from the neoclassical model in its estimates of elasticities of the demand for money, and in its assumption of fixed nominal wages. Eliminate these from the neoKeynesian model and one arrives at the neoclassical model.

The debates of the "neos" centers around empirical estimates of elasticities of the demand for money (and hence the shape of the LM curve) and the reasonableness of a fixed nominal wage assumption. NeoKeynesians argue that the fixed nominal wage and price assumptions are reasonable; neoclassicals argue that they aren't.

Because the neoKeynesian model requires fixed nominal wages to lead to different results from the neoclassical model, whereas Keynes was explicit that assumption of fixed nominal wages wasn't necessary, most Keynes scholars do not regard this model as an adequate representation of Keynes' ideas. In the 1970s E. Malinvaud (1977) and Barro and Grossman (1971, 1976) extended the formality of the neoKeynesian model and presented neoKeynesian economics in a more complete general equilibrium model, but their work is still classified as neoKeynesian since the central neoKeynesian elements remain.

As I stated above, not all macroeconomists accepted the formal neoKeynesian interpretation of the Keynes/Classical debate, causing many splinter groups and much confusion. For example, monetarists, most specifically Milton Friedman, when pushed, rejected the formal neoclassical position, and related his arguments back to the early Classical schools. This led to Friedman being "utterly baffled" by the views attributed to him. (Friedman 1974)

The Keynesian counterparts to the monetarists were the Post Keynesians. They, like the monetarists, argued that the neoKeynesians had it all wrong—that it was impossible to achieve a deterministic model. Both these schools were throwbacks to the early no-prefix classifications; they wanted to broaden the debate.

But these, and other, critics of the terms of the "neo" debate lost out in the fight for textbook space. By the 1970s the debate between Keynesians and Classicals was seen almost exclusively in the variations of the formal models. As that happened the neoKeynesian and neoclassical models were taught to students as being the entire Keynesian/Classical debate. Thus, students lost sight of much of the intellectual debate, setting the stage for the next development in macroeconomic thought, in which, instead of moving back to the broader debate, the debate shifted to the aspect of the neoKeynesian debate that seemed to be the center of the debate: the question of wage and price flexibility.

The "New" Debate

In the early 1970s the neoKeynesian position was called into question by the work done in the microfoundations of macro and by a group of writers who later became known as the New Classicals. This work argued that rational individuals would not be fooled by inflation and therefore that the neoKeynesian position based on wage inflexibility did not hold. This simple argument undermined the neoKeynesian position which required that individuals respond differently to real wage decreases caused by price rises than to real wage decreases caused by falls in nominal wages. Without that assumption wage inflexibility was not consistent with assumptions of rational expectations and market clearing. The general adoption of these latter assumption led to the rise of the New Classical School and the demise of NeoKeynesian economics.

New Classical macroeconomics is much more formal in its modeling techniques than is neoclassical macroeconomics. It uses a noncontextual analytic model in which the institutional backdrop is totally contained within the equations of the model itself. Nonetheless it arrives at roughly the same ideas as do the other Classical schools.

New Classical models are general equilibrium models that implicitly accept Says Law and the Quantity Theory. They relate these assumptions to individual choice theory using rational expectations, microfoundations of macro, and market clearing assumptions. In doing so, New Classical economics tries to understand all macro issues within a general equilibrium framework. It focuses on the Lucas aggregate supply curve, which is a perfectly inelastic aggregate supply curve at full employment. That Lucas supply curve formally embodies what I call the Classical Corollary to Says Law: supply creates its own demand at the level of income that society desires.

The New Classical revolution had the effect of freeing the debate from the rather stale debate that had characterized the "neo" debate, opening up a much wider debate front. It brought significant responses from Keynesians.

As the term, *New Classical*, came into wide use in the 1980, the rise of the term, *New Keynesian*, was inevitable. Initially, the New Keynesian terminology was used to describe the general Keynesian response to the New Classicals. It is this loose use of the term that has caused confusion. My definition of New Keynesian is useful precisely because it separates out those Keynesian responses that return the debate to old "neo" debates about fixed nominal wages or prices from those that *broaden the debate front between Keynesians and Classicals back to the questions of the nature of general equilibrium of a monetary economy.* Only the latter can be usefully designated as *New Keynesian.*

New Keynesian economics does not ask questions than can be answered in an partial-equilibrium or highly limited multi-market (such as IS/LM) framework. Posing the question within a limited multi-market framework is the hallmark of the "neo" debate. New Keynesian economics doesn't ask questions that can be posed in a limited framework because *it is interested in more fundamental questions.* Specifically, it challenges two interrelated New Classical assumptions: the assumption of a unique general equilibrium and the assumption that there is no need to establish the macro foundations of micro simultaneously with the microfoundations of macro.

Giving up these assumptions leads to the possibility of macro externalities--results of individual decisions on macroeconomic goals which affect other individuals, but which are not internalized by the market. Macroeconomic externalities come about because of individual choice interdependencies for which markets have not developed to internalize them. These interdependencies might be expectational interdependencies or other types of interdependencies; their existence can create an economy in which there are multiple equilibria, or they can lead the economy to a single nonoptimal equilibrium. The models used to demonstrate these are usually highly abstract, game theoretic models, with far less institutional detail than neoKeynesian or even New Classical models. These more general models clearly bring out some of the ad hoc assumptions which are needed to arrive at New Classical results.

The Distinctive Elements of New Keynesian Thought

Using the above terminological backdrop, let me now be more explicit about why New Keynesian economics requires its own classification. I accomplish this by posing two questions central to the macroeconomic debate and comparing the New Keynesian answer with the neoKeynesian answer. The two questions are:

1. How can a macro economy get stuck at less than a full employment equilibrium?

2. What role do wage and price rigidities play in the thinking of macroeconomists?

NeoKeynesians answer these two questions as follows: the macroeconomy can get stuck at less than full employment equilibrium if there are not perfectly flexible wages and prices; it follows that the answer to Question 2 is that the flexibility of wages and prices is a fundamental research question for neoKeynesian economists.[4]

[4] One of the problems I have with Mankiw and Romer's definition of New Keynesian economics is that it makes wage and price flexibility and and the interaction of real and nominal rigidities, central to their definition of New Keynesian thought. Since the question of wage and price rigidities have always been part of neoKeynesian economics, in

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New Keynesian economics agrees with neoKeynesian economics that an under-full-employment equilibrium can occur only if wages and prices are less than perfectly flexible (or if there are corner solutions) but it does not see this question as worthy of significant study. Hence, the neoKeynesian and New Keynesian answers to the second question are fundamentally different. NeoKeynesian economics focuses on issues of wage and price flexibility; New Keynesian economics focuses on more general issues of coordination failures. Thus, in the work of New Keynesian economists, like Classical economists, there is little direct analysis of issues of wage and price level flexibility or unemployment; unemployment is a derivative issue to be considered only after certain difficult questions in general equilibrium have been resolved. The novel element in New Keynesian thought is the recognition that, simply because there is no unemployment, there is no reason to believe that the equilibrium arrived at is optimal. There can be what might be called aggregate X-inefficiency, which means the output is not at the desired level.

Thus, while agreeing that unemployment is important, and must be explained, New Keynesian economics first tries to understand potential inefficiencies which can develop in an aggregate economy within a general equilibrium framework. In fact, once the New Keynesian general equilibrium context is understood, it is reasonable to conclude that wage and price *inflexibility* can actually improve the economy's performance, making it consistent with the argument Keynes made in *The General Theory*.

An Example of How Wage and Price Inflexibility Can Improve Aggregate Efficiency

Say that the widget economy with perfect wage and price flexibility can arrive at two general equilibria, one with an output of 1,000 widgets, and one with an output of 400 widgets and the social utility is directly related to output. Both are full employment equilibria but the first equilibria has a much higher output and hence real wage than the second. Assume that the institutional structure is such that there is no way for it to move from the second to the first once it has arrived at the first. However, say that by establishing institutional conventions which limit wage and price flexibility, the economy can move to a new equilibrium with unemployed resources in which it produces 600 widgets. That unemployment equilibrium is preferred to the 400 widget full employment equilibrium, and could be a Pareto improvement if some means of compensating the unemployed can be

other papers I suggested that, at most, this work could be called New neoKeynesian (Colander 1991, 1992), but said that such subclassification strains the memory banks of even macro specialists.

designed. Thus, an important part of the New Keynesian research program is to show that multiple equilibria situations can describe the economy, and show that limiting wage and price flexibility can improve on that equilibrium.

Is it possible that the aggregate economy can be at full employment, but nonetheless operate at less than ideal output? In the New Keynesian technical models, the answer is definitely yes; they have shown that it can, but those models are highly abstract and the question remains whether they carry over to the real world: Can the models be reduced to a reasonably satisfying story? I believe the answer is "yes;" there are several reasonable stories one can tell to intuitively justify the existence of aggregate X inefficiency. One of the stories is almost identical to the familiar no-prefix Keynesian story of the multiplier. Individuals believe there will be low demand and in expectation of that low demand, they produce little and there is low output. In that story miscoordinated expectations cause low output.

A Macrofoundation Foundation to Micro and Interdependent Choice

New Keynesian authors have shown that the above story is totally consistent with microfoundations and rational expectations. They have shown that to arrive at its unique equilibrium result New Classical economics makes what might be called the independence assumption: Individual choice can be analyzed independently of the aggregate context. New Keynesian economics differs from New Classical economics by not accepting this independence assumption; it argues that that assumption is ad hoc and inconsistent with reality; a more general analysis of individual choice sees choices as interdependent with others' choices. Put another way, just as there is a microfoundation to macro, so too is there a macrofoundation to micro which incorporates those analyses, and which must be considered before individual choice is analyzed.

Only by studying individuals' choice in its macroeconomic context can one understand interdependent choice. Without a variety of ad hoc assumptions, there are many different rational expectations. Depending on which of the many rational expectations individuals hold, many different equilibria are possible.

When one considers the macrofoundations of microeconomics one comes away with a strong sense of indeterminacy; many possible aggregate equilibria are possible. The actual equilibrium that the economy arrives at can only be determined contextually, with a knowledge of peoples prior history and of the existing institutions. The actual equilibrium can be path dependent and expectations can be self-fulfilling. For example, individuals' production could depend on their expectations of others demands (and, rationally, expectations must) if individuals expect low demand, they will produce little and there will be a low output equilibrium. Thus sunspot equilibria and self fulfilling expectations models are a key areas of New Keynesians research.

The New Keynesian Production Function

The above conceptual discussion has, I hope, provided a sense of the New Keynesian vision. Let me conclude with a brief discussion of how that New Keynesian vision changes the macroeconomic model which we study and teach students. It will only become part of the economists terminology if it is teachable.

NeoKeynesian, Neoclassical, and New Classical macroeconomics all model the aggregate production function as a static technical phenomenon. It follows from this conception that an economy with perfectly flexible prices will be operating at peak efficiency. As I discussed above, New Keynesian economics challenges that conception of the production function and the conclusions that an economy with perfectly flexible prices will be operating at peak efficiency. Specifically, it argues that such a specification assumes precisely that which is at issue: whether an aggregate economy will be operating efficiently. New Keynesian economics no longer assumes that an economy with perfectly flexible prices will operate at peak efficiency. Multiple and nonoptimal equilibria are possible. Such issues can be added to the production function by including a new term *coordination* in the production function as in the following:

$$X = f(K, L; C)$$

The coordination variable, C, can cause the production function to shift around; it makes it technically possible for the same inputs to be associated with different levels of output. The New Keynesian research agenda is to examine and understand that coordination factor and how it interrelates with markets.

That research program necessarily involves institutions which in the New Keynesian view have two roles: to coordinate individuals' expectations about others actions, and to coordinate individuals actions, given expectations. All other schools of macro have focused on the second of these two roles and have concluded that perfectly flexible price markets optimally coordinate individuals actions. New Keynesians argue that is not necessarily true.

Thus the New Keynesian aggregate production function no longer becomes a fixed point around which fluctuations occur, as in the case of the New Classical economics, or a point of departure to look for deviation from perfect competition—as is the case with the neoKeynesian model. Instead, New Keynesian economics challenges the basic assumption of the traditional approach. In doing so it returns Keynesian economics to its role as the general theory, and makes classical economics a specific theory which follows from Keynesian theory if one makes certain ad hoc assumptions.

In New Keynesian economics markets (and hence money), and the conduct of monetary and fiscal policy, are seen as technical phenomena which increase the efficiency of aggregate production; they can cause the aggregate production function, and hence the supply curve, to *shift*. This addition of coordination to the production function changes the nature of the questions raised by macroeconomists from policy questions, given institutions, to *institutional* questions. Since whether a change is seen as a policy or an institutional question depends on the model, not the change being talked about, all the traditional macroeconomic questions can be asked. They now become questions relating to aggregate production function, not questions to be tacked onto an implicitly assumed institutional structure.

Conclusion

The above discussion has been brief, but, I hope, has conveyed the major departure that New Keynesian work in making. It is not tacking on microfoundations to the existing neoKeynesian model; it is instead searching for the appropriate macrofoundations for microeconomics. If successful it will not only change the way economists think about macro; it will also change the way they think about micro.

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Macroeconomic Schools

	No Prefix		Neo		New	
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