

New Classical and Old Austrian Economics: Equilibrium Business Cycle Theory in Perspective

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The recent flourishing of New Classical economics, and especially its Equilibrium Business Cycle Theory (EBCT), has given a fresh hearing to the Old—but still developing—Austrian Business Cycle Theory (ABCT). While the New and the Old differ radically in both substance and methods, they exhibit a certain formal congruency that has captured the attention of both schools. The formal similarities between EBCT and ABCT invites a point-by-point comparison, but the comparison itself dramatizes differences between the two views in a way that adds to the integrity and plausibility of the Austrian theory.

In modern macroeconomic literature, the label EBCT is applied sometimes so broadly as to include New Keynesian as well as New Classical constructions and sometimes so narrowly as to preclude the very developments within the New Classical school that are most closely related to ABCT. So-called Real Business Cycle Theory, in which cyclical movements of macroeconomic variables are characterized by both market clearing and Pareto optimality, is sometimes designated as the only true equilibrium construction. The comparison of New Classical and Old Austrian theories is best facilitated by letting EBCT refer to those theories in which (a) individuals make the best use of the information available to them and (b) an informational deficiency temporarily masks the interventions of the monetary authority. As explicated by Robert Lucas (1981), Robert Barro (1981) and others, EBCT so conceived accounts for business cycles in terms of the actions of market participants confronted with what has come to be known as a signal-extraction problem. Difficulties in

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interpreting price signals during a monetary expansion also lie at the root of ABCT as introduced by Ludwig von Mises (1953) and developed by Friedrich A. Hayek (1967).

Comparing Lucas's EBCT with Hayek's ABCT, R. W. van Zijp (1990) argues that Lucas is not a Hayekian on the grounds of the differing goals of the two theorists. Hayek sought to explain the business cycle in terms of a multitude of partially conflicting individual plans; Lucas seeks to predict the behavior of the "representative individual" during the course of the business cycle (p. 20). Kim Kyun (1988) provides an historical perspective by finding links between modern EBCT and business-cycle theories of the inter-war period. He concludes that the New Classical economists have so revolutionized the style of argument that their ability to challenge old views and deal with key issues is seriously restricted (pp. 112-14). William Butos (1985) assesses the claims that Hayek pioneered modern EBCT and finds them misleading. While Hayek took the equilibrium relationships established by price theory as the point of departure for his business-cycle theory, the technique-bound EBC theories take those same relationships to be effective constraints throughout the course of the business cycle (pp. 337 and 341). These treatments of the relationship between EBCT and ABCT are mutually reinforcing and are consistent with my own Austrian perspective on New Classicism (Garrison 1986, pp 443-45; 1989, pp. 19-23).

Substance and Method

It is possible to describe a business cycle in such general terms that the description is consistent with both EBCT and ABCT yet distinct from, say, Keynesian and Marxian theories. The common ground can most easily be identified in terms of the reactions of market participants to a price change whose origins are possibly real, possibly monetary, or possibly both. Similarities between EBCT and ABCT reveal themselves despite the fact that the particular price featured in the two theorists is the price of output (in EBCT) and the price of credit (in ABCT).¹ Points of congruency derive from the fact, emphasized in each theory, that market participants cannot easily (or costlessly) distinguish between the real and the monetary component of the change.

¹The difference in terms of the particular price featured in the two theories accounts for an anonymous referee's observation that in EBCT the cycle is initiated by a rise in the interest rate [in the sense of a greater spread between input and output prices], while in ABCT the cycle is initiated by a fall in the interest rate [in the sense of cheaper credit].

The appropriateness of the response to the price change clearly depends upon the origin, or cause, of the change. An alteration in the underlying economic realities requires accommodation in real terms; monetary manipulation does not. Until the true nature of the price change is known, market participants will respond, at least in part, as if its causes were real. If the price change is, in fact, purely of monetary origins, then market participants will eventually readjust their activities in recognition of the actual, and pre-existing, economic realities. Thus, both EBCT and ABCT allow for a certain non-trivial and systematic non-neutrality of money during the period the economy is adjusting to an increased money supply.²

If EBC models could be taken at face value, the substantive differences between these models and Austrian theory would be easy to identify. In their most basic formulations (e.g., Barro 1981, pp. 80-83; and Hayek 1967, pp. 69-100), the initial response by market participants takes the form of an increase in labor services in response to high nominal output prices (in the EBC model); of an inherently unsustainable capital restructuring in response to an artificially low interest rate (in ABC theory). The subsequent response takes the form of a reversion to the initial level of labor services (in the EBC model), of a time-consuming liquidation of malinvested capital (in ABC theory). If these differences were the essential ones separating EBCT and ABCT, then the two theories could rightly be viewed as variations on a theme. And there is even some overlap in the variations as evidenced by discussions in the Austrian literature (e.g., Hayek 1967 and 1975) of the misdirection of labor and by developments within New Classicism which incorporate a capital stock variable (e.g., Lucas 1981, p. 179ff) and even "time-to-build" considerations (Kydland and Prescott [1982], as discussed by Lucas [1987]). Seemingly, EBCT and ABCT have much common ground.

But EBC models are not to be taken at face value. An EBC model is not offered as a theoretical account of some actual or possible historical episode. Rather, EBCT is only a modeling technique designed to demonstrate that a model economy can exhibit cyclical

²Extending the comparison to encompass Monetarism would involve too great a detour. In general, the qualifier "non-trivial" distinguishes this general description from the Monetarist view, which characteristically trivializes all short-run monetary non-neutralities with the label "first-round effects." Otherwise, the Friedman-Phelps treatment of short-run and long-run Phillips curves identifies a market process similar to the ones identified by EBCT and ABCT. This similarity is the focus of Bellante and Garrison (1988). But for an argument that the Friedman-Phelps dynamics is not an integral part of Monetarism, see Garrison (1991).

patterns in macroeconomic variables without violating the constraints imposed by general equilibrium theory. Equilibrium conditions hold for the model economy throughout the course of the cycle. In the New Classical view, the constraint imposed by the logic of general equilibrium confers theoretical respectability on the model; econometric testing as suggested by exercising the model economy and performed on extended time-series data descriptive of the real-world economy establish the model's empirical relevance.

This New Classical technique is foreign to ABCT, which treats the business cycle as an instance of systematic intertemporal *disequilibrium*. In the Austrian formulation, the very language used to describe the course of the cycle is the language of disequilibrium: credit expansion suppresses the rate of interest below its natural level; the artificially low interest rate results in forced saving, which unduly restricts consumption; capital is malinvested; the boom is unsustainable; entrepreneurial errors are revealed in the inevitable bust. These notions cannot be described in the language of equilibrium without doing violence to their meaning.

Old and New Uses of Equilibrium

The Austrians, particularly Hayek, have made explicit but limited use of the concept of equilibrium in the exposition of their business-cycle theory. But, as van Zijp, Kim, and Butos have noted or implied, the limited use made does not qualify ABCT as a specific instance of EBCT. For the Austrians, the appropriate role for some suitable equilibrium construct is mandated by a self-evident methodological consideration: Any account of the origins of phenomena characteristic of business cycles, such as an uncoordinated capital structure, massive unemployment of labor, and other instances of widespread resource idleness, cannot assume those phenomena to exist at the beginning of the account. Theory, in short, is logically incapable of explaining what it assumes. Hayek (1948, p. 34) undoubtedly had Keynes in mind when he insisted that before we can even ask how things can go wrong, we need to understand how things could ever go right.

The very meaning of disequilibrium in the context of business-cycle theory derives from its being compared to some relevant equilibrium. That is, adopting a suitable equilibrium concept establishes the initial conditions and facilitates the analysis of an ensuing disequilibrium caused, say, by the central bank's cheap-credit policy. It allows our understanding of the particular kind of disequilibrium associated with the business cycle to be dovetailed with our understanding of the equilibrium that would have prevailed in the absence

of the monetary disturbance.

This essential but limited role for an equilibrium concept is not at all what the New Classical economists have in mind. For them (e.g., Lucas 1981, pp. 287 and *passim*), the concept of disequilibrium is of no use in understanding business cycles. The phrase "equilibrium theory" is pleonastic and means, simply, "theory"; "disequilibrium theory" is self-contradictory and can only mean "non-theory." The methodological precept that underlies EBCT is that each phase of the business cycle can be understood as an equilibrium set of prices and quantities, or it cannot be understood at all.

The all-inclusiveness of the equilibrium concept in New Classicism warns against comparisons of EBCT and ABCT that ignore the radically different methodological contexts. For instance, the inevitable bust that figures importantly in ABCT cannot easily be translated into the language of EBCT. For the Austrians, "equilibrium bust" is a term at war with itself; for the New Classicists, "disequilibrium bust" can only mean an unexplainable downturn (cf. Lucas 1981, pp. 225 and 231).

The Evenly Rotating Economy and the Fully Articulated Artificial Economy

Criticism of even the limited use of equilibrium made by the Austrian theorists can help to assess the fruitfulness of "equilibrium theorizing" in each context. Cowen and Fink (1985) find a contradiction between ABCT and the assumed initial conditions that link business-cycle theory with established price theory. They base their case on the most thorough-going concept of equilibrium in the Austrian literature, the Evenly Rotating Economy (ERE) so designated by Mises (1966, pp. 244-50). The complete coordination of all economic activities, which defines the ERE, precludes disequilibrium of any sort. The ERE allows for no uncertainty and hence has no role for the real-world institutions that help market participants deal with uncertainty. Monetary institutions and even money itself are no part of the ERE—hence the contradiction between a theory of money-induced disequilibrium grafted onto a concept of moneyless general equilibrium.

All Cowen and Fink have shown, however, is that Mises's ERE is not the appropriate equilibrium concept to serve as the initial conditions for ABCT. It is not necessary for the initial conditions to preclude *all* kinds of disequilibria but only to preclude systematic intertemporal disequilibrium—the kind of disequilibrium for which the theory itself accounts. This limited equilibrium construct complies fully with both the logic and the spirit of ABCT.

In view of the differing uses of equilibrium constructs in EBCT and in ABCT, contradictions of the sort identified by Cowen and Fink are much more telling against EBCT. The equilibrium construct that underlies both the initial conditions and all subsequent phases of the business cycle is a clear rival for the ERE in terms of its severity and other-worldliness. The cyclical variations that mimic the ups and downs in a real-world economy play themselves out in the context of a "Fully Articulated Artificial Economy" (FAAE), in which all markets continuously clear (as in Lucas 1981, pp. 271 and *passim*; and in Barro 1981, p. 81-83).

In order that full articulation be possible, the FAAE must assume away virtually all the features that give economics its subject matter. The FAAE disallows diversity among market participants in terms of knowledge and entrepreneurial ability. Output typically takes the form of a single service indistinguishable from the labor that renders it. The price system is non-existent except in the trivial sense of the ratio of output to leisure. And except in some similarly trivial sense, there is no role in the FAAE for a monetary institution or even for money itself. Yet, a monetary impulse is what triggers the cyclical variation of output and prices. Money is injected into an artificial economy that has no non-trivial use for money.³

Any attempt to articulate the process through which a hypothetical monetary injection affects output and prices in the artificial economy inevitably draws on our understanding of how actual monetary injections affect the real-world economy. The characteristic effects of an actual monetary injection derive largely from the nature and limitations of the price system. Broadly conceived, the price system serves as a communications network, but any individual price signal, by itself, may be ambiguous. This limitation in the ability of the price system to communicate real changes in economic conditions underlies monetary theory from Richard Cantillon to David Hume to Friedrich Hayek. Hayek's "The Use of Knowledge in Society," (in Hayek 1948) virtually redefines the economic problem as a communications problem inherent in a society in which knowledge is widely dispersed among market participants.

Specifically underlying EBCT is the fact that market participants

³Garrison (1989, p. 21) discusses what, in effect, is the Cowen-and-Fink contradiction in the context of Barro's back-scratching economy. Lucas (1987) attempts to "motivate the use of money" (p. 74) by introducing the concept of "cash goods," which—for reasons plausible enough to participants in the real-world economy—can be purchased only with cash.

have no timely and failsafe method of distinguishing between real and monetary components of a price change. But a FAAE in which there is no dispersion of knowledge and only one output has little need for communications and even less scope for ambiguity. The communications network exists, if at all, in its most degenerate form.

Scope for ambiguity of a price change is incorporated into EBC models by a technique originated by Edmund Phelps (1970, pp. 6-7). A global economy consists of numerous local, or island, economies, such that inter-island communication lags intra-island communication. Such models allow economic agents to observe price changes on their own island instantly and price changes on other islands belatedly. Ambiguity about the true meaning of price changes characterizes the period marked by the instantly perceived and the belatedly received price information.

Economic agents would react one way if a particular price change is attributable to monetary expansion, which is presumed to affect all islands equally, and another way if the change is attributable to underlying economic conditions, which is presumed to affect only the one island. But during the wait for the inter-island information, which will clarify the meaning of the local price change, economic agents must react in *some* way. Possible reactions during the period of partial information is constrained by the assumptions of optimizing behavior and continuous market clearing. The supposed behavior of the model's agents, however, depends upon whether the implicit reasoning has a supply or a demand orientation (Friedman 1978, p.76). That is, a supply-side adjustment plus assumed market clearing and a demand-side adjustment plus assumed market clearing imply different behavior and different outcomes. While the virtue of the FAAE is believed to lie in its being fully articulated, the behavior of its inhabitants varies substantially from one model to another and invariably leaves much to the imagination.

Difficulties in understanding why agents in the FAAE would use money at all are transformed into difficulties in understanding how (or why) these agents would react to monetary expansion. Accounts of their supposed behavior derive their plausibility from—rather than confer their plausibility upon—our understanding of the effects of monetary expansion in real-world economies. The FAAE, then, which contains just the sort of contradiction identified by Cowen and Fink, cannot help us understand the real world. Rather, it is the implicit and intuitive understanding of the effects of actual monetary expansions that has concealed the contradictory construction of the EBC models.

The Wicksell Connection

Except for Marxian theories, nearly all modern theories of the business cycle have essential elements that trace back to Knut Wicksell's turn-of-the-century writings on interest and prices. Austrians, New Classicists, Monetarists, and even Keynesians can legitimately claim a kinship on this basis. Accordingly, the recognition that both the Austrians and the New Classicists have a Swedish ancestry does not translate into a meaningful claim that the two schools are essentially similar. To the contrary, identifying their particular relationships to Wicksellian ideas, like comparing the two formally similar business-cycle theories themselves, reveals more differences than similarities.

Central to Wicksell's treatment of the relationship between prices and interest was the distinction between the natural rate of interest and bank rate of interest and the recognition that the bank rate can diverge from the natural rate. These are the ideas that directly influenced Mises and subsequent Austrian theorists. The institutional setting in which the interest rate reflects both the intertemporal preferences of market participants and the actions of policy makers, then, figures importantly in the Austrian account of the artificial boom and inevitable bust. Fritz Machlup (1976, p. 23) accurately summarized the Austrian view with the statement that "*monetary factors cause the cycle but real phenomena constitute it.*" But to establish the essential difference between the Austrians and the New Classicists, it needs to be added that the focus of the Austrian theory is on the actual market process that translates the monetary cause into the real phenomena and hence on the institutional setting in which this process plays itself out.

The New Classicists deliberately abstract from institutional considerations and specifically deny, on the basis of empirical evidence, that the interest rate plays a significant role in cyclical fluctuations (Lucas 1981, p. 237 15n). Thus, Wicksell's *Interest and Prices* is at best only half relevant to EBCT. More relevant, in establishing the Wicksell connection, is Ragnar Frisch's (1933) work on "impulse and propagation." This separation of issues in Frisch's writing formally parallels Machlup's characterization of the Austrian view, but the difference in the extent of the separation translates into a fundamental difference between EBCT and ABCT.

Frisch (1933, p. 198) took as his inspiration a metaphor that he attributed to Wicksell. Cyclical fluctuations in economic activity is mimicked by the motion of a child's rocking horse. The metaphor is intended to suggest that understanding the horse's rocking, or even

its propensity to rock, requires an analysis of its structure. Further, the questions "What sets the horse to rocking?" and "What are the structural parameters that underlie its rocking motion?" are completely separate. The impulse that causes the motion need not have any particular relationship to the activated propagation mechanism that constitutes the motion. Taking the Wicksellian metaphor as their cue, the New Classicists are led away from the pre-eminent Austrian concern about the actual market process that transforms cause into effect and towards the belief that a full specification of the economy's structure, which is possible only in the context of an artificial economy, can shed light on an effect whose nature is fundamentally independent of the cause.⁴

Dichotomizing the analysis as it relates either to questions about the impulse that initiates cyclical movements or to questions about the economic structure in which cyclical movements can occur has allowed for developments within New Classicism that transcend the traditional categories of business cycle theories. Theories traditionally categorized as "monetary" and "non-monetary" can now belong to the same category. Within the context of New Classicism, Real Business-Cycle Theory (RBCT) is distinguished mainly in terms of the nature of the impulse that is thought to set the economic structure into its cyclical motion. In RBCT, business cycles are initiated by real supply shocks rather than by monetary shocks. And while the hard-drawn version of RBCT's propagation mechanism (Long and Plosser 1983), assigns no role at all to money, more accommodating accounts (King and Plosser 1984) allow for money and credit to become involved through "reverse causation."

Dispute or agnosticism about the true nature of the impulse has only a minimal effect on the empirical research inspired by the monetary EBCT or the non-monetary RBCT. Lucas (1987, p. 70-71), for instance, favors the former over the latter on the basis of the comparison of the amplitude of cyclical fluctuations with the magnitude of nineteenth- and twentieth-century supply shocks. The fact that monetary considerations can be ruled in or ruled out on such grounds suggests that money and monetary institutions are not nearly so central to New Classical theory as they are to Wicksellian and Old Austrian theories.

⁴In his historical perspective Kim (1988) gives some play to Frisch and the rocking horse as a link between Wicksell and EBCT and argues that EBCT is a "child of the Cowles Commission method," which was the method pioneered by Frisch.

Broadly Historical or Narrowly Empirical Analysis

Fundamental differences between the process analysis of ABCT and the structural analysis of EBCT imply corresponding differences in the respective historical, or empirical, treatments of cyclical fluctuations. The Austrian theory finds empirical expression in actual historical episodes in which a credit-driven boom is followed by an economywide bust. The policies of the Federal Reserve System during the 1920s in the light of the subsequent crash in 1929, for example, provide primary raw materials for an historical study. The theory establishes the causal connection between the boom and the bust and explains many of the features of both, such as the movements of capital-goods prices relative to consumer-goods prices during the boom, the high real interest rate immediately preceding the bust, and the disproportionately low value of long-term capital goods during the depression.

In the spirit of Mises (1969), theory and history are shown to yield complementary accounts of a particular instance of boom and bust, an instance that is understood to have occurred independent of our theoretical understanding of it. And the process analysis that provides the theoretical understanding requires, as its empirical complement, an economic history that gives full play to monetary institutions, policy goals, and beliefs held by opinion makers, public officials and key Federal Reserve operatives, as well as to the more narrowly conceived macroeconomic data.

The structural approach of EBCT leads to a fundamentally different kind of empirical research. Wicksell's rocking horse can help to explain. The motion of the rocking horse can be understood and predicted exclusively on the basis of knowledge of its structure. And in principle, as applied literally to a rocking horse, knowledge of the structure can be acquired without the horse rocking at all. Values of a few structural parameters, such as weight, center of gravity, and curvature of the runners, are enough to fully specify the parameters of the horse's motion.

Structural properties of the economy, however, cannot be measured independently of relative movements of economic variables. But the relative movements needed for the identification of the economic structure need not be movements that any contemporary historian has identified as a boom-bust cycle in the sense of ABCT. All that is required is that there be enough variation in the independent variables to allow for statistically significant estimates of the system's parametric values. In other words, the metaphorical rocking

horse cannot be observed directly by econometricians. Available data consist only of the points of contact between runners and floor. Thus, inferring the structure from the data requires that there be some movement in these points of contact.

Since the needed variation in the independent variables falls as the sample size increases, the prospects for identifying the economic structure increase with the length of the period that serves as the basis for the empirical research. The typical data base used is the time series of macroeconomic variables from the end of World War II to the latest quarter for which data are available. Parameter estimates, then, are based upon data for the entire period whether or not the constituent sub-periods were part of a noticeable or a not-so-noticeable cyclical episode. Revealingly, the most noticeable of all cyclical episodes, the Great Depression, is viewed by New Classicists as an outlier that defies explanation by existing economic analysis (Lucas 1981, p. 284).

Contrasting examples of Austrian-based historical research and New Classicist-based empirical research are easily identified. Lionel Robbins's *The Great Depression* (1934) and Murray Rothbard's *America's Great Depression* (1975) clearly exemplify the analysis of a particular historical episode as the empirical counterpart of ABCT. The econometric testing of hypotheses consistent with EBCT is exemplified by Robert Barro's "Unanticipated Money Growth and Economic Activity in the United States" (in Barro 1981) and Thomas Sargent's "A Classical Model for the United States" (1976), both of which test an extended time series for relative movements in macroeconomic variables thought to be characteristic of cyclical activity. An interesting hybrid is Charles Wainhouse's "Empirical Evidence for Hayek's Theory of Economic Fluctuations," in which a number of hypotheses derived from ABCT are tested on the basis of monthly data for the period January 1959 through June 1981. There seems to be no hybrid of the other sort, in which EBCT is shown to illuminate some historical account of a particular cyclical episode.

Concluding Remarks

EBCT in its Lucas and Barro formulations and ABCT as spelled out by Mises and Hayek have a certain formal similarity. The two theories both owe something—though something different—to Knut Wicksell. Policy implications of the two theories, not discussed in this article, are clearly similar. Yet, in terms of the well recognized methodological distinctions that separate the Austrian school from the modern orthodoxy, EBCT and ABCT are worlds apart. Theorists who are more at home with ABCT than with EBCT will do well, though, to monitor

developments of EBCT. These New Classical models continue to provide a forum for Old Austrian ideas.

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