Macrofoundations for Microanalysis?

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Macrofoundations for macroanalysis are considered desirable, if not essential. For instance, Robert Gordon (1989: 207) describes the rational expectations methodology as appealing "because of its grounding in microeconomics." However, little attention has been focused on the need for macrofoundations of microeconomics. Boland (1982: 80) makes the point: "There is virtually no discussion among economists of a need for macrofoundations for microeconomics, except, perhaps implicitly, in the writings of some institutionalists. In contrast, the demonstration of the existence of microfoundations for macrotheories is considered essential by leading economists."

The purpose of this paper is threefold. In the first section we contend that developing macroeconomics on the basis of neoclassical microfoundations is not always desirable. The second section discusses several examples of theories which have been operationalized and made more relevant once their unrealistic microfoundations are dropped. In the final section we complete the circle by contending that going in the opposite direction—from macro to micro—is potentially useful.

Before we proceed, three clarifications are necessary. First, our assessment of different approaches is based on the amount of practical relevance each claims, and not on the elegance of its theoretical constructs. Second, by microfoundations we mean three neoclassical tenets: utility maximization by consumers, profit (or some other objective) maximization by firms, and the Walrasian notion of market clearing. Third, we prefer the terms "macrocontext" and "macro-analysis" over "macroeconomics" because we want to allude to the institutional setting and group dynamics as well as to aggregate analysis.

**Why Microfoundations for Macroanalysis are not (Always) Desirable**

The insistence on microfoundations for macroeconomics stems from the Cartesian tradition of deriving all statements from a small set of first principles. This entails numerous implicit methodological assumptions, some of which may not be valid. First, as Boland (1980: 80) points out, the microfoundations for macroanalysis "presumes that microeconomic theory, in the form of general equilibrium theory, is a successful individualist program ..., this is still an open question." Empirical evidence against traditional neoclassical microfoundations has been piling up. Experimental studies at the laboratory level indicate that consumer decisions are subject to a wide variety of biases and heuristics which generally persist in repeated trials (Hogarth and Reder 1987). At the firm level, empirical evidence in support of x-efficiency indicates that firms may continue to operate inside their production frontier. Frantz (1987) documents more than sixty empirical studies to support this viewpoint. In addition, according to Tobin, the new Keynesian literature has shown that the market clearing assumption is not realistic, particularly in labor markets (Klamr 1984: 110).

Secondly, macroanalysis derived from microfoundations implicitly assumes away the well known problem of aggregation. For example, the special properties of linear models lead to the aggregation of production function by assuming (without verification) that each function is locally linear homogeneous (Baumol 1977). Similarly, in the area of consumer theory, Tobin points out "I don't think that there is a way to write down any model which at one hand respects the possible diversity of agents in taste, circumstances, and so on, and at the other hand also grounds behavior rigorously in utility maximization and which has any substantive content to it" (Klamr 1984: 111).

A third assumption of the microfoundations approach is that microanalysis provides the first principles for
macroanalysis. This is a long way from asserting that since micro and macroanalyses are explaining the same phenomena, the two approaches should be compatible. The latter assertion does not imply causality from micro to macro. We agree with Karl Brunner’s statement that “science rarely progresses by ‘working down from first principles’; it progresses and expands the other way. We begin with empirical regularities and go backward to more and more complicated hypotheses and theories. Adherence to the Cartesian principles would condemn science to stagnation. There are, moreover, as Karl Popper emphasized, no first principles (Klamer 1984: 195).”

A fourth assumption of the microfoundations approach is the principle of methodological monism. Weintraub (1979: 159) points out that looking for the microfoundations of macroeconomics “is a foolish way to do any science, even economics.” Effective research involves the elaboration of approaches to problem solving and is inherently anti-monic. Several well known fallacies of composition (such as the paradox of thrift) are testimony to the inappropriateness of micro logic at the macro level. It may well be that macroanalysis needs to develop its own coherent approach and aggregate systems have their own empirical regularities. Methodological monism prematurely precludes this possibility.

The Gains from Removing Unrealistic Microfoundations

We analyze three examples where microfoundations have impeded the development of policy relevant theories. In each case, the removal of unrealistic assumptions has led to analysis which is operational and more relevant.

(1) Growth Theory and Economic Development

Solow’s (1956) growth model was the foundation on which most subsequent thinking has rested. Baumol (1970) describes the microfoundations of these models (perfect foresight, smooth adjustments of goods, capital, and labor markets, market clearing, and full employment) as “highly restrictive assumptions which limit their applicability.” Blaug (1980: 254-255) bluntly points out that “no economy has ever been observed in steady state growth... and “if there is no correspondence whatever between the steady state path and the actual historical experience of economic development, it is not easy to see how growth theory can throw light on the causes of unbalanced growth, or on the policies that may be required to balance the economy.”

In the 1950s economists began to formulate a set of structural hypotheses about economic growth in developing economies. The structuralist approach “attempts to identify specific rigidities, lags, and other characteristics of developing economies” and have led to numerous advancements in our understanding of “balance of payments disequilibrium, unemployment, and worsening income distribution,” to cite just a few examples (Chenery 1965: 310). The structuralist approach has demonstrated that when unrealistic microfoundations are eschewed and macroeconomic institutional context is incorporated, significant insights relevant to policy making can be obtained.

(2) International Trade

The microfoundations of trade theory are the assumptions of constant returns to scale, perfect competition, and full employment. Although the theory of comparative advantage on the basis of factor endowments is one of the oldest areas of theorizing from microeconomic first principles, until the 1950s there were no significant attempts to operationalize the theory. A major theoretical problem is that technical change enables firms to continuously overcome the limitations of national factor endowments. Economists have been slow to accept this, despite the successes of Japan and East Asian newly industrialized countries. In the Japanese case, industrial targeting led to a concentration of resources in areas of predicted rapid technological progress. Japanese policy makers deviated from a static interpretation of comparative advantage in order to capture externalities associated with movement along the experience curve. Externalities are well recognized in trade theory, yet traditional models have never attempted to operationalize this idea. “In traditional trade models, one industry seems as likely as another to generate important external economies – so that the theory seems remote from operational usefulness (Krugman 1987: 137).”

A second problem for trade theory is the presence of imperfect competition. In the last decade new models have dropped the assumption of perfect competition and now “call into doubt the extent to which actual trade can be explained by comparative advantage:
they also open the possibility that government intervention in trade via import restrictions, export subsidies, and so on may under some circumstances be in the national interest after all" (Krugman 1987: 131-132).

(3) Business Cycles

The rational expectations approach to macroeconomics is based on the twin assumptions of utility maximization and market clearing. However, macro models based on this approach are unable to provide a convincing explanation of the business cycle. For instance, in the Lucas (1977) model fluctuations in output are driven by the confusion (1) between permanent and transitory price changes and (2) between aggregate and relative prices, although expectations are assumed to be rational and information is freely available. On the other hand, new-Keynesian models drop the unrealistic assumption of continuous equilibrium in labor markets. By focusing on the existence of wage rigidity generated by three year overlapping wage contracts in U.S. labor markets, these models explain why the business cycle in the U.S. is more pronounced than in Japan (Gordon 1989).

**Why Macrocontexts are Relevant for Microanalysis**

Intuitively, it is clear that micro phenomena does not exist in a vacuum but is embedded in a specific macro context. Several recent strands of economic literature have stressed the implications of this point.

(1) Psychologists/behavioral economists have used controlled experiments to show that the nature of decision making is significantly altered when the environment of the decision maker is changed (Tversky et. al. in Hogarth 1983). This "framing effect" is ubiquitous and points to the importance of analyzing the context in which decisions are made. Controlled experiments by Charles Plott and Vincent Smith reveal that different market institutions result in different equilibrium prices and outcomes. As Coleman points out "An English auction gives one set of outcomes, a central clearing house of bids and offers gives another; sealed bid auctions give another ... Social institutions and social networks – which are not completely, but largely, ignored in neoclassical theory – can make differences in outcomes without any change at all in the model of rational action. It is elaboration in this direction that I believe will constitute the greater payoff for economic theory" (Hogarth 1987: 184-185).

(2) Socioeconomists insist that the macro context should be placed on an equal footing with the micro context. A leading practitioner of socioeconomics (Etzioni 1988: 185) explains that "social collectivities (such as local communities, ethnic and radical groups, and social movements) are pivotal actors; and that the qualities of most decision-making and deliberation – the collection of information, its processing, the drawing of inferences, and the formation of judgments – are deeply affected and can be explained to a significant extent by collective processes and structures." Socioeconomists have numerous empirical studies of anomalies in the neoclassical microfoundations paradigm. Three propositions emerge: (a) individual decisions and perceptions vary according to the social setting; (b) the social setting often controls the efficacy of decisions and activities; (c) the market and the rules of competition are encapsulated within a social setting, including norms, which determine what is a legitimate product or exchange (Hurst 1982). Etzioni (1988: 185-198) summarizes over thirty empirical studies.

(3) Institutional economists have long contended that economic analysis should be holistic, systematic, and evolutionary (Wilber and Harrison 1978). It is holistic because it emphasizes the entire pattern of relations. It is systematic because it views phenomena as a coherent whole which can be understood only in relation to each other. It is evolutionary because gradual changes in the pattern of relations and institutions are viewed as the essence of economic and social reality. Institutions serve as the stimuli and guide to the development of behavioral standards. Pattern models are constructed by analyzing individual behavior within the context of specific institutions and cultural norms. Hypothesis testing takes the form of contextual validation: individual behavior within a macrocontext is jointly evaluated.

(4) Various empirical studies support the importance of viewing microanalysis within a macrocontext. In the area of consumer behavior, for instance, the "bandwagon" effect implies that the aggregate demand curve is not simply the sum of individual demand curves as generally assumed. Individual consumption is affected by group behavior (Leibenstein 1950).

In firm analysis, background variables can be a
crucial determinant. For example, a 1981 study compared two Ford Motor Company plants using identical technologies and employee training programs to manufacture the same car, a Ford Escort. The English plant produced 27% fewer cars with four times the rate of defects while using 30% more workers than the German plant. The differences were attributed to institutional and cultural factors (New York Times, October 13, 1981).

Conclusion
We believe that three guidelines for economic methodology are in order. First, existing neoclassical microfoundations should not be employed as automatic legitimizing tools for macroeconomics. Second, the principle of methodological monism should not be pushed too far. There is no reason to assume that causality runs only (or mainly) from micro to macroeconomics; microanalysis should be conducted within a macro framework. More importantly, both type of analyses should inform rather than dominate each other. Third, in the final analysis the issue is not whether micro or macro has priority, but rather which methodology is relevant and useful for accomplishing stated objectives. We agree with Boland (1982) that there is no all-purpose methodology. Objectives should be decided before a methodology is chosen. We believe that an important objective of economic analysis is usefulness and relevance at the practical level. Tools from macro and/or microeconomics can be utilized towards this end.

References