

Macroeconomic Theory: An Emergent, Enterprise-based Exposition

Richard E. Wagner

Department of Economics
George Mason University
Fairfax, VA 22030 USA

703-993-1132

rwagner@gmu.edu

<http://mason.gmu.edu/~rwagner>

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Preface

The relationship between micro and macro theorizing in economics is deeply troubling and perplexing to me. This book is my effort to probe the perplexities and resolve the troubling features. So far as I know, the distinction between micro and macro theorizing was first advanced in 1919 by the Swedish economist Erik Lindahl, in an essay that was later included in his collection on *Studies in the Theory of Capital and Income*. Lindahl assigned to micro theorizing the domain of choice and to macro theorizing the domain of interaction among choosers. In articulating this disjunction, Lindahl reflected a core theme that was common to both the Classical and the Austrian traditions of economic scholarship: interactions among individual choosers generate complex societal formations that advance our ends in ways and to a degree that could never have been achieved through individual planning and choice. In Lindahl's disjunction between micro and macro lies an approach that treats macro phenomena as complex phenomena that are not open directly to individual choice, but rather are generated and emergent phenomena that are characterized by such notions as invisible hands and spontaneous orders.

In sharp contrast to Lindahl's initial formulation, contemporary macro theorizing, whether of the New Keynesian or the New Classical sort, treats macro phenomena as simple resultants of choice. In these formulations, the move from the micro to the macro level is most certainly not a movement in direction of increasing complexity. Macro is simply micro spoken in a loud, booming voice. There is no difference between explaining the actions of Robinson Crusoe alone

on his island and explaining the aggregation of the actions of the billions of people who collectively inhabit the globe today. Micro and macro are equally simple phenomena to be represented by simple functional relationships among variables of interest. An individual's demand for a product might be represented by a function that includes the price of the product and the person's income. An aggregate demand for everything is conceptualized in the same manner, only now the price is not the price of some particular product but rather is some statistically constructed index of prices.

This proposition about simplicity I reject thoroughly and completely. When many Robinson Crusoes come together, the resulting interactions generate results that would never have occurred to Robinson on his own. The greater the number of interacting participants, moreover, the more this is so, as the resultant phenomena become increasingly complex and removed from the domain of individual choice and enter the domain of invisible hands and spontaneous orders. This shift in domains has nice parallels in object-oriented programming. Imagine a continuous line of cars moving evenly-spaced down a highway. One car suddenly slows down for any of numerous possible reasons. One result is that a traffic jam forms as the following cars slow down to avoid crashing into the car in front. This slowing down of cars is a simple result of driver choices in response to new information. But there is a second result that is not a matter of any driver's choice, but rather is due to interaction among the drivers. A time-lapse photograph of the traffic jam will show it moving backwards. This is a

macro phenomenon that cannot be assimilated to some model of Robinson Crusoe and his choices, for it arises through interaction among multiple Crusoes.

Robinson Crusoe does not possess property or contract, nor does he possess courts or business enterprises. These are all phenomena of interaction that serve to order the interactions among those many Crusoes. The institutional arrangements that people generate through interaction are surely a central feature of any effort at macro theorizing, for institutions are a macro and not a micro phenomena. Yet contemporary macro theorizing gives but minimal attention to institutions, usually by making crabbed references to sources of price rigidity. The absence of any serious concern with institutions reflects two things. One is the choice-theoretic character of contemporary macro theorizing. The other is the origin of contemporary macro theorizing not in the Classical-Austrian-Swedish recognition of inherent macro complexity but rather in the corrosive and stultifying marriage between national accounting and economic control.

This book has both past and present sources of inspiration. The past is represented by the aforementioned intellectual heritage, in that it builds upon the invisible hand formulations of such scholars of the Scottish Enlightenment as Adam Smith and David Hume, of the similar formulations articulated within the Austrian tradition set in motion by Carl Menger, and adopts Erik Lindahl's distinction between the micro and macro levels of analysis. By adopting Lindahl's distinction and rejecting the orthodox distinction, the gulf between micro and macro is bridged. This bridge, however, is real and not fictive or virtual, in sharp contrast to the invocation of representative agent models, according to

which a traffic jam would be modeled as a gigantic car moving backwards. A reader would not go astray in thinking of this book as a treatment of New Austrian macro theory, in parallel with treatments of New Keynesian and New Classical macro theory. Similar to the New Keynesian and the New Classical formulations, this book carries forward some of the formulations that comprise the Austrian tradition, but discards others and replaces them with new formulations. Those new formulations, however, remain true to the concern with societal complexity that reside at the deepest foundations of both the Austrian and Classical traditions, only they are recast to take advantage of modern analytical techniques, particularly graph theory and agent-based computational modeling.

This book is presented in eight chapters, followed by an appendix.

Chapter 1 distinguishes between the orthodox, choice-theoretic approach to macro theory and a catallactical or emergent approach to macro theory. Among other things, this leads to a reduced emphasis on resource allocation and such summary statistics as GDP or aggregate employment, because relatively more attention is given to the institutional arrangements within which human governance proceeds. **Chapter 2** uses some agent-based computational models to illustrate how macro theorizing can proceed without the fictive presumption that all plans are pre-coordinated before they are set in motion.

Chapter 3 seeks to locate money as the central language of commercial conduct and calculation. In this alternative formulation, the real economy is accessed only through the nominal, in sharp contrast to standard equilibrium theory where

money is but an appendage or veil. **Chapter 4** examines growth or progress within a context where there is entrepreneurial competition over different visions of future commercial formations. Within this context, moreover, growth is not some direct object of choice, but instead is a quality of the entire societal nexus of relationships within which people interact. Just as no one could produce a pencil, so it is that growth in the ability to produce pencils is a consequence of patterns of interaction and not of simple choice.

Chapter 5 distinguishes between a theory of exchange and a theory of markets. A theory of exchange has as its object the terms of trade, and this has been the dominant concern in both micro and macro theory. A theory of markets is concerned with the institutional framework within which particular acts of exchange are encased. The focus of this chapter is on the generation of those market relationships that typically are taken as given data in orthodox theorizing.

Chapter 6 seeks to characterize the economic nexus as one of turbulent bubbling and not one of some steady-state or flat-line equilibrium. Within this formulation, which is conveyed with reference to agent-based computational modeling, there is no analytical work to be done by exogenous shocks, for these are the misidentified resultants of conflicting plans. They are also the result of institutionally generated conflict when some people are residual claimants to the consequences of their actions while others are insulated from those consequences through their Big Player status. **Chapter 7** elaborates the Big Player notion by treating bounded conflict as an inherent property of progress. Societal processes are characterized as tectonic, in reference to plate tectonics,

and with there being continual jostling between conserving and progressive activities within societies. **Chapter 8** presents an alternative treatment of the material of welfare economics when notions of equilibrium and Paretian efficiency are abandoned. An **Appendix** on Ockham's Razor concludes the book: Ockham's Razor has often been invoked to justify fictive formulations about societal processes, and this razor has often been used in harmful ways.

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1. Subject, Object, and Choice vs. Emergence in Macro Theorizing

This chapter is primarily methodological in treating the distinctiveness of the humane studies relative to the natural sciences, which arises because the subject who analyzes is also part of the object that is being examined. This creates both opportunities and traps. Economic models are vehicles for conveying stories. For equilibrium-based modeling, stories are conveyed in the passive voice. For process-based modeling, those stories are conveyed in the active voice, and, moreover, involve a two-way relationship between mind and society. Within this line of analysis, the institutions of human governance replace the allocative consequences of those institutions in occupying the analytical foreground. The tight macro focus on GDP, its growth and its variability, gives way to a broader vision where growth and variability are emergent features of institutional arrangements.

2. Mind, Society, and Equilibrium: What Micro Foundations for Macro?

Orthodox allocative theory treats rational conduct within a framework of tâtonnement, whereby trades never take place until they all form a coordinated equilibrium. This is a methodological device to create tractability, but in doing so it also hides the market generated adaptations that emerge in light of the resulting uncertainties. This unit will explore alternatives to tâtonnement by exploring some of the contours of an ecology of plans. These ideas will be carried by some simple computational models wherein so-called false trading and turbulence are an integral part of the motion of economic processes. There is, moreover, bi-directionality between mind and society: on the one hand, people generate societal formation through interaction; on the other hand, those emergent formations shape and constrain choice in various ways. While a society would no longer exist if all of its members were to die, it is not sufficient to model society by simple addition from a model of individual choice. In terms of object-oriented programming, societal formations are as much objects as are the individuals who comprise the society. There is a two way movement of energy and relationship between individuals at the micro level and society at the macro level. On the one hand, it is interaction among the choices made by individuals that generate the macro forms of society. On the other hand, those macro forms serve variously as opportunities and constraints in informing individual choice. At the macro level, central importance is given to the organization of structured living together and the institutional framework for mitigating conflict.

3. Money, Emergence, Calculation, and Coordination

Monetary theory typically proceeds via a presumption of neutrality, whereby monetary arrangements and institutions exert no lasting effect upon real economic patterns and variables. This chapter will explore alternative approaches to claims about nonneutrality, in part by reversing the relationship between real and nominal in economic theorizing. The conventional analytical procedure is to graft money onto a pre-coordinated real economy. This chapter explores a reversal of this theoretical order. In doing so, it builds upon Carl Menger's work on the emergence of money out of the simplicity of barter relationships, which in turn allows an expansion in the complexity of economic relationships, facilitating progress in the process. Money, then, becomes a vital tool of commercial calculation. Because of its position as a commanding height, money and its surrounding institutional arrangements become continuing objects of societal contestation.

4. Knowledge, Capital, Entrepreneurship, and Growth in a Pencil Economy

This chapter explores capital-based and knowledge-based approaches to growth, and seeks to plumb the insights that a process-orientation might add to the growing interest in growth among economists. In this respect, I would ask you to think about Adam Smith's assertion that "Little else is requisite to carry a state to the highest degree of opulence from the lowest barbarism, but peace, easy taxes, and a tolerable administration of justice; all the rest being brought about by the natural course of things." Either Smith would seem to have been dreadfully wrong or his claim was incomplete and needs amendment. To be sure, it is a bit perplexing to speak of growth in the aggregate because of the fictive character of references to aggregate output. Nonetheless, a simple model of a pencil economy can serve as a good way of organizing thinking about growth in a different manner. Leonard Read recognized that no one can produce a pencil. The production a pencil requires cooperation among many participants, and this cooperation is secured through liberal institutional arrangements. A relatively straightforward extension of this line of reasoning suggests that growth, or progress (a term that now seems obsolete but which I prefer immensely), is not an object of direct choice but rather is an emergent property of particular patterns of human governance. Any enterprise involves contracting today to generate future outcomes whose value will not be known until that future arrives. Enterprises differ widely in their conformability to societal patterns in place at the time they are established, with some enterprises being routine and others are highly speculative. It is particularly the innovative activities of enterprises that generate the motion that is called progress. Such progress continually unsettles previously formed expectations, which in turn creates a tension within societies between conservation and innovation.

5. Price Formation, Contractual Forms, and Market Generation

Markets are an abstract noun that economists mostly use to organize observations about prices and outputs. Markets themselves are typically taken simply as given data. Yet the observable regularities that we denote by the name markets are generated through interaction and are not products of someone's choice. Where most economic theorizing places consumer wants in the foreground of analytical attention, the treatment here places creativity, imagination, and entrepreneurial activity in the foreground. This generates an analytical agenda that covers the creation of plans, the formation of prices and of market frameworks, and the clashing of plans in the foreground of analytical attention. Markets are treated as emergent patterns of human governance, where money is the instrument of calculation and where limited knowledge and asymmetric information is a blessing and not a bane.

6. Turbulent Bubbling within an Emergent Ecology of Enterprises

Standard equilibrium theorizing mostly leads to a treatment of economic normality as a process of steady-state growth. The exception are the theorists of real business cycles, who treat the rate of growth as being subject to a parade of exogenous shocks. Both approaches are forced representations made necessary by different equilibrium-grounded modes of reasoning. This chapter takes a strikingly different tack. There is no steady state equilibrium, nor are there any such things as exogenous shocks. Exogenous shocks are a fiction, an illusion generated by the equilibrium mode of thinking. A so-called exogenous shock is really the misidentified natural turbulence that is a natural feature of an emergent ecology of entrepreneurially-driven enterprises. Moderate bubbles are a characteristic feature of a market economy, only there is no vantage point of omniscience from which they can be recognized. Their recognition is possible only ex post, as revealed by the enterprise failures that accompany the creative motion of a capitalist system of economic relationships. To be sure, not all bubbles are moderate. Immoderate bubbles, however, seem generally to occur in the presence of "Big Player" effects, namely governments, where residual claimancy does not operate directly.

7. Governance, Government, and Societal Tectonics

This chapter further elaborates the Big Player notions with which the preceding chapter concluded. The Paretian fiction of an end to history is abandoned, and is replaced by a duality between concord and conflict wherein what is sought is an appropriate tension between the two. Human flourishing is far more a matter of handshakes than guns, but one corner solution is unstable while the other is deadening. While I take the realm of the moral as real and not conventional, the central emphasis in this chapter is on the development of a

non-separable mapping of the political and the economic spheres within society. Economists speak of resource allocation, only resources cannot allocate themselves. Only people can do this, through property-governed relationships among themselves, and on a societal landscape that can only be described as tectonic and most certainly not as continuous and twice differentiable. These ideas are expressed by a combination of graph theory and computational modeling, and lead to a recognition that the relative inefficiency of government is an important key to continuing progress. In other words, government is a conserving and not a progressive institution within society, and too much efficiency in conserving can stifle progress.

8. Transforming Pygmies into Giants: First Federalist Revisited

Robinson Crusoe could not even make a pencil. He is a pygmy who becomes a giant through rightly ordered patterns of social interaction. Welfare economics almost universally works with a disjunctive landscape where markets and governments operate within distinctive regions. This chapter explores an alternative topology where the two spheres are braided. This alternative formulation leads in a number of directions. One is that the peaceful quiet of twice-differentiability gives way to the turbulence of clashing tectonics. Another is to approach differently law and legislation as vehicles for conflict resolution. Yet a third direction concerns what happens to the domain of welfare economics when the comparative statics of equilibrium states gives way to analysis predicated upon continual motion.

Appendix: Ockham's Razor, A Dangerous Instrument to be Used with Care

Many of the modeling efforts throughout this book have been based on various forms of heterogeneity, with the ideas often conveyed through agent-based computational modeling. I do this not because I seek eventually to develop large-scale models of societal simulation, for I certainly harbor no such ambitions. Rather I do it because I think it contributes to a better understanding concerning societal processes regarding human governance. In some places, though certainly not in all places, the results are similar to what come out of orthodox models. One might be tempted to invoke Ockham's Razor in such cases. In this appendix, which is in part a continuation of the opening chapter, I explain why Ockham's Razor can cut dangerously into our knowledge of societal phenomena.