



# Generalized Exchange Macroeconomics

## PREFACE



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*“...the characteristics of great theoretical achievements [are] clear foundations, consistency with many observed facts, unification of theories which previously appeared as fundamentally distinct.”*

Edmond Malinvaud (1977, p.vii)

The term I came up with is “conundrum economics”. The heretofore nameless phenomenon refers to analysis with models that lack the capacity to accommodate, at least coherently, the existence of the activity being studied. The urge to name that curious practice became acute with the juxtaposition of the macro thinking that dominates modern graduate-school curriculums and the devastating 2008-09 extreme instability. The Great Recession is broadly understood to have been the most perilous market breakdown since the 1930s.

A deeply troubling conundrum of the consensus New Neoclassical Synthesis (aka the market-centric dynamic stochastic general-equilibrium model class) is its inability to accommodate the six million involuntarily lost jobs that occurred during the Great Recession. Barro formulated his famous critique of arbitrarily suppressing wage recontracting lest we forget that the nonexistence of forced job loss is a requirement of market-centric general equilibrium. Given the nature of mainstream modeling, no endogenous market friction has been able to overturn the rational decision rule requiring an employee to choose a wage cut, rather than job loss, if the reduced wage does not violate his or her opportunity costs. Consensus theory becomes a conundrum exercise whenever tasked to explain contraction phases of business cycles, which always feature substantial incidence of involuntary job loss and consequent unemployment.

Conundrum macroeconomics is best understood as the result of the century-long conflict between two model-building methodologies. One side has usefully emphasized analytic rigor, coherently modeling aggregate behavior guided by optimizing market exchange organized around general equilibrium. The other has usefully stressed stabilization relevancy, positing wage rigidity in order to link spending disturbances and job- and output-instability and thereby

justifying discretionary management of nominal demand. The arguments of each side are largely valid, a tricky situation that has motivated an enduring macro civil war. If the two approaches remain unreconciled, the pendulum of theoretic dominance will continue to swing between the opposing camps, assuring that the promise of macroeconomics will remain unfulfilled.

This eBook demonstrates that there is no inherent conflict between the analytic rigor of rational exchange organized by dynamic general equilibrium and the stabilization relevancy provided by meaningful wage rigidity. Reconciliation is made possible by the generalization of optimizing exchange from the marketplace to the workplace, surely an intuitive innovation. Arbitrarily restricting price-mediated transactions to the marketplace turns out to be the principal reason why, since the Second Industrial Revolution, coherent macro models have not been up to the task of elucidating recurring, costly instability in specialized economies.

The truncated scope of rational exchange has, for some time, been poisoning the macroeconomic well. Beyond the failure to come close to adequately explicating the 2007-09 (or any other) recession, it is alarming that obvious shortcomings of modern macro thinking have been generating, for some time now, deep dissatisfaction among the next generation of economists. The bleak message of David Colander's (2005, p.180) survey of and interviews with graduate students at seven top-ranked economics programs in North America is that new customers are rejecting the product: "In the interviews, macro received highly negative marks across schools. A typical comment was the following: 'The general perspective of the micro students is that the macro courses are pretty worthless, and we do not see why we have to do it, because we don't see what is taught as a plausible description of the economy. It's not that macroeconomic questions are inherently uninteresting; it is just that the models presented in the courses are not up to the job of explaining what is happening. There's just a lot of math, and we can't see the purpose of it.'" Another student was more succinct: "Macro sucks." (Colander (2007), p.174) A central message of the GEM Project is that the costs of counterfactually restricting macro theory to a single (market) venue of exchange are profound and broadly debilitating.

*Generalized-Exchange Macroeconomics* is the culmination of a personal research program pursued, with varying urgency, since I studied labor economics with the late Frederick Harbison

at Princeton and subsequently taught at MIT. Harbison's deep insight was that, in large establishments, the workplace is best understood as a venue of optimizing activities, with a detailed set of constraints and mechanisms of exchange, producing results that are distinct from the market-driven wage optimization of relatively small firms. After MIT, my additional interest in stabilization policy led me to the research staff of the Federal Reserve Board at an exciting time. The central bank was mired in the stagflation crisis. The coexistence of a powerful price-wage-price spiral and rising unemployment strained to the breaking point the Fed's capacity to understand and effectively stabilize the economy.

I was asked to organize and supervise the Wages, Prices, Productivity Section, the research group newly established at the Fed to figure out the stagflation problem. After several talented economists were assembled, we initially set out to discover why, especially in the circumstances of high and rising unemployment, nominal wage adjustments appeared to be incorporating the large run-up in commodity prices that characterized the early 1970s. We particularly needed to know whether our econometric findings were temporary or reflected a permanent feature of the economy, requiring work on a plausible explanatory theory to complement the empirical analysis. The research led to pioneering a class of modeling that later came to be known as efficiency-wage theory, featuring a nonmarket (workplace) venue of rational price-mediated exchange.<sup>1</sup> We came to understand that explaining optimizing behavior in the workplace venue was necessary to support the proper construction of policy-relevant monetary theory.

The Fed Board, at that time, was in crisis and little valued publication by economists actively involved in policymaking. But I did make time to write two quick articles that, drawing from the research conducted by my group, effectively captured the nature of subsequent morale-centric efficiency-wage theory ("A Theory of Downward-Rigid Wages and Cyclical Unemployment" appearing in 1977 and "Money Wage Determination in Post Keynesian Analysis" in 1980). Somewhat later, after leaving Washington, I pulled the various strands of the early research on labor pricing and use into a book (*The Price of Industrial Labor: The Role of Wages in Business Cycle and Economic Growth*, 1984) that derived optimal firm labor-pricing conditions in the

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<sup>1</sup> We were not alone. Other macroeconomists independently doing pioneering work on efficiency wages and, ultimately, workplace equilibrium included Arthur Okun, Robert Solow, and somewhat later George Akerlof, Janet Yellen, and Joseph Stiglitz. The obvious quality of the theorists reflected the importance of the problem.

circumstances of costly, asymmetric workplace information and provided, in retrospect, a remarkably complete analysis of the stagflation problem. (For elaboration, see Chapter 4.)

The two papers combined with the 1984 book to introduce a critical class of market-wage rigidity, ultimately rooted in optimal workplace behavior, into macroeconomics and to lay the groundwork for the GEM Project. The long delay between the book and this website was a consequence of a career shift from government to banking and insurance. The relatively unique opportunity for a working economist to be part of executive management and corporate boards of large, for-profit institutions, including an extended period as chair of the compensation and executive committees for a multi-line insurance company, has stimulated my thinking on how specialized firms and economies, particularly their pricing and use of human resources, are best modeled. Hands-on business experience provided fertile context for the coherent modeling of dynamic workplace equilibrium. My continuing interest in such analysis, and its implications for central-bank stabilization policymaking, was also a close fit for another position I held, from 1994 to 2014, as Permanent Secretary of the Federal Advisory Council – a body tasked by the original 1913 Act establishing the Federal Reserve System to advise the Board of Governors on a range of topics including the design and implementation of monetary policy.

*Generalized-Exchange Macroeconomics* combines academic, stabilization-policymaking, and corporate-management experience to derive the formal separation of workplace and marketplace venues of optimizing decision rules, constraints, and exchange-mechanisms from axiomatic preferences and technological constraints. The two-venue theory easily complies with Michael Woodford's (2009, p.269) gatekeeping rule governing consensus macro model-building: "... it is now widely agreed that macroeconomic analysis should employ models with coherent intertemporal general equilibrium foundations. These make it possible to analyze both short-run fluctuations and long-run growth within a single consistent framework."

More generally, the GEM theory satisfies the high model-building standards, quoted above, of Edmond Malinvaud, the late, greatly admired French macroeconomist. The consistency of the workplace-marketplace synthesis with the broad range of stabilization-relevant evidence is beyond the reach of any coherent single-venue theory. Most crucially, the two-venue model class

uniquely microfounds meaningful wage rigidity (MWR) and therefore a powerful channel through which nominal demand disturbances induce same-direction movement in employment, production, profit, and investment. (Chapters 2 and 3)

GEM modeling also demonstrates an extraordinary capacity to unify a broad range of existing theories, the macro connectivity of which has been heretofore poorly understood. Integration extends to Nobel-Prize winners: Solow’s neoclassical growth model, Akerlof’s asymmetric-information model, Coase’s rational boundaries between firms and markets, Williamson’s new institutionalism; too often forgotten Nobel laureates: Lewis’s two-sector growth model, Simon’s intra-firm organization; under-appreciated theories: mid-century intra-firm labor modeling of Kerr, Dunlop, Harbison, Myers, *et al.*, Chandler’s “new corporate forms” growth model, Olson’s rent-seeking growth model, Okun’s intra-firm optimization modeling, Barro, and Grossman’s Fixed Wage General Equilibrium (FWGE) “Keynesian” consumption model, Jensen’s (Ricardian) income-distribution model, Lazear’s personnel economics, Bernanke’s depression model, Farmer’s confidence model, Stokey’s rational-inaction model; and venerable theories: Edgeworth’s theory of the bargain and Pigou’s externalities analysis.

GEM thinking can motivate a jump in macroeconomists’ productivity much the way early Keynesian and later New Classical modeling jump-started extended periods of innovative research. My former MIT colleague, the late Paul Samuelson (1986, p.171) got it right: “There’s another reason, I think, why Keynesianism swept the field. It’s the same reason why rational expectations attracts people today. It provided a lot of Ph.D. fodder, a lot of clever models to work on.... Theory is the life-blood of science; if that’s decadent, well that’s the way it is.”

What is clearly not decadent is the design of this eBook, and the larger GEM Project in which it is embedded, to be both free and readily available. Macro became a separate branch of economic theory in order to better develop its capacity to provide an effective guide to the stabilization of specialized economies. We know that instability, especially when unchecked, imposes huge costs on society, making the fundamental task of macroeconomists the most important responsibility in all of the social sciences. I believe that *Generalized-Exchange Macroeconomics* produces a much superior macro roadmap, one that is uniquely coherent and stabilization-relevant, and that

it should, therefore, be distributed as quickly and cheaply as possible. This website, the content and construction of which would not have been possible without the able assistance of Shani Schechter, is the manifestation of that belief.

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