

# Modeling Management: Setting the Stage

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The marketplace-workplace synthesis featured in this Blog addresses a lot of debilitating gaps in dominant NK macro theory. Among the most notable, the two-sector approach provides a much more robust role for optimizing management. Mainstream modeling relies on market exchange for almost all its heavy lifting, crowding out important employer behavior. By contrast, the Project's generalization of rational exchange accommodates the existence of large bureaucratic firms and, from that platform, can enrich management modeling with a range of information costs and imperfections that impose substantial responsibilities on profit-seeking firm leadership. Familiar examples include the design and implementation of human-resources systems, identifying and responding to hold-up problems associated with sunk-capital investment, and the use of advertising and other marketing techniques to differentiate products and generate some product-pricing power.

The GEM Project focuses on inherently costly, asymmetric information on employee behavior to motivate management's rational construction of wage incentives and, more generally, intrafirm exchange mechanisms and workplace rules. Convincing employees to adopt the firm's goals as their own is among the most profit-critical tasks of employers in complex, highly specialized establishments. After introductory comments on the general role of unbalanced information in economic theory, this post introduces a series of forthcoming essays on endogenous optimizing management in macro theory.

*Fundamental question.* Why do firms exist? Ronald Coase (1937) famously forced that question on initially disinterested economist colleagues. Once theorists, led by the estimable George Stigler, got around to responding thoughtfully, powerful avenues of research opened that eventually informed our understanding of the nature and practice of management in highly specialized economies. Particularly consequential, organization of a substantial share of global economic activity into large complex firms turned out to challenge the mainstream theorem that friction-adjusted market prices are always an efficient measurement and information-transmission mechanism. The answer to Coase's question is that spontaneous (market) and intentional (intra-establishment) information measurement/transmission systems are both – to varying degrees – inherently imperfect and costly. Circumstances, determine the relative efficiency of each and, therefore, the rational boundaries between the firm and the marketplace.

While intentional information systems constructed and operating inside firms have no place in mainstream friction-augmented general market-equilibrium (FGME) modeling, they have not been wholly ignored by economists. One strand of relevant modern work appears to have been pioneered by Monsen and Downs (1965), who identified a large-corporation problem set rooted in information gathering and dissemination: separation of ownership and control, risk aversion, expense preference, information bias, and manager satisficing in place of optimizing. Somewhat later, Alchian and Demsetz (1972) influentially examined another part of the elephant, arguing that information and other inseparabilities inherent to team production require intentional, nonmarket measurement systems. Recasting their message in the language of GEM modeling, market pricing cannot cope with significant workplace information asymmetries associated with employer-employee exchange in complex production environments, loosely named the large-establishment venue (LEV). Remaining firms reside in the small-establishment venue (SEV).

*Workplace exchange.* The website's eBook demonstrates, within fundamental neoclassical tenets of optimization and equilibrium, what practitioners have long understood. Voluntary workplace exchange, a global activity set that has become increasingly significant since the second half of the 19<sup>th</sup> century, is intentionally organized by management to deal with labor-related information-acquisition and job-routinization problems. Efficient solutions are understood to be beyond the capacity of the marketplace. Richard Nelson (1995, 2003), working through the significance of such intra-firm transactions, insightfully separated technology into two classes. First is physical technology, captured (frequently badly) by standard-form production functions. Second is social technology, which organizes cooperative behavior and includes the rule of law, the development and use of money, and joint-stock corporations.

The intentional configuration of workplace exchange requires explicit design. Early in the Second Industrial Revolution, management began to confront a complex learning curve as firms became larger and more specialized. Modern best-practice administration of workplace exchange developed via experimentation, an ongoing process motivated by simultaneous employer profit- and employee utility-seeking. Continuous-

equilibrium workplace modeling has extended the formal neoclassical method to modeling LEV management functions, helping to better integrate the uncomfortably inconsistent literatures of economics departments and business schools.

In introductory two-venue macroeconomics, LEV management confronts two interrelated classes of endogenous labor-related decision rules:

- The labor-capacity decision, i.e., maintain/increase employment, layoff workers (with or without recall rights) with the expectation that the job reduction is temporary, or permanently downsize jobs (including closing relevant facilities); and
- The labor-pricing decision, i.e., pay the established efficiency rate unless ongoing job destruction has convinced employees to rationally recalibrate their reference standards (in the GEM model denoted by  $\mathbf{K}^n_j$ ) and accept (with unchanged OJB) wage givebacks.

The posts scheduled for the next several weeks provide a more detailed treatment of optimizing management. To anticipate the overall outcome, greater LEV management endogeneity does not compromise the central role of employee reference standards, does not alter the simultaneous determination of labor pricing and worker OJB, does not return wage determination to the marketplace, does not eliminate meaningful wage rigidities, and does not microfound the fine-tuning of wage rents over the business cycle. The expanded analysis does make management modeling more intuitive and powerful, better delineating its influence on macro outcomes while maintaining the bedrock methodological pillars of optimization and equilibrium. Overall, the analysis of a broader range of management behavior reinforces the value of separating economic exchange into large- and small-establishment venues, each with its own decision rules, constraints, and transaction mechanisms.

The subjects to be covered are: (1) The trial-and-error development of the modern LEV best-practices management of worker OJB; (2) Management of employee behavior in the Project's two heterogeneous venues derived from axiomatic preferences and technological constraints; (3) Acknowledgement of the antecedents to LEV management modeling, Herbert Simon's organization theory and Edward Lazear's personnel economics; and (4) Multi-post elaborations on the GEM Project's analysis of LEV management.

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