Two Important Growth Models

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Date : Aug 9, 2019

This post is the last of the five-part series on the contribution of the GEM Project to growth macroeconomics. What follows looks at two powerful theories of trend macrodynamics that aren't a good fit in market-centric modeling and are, as a result, ignored by mainstream theorists. The GEM Blog has a history of rescuing useful theories from the academy's dustbin. The intuitive, microfounded generalization of rational exchange from the marketplace to information-challenged workplaces is a big tent, accommodating a much greater range of analysis than its single-venue counterpart.

Olson's rent-seeking growth model. Unlike mainstream neoclassical growth theorists, Mancur Olson (1982) assigned a starring role to chronic market supply-demand disequilibria in his sweeping reworking of trend labor-productivity modeling. Olson's institutional macrodynamics are built on three propositions, which taken together motivate an economic aging process that weakens market control of resource pricing and allocation.

First, rent-seeking organizations tend to become established and flourish in stable societies, accumulating in economies undisturbed by great shocks such as invasion, revolution, or boundary changes. Second, the distributional coalitions push prices out of line with market-clearing solutions, adversely affecting allocative efficiency, productivity, and total income. Third, by their nature, such coalitions tend to make decisions relatively slowly, delaying adjustments to changed market conditions. The inefficiency drag from persisting rents produces specialized economies' convergence to slow growth.

Generalized-exchange modeling is consistent with a number of Olson's ideas, especially those on free riders and group behavior, deepening the rational microfoundations for his growth theory. The intra-establishment arrangements derived in the Workplace-Marketplace Synthesis are broadly consistent with his larger institutional approach. But there are, of course, differences. Olson built his model directly on a careful explication of the exclusion principle and its effect on collective action. The GEM Project directly models, given axiomatic assumptions and the neoclassical focus on rational price-mediated exchange, workplace behavior and introduces free riders to help shape the optimizing organization of group conduct. (See the website's e-book, chapter 2.)

The microfoundations provided by the Project's two-venue general-equilibrium macrodynamics allow Olson's institutional theory to better explain its slow-growth convergence. The rational longer-run recalibration of efficiency wages in the e-book's chapter 3 provides a channel for some long-lagged product-market correction of high wage rents and mounting inefficiency. Olson's corrective adjustments are much weaker and more delayed, producing a decidedly more pessimistic prognosis that is inconsistent with the available evidence.

For example, Olson (1988) used his distributional coalition model to produce an overly pessimistic prediction of the persistence of market inefficiency in the United States in the aftermath of the 1970s energy price jump and productivity slowdown. As modeled in the generalized-exchange theory, the U.S. experienced an aggressive downsizing phase beginning in late-1970s, featuring (i) chronic job losses that eventually made efficiency wages more malleable and (ii) aggressive management practices that took advantage of that malleability.

The GEM Project microfounds the workplace version of Olson rent-seeking in modern economies. In so doing, it explicates an important piece of the economic-growth puzzle. It follows, for example, that macrodynamic analysis of the Thatcher period in Great Britain is much better explained by the GEM model class than mainstream market-centric general-equilibrium thinking.

Baumol's Schumpeterian model. Joseph Schumpeter's *Theory of Economic Development* (1911) provided an early, insightful look at productivity dynamics, in which the starring role is assigned to entrepreneurs' search for ever-greater efficiency. Schumpeter argued that the productivity acceleration from the mid-nineteenth century was largely driven by big-tent innovations (new production processes, new corporate forms, new products, and new markets and sources of supply), producing his famous perennial gale of creative destruction. He also deduced the most fertile environment for effective innovation, including established property rights, free trade, moderate taxes, stable prices, and the efficient cycling of saving into credit.

A valuable modern application of Schumpeterian thinking has been provided by the late William Baumol (2002).

An intuitive firm-specific source of endogenous trend growth in labor productivity (via enhancing the technical efficiency of workers, $\Delta(X/E)>0$) is identified in his modeling of the rational funding and generation of proprietary innovations/applications. He cogently argues that such technical change is critically dependent on the capacity of firms to appropriate returns from sunk capital investments.

From Baumol (2002): "… firms cannot afford to leave innovation to chance. Rather, managements are forced by market pressures to support innovative activity systematically and substantially, and success of the efforts of any one business firm forces its rivals to step up their own efforts. The result is a ferocious arms race among the firms in the most rapidly evolving sectors of the economy, with innovation as the prime weapon." (p. ix) As pure-profit expectations approach zero, the firm will find it increasingly difficult to raise money in capital markets or from banks. More generally, the relation between research on profit-enhancing technological change and the resources firms are able to commit to its pursuit must be a fundamental part of growth economics.

The GEM Project compatibly models rational employer behavior in large establishments, deriving optimizing factor-income shares that influence the capacity of management to finance research and development. Replacing the textbook Euler-equation formulation, generalized-exchange income distribution rationally focuses on pure profits as a residual: $P(t)=P(t)X(t)-W^{n}H(t)-i^{m}(t)K^{r}(t)$, where P represents pure profit (PP), P is product price, X stands for output, W^{n} denotes the efficiency wage which embodies meaningful wage rigidity, i^{m} is the market interest rate, and K^{r} is the capital stock net of its sunk component ($K^{r}=K–K^{S}$). Note that the term ($i^{m}(t)K^{r}(t)$) is the market-opportunity cost of the firm's capital stock. The powerful residual-rent model microfounds critical factors that drive Baumol's capacity to fund applied research, significantly extending the explanatory reach of his model.

Baumol's macrodynamics explicitly and usefully model R&D, especially the causal role of residual rent. His theory is easily microfounded by the Project's generalized-exchange theory, which already assigns a critical role to pure profit. By contrast, PP does not even exist in mainstream market-centric general-equilibrium modeling, helping to explain the modern obscurity of Baumol growth. (Pure profit will be examined more closely next week.)

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