

CHANGE OR PERMANENCE? GROWTH AND DEVELOPMENT IN CAPITALIST ECONOMIES

A Review of W. Lazonick, *Competitive Advantage on the Shopfloor*, Harvard University Press, Cambridge, MA, 1990 and G. M. Grossman and E. Helpman, *Innovation and Growth in the Global Economy*, The MIT Press, Cambridge, MA, 1991.

Most economists have their favourite “stylized facts” about growth. Two, however, seem incontrovertible: First, growth rates in capitalist economies vary over time; and second, growth rates vary between capitalist economies at any given point in time. Ostensibly, it is these facts that concern Lazonick in *Competitive Advantage on the Shopfloor*, and Grossman and Helpman in *Innovation and Growth in the Global Economy*. Both books contribute to the literature on the long run growth and development dynamics of capitalist economies, although their methodologies and emphases differ substantially.

Grossman and Helpman adopt a general equilibrium approach, claiming that this affords maximum analytical rigour. An initial review of some “facts about growth” sets the context for an analysis which is otherwise abstract and deductive throughout. By the authors own admission, they make no attempt to confront their theory with data. Instead, they provide a treatment of developments in “new endogenous” growth theory and “new” trade theory, integrating these developments to illustrate the possible consequences of trade for growth. The book is essentially a collection of papers, with different specific models organised around a common theme. Much of the analysis concentrates on the rate of innovation (the basic source of sustained growth in Grossman and Helpman’s models) and how this is affected by the outcomes of international trade.

For Lazonick, analytical rigour requires not just logical consistency, but also “... empirical research of sufficient breadth and depth to give one reason to believe that one’s theoretical arguments do indeed capture the essence of reality” (page 11). He places his approach in the tradition of Marx and Schumpeter, describing it as an “... economic analysis in which the dynamics of historical reality and the theoretical abstractions constructed to comprehend that reality bear a symbiotic relationship to each other” (page 11). Lazonick’s theoretical point of departure is the Marxian analysis of value creation within the firm. He examines the history of capitalism, emphasising how the growth and development of this system have been linked to the varying competitive fortunes of the British, U.S. and Japanese economies. Lazonick stresses throughout the central role that

Note: I am grateful to Lars Osberg and Paul Bowles for their comments on an earlier version of this review.

different combinations of technology and institutions (especially industrial relations systems) have played in the fortunes of these economies, and hence the growth and development of capitalism as a whole.

The essential theoretical differences between Lazonick and Grossman and Helpman can be summarised in terms of their conceptions of the aggregate production function.¹ The essence of “new endogenous” growth theory as summarised by Grossman and Helpman is the role accorded to technological progress in the aggregate production function $Y = f(A, K, L)$, where Y is aggregate output, A is technological progress, L represents labour and K is some aggregate measure of capital. In traditional neoclassical growth theory (see, for example, Solow, 1956), K is assumed to display diminishing marginal returns. Other things being equal, as K becomes large, its marginal contribution to total output becomes smaller and smaller, with the result that capital accumulation alone cannot sustain growth. Instead, long run growth depends on the rate of technological progress (i.e. increments in A). The rate of growth is not, therefore, explained *within* the traditional neoclassical model—it depends on the *exogenous* rate of technological progress.

The contribution of Grossman and Helpman (and other “new endogenous” growth theorists) is to formulate models in which A is *endogenous*. Technological progress is seen to arise from innovation, which occurs in response to market activity itself as firms seek out monopoly rents associated with innovations.² Furthermore, innovation occurs continuously by virtue of the “knowledge externalities” it creates. These externalities contribute to a general pool of knowledge which lowers the cost of subsequent research and development to an extent which offsets private diminishing returns to this activity. Innovation, and hence growth, can therefore be sustained indefinitely owing to the public good attributes of knowledge. This is effectively equivalent to assuming that the aggregate production function is characterised by increasing returns to scale (see, for example, Romer, 1986).

After demonstrating that the endogenous growth rate may itself be non-optimal, the authors conclude that trade has an ambiguous effect on growth. Trade may enhance or retard an economy’s growth rate, depending on the patterns of trade specialization that arise in the course of international competition. This is particularly evident when one economy achieves and retains a higher level of innovation than its trading partner. In this scenario, the former continually gains market share and hence enhances its rate of growth at the expense of the latter. If this result sounds familiar it is because it is precisely the one which Kaldor (1970, 1985) generates in his models of cumulative causation. Indeed the very premise of “new endogenous” growth theory—that endogenous technological progress influences the rate of growth of an economy—is entirely pre-empted by Kaldor’s work on cumulative causation (see also Kaldor, 1972). To at least some of the economics profession, Grossman and Helpman’s results are not at all new.

Neither is it altogether clear that technological change in their theory is endogenous. For Grossman and Helpman, technological progress depends on

¹The aggregate production function is used here as a pedagogic device. We overlook any problems which may be associated with the measurement of aggregates such as capital.

²Imperfect competition therefore plays an important role in “new endogenous” growth theory.

innovation, which is itself conceived as a market activity. In the majority of their models, however, long run growth depends on a steady state rate of innovation which is determined by such factors as the size of the labour force, the productivity of labour, and households' rate of time preference—all of which are taken as given.³ Factors such as the productivity of labour are occasionally explained in terms of endogenous human capital acquisition, but the extent to which this occurs depends in turn on the unexplained “tastes for education” of the population. “New endogenous” growth theory certainly progresses beyond the assumption of exogenous technological progress postulated by the Solow model. However, the extent to which the long run rate of growth in these models is ultimately determined by endogenous forces is open to question.

A final important feature of Grossman and Helpman's results is that they are based on steady state growth outcomes. As illustrated earlier, the knowledge externalities which sustain growth in Grossman and Helpman's models introduce the spectre of increasing returns, and hence instability, into the aggregate production function. Steady growth is, in fact, a special case in “new endogenous” growth models—“new endogenous” growth theorists have rediscovered Harrod's knife edge.

A key feature of Grossman and Helpman's analysis is their result that explosive and zero growth are incompatible with rational expectations. The special case of steady growth is therefore established as the *relevant* case, and the economy is seen to expand cautiously along its knife edge. However, this still leaves us with the problem that along a steady state growth path, growth inexorably goes on at the same rate over time. Of course, the steady state growth rate may change in response to exogenous shocks, but should a supposedly “endogenous” growth theory rely on exogenous shocks to explain so elementary an observation (and so concrete a “stylized fact”) as the variation in national growth rates over time? The problem with steady growth becomes acute in the class of models where competitors in international trade experience differential growth rates. It conveys the impression that an initially fast growing economy will experience fast growth indefinitely, whilst its less successful trading partner is doomed to a history of perpetual slow growth.

However, one of the main concerns in North America today is the possibility that an initially fast growing economy (the U.S.) can experience both a historical growth slowdown, and a challenge to its economic leadership from initially less developed, but subsequently faster growing economies (most notably Japan). The sense that a once powerful economy is ailing, and faces a threat to its international economic pre-eminence, pervades contemporary American thinking in much the same way that it has long occupied British thought.⁴

Some of these concerns find expression in the work of the Social Structure of Accumulation and Regulation Schools (see, for example, Bowles, Gordon and

³Conceiving innovation as a steady state process also distinguishes Grossman and Helpman from Schumpeter, whose contributions on innovation they cite as an influence on their analysis. Schumpeter, it will be recalled, suggested that innovations occur in clusters, not at a constant pace over time. Furthermore, these innovation clusters are usually associated with periodic “long waves” of growth, rather than steady state expansion (see Solomou, 1987).

⁴See, for example, Bluestone and Harrison (1982), Harrison and Bluestone (1990), Baumol, Blackman and Wolff (1989) and Bowles, Gordon and Weisskopf (1990). For a brief discussion of parallels with the British case, see Rowthorn (1992).

Weisskopf, 1990; Boyer, 1990). This suggests that there have been structurally different epochs in the history of capitalism's growth and development, rather than a single period of sustained steady state growth. These epochs are, in turn, associated with the periodic dominance of the world economy by different national economies (Britain, the U.S., and now possibly Japan) rather than a single, initially successful nation. The conception of growth and development that this inspires—that of a process intrinsically related to structural change and the relative rise and decline of nations—is antithetical to Grossman and Helpman's steady state conception. Grossman and Helpman are bound by the equilibrium framework they adopt. As indicated above, strenuous manipulations are needed simply in order to generate the only "sensible" result their framework permits—that of steady growth. However, this automatically precludes them from discussing the crucial contemporary issue of how and why relative growth rates vary over time.

The conception of growth as a process of structural transformation is, however, precisely the one adopted by Lazonick in *Competitive Advantage on the Shopfloor*. In terms of the aggregate production function $Y = f(A, K, L)$, Lazonick draws an important distinction between labour power and labour—i.e., between *potential* labour input, and the *actual labour input realised* in the process of production. Unlike Grossman and Helpman, Lazonick treats labour as an innately *social* factor of production, distinct from capital which is a purely *technical* factor of production. One of the key problems for a capitalist economy is to utilise this social factor of production to the fullest extent—that is, to elicit realised labour input from the potential labour power it employs. In terms of the aggregate production function above, L must be thought of as representing "effort units" of labour, and must be allowed to vary with the social conditions that workers are subject to in the process of production.

Lazonick treats capital as the embodiment of technological progress, so that A and K in the aggregate production function are inextricably linked. These purely technical factors of production capture the effects of accumulation and technological progress on aggregate production. The key feature of capital when it embodies technological change is that it is potentially "effort saving;" combined with the same supply of "effort units" of labour, a new unit of capital will yield a higher level of output than a unit of the previous vintage.

For Lazonick, then, the key to increasing aggregate output—that is, the key to realising economic growth—lies in increasing the intensity of work effort and/or accumulation and technological progress. What these sources of growth have in common is that both depend on the compliance of labour in the production process, and thus on the state of the (social) relationship between workers and firms.⁵ The more compliant is labour, the greater will be its supply of effort, and the easier it will be for the firm to undergo technological change. Viewed in this way as an inherently social process, the production problem of the firm depends critically on its ability to cajole or coerce labour into complying with its production plans. The ability of firms to find a successful combination of "carrots and

⁵Lazonick argues that technological change may in turn affect the worker-firm relationship if, for example, it results in a redistribution of power between these groups. However, he clearly regards the worker-firm relationship as the unambiguous leading element in this two way interaction.

sticks”—that is, of force and incentive—at the point of production is therefore a crucial element in the growth prospects of a capitalist economy.

Lazonick’s vision of capitalistic production differs not only from the “technological black box” conception found in neoclassical economics (see, for example, Grossman and Helpman), but also from that of Marx, from whom it most obviously draws inspiration. For Lazonick, firms must have sufficient control over the production process in order to facilitate technological and organisational change. Anti-labour strategies stand not only to decrease work intensity, but also to reduce shopfloor goodwill, which may in turn obstruct the flow of technological and organisational change. Hence successful capitalism is portrayed as a form of “fragile cooperation” between capital and labour. This is a point of departure from Marx, for whom capitalism involved an inexorable increase in the supply of unremunerated work effort, leading to the long run immiserisation of the working class. According to Lazonick, it is not only the case that technological change may reduce the intensity of work effort; workers may face incentives rather than overt coercion from firms eager to control the process of production. Furthermore, Lazonick points to the gains made by organised labour as evidence that unrelenting coercion has not always been a feasible strategy for capitalist firms.

From a historical perspective, the central feature of Lazonick’s interpretation of capitalism’s development is the periodic dominance of the world economy by different nation states, each of which has out-competed its predecessor on the basis of a superior combination of technology and worker-firm relations. Hence the craft system of nineteenth century British capitalism was subsequently out-performed by American Fordism, which is seen to now be facing the challenge of the Japanese flexible manufacturing system.

Lazonick’s emphasis on the *combination* of technology and institutions is especially interesting in the Japanese case, because it differs from explanations of Japan’s success based solely on factors such as the role of the MITI and state intervention in the economy, or the “corporatist” nature of Japan’s plant level industrial relations system. Instead, Lazonick stresses that institutions form a context within which historically specific forms of accumulation occur. In the Japanese case, cooperative shopfloor labour relations have created an environment suited to a form of workplace organisation which vests more potential control over production in the hands of labour, but which simultaneously better utilises their skills and so increases their average productivity. By conceiving the history of capitalism as a history of different techniques of production differentiated along technological and institutional lines, Lazonick entertains the notion that Japan owes its success not just to more efficient state intervention or labour market organisation, but to a distinctly post-Fordist method of industrial production.

Lazonick also asserts that of the craft system, Fordism, and the flexible manufacturing system, only the latter has created an appropriate level of managerial control over the production process without fostering an anti-labour attitude. What is less clear from Lazonick’s analysis is whether this means that Japan has in some sense “solved” the problem of the production process. Does the Japanese model represent a stable future for capitalism? Will it subsequently

be challenged by a new competitor technique of production? Can the Japanese model sustain growth indefinitely without creating internal pressures on the “fragile cooperation” between workers and firms on which it rests?

For an historical analysis of an avowedly Marxian orientation, Lazonick might be criticised for being too silent on these issues. He might also be criticised for being overly enthusiastic about the Japanese model in its present form. Regardless of whether it is capable of sustained long run success, it is not obvious that the Japanese economy represents any sort of ideal. As Lazonick himself notes on page 34, part of Japan’s “success” has involved the creation of a pool of “secondary” labour (including many female employees) to whom the commitments made to “primary” workers (such as high wages and long-term employment contracts) are not extended. Whether this is a desirable distributional feature of a society—no matter how productive in the aggregate it may be—is far from clear.

Lazonick’s analysis of the comparative dynamics of different production systems, once they are in operation, is most lucid. However, he tends to be somewhat vague on the precise *origins* of these systems. Why, for example, did the flexible manufacturing system arise in East Asia rather than in some other previously underdeveloped region? To some extent this may be an unfair criticism. If the Japanese system of production is a genuine innovation, and given that innovation by its nature is not a determinate process (see Boyer and Juillard, 1992), Lazonick cannot be at fault for failing to account for the timing and location of a particular innovation. However, a broader question remains: what are the initial conditions for successful industrial development? We are left wondering whether an attempt to answer this question might provide some sort of “blueprint” for development—and possibly even for reform and recovery in ailing industrial economies such as Britain and the U.S.

The extent to which popular attention is currently focused on the Japanese economy, and the fascination in business circles with the characteristics of the Japanese system of production, are undeniably great. If the growth and development of capitalism has indeed been characterised by different epochs, in which the most successful economy has employed a technique of production markedly different from that of its predecessor, then one must ask: How are the dynamics of growth and structural change, as it affects both technology and worker-firm relations, interrelated? What are the conditions for the sustainability of a particular system of production, or what mechanisms threaten its dynamic success? Under what conditions do new techniques of production arise? Does the Japanese flexible manufacturing system represent the “highest form of capitalism,” and should other developing (and developed) economies attempt to imitate its social and economic structures?

Ultimately, only Lazonick attempts to address questions of this nature. Despite the “informality” of much of his analysis by the standards of mainstream economics, this is because only Lazonick displays an underlying conception of capitalism as a historical system, whose growth and development are intrinsically linked to structural change, both of a technological and social nature. Due to their reliance on a steady state framework of analysis, supposedly applicable

to any economy regardless of time and space, these issues necessarily elude Grossman and Helpman.

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