

## **A Battle of Orthodoxies or a Cooperative Effort? Comment on Hannah**

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The general focus of Professor Hannah's paper is the relationship between business organization and economic performance or, in his own words, between living standards and the productive powers of business that underpin them. In focusing on the need to identify the relationship between business organization and comparative economic performance, on the importance of linking microeconomic and macroeconomic analysis, Hannah makes a very important point. But if we are to make this link we must have a theory of economic performance that is capable of comprehending the wealth of the most successful nations and the continuing poverty of many others, so that we can understand whether -- and if so, how -- business organizations play a role in creating this wealth.

Hannah criticizes what he calls the "new orthodoxy" in business history -- the perspective that organizational and technological capabilities in the manufacturing sector are the wellspring of economic success. Though he does not explicitly lay out an alternative conception of the foundations for economic performance, by invoking convergence arguments he relies on another orthodoxy. The power of the invisible hand to promote economic performance is of course the central foundation of the neoclassical economic theory on which convergence arguments rest.

Throughout his paper Hannah criticizes the contention that bureaucratic managerial hierarchies are central to economic success. The main thrust of this argument is indeed widely accepted, at least as an explanation for America's dominance in international business in the first half of the twentieth century. It is important to note, however, that the general hypothesis that managerial bureaucracies are central to economic performance across time and place is not

common to all, or even to most, of those who highlight the importance of organizational and technological capabilities. Rather it is associated with a particular strand of that literature, the comparative business histories of Alfred Chandler and his collaborators.

Other scholars, not only business historians but also a small, yet increasingly influential, group of economists such as Michael Best [1990], William Lazonick [1990; 1991], David Mowery and Nathan Rosenberg [1989], and Richard Nelson [1992] do not regard organizational and technological capabilities as synonymous with managerial bureaucracies. The importance that they attach to the interaction between organizations and technology has led them to take a broader perspective on the concept of organizational capabilities. While not disputing the contribution of managerial hierarchies to economic performance, they have emphasized the importance of shop-floor organization, management-labor integration, industry-university linkages, and business-government relations in the development and utilization of technology. The importance of relationships between business and financial interests in making resources available for innovative investments is also a subject in which there has been a revival of interest among economists and historians, as well as among political scientists and legal scholars.

The failure to discuss the diversity of perspectives that the literature on organizational and technological capabilities comprises leads Hannah, I believe, from a critique of the managerial perspective to an extreme alternative -- one in which the analysis of large-scale integrated organizations is deemed of little importance to an understanding of economic performance. At one point he seems to suggest that these organizations might just be a symptom of "market failure." To reach this conclusion is, I think, to parody the work on capabilities, the Chandlerian literature included, as an advertisement for the merits of large-scale companies, of absolute size and firepower, compared with those of small-scale firms.

From my reading of the literature on organizational and technological capability, what seems to be at its heart is not the question of whether "bigger is better." Rather, it is concerned with the process through which dominant firms emerge in some industrial sectors and remain dominant for long periods of time. That a historical and comparative perspective leads one to the conclusion that the building of organizational and technological capabilities is a general principle of that process does not necessarily mean that the type of business organization that generates economic development is the same across time and place. In fact, if one accepts that the development and utilization of technology is a social process, as many historians of technology and industrial sociologists have argued, one would expect to see variations in the characteristic features of business organization that foster economic development in different eras and across nations. To the extent that the Chandlerian perspective can be criticized, it is for its failure to recognize the *changing* process through which firms, regions, and nations gain competitive advantage. Its shortcomings in this regard can be traced to its neglect of the role of continuous innovation in the sustained success of dominant enterprises and of the interaction between organizational and technological capabilities in generating that innovation.

Despite the common features in the organizational transformation that provided the foundation for the technological development of the Second Industrial Revolution in the United States, Germany, and Japan -- the separation of ownership and control and the building of managerial hierarchies -- the organization of business and the institutional arrangements within which business enterprises operated varied substantially from one country to another. As the twentieth century unfolded, the differences across countries meant that each national system developed a distinctive dynamic of its own that was reflected in a diversity of technological trajectories and differences in international product market performance. In particular, marked differences became apparent in the shop-floor investment strategies in each of these countries -- that is, in the extent

to which workers were incorporated into a strategically structured and directed learning process. In the American case, the shop-floor investment strategy was skill-destroying in its substitution of machines and materials for the skills of workers. In contrast, the Germans and Japanese pursued a strategy of skill-creation on the shop floor, although they differed substantially from each other in the types of skills they developed and the methods they used [Lazonick and O'Sullivan, 1996].

The reliance on different forms of organizational capability led to differences in product market performance. In the decades after World War II, Japanese enterprises gained competitive advantage over American businesses in industries such as steel, consumer electronics, and automobiles -- those in which an integrated system of skill formation within the managerial structure was critical for product innovation, but in which the evolution of process technology made an integrated system of skill formation that included shop-floor workers and suppliers critically important for process innovation. In industries in which a system of skill formation that relied on managerial structures alone continued to suffice in international competition -- industries such as pharmaceuticals and chemicals -- the Americans continued to be leading innovators [Lazonick and West, 1995].

From this perspective, the diminution of the competitive advantage of some American firms from the 1960s onward is not testament, as Hannah would have us believe, to the ephemeral nature of their initial success. A sustained process of industrial development relies on the ability and incentives of those who control productive resources to engage in a collective and lengthy learning process that delivers uncertain returns. Getting such a process under way or revitalizing one that has been outcompeted is a synthetic and complicated process that depends not only on the strategy and structure of business organizations but also on the manner in which they interact with social institutions.

Substantial variation in the structure of industrial organization is evident across successful industrial economies and is reflected in

differential national and sectoral performances. Nevertheless, the sustained dominance of organizations that grow to be large-scale is an empirical feature of the development of all the advanced industrial economies. This fact does not mean that small and medium-sized enterprises are unimportant to economic performance. The recent wave of academic literature on small-scale industrial organizations has in many cases distorted their true contribution to economic performance, however, by underplaying and even ignoring the dependence of these enterprises on their larger counterparts [see, for example, Piore and Sabel, 1984].

The example of the *Mittelstand*, Germany's oft-praised sector of medium-sized companies, is à propos. As Hannah suggests, the *Mittelstand* and the capabilities of Germany's industrial training system were important to postwar economic success in that country, but not as a substitute for, or in isolation from, the organizational and technological capability of large German firms. The German dual system of apprenticeship is financed to some extent by the government and by the low wages of apprentices, but most of the resources come from business organizations, and in particular from large companies such as Siemens who run more intensive and sophisticated apprentice-training programs than smaller companies. Moreover, as industrial customers of *Mittelstand* companies, dominant German companies have bolstered the smaller producers' business, as has become very clear in the recent devastating regional effects of a strategy of supplier rationalization by some large German companies such as Daimler-Benz and Volkswagen.

Hannah's criticism of a perspective in business history that holds that "big is better" is well-founded, even if he does not make clear who it is that promulgates this view. To ignore the importance of an entire literature on organizational and technological capability in his critique, and then to abandon it in fleeing into the arms of an economic orthodoxy that ignores such issues, is to my mind to throw the baby out with the bathwater. The infant is business organizations, and its neglect involves the abandonment of the stuff of business history -- that is, the analysis of the process through which some

business organizations come to dominate certain industrial sectors and national economies. Hannah does not spare his own earlier work in this disposal, but what a waste of good work! And for what gain?

What Bernard Shaw had to say of Greek and Greek scholars applies just as readily to economic development and mainstream economists: "How extraordinary it is," he observed, "that we accord Greek scholars such privileges, for they know no Greek and little about anything else." Neoclassical theory conceives of production as the simple combination of homogenous commodities that are readily available on the market. Technological advancement is treated as if it were generated exogenously from extant economic activity. Once a technological improvement becomes available to one country, it is supposed to flow relatively freely to others that quite lack rudimentary requirements in social and political institutions. The aggregative analysis based on these assumptions that Hannah advocates has proven strikingly unsuccessful even in accounting for the sources of development after the process has worked itself out, never mind explaining the mechanism of development itself. Hence total factor productivity: the concept that is to the macroeconomist what the firm is to the microeconomist.

To the extent that models based on neoclassical theories are consistent, at least to some extent, with empirical evidence on economic growth, it is on the strength of ad hoc assumptions about the development process. The assumptions about technological development and utilization at the heart of the endogenous growth literature, for example, are grounded neither in empirical facts nor in theoretical arguments. The convergence hypothesis, which to some extent seems to account for certain growth patterns, relies on models that are constructed in abstraction from any institutional or organizational context. I must therefore express skepticism about Hannah's confidence in its worth as an explanation. It relies critically on a differentiation among groups of countries -- the convergence club being the OECD countries, and the unfortunate mass being everyone else -- on the basis of their level of social capability. But what is this social capability? Like most tickets of entry to exclusive

clubs -- golf, cricket, or convergence -- it is whatever you would like it to be.

If the residual is a measure of our ignorance, "social capability" is surely an obfuscation of it. Moses Abramovitz, who has popularized the term, recently had this to say of it: "It is a large and still poorly defined subject that I will treat only briefly, partly for lack of space, but still more because no one knows the full scope of the subject or how to measure many of its elements" [Abramovitz, 1994]. He does make an attempt, though, and includes under the rubric of social capability technical competence, political, commercial, financial, educational, industrial, and financial institutions, attitudes toward wealth and growth, and problems of incentives and opportunities. Perhaps a more appropriate shorthand than "social capability" for this list is "the economy" and -- not to bring everything down to marginal productivity -- isn't that what the world's economists are being paid to study?

There are other problems associated with relying on aggregate statistics in isolation from their microeconomic foundations. Macroeconomic aggregates are symptoms of the ability of a nation, region, or enterprise to produce higher-quality and/or lower-cost products than its competitors. I agree with Hannah that the evaluation of long-term trends in these indicators should form part of any diagnosis of economic performance, but they are only a beginning. High relative labor productivity may be necessary, but it is certainly not sufficient, to achieve and sustain high living standards in the long term. The important issues are to whom the gains from higher productivity accrue and the extent to which they are sustainable over time. To understand them requires explicit attention to the organizational and technological capabilities that are the roots of productivity performance.

It is interesting and ironic that, at a time when it is finally being recognized within the mainstream of the economics profession that there is a need to understand the importance of social organization in industrial performance, business historians are contemplating arguments that make sense only when the very organizational

transformation that they study is assumed away. It would be ungracious to treat attempts by economists to move in a more realistic direction with anything less than enthusiasm. But it would be misguided to assume that all that is required for a more relevant theory of economic development is an awakening by mainstream economists to the importance of these issues. Neoclassical theory has been systematically designed to answer questions about the allocation, rather than the development, of productive resources. To devise economic theory that is relevant to the study of the development process will take more than a liberal smattering of market imperfections and the frequent invocation of the theory of the second best. Indeed, given the nature of neoclassical theory, it is highly questionable that the type of economics we need to link the macroeconomic with what really happens at the level of productive activity can come from the economics profession as it is currently constituted.

So, although I agree wholeheartedly with the impulse that motivated Professor Hannah's piece, I believe that there is far more to linking business organization with economic performance than his paper suggests. In particular, one cannot rely exclusively, if at all, on aggregate tools, measures, and theories that deny the existence, never mind the importance, of the organizations on which business historians focus. If we are to use microeconomic analysis and evidence as a basis for explaining macroeconomic performance, what is needed is a fusion of business history and economic theory. That will require investments in intellectual capabilities in both fields of inquiry; it is a difficult endeavour for both, but one whose value is difficult to dispute.