

# Towards an Organizational Economics of Heterogeneous Capabilities

Foss, Nicolai J.

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OF HETEROGENEOUS CAPABILITIES**

Nicolai J. Foss

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**Department of Strategic Management and Globalization**  
**Copenhagen Business School**  
**Kilen, Kilevej 14A**  
**2000 Frederiksberg**  
**Denmark**  
**[www.cbs.dk/smg](http://www.cbs.dk/smg)**

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OF HETEROGENEOUS CAPABILITIES**

**Nicolai J Foss**

Department of Strategic Management and Globalization  
Copenhagen Business School; Kilevej 14, 2<sup>nd</sup> floor  
2000 Frederiksberg; Denmark  
[njf.smg@cbs.dk](mailto:njf.smg@cbs.dk)

and

Department of Strategy and Management  
Norwegian School of Economics and Business Administration  
Breiviksveien 40, N-5045  
Bergen; Norway

**(Invited paper, *International Journal of the Economics of Business*,  
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**Abstract**

The notion of “capability” has long been influential in management research as an approach to address firm-level heterogeneity and heterogeneity in competitive outcomes. I discuss how recent advances in economics may allow for a more rigorous understanding and measurement of capability that take organizational practices into account. However, economists may also learn from work on capabilities in management research.

**Keywords:** Organizational capability, productivity, internal organization,  
organizational economics

**JEL Codes:** D23, D24, L25, M12

## **INTRODUCTION**

As befits a contribution to a journal dedicated to the economics of business, I intend to discuss a notion that has become a central construct in management research from an economics perspective. The notion is that of firm-level “capability,” which was coined by George Richardson (1972), acquired a central explanatory role in evolutionary economics (Nelson & Winter, 1972), and has become the cornerstone of much of strategic management thinking. Thus, strategy’s dominant perspective, the resource-based view, and its many relatives and offspring trace the foundations of competitive advantage to capabilities, that is, capabilities are analyzed as antecedents to competitive heterogeneity (Barney, 1991). Economists have also invoked with the construct as a useful shorthand for capturing firm-specific knowledge and intra-industry heterogeneity without, however, making serious attempts to get an analytical grip on it (e.g., Holmström and Roberts, 1998).

However, recent advances in economics with respect to showing the presence of (massive) intra-industry heterogeneity (as summarized in Syverson, 2011), and the actual measurement of the firm-specific causes of such heterogeneity (Bloom and Van Reenen, 2007) imply that economists may not only take capability seriously as a meaningful construct, but may also begin to apply their tools, such as contract theory, to unpacking it. In the process, economists are likely to learn valuable lessons from management scholars.

## **EXPLAINING CAPABILITY**

### **Overcoming the Machlup Legacy**

In his Presidential Address to the American Economic Association, Fritz Machlup (1967) famously presented a case that economists should not care about the specificities (e.g., internal organization) of individual firms, as this was unlikely to bring substantial additional insight in the market outcomes that were the real objects of interests for economists. Thus, for the purposes of price theory, firms within an industry could essentially be taken to be homogenous. Somewhat surprisingly, Machlup's view was also reflected in much of the micro-economics of the firm, not just in the standard Marshallian approach, but also in later contract theoretic and transaction cost approaches. While contract theory and transaction cost insights are surely capable of contributing to the understanding of firm heterogeneity (cf. Argyres et al., 2012), explaining such heterogeneity *per se* has never been a central explanatory task of these approaches (Legros and Newman, 2013). However, while the Machlup view was still holding sway among economists (well into the 1990s), dissenting economists and management scholars highlighted that heterogeneity among firms could be understood in terms of differential capability—an idea that helped them to explain firm boundaries (Richardson, 1972; Langlois and Foss, 1999), competitive heterogeneity in a population of firms (Nelson and Winter, 1982), and competitive advantage (Barney, 1991).

However, the capability construct has mainly been a building block in the analysis on such phenomena, and perhaps for this reason management scholars have been less successful with respect to precisely characterizing capability and its dynamics in terms of the actions and interactions of individuals within firms. Thus, while management research has done much to advance the notion of intra-industry heterogeneity, it may have been less forthcoming with respect to theorizing the antecedents of such heterogeneity, at least in ways that would be appealing to an economist (Argyres et al., 2012). Most work on such antecedents has highlighted cognitive variables, such as managerial cognition and absorptive capacity, and variables related to skill levels and the efficiency of routines. Surprisingly, virtually no work in management research has linked

differential capability to organizational design (e.g., the structures of communication, delegation, and incentives) or even to the human capital characteristics of firms' workforces.

### **Recent Economics and the Capabilities Construct**

In most uses of the construct, "firm capability" refer to the efficiency level at which productive activities are carried out, or simply, "firm-level productivity" (e.g., Nelson and Winter, 1982). Recent work in empirical economics (summarized by Syverson, 2011) documents not only massive but also persistent productivity differences between firms in several countries, even within narrowly defined industries. Industrial organization and labor market economists have examined many different antecedents of such differences, including human capital characteristics, firm-specific sunk costs, and differential access to technology spill-overs, usually being able to make use of register data, the traditionally preferred data sources of academic economists.

In contrast, excepting single-firm insider econometrics studies, most research on firm-level productivity has not considered organizational design as a factor explicitly contributing to firm-level productivity. The reason arguably has to do with the fact that very little publicly available register data contains information on design variables, coupled with economists' traditional skepticism of survey-data. However, work by particularly Nicholas Bloom and John Van Reenen (e.g., 2007; Bloom, Sadun, and Van Reenen, 2012) has, however, successfully demonstrated the explanatory success of rigorous interview-based surveys, particularly when such work can be linked to field-experiments. Their line of research has documented massive productivity differences across firms and public organizations that are to a high extent explainable in terms of the efficiency of the applied management practices as well as ownership patterns.

While this line of research is highly promising, so far it has only identified a subset of the firm-specific determinants of capability/firm-level sources of productivity differences. Thus, it is mainly focused on human resource management practices, to the neglect of such traditional

organizational design variables as delegation, departmentalization, specialization, and formal communication structures, many of which are theorized in the economics of organization. A further problem is that it tends to approach practices in a partial way, where changing one organizational practices directly leads to productivity improvements, and potentially improvements of profitability. Given this, it is not clear why such practices are not just changed. However, organizational design theory in management research as well as the notion of (Edgeworth) complementarity suggest that elements of organizational design cluster in bundles of discrete practices that are linked to each other in terms of, more or less binding, relations of complementarity. Given this, practices only have a significant performance effect when they are implemented (changed) as a discrete bundle, which is likely to be risky and costly. Moreover, the way in which such practices cluster may reflect not just complementarity, but also a high degree of firm-specificity (Williamson, 1996). These characteristics contribute to the understanding of why differences in performance tend to be sustained within industries (Syverson, 2011).

Finally, while much of the creation of capability may be a matter of learning-by-doing processes, discrete investments in physical assets, location, training and so on clearly also play a role. Organizational economists have made significant strides forward in the understanding of the optimal governance of such investments (Williamson, 1996), which suggests that economists may usefully turn the tools of contracts economics and related fields to the study of capabilities (Argyres et al., 2012).

## **CONCLUSIONS**

Almost three decades ago, Milgrom and Roberts (1988: 450) suggested that incentive theory had “been made to carry too much of the weight in the theory of organizations. We expect competing and complementary theories to emerge—theories that are founded on economizing on bounded rationality and that pay more attention to changing technology or to evolutionary considerations.” In



many ways, capabilities theories in management research may be seen as such “competing and complementary theories,” and after a long period of neglect on the part of economists, key insights associated with capabilities theories are now being taken seriously by economists. Thus, the capabilities construct serves the purpose of reminding economists of taking firm-level heterogeneity more seriously, and it points to the potential role that such heterogeneity may play in shaping economic organization and competitive outcomes.

Management scholars have for a long time been engaged in serious thinking on some of the factors that shape capability over time and have examined the outcomes of differential capability. I have argued that recent advances in economics may provide a much-needed new set of empirically-grounded insights in the causes of heterogeneous capability. The capabilities approach to firms will no doubt prosper as a result of economists’ skills at model-building and econometric identification. At the same time, economists could do worse than heeding the management arguments that capabilities also depend on bounded rationality, managerial and organizational cognition, and the allocation of attention within a hierarchy. It is, after all, bounded rational managers who (imperfectly) search in a space of available managerial technology and implement such technology, and undertake the investments that contribute to differential capability. Similarly, management scholars with a social-psychology or sociology background have done much to theorize the implicit, relations contracts (i.e., “psychological contracts”) that arise in firms, and such contracts also arguably have a strong bearing on the understanding of firm heterogeneity (cf. Gibbons and Henderson, 2012). At any rate, heterogeneous capability is a key example of an important topic on which management scholars and economists can sustain a mutually beneficial discussion.

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