

ISBN: 87-7869-042-0

WP nr. 99-7

# The Organization of Large, Complex Firms: an Austrian View

**Frédéric E. Sautet**

New York University  
Department of Economics  
269 Mercer Street, 7th floor  
New York, NY 10003, USA  
fes4361@is3.nyu.edu

**Nicolai J Foss**

*RESPECT*

Department of Industrial Economics and Strategy  
Copenhagen Business School  
Nansensgade 19,6  
1366 Copenhagen K, Denmark  
esnjf@cbs.dk

Revised draft, August 12, 1999  
Preliminary, comments solicited

## **Abstract**

We argue that the discovery process perspective, developed in the context of Austrian economics, is helpful for understanding the organization of large complex firms, even though the perspective has traditionally been applied to the analysis of market activities. The stress put in the perspective on genuine uncertainty, dispersed, tacit and subjectively held knowledge, rules, and entrepreneurial alertness to hitherto unnoticed opportunities provides new insights that are not captured by contemporary agency, transaction cost, rent-seeking, etc. models. We illustrate our reasoning by focusing on the case of the M-form corporation.

**JEL Classification:** D23, D82, D83, M13

## I. Introduction

What factors and mechanisms determine the existence, scope and internal organization of giant corporations, such as General Electric, Asea-Brown-Boveri, Philips, etc.? Can the large, complex firm be understood in the same basic terms that we apply to the analysis of smaller and less complex firms?<sup>1</sup> Are the same economic forces at work, or do bigness and complexity necessitate different or additional insights and explanations?

These are issues that have vexed business academics, historians and economists for decades, which continue to spur controversy, and which – we shall argue – still haven't found completely satisfactory answers. Generally speaking, much existing literature maintains that the same economic forces that explain the existence, scope and internal organization of the giant firm also explain the existence, scope and internal organization of Jimmy's Auto.

However, other contributors have argued that big complex firms create information and incentive problems that are not likely to exist in smaller firms, and that they therefore represent distinct challenges with respect to the design of information channels and incentive schemes (e.g., Williamson, 1970; Groves and Loeb, 1979; Milgrom, 1988; Radner, 1986, 1992; Aghion and Tirole, 1995). From more managerial perspectives, other theorists have argued that we need to incorporate considerations relating to dimensions of knowledge, bounded rationality, and learning. Ideas on the "similarity" of corporate assets (Richardson, 1972; Foss, 1997b), "learning distance" (Dosi, Rumelt, Teece and Winter, 1994) and the need to "respond to the complexity of [the] environment" (Groves and Loeb, 1979: 221), belong to this category. In terms of underlying perspectives, the answers draw on work on mechanism design, agency theory, the theory of teams, ideas on bounded rationality, transaction cost economics and the capabilities perspective – surely an impressive menu of diverse perspectives!

---

<sup>1</sup> The notions of "large" and "complex", as well as their interrelation requires some brief clarification. We follow Hayek (1964: 25) in thinking of complexity as a matter the "... minimum number of elements of which an instance of the pattern [that we wish to explain] must consist in order to exhibit all the characteristic attributes of the class of patterns in question". Thus, while the economic organization of Jimmy's Auto may be described in less complex terms, for example, as a dyadic principal-agent relationship, much more explanatory complexity is involved in the case of large divisionalized firms. There are simply many more basic elements that must be taken into account in the explanation, such as many more players (shareholders, directors, managers, workers...). This also indicates that complexity is, to a large extent, a product of size, and may be expected to increase positively with size.

In this paper we want to provide different answers that is drawn from a different perspective. More specifically, we seek answers to the above questions from the discovery or market process perspective put forward in the body of literature often referred to as “Austrian economics” (Hayek, 1948; Mises, 1949; Kirzner, 1973, 1997; Lachmann, 1986; Boettke, 1994). Thereby we are admittedly adding to the diversity in an area that is already diverse in terms of answers and perspectives. However, we strongly believe that existing perspectives have given inadequate (*not* erroneous) answers, and that this is founded in some basic, shared weaknesses. Since the proof of the pudding is in the eating, let us be more precise and state that what we find missing in most contemporary perspectives on the large, complex firm are

- a genuine acknowledgement that such firms are characterized by a substantial *division of knowledge*, large parts of the relevant knowledge being subjectively held and tacit. This, we argue, is only imperfectly captured in the asymmetric information paradigm that is applied in, for example, principal-agent theory, and which is arguably the dominant approach to the economics of internal organization. Thus, we criticize contemporary perspectives for their inability to come to grips with essential complexity.
- a genuine taking account of the role of *discovery*, and therefore also the role of the *entrepreneur*, in large firms. Although the role (and limitations) of incentives in organizations is a hugely researched area, incentives are only discussed with reference to situations in which the principal has full knowledge of the complete range of possible realizations of the agent’s private information. The situation in which this is not the case, and where incentives may therefore also play the role of stimulating the discovery of the “facts” that pertain to the situation of the agent, has attracted only negligible attention.
- a lack of understanding that “... the set of opportunities to be discovered might in some way depend on the institutional framework” (Kirzner, 1985: 70), that is, organizational structures influences discovery processes in firms, so that there are some discoveries and some type of growth of knowledge that simply will not take place under certain types of organizational structure.
- an adequate understanding of the role of *rules* in firms. At the present level of understanding rules are usually conceptualized in terms of the literature on rent-seeking and explained as efficient responses to rent-seeking efforts of employees (e.g., Milgrom, 1988). However, we argue that in large, complex firms, rules – as well as commands – are necessary for efficiently coordinating and utilizing dispersed knowledge.

In the ensuing pages, we develop and illustrate this view of the firm. We begin by presenting the basic approach on which we build, namely “*the Austrian*

*Discovery Process Perspective*” (section II). Although Austrian economics has conventionally been developed in the context of work on spontaneous market processes, Austrian economists have actually contributed to the understanding of (bureaucratically) organized economic activity, namely during the so-called “socialist calculation debate” (Lavoie, 1985). In fact, key insights from this debate are as applicable to firm organization as they are to the issue of socialist economic organization.

In section III, “*The Large, Complex Firm: An Austrian Perspective*”, we explicate our view of the large, complex firm, and show in which ways it differs from the “simple firm”, that is to say, the initial founding of a firm on the basis of an entrepreneurial business conception, and in which ways an Austrian conception can assist the understanding of it. We next apply our story to a well-known generic case in the business history literature, namely the emergence of the multidivisional organizational form in the US in the first decades of this century, and argue that an Austrian discovery perspective yields unique insights into this. For example, from our perspective, the primary advantage of the M-form was that it stimulated an entrepreneurial discovery process that led to a growth of knowledge that simply couldn’t have taken place under alternative organizational structures (Section IV, “*Understanding the Emergence of the M-form*”). Finally, we discuss how our view differs from other contemporary perspectives, concluding that an Austrian view complements rather than contradicts much existing work in the theory of the firm (Section V, “*Connections to Other Theories*”).<sup>2</sup>

## **II. The Austrian Discovery Process Perspective**

### *A. Process and Equilibrium*

Although Williamson (1988: 94) observed that “[t]he proposition that process matters is widely resisted and has attracted little concerted research attention from economists”, not everybody has resisted this “proposition” and there has been ample “concerted” research effort<sup>3</sup>, notably taking place under the banner of Austrian economics.<sup>4</sup> Fundamentally, modern Austrian economics build on the

---

<sup>2</sup> This paper partly draws on Sautet (1998).

<sup>3</sup> Historically, the suppression of process in economics is largely a post Second World War phenomenon (Machovec, 1995).

<sup>4</sup> More broadly, we may speak of “market process economics” (Boettke and Prychitko, 1998) – a broad line of thought that includes the Austrian school of economics (e.g., Mises, 1949; Hayek, 1948; Kirzner, 1973; Lachmann, 1986), and evolutionary (Nelson and Winter, 1982), Schumpeterian (Schumpeter, 1934), and post-Marshallian economics (Loasby, 1991), as well as some contributions with a more formal, neoclassical character (e.g., Fisher, 1983).

work of particularly Ludwig von Mises and Friedrich von Hayek in its attempt to conceptualize and understand the mechanisms that drive disequilibrium processes of change. Setting aside the differences between the views of Mises (1949) and Hayek (1945,1946, 1978), we focus in this section on Israel Kirzner's (1973, 1985, 1992, 1997) development of Hayek and Mises' thought.

At least since Hayek's paper on "The Use of Knowledge in Society" (1945), Austrians have been concerned with understanding the economic problem not in terms of the allocation of known resources, but in terms of the discovery and use of dispersed (or not yet perceived) knowledge.<sup>5</sup> The Austrian approach to economics and the market process stems from two fundamental phenomena: (a) the recognition that there is genuine novelty in the marketplace; in other words, that the economy is open-ended; and (b) that individuals can discover what the future could be like and as such act as entrepreneurs (Mises, 1949; Hayek, 1978). The Misesian and Hayekian understanding of the market system led Austrians, and especially Kirzner, to launch a strong critique of what we may term the "equilibrium-always approach" of most of mainstream economics, that is, the methodological convention that all economic phenomena should always and everywhere be represented "as if" in equilibrium.<sup>6</sup>

The conventional mainstream defence of this position is that eventually, "the system" will home in on the equilibrium – a position that may be criticized by pointing to restrictive assumptions that in general need to be made for a system to possess a unique equilibrium solution. Moreover, if the system possesses multiple equilibria, attention has to be paid to dynamic out-of-equilibrium, as, for example, the literature on path-dependence has showed. The Austrian critique, however, is different, since it is not dependent on, for example, whether unique or multiple equilibria exist. One Austrian critique is that the equilibrium-always heuristic

---

<sup>5</sup> As Hayek (1945: 78) explains in a famous passage: "The peculiar character of the problem of a rational economic order is determined precisely by the fact that the knowledge of the circumstances of which we must make use never exists in concentrated or integrated form but solely as the dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess. The economic problem of society is thus not merely a problem of how to allocate "given" resources – if "given" is taken to mean given to a single mind which deliberately solves the problem set by these "data". It is rather a problem of how to secure the best use of resources known to any of the members of society, for ends whose relative importance only these individuals know. Or, to put it briefly, it is a problem of the utilization of knowledge which is not given to anyone in its totality".

<sup>6</sup> Arguably, the most extreme representatives of this view are Chicago economists (Friedman 1953; Lucas 1981; Reder 1982), who further argue that *competitive* equilibrium is the only permitted way of representing interaction in an economic system.

hinders understanding those phenomena that are best understood as genuine disequilibrium phenomena. Thus, in a famous paper, Hayek (1946) argued that a (competitive) equilibrium understanding of competition implied a fundamental misrepresentation of a number of practices that would only make sense outside competitive equilibrium.<sup>7</sup> Admittedly, modern game-theoretic treatments of the competitive process succeeds in interpreting “[a]dvertising, undercutting, and improving (“differentiating”) the goods and services” as equilibrium phenomena (e.g., Krouse 1990), and on this basis, at least one commentator (Vickers, 1995) has argued that modern (industrial organization) economics has answered the Austrian challenge.

However, we strongly contest that claim. First, the attempt to interpret the Austrian emphasis on the market process in terms of equilibrium (albeit of the sophisticated, game-theoretical variety) has not succeeded in modelling disequilibrium behavior. Second, the essential Austrian point that the market process is essentially one of learning is obscured by equilibrium constructs (of any kind) in which everything one can profitably learn has already been learnt. Third, the underlying conceptions of human behavior are widely different. What we, following Kirzner (1973), may call “Robbinsian maximizers” continue to be the only allowed-for portrayal of behavior in mainstream economics. However, Robbinsian maximizers are characterized by the maximizing within *known* means-ends frameworks (and this is also true if agents are boundedly rational). As such, they cannot be a source of novelty in the system. As Richardson (1960) showed, Robbinsian maximizers cannot even bring about a general equilibrium, since they can only act with respect to what they know: the economy is by definition always in a state of equilibrium (even if we set the model in a stochastic environment). Thus the neoclassical approach doesn’t give a satisfying answer to the economic problem, at least as this is conceptualized in the Austrian tradition.

### *B. The Entrepreneur*

In fact, in order to explain these issues, we need a theory of the use of knowledge in society (and of the division of labor), and, from the Austrian perspective, this can only be so if we introduce the concept of the entrepreneur. Entrepreneurial behavior is distinct from the maximizing behavior conventionally assumed in mainstream theory. In Kirzner’s analysis, the essence of entrepreneurship is

---

<sup>7</sup> Argues Hayek (1946: 96): “The peculiar nature of the assumptions from which the theory of competitive equilibrium starts stands out very clearly if we ask which of the activities that are commonly designated by the verb “to compete” would still be possible if those conditions were all satisfied ... I believe that the answer is exactly none. Advertising, undercutting, and improving (“differentiating”) the goods and services are all excluded by definition – “perfect” competition means indeed the absence of all competitive activities”.

“alertness.” It is because the entrepreneur is alert that he notices opportunities that others simply don’t see. Entrepreneurial behavior is purposeful and is brought about by the lure for profit.<sup>8</sup> Now, all this may seem so self-evident as to hardly warrant much comment, not to mention objection. Isn’t this what we naturally assume about at least businessmen’s behavior? However, in actuality mainstream economics does not – and cannot – have room for entrepreneurship, because of its overriding equilibrium-always heuristic and the closely related assumption of maximizing behavior. And although Kirzner’s argument is surely common-sensical, on closer inspection it turns out to be finely crafted and sophisticated, as well as genuinely different from mainstream economics.

When an entrepreneur discovers and exploits an opportunity, the entrepreneur redefines the means-end framework and, *ceteris paribus*, tends to bring the system closer to equilibrium. In other words, his activity increases the coordination of other agents’ plans. Not all market adjustments are equilibrating, of course, and disequilibrium is also a common feature of the market economy, as Mises (1949) explains (see also Lachmann, 1986). Disequilibrating tendencies in the market system are not simply the result of exogenous changes (like changes in preferences), but also of endogenous changes (emerging from the equilibrating forces themselves). In fact, an equilibrium may only be definable in the process of its emergence.<sup>9</sup> The entrepreneur brings knowledge that is utterly unknown to anyone in the market, and helps defining a new equilibrium by setting the pattern of an underlying future reality.

This understanding of entrepreneurial activity implies that entrepreneurship is not a resource that can be deployed or planned. Alertness cannot be bought and sold and therefore no investment in entrepreneurship is possible. Entrepreneurship is present in all human action to a certain degree and individuals are not alert in the same way. Entrepreneurs are alert to price discrepancies in the marketplace. These discrepancies can be purely geographical (as in the usual understanding of the arbitrageur) or can take place over time. In the first type, knowledge is scattered in the economy and the entrepreneur realizes that he can profit from this ignorance. In the second type knowledge is not currently possessed by anyone in the market, it is utterly unknown to the market participants.

---

<sup>8</sup> Thus, from an Austrian perspective, the main problem with government intervention, including full-scale socialism, is that it risks stifling this entrepreneurial process of discovery.

<sup>9</sup> See Buchanan (1982) and the new introduction in O’Driscoll and Rizzo (1996). Of course, this insight is also present in the path-dependency literature.

This approach allows for the introduction of discovery over time and shows that the entrepreneur can imagine the future, even if he only discovers one of the underlying future realities. By imagining the future, the entrepreneur can set the economy onto a new path, and influence the pattern of preferences individuals hold at a certain point in time (Kirzner, 1992). It also shows that one of the roles of the entrepreneur is to deal with the uncertainty surrounding the future of most human activities and that arbitrage is the essence of all entrepreneurial activity. In other words, the *entrepreneurial function is arbitrage*. What is fundamental in entrepreneurial activity from the economic point of view, is not the fact that resources are physically transformed for instance, but the fact that an individual decides to speculate over the use of resources that are undervalued in the present (and this includes the knowledge necessary for the physical transformation of the resources). It is the economic function of entrepreneurship through arbitrage that interests Austrian economics.

Austrians conceptualize the market as a process which can be understood as a discovery procedure that tends to solve the economic problem through entrepreneurial competition – the basic task of economics being to understand and explicate how this process takes place. As explained in Kirzner’s recent survey paper in the *Journal of Economic Literature* (Kirzner, 1997), the Austrian discovery perspective has been applied to a broad range of phenomena, ranging from gender issues over antitrust to issues in comparative systems. What Kirzner does not mention, however, is the increasingly widespread realization that these ideas can also be used to understand the rationales and functioning of firms (Foss, 1994a&b, 1997a; Sautet, 1998), particularly large, complex firms.<sup>10</sup> In the following, we present our take on this issue.

### **III. The Large, Complex Firm: An Austrian Perspective**

*Prima facie*, the application of Austrian ideas to the analysis of firm organization may seem paradoxical. This is so for a number of reasons. First, the Austrian approach has historically been developed in the context of the theory of markets,

---

<sup>10</sup> In fact, some Austrians have recently developed a normative market-process approach to *management* (Ellig, 1993; Cowen and Parker, 1997). Many valuable insights are to be found in this literature, but it doesn’t address entirely the issue the way we see it. Setting aside the fact that they use an Austrian terminology in ways that don’t correspond to what has been developed in the market process approach, we don’t agree with them when they contend, following “nexus of contracts” theorists, such as Cheung (1983), that the firm mode of organization is not in any meaningful sense qualitatively different from the market mode of organization (Cowen and Parker, 1997: 40-1).



that is, with respect to "spontaneous" rather than "intentional" governance (cf. Williamson, 1996: 145-169). Second, an Austrian view would seem to imply that because of the importance of local, subjectively held and partly tacit knowledge and the inability to centralize this knowledge, firms can have only a temporary advantage relative to markets (Jensen and Meckling, 1992). Indeed, the conclusion that it is only to the extent that firms mimics market organization that they can survive seems both attractive and easy to reach from a basic Austrian perspective (Cowen and Parker, 1997).<sup>11</sup> However, as we will argue below, the whole problem lies in the fact that the large, complex firm is *not* a market-like mode of organization, and *yet* is confronted with problems that are similar to the "economic problem" as described above (Foss, 1998; Sautet, 1998).

### *A. The Double Hayekian Knowledge Problem*

If we take into account the "economic problem" as stated above, that is to say, the fact that there is genuine novelty and general ignorance in the marketplace, we can argue, following the modern Austrian tradition, that the economic problem is in fact mostly a knowledge problem. The pervasiveness of structural uncertainty in the economy implies that, from the point of agents, the problem is not so much a matter of acquiring an optimal level of ignorance (like in standard optimization models), but that they are ignorant of the extent of their own ignorance. In other words, they don't know what it is that they don't know (Kirzner, 1997). This is the Hayekian knowledge problem

It follows that a firm, or more exactly the manager of a firm, like any individual in the market, will be ignorant of his/her own ignorance with respect to opportunities "out there." For example, managers may overlook a profit opportunity available to them and continue to produce a former product when they should "optimally" have diverted the present use of their resources into more profitable lines of production; they may fail to implement new attractive process innovations, etc. However, as we shall argue, this is far from the only Austrian insight that is applicable to understanding firms.

In contrast to markets, firms are planned by identifiable historical individuals with the purpose of earning a profit and they normally operate under a designed framework, such as a mission statement, a formal organization structure, etc. They are set in motion, as it were, by conscious intention and are therefore "pragmatic" institutions in the sense of Menger ([1883] 1985). However, the distinction between "pragmatic" and "organic" systems really only refer to the origins of these systems. Thus, systems with an organic origin may become heavily regulated and systems with

---

<sup>11</sup> To some extent, this conclusion may also be derived from the older literature on transfer pricing (Hirshleifer, 1956).

a pragmatic origin may develop spontaneous elements (e.g., the results of the rent-seeking efforts of bureaucrats in a government hierarchy). Similarly, firms may develop strong “organic” elements, such as its corporate culture and often corporate strategy as well (Mintzberg, 1994; Langlois, 1995) – a point which borders on the trivial to most analysts of corporate behavior but has gone virtually unnoticed (or, at least untreated) in the modern economics of organization.

This suggest that we should also expect to encounter the Hayekian knowledge problem *within* a centralized and hierarchical organization. Just as in the market, each agent in a firm possesses knowledge that is local, subjectively held and partly tacit. Thus, from the perspective of management, there is not only a problem of distribution of knowledge among individuals in a firm; there is also a problem of genuine ignorance. More specifically, there can always be knowledge possessed by the employees which will depend on the particular circumstances of time and place that the management won’t know – even if these pieces of knowledge would be valuable to management. This knowledge could be about how to improve the internal allocation of resources or about how to seize a profit opportunity in the marketplace. In other words, there is also a Hayekian knowledge problem within the complex firm. The manager can be ignorant of his own ignorance with respect to the knowledge possessed by his employees (and this knowledge could be crucial to the firm). This problem comes in addition to the knowledge problem that individuals have to face in the marketplace: this is the double Hayekian knowledge problem (Sautet, 1998).

### *B. Complex Firms and Central Planning*

At the basis of our argument is the contention that firms may confront knowledge problems of a magnitude comparable to those which confront the social planner in a socialist economy (Foss 1998; Sautet 1998). At least giant firms (ABB, Philips, GM, IBM, etc.) certainly face a knowledge dispersal problem of almost the same caliber as the general societal knowledge dispersal problem.<sup>12</sup> To such firms, Hayek’s (1945: 83-84) point about the necessity of decentralization seems quite pressing indeed<sup>13</sup>:

---

<sup>12</sup> Smaller firms also confront coordination problems, although there is probably a monotone (but probably not linear) relationship between the size of firms and the severity of coordination problems.

<sup>13</sup> There is, in fact, a literature that explicitly addresses how to handle the knowledge dispersal problems that exist in, typically, multinational firms (see, e.g., Bartlett and Ghoshal 1989). This literature explicitly begins by rejecting the idea that top-management in large firms, such as ABB, can simply centralize all the relevant knowledge and issue in a top-down fashion the relevant commands to different business units. This is seen as plainly absurd; and the arguments advanced in favor of this judgment are closely related to Austrian arguments against central planning (e.g., Lavoie 1985): the size, complexity and partially tacit character of the relevant knowledge, in addition to the need for flexibility and local adaptation, makes centralization not only inefficient, but genuinely impossible. Firms must resort to

If we can agree that the economic problem of society is mainly one of rapid adaptation to changes in the particular circumstances of time and place, it would seem to follow that the ultimate decisions must be left to the people who are familiar with these circumstances, who know directly of the relevant changes and of the resources immediately available to meet them. We cannot expect that this problem will be solved by first communicating all this knowledge to a central board which, after integrating all knowledge, issues its orders.

Hayek's point, of course, is that a "central board" is not at all necessary: a market system, meaning a system with alienable property rights, promotes a tendency towards allocating property rights to those who can make best use of them; the entrepreneurial market process ensures that there is a tendency towards a state where the best use is indeed made of these rights. This point has been reflected in much recent management thinking (Semler, 1989; Meyer, 1994; Nonaka and Takeuchi, 1995). Characteristically, one best-seller was called *Internal Markets: Bringing the Power of Free Enterprise INSIDE your Organization* (Halal, Geranmayeh, and Pourdehnad, 1993), and the recent strong emphasis on cross-functional teams that are given extensive decision rights and where payment is based on team-output reflects the recognition that it is to some extent possible to combine "high-powered" incentives with efficient utilization of local knowledge in firms.

We don't subscribe to the view that denies an essential difference between firms and markets. We hold that the Coasean claim that the "the distinguishing mark of the firm is the supersession of the price mechanism" (Coase, [1937] 1993: 20) is still valid and implies the existence of some sort of planning (Hayek, 1946, 1973). First, note that many firms actually regularly do carry out (strategic) planning exercises, and continue to do so, which suggests (if not proves) that such exercises may have some sort of value. That value may exactly be that although nobody believes that all dispersed, subjectively held and tacit knowledge can be mobilized, a regular planning exercise may indeed make clearer to management what sort of knowledge is present in the organization and which learning processes are going on locally (say, in a foreign subsidiary). Second, planning can mean simply choosing some sort of policy, however broadly defined, to emergent events, where the policy in question concerns the coordination of those activities that are affected by the emergent events.

For these reasons, the complex firm encounters "... the problem which any attempt to bring order into complex human activities meets: the organizer must wish the individuals who are to cooperate to make use of knowledge that he

---

other means to handle dispersed knowledge; however, for a given set of means (bonuses, monitoring, divisionalization, matrix organization, etc.), there is a limit to how large and how complex the firm's "stock" of knowledge can be.

himself does not possess” (Hayek, 1973: 49). This is a deep problem that is not easy to resolve. It is different from a standard adverse selection problem, for we here have in mind employees (rather than prospective employees), who possess knowledge not possessed by the principal. Specifically, he does not know the complete range of possible realizations of the agent’s private information. He confronts a Hayekian knowledge problem. In the following section, we argue in an illustrative manner that real firms have actually made successful attempts at solving this problem.

### *C. Incentives, Rules, and Discovery*

One fruitful way of approaching the issue is to say that the central problem of organizational design is to combine ”relative immutability” with “flexibility”, to use terms taken from Ludwig Lachmann’s (1971: 13) thoughts on institutional design:

[T]he central problem of the institutional order hinges on the contrast between coherence and flexibility, between the necessarily durable nature of the institutional order as a whole and the requisite flexibility of the individual institution ... the relative immutability of some institutions is always a necessary prerequisite for the relative flexibility of the rest.

This basic insight can be rephrased thus: the design is to choose the set of incentives and rules (relative immutability) that best promotes growth through entrepreneurial discovery (flexibility).

Hayek (1973) makes the distinction between rules (in relation to spontaneous orders) and commands (in relation to the organization). Rules need not be known to the individuals who are following them (they can be tacit), and they may be of spontaneous origin. His distinction is fundamental to the treatment of the double knowledge problem. Indeed, because of the nature of the problem at stake, the complex firm must

... rely also on rules and not only on specific commands. The reason here is the same as that which makes it necessary for a spontaneous order to rely solely on rules: namely that by guiding the actions of individuals by rules rather than by specific commands it is possible to make use of knowledge which nobody possesses as a whole” (Hayek, 1973: 48-9).

On the basis of the Austrian principles that we outlined in the preceding pages, we contend that the complex firm can only be a successful locus of discovery if it is a structure in which the discoverers are also the gainers. In order to induce individuals in the organization to make use of knowledge that only they possess, the rewarding system must be carefully designed. Austrian economics sees two types of incentives that can be related, in the Hayekian view, to

commands (“Robbinsian incentives”) on the one hand and to rules (“Entrepreneurial incentives”) on the other.

***Robbinsian Incentives.*** In the incentive-alignment approach (principal-agent, incomplete contracts, transaction cost economics), incentives are “... called for to motivate an agent to engage in some costly activity.” (Kirzner, 1985: 86). Indeed, “[e]conomists treat the concept of an incentive as referring to the provision of an encouragement for a decision maker to select a particular one out of an array of already perceived alternatives” (ibid.: 94). In order to obtain the desired planned coordination, the manager motivates his employees with (high enough) wages. He is the residual claimant for instance, and as such, he rewards employees and possesses the power to enforce the various contracts (Alchian and Demsetz, 1972). Following Kirzner, we call these incentives “Robbinsian.” They are based on the fact that the reward must compensate for the cost of acting (the salary must exceed the disutility of work),<sup>14</sup> where the reward and cost calculations take place with respect to given and fully known alternatives.

The problem with this view is that the double Hayekian knowledge problem is completely overlooked, and agents are supposed to act, not as discoverers, but as pure maximizers only. If much relevant knowledge in a firm is fundamentally dispersed, subjectively held and partly tacit, there is a basic problem of supervision, as Jack Wiseman (1953) pointed out many years ago. For the principal may not know the agents’ action set and may therefore not know the full range of possible outcomes, and he cannot therefore make a direct check on the agent’s efficiency. It is possible to make indirect checks, for example by comparing the agent to other agents that work with similar tasks (tournaments, etc.), but strictly speaking, truly dispersed, subjectively held and tacit knowledge means that it is never possible for the principal to know whether there were better alternatives that should have considered, whether the agent forecast the outcomes of alternative actions correctly, etc.

---

<sup>14</sup> Williamson (1985: 131-62) makes the distinction between “high-powered incentives” and “low-powered incentives.” The former characterizes markets and the latter firms. In markets, one can appropriate all of the net receipts, which provides incentives to exhaust them, whereas in the firm, an individual receives a specified salary, which lowers the incentive to do well. Williamson explains that corporations try to use high-powered incentives, especially between two divisions when one supplies the other, but this doesn’t come without problems. First, “firms cannot mimic the high-powered incentives of markets without experiencing added cost” explains Williamson; and second, “although recourse by firms to low-powered incentives is thereby indicated, that too comes at a cost.” (Williamson, 1985: 140) Another important development in the neoclassical approach to incentives is tournament theory, which emphasizes how agency costs may be reduced when employees compete for prizes.

**Entrepreneurial Incentives.** Another kind of incentive, Kirzner (1985: 96) explains,

... operates to encourage the adoption of A by making A more likely to be noticed by the decision maker ... The incentive to undertake A operates, under the specified assumptions, through its inducement to discover the possibility and/or the attractiveness of A.

Although this may not seem different from an ordinary problem of controlling moral hazard, there are subtle differences from the principal/agent problem as conventionally conceptualized. Thus, there is not a presumption that the principal knows the entire possible realization of the agent's action set, that the relevant probability distributions are common knowledge, etc. Rather, the goal is to induce the agent to be alert to discoveries for net profit, and not only to gains that are already known (wages). In the marketplace, entrepreneurs tend to notice what is in their interest, because of the sheer lure of money. We contend that this type of incentive can exist in the complex firm. Many corporations function with incentive compensation systems that reward personal achievement (i.e., profit discovery for the company) by measuring it through various forms of profit centers. This is exactly what Robert Townsend, the former president of Avis, recommends in his book, *Further Up the Organization*:

To be effective, an incentive compensation system of profit sharing should include the following characteristics:

1. It should be related as directly as possible to performance. Therefore, wherever a participant has primary responsibility for a profit center, his incentive compensation is directly related on a percentage basis to the profits of that center. Where his relationship is more remote, or where his judgment are of a staff type, evaluation is based on the judgment of his boss, but this is far less desirable. Spend company time and effort on the preparation of profit-and-loss statements for profit centers to enable as many people as practicable to be measured that way. [...] For maximum effectiveness, no ceiling should be put on a profit-measured bonus merely because it has become substantial. [...]
2. [...] Incentive compensation is to measure variations in performance [i.e. employees should obtain a minimum basis irrespective of performance].
3. Get your board of directors to establish in perpetuity (a moral binder) that 15 percent of total pre-tax profit will be available for those eligible for incentive compensation. The perpetuity is important. Otherwise the finks will try to reduce it when it becomes desirable.

4. Bonuses measured by profit centers are handled by formula. Changes in formula should be resisted. [...] Fairness and full disclosure are the two keys to making the system work. [...]

[O]ne might state the things that are not built into this compensation philosophy:

1. No “thirteenth month” type of bonus or profit sharing by which every employee simply gets an extra pay period during the year, unrelated to performance. [...]

2. No incentive compensation is paid to an employee who does not otherwise merit it because “he is counting on it.” [...]

3. No penalizing an employee — who has conducted himself well and shown tangible results — because of others either above him or elsewhere in the organization. [...]

4. No reducing the percentage of participation of a manager because his bonus is “getting too high,” since such fudging corrupts the entire system. [...] (Townsend, 1984: 95-103, italics removed)<sup>15</sup>

Notice that Townsend provides more than the usual incentive-alignment story. He says that management can devise a plan that would induce individuals to work for profit and not only for their salary. In other words, if management is to set profit centers within the organization, it can directly reward individuals with the profits they have made. In Chandler’s account of the M-form revolution, executives are credited for being the prime movers that led to structural change. But executives are not the only one who can make discoveries in the firm. More and more firms adopt today the Japanese approach which consist in making employees participate in the ever-improving production process (Deming, 1986). Alanson Minkler (1993: 575) elaborates on the same idea. As he puts it:

Pepsi’s Riverside plant [Lang, 1990] and Harley-Davidson’s entire operations [Reid, 1990] were constructed using employee ideas and have incorporated management systems that involve employees in decision-making and problem-solving. Womack, Jones, and Roos [1990] attribute Toyota’s success largely to its allowing workers to make decisions based upon their on-the-spot knowledge. In fact, the use of just-in-time supply systems intentionally forces employees to use their knowledge to solve problems.

---

<sup>15</sup> This is under the section: “Incentive compensation and profit sharing.”

Many firms now adopt the “everybody thinks, does and wins” approach, which fosters the use of local knowledge more than the standard incentive approach. For example, firms reward money-saving tips from workers. Sam Walton, CEO of Wal-Mart, created cash awards for employees who contributed to superior cost-saving service, and McDonald’s under the guidance of Ray Kroc set up an unusual franchising system (Cowen and Parker, 1997: 63-4). The issue is to relate the profit perceived to the discovery made. Rules within the organization are, in this respect, fundamental – just as they are to entrepreneurial discovery in the marketplace. We consider this next.

**Rules as a Form of Entrepreneurial Incentives.** In a sense, Townsend illustrates Hayek’s contention about the use of rules in the organization. “What distinguishes the rules which will govern action within an organization,” writes Hayek, “is that they must be rules for the performance of assigned tasks.” (Hayek, 1973: 49). It is only by allowing individuals to use the knowledge they possess that the promoter will be able to rely on the knowledge possessed by his employees. As Hayek puts it: “[W]e cannot improve the results by specific commands that deprive its members of the possibility of using their knowledge for their purposes” (ibid.: 51). Along these lines, Langlois (1995: 258) uses Hayek’s distinction between abstract and concrete rules, saying, in essence, that organizations that rely more on abstract rules will be able to adapt better to changing circumstances. Firms and markets are both systems of rules of conduct.<sup>16</sup>

The importance of “relative immutability”, as Langlois (1986: 187) points out, is that a stable high-level environment is conducive to the division of labor, and therefore, we may add, to the growth of knowledge. Since uncertainty is reduced, the need for flexibility is reduced which allows agents to concentrate on fewer tasks in which they can therefore accumulate more knowledge. Some measure of flexibility, on the other hand, is required in the face of the fact that unexpected contingencies emerge from the external environment, the firm itself generate emergent events through collective learning, management experimentation, R&D, etc. (Kirsten Foss, 1998), and, relatedly, entrepreneurial discovery inside the firm is bound to produce new facts that have to be accommodated.

#### **IV. Understanding the Emergence of the M-Form<sup>17</sup>**

---

<sup>16</sup> Contrast this with the notion of rules in Milgrom (1988), where these *only* serve the role of mitigating subordinates’ rent-seeking efforts.

<sup>17</sup> This section draws on Sautet (1998).



We not only claim that principles traditionally applied to the analysis of the market can be usefully applied to understanding the firm; we also submit that the understanding of the market system will be enhanced by a better understanding of the development and growth of firms. The emergence of the M-form structure in the twentieth century is arguably the most significant of all modern organizational innovations (Williamson, 1985). Ironically, this has sometimes been taken to be the crowning achievement of a long march towards increased infusion of markets with conscious planning; the ultimate manifestation of the "visible hand" (cf. Chandler, 1977) of managerial capitalism supplanting the invisible hand of market forces.<sup>18</sup> Quite in contrast to this view, we shall argue that the Austrian conceptualization of the large, complex firm that we have presented in the preceding sections can actually be applied to understanding the specific case of the M-form. Notably, the perspective that we present is completely different from the perspective of what is arguably the most prominent economic interpretation of the important piece of business history that Chandler present, namely Williamson's (1985). The latter's emphasis lies on the M-form's ability to reduce both problems of bounded rationality and problems of opportunism, and while we don't wish to reject this explanation, a more Austrian interpretation is possible.

As Chandler tells the story, between 1850 and the First World War, firms in the United States systematically began to establish distinct organizational structures (Chandler, 1990 [1962]). Thus, departments and other administrative units and functions emerged within firms as the division of labor was becoming more and more essential to the management of the growing capital structure in the economy. By the turn of the century, many firms had a departmental structure, which usually reflected the types of products they produced. Each major function a firm had to deal with was managed by a separate department, but firms, on the whole, would still produce one major product or line of products and would operate over a relatively small area. This early firm structure is the unitary form. In the U-form, the president and the board of directors (of the departments) take managerial and long-run decisions.

#### *A. Sources of Growth and the Emergence of the M-form*

Over time sources of growth became more diverse, especially with the growth of urban population at the turn of the century. Firms could continue to expand along their existing lines, they could also try to reach new markets and new sources of supplies in more distant places, or they could try to develop new types of products for new customers and enlarge their capabilities (Chandler, 1990 [1962]: 42).

---

<sup>18</sup> Lazonick (1991) is a rather extreme representative of this view. Of course, the older work of John Kenneth Galbraith had a similar orientation.

Most metals companies and those that processed agricultural products continued to develop, in the first quarter of the century, along their existing lines. Metals companies continued making copper, zinc, iron or steel, for instance, and sold it to the same type of users. Of course, the technology used to produce steel products evolved and new demands for steel came into existence during that period, but expansion was not so much a matter of new products or new geographical area than a matter of cost of production (better services, cheaper products, etc.). The same is true for tobacco, sugar, liquor and banana companies for instance. Expansion of these firms did not really bring new types of administrative problems, and as Chandler explains, by the early 1960s, most of these companies were still run through the centralized form.

In other industries, growth came more by going overseas and by the multiplication of products. Many chemical companies followed the path opened by du Pont at the end of the 1920s, and grew through diversification into new lines of products. The same is true of the power machinery, electrical and automobile industries.<sup>19</sup> For instance, automobile companies started to produce tractors, diesels, trucks, airplane engines and even electrical equipment, using most of the time the internal combustion engine. Most firms that began to grow through diversification and territorial expansion eventually changed their organizational structures. They went from the departmental to the multidivisional form<sup>20</sup>.

### *B. Rationales for the Metamorphosis: Chandler and Williamson on Complexity, Opportunism and Bounded Rationality*

One of the most commonly admitted explanations for the emergence of the M-form is Chandler's view and its later transaction cost interpretation.<sup>21</sup> Chandler emphasizes in his 1962 book the importance of complexity of the tasks involved in the management of the growing U-form structure and the limitations of managers in administrative and operating functions. The men at the top of the hierarchy (the president and the vice-president usually) were entrusted with a great number of complex decisions regarding the administration of the company and they couldn't devote enough time to the conduct of the firm as a whole. Moreover, their specialization within the firm did not permit them to handle new problems

---

<sup>19</sup> With the notable exception of Ford before W.W.II. As Chandler puts it: "By concentrating on one model which came to be built largely in one plant, Henry Ford expanded enormously in size without creating many central office management problems." (Chandler, 1990 [1962]: 301)

<sup>20</sup> J. Kocka has argued that Siemens developed aspects of a multidivisional structure before W.W.I, ahead of its more widely known adoption in the USA. See Schmitz (1993: 34) on that issue.

<sup>21</sup> Although Chandler originally endorsed the transaction cost interpretation of Williamson, he has later rejected it in favor of a capabilities explanation. See Chandler (1992).

emerging from rapid changes in the market when the firm was involved in rapidly evolving and technological new markets (Chandler, 1990 [1962]). Notably, growth by diversification into several lines and geographical expansion led to serious new administrative problems, since it increased the complexity of operational activities. Departmental headquarters came to manage the problems of obtaining supplies, manufacturing products and marketing them for a growing number of product lines, for different types of customers and in different parts of the country (and eventually of world).

This was, as Chandler puts it, “exceedingly difficult to administer systematically and rationally” (Chandler, 1990 [1962]: 44). Even more difficult was the coordination of activities and product flows among the various departments. Not only had the general office to show expertise in engineering, research, product development, distribution, production processes, transportation, finance and the like, but also it had to make appraisals in very different lines of business in different geographical areas. The complexity of the task involved in the management of growing departmentalized firms became overwhelming. This phenomenon explains the emergence of the multidivisional firm in Chandler’s analysis. As he (1962: 382-383) sums up:

The basic reason for the success [of the multidivisional form] was simply that it clearly removed the executives responsible for the destiny of the entire enterprise from the more routine operational activities, and so gave them time, information, and even psychological commitment for long term planning and appraisal.

Williamson’s analysis is closely related but adds opportunistic sub-goal pursuit to Chandler’s basic story. According to Williamson, the top-management reached its bound on rationality as the departmentalized firm grew. Moreover, department managers pursued operational subgoals instead of contributing to the realization of global goals – a manifestation of opportunism. In this story, the M-form structure arose because it is a superior (relative to the U-form) governance structure with respect to economizing on bounded rationality of the management and safeguarding the internal resource allocation process against the hazards of opportunism. The internal structure is fundamental in the way it copes with the problems identified by transaction cost economics (bounded rationality and opportunism). In the M-form, the central management is composed of an elite staff which has the capacity to evaluate divisional performance and gives rewards and penalties (Williamson, 1985).

No economist can deny that indeed central management in unitary firms can be confronted with complexity when such a firm is growing by diversification into several lines of products and in different geographical areas. Also, it is hard to deny that cognitive limitations on the part of the management and opportunistic

behavior at the level of department managers may be observed. But we believe that there is another reason why structure followed strategy in the specific way reported by Chandler. There is more to the M-form than economizing on bounded rationality and reducing opportunism: the answer that we wish to develop is that *the M-form is a structure that enhances discovery of new knowledge through entrepreneurial activity.*

### *C. The M-Form as an Answer to the Double Hayekian Knowledge Problem: the Limits of Central Planning in the Complex Firm*

The story described by Chandler and Williamson can be understood as another version of the problem of central planning. The issue of central planning becomes really clear once we emphasize the double knowledge problem. As we saw above, when a firm grows, that is to say, when it tries to exploit new profit opportunities by diversifying into new products and by expanding in new geographical areas, it has to confront a double knowledge problem: the entrepreneur-promoter is not only ignorant of his own ignorance with respect to profit opportunities in the market, but also with respect to what his employees might know about opportunities outside the firm as well as inner problems.

The problem of central planning in economics is very similar. As Kirzner (1992) explains, central planners, because of the knowledge problem, may be unaware of their own ignorance regarding the relevance of their plan for each individual in society, especially regarding the circumstances of time and place. The planner will be unable to gather and discover all the necessary information to make his social plan “successful,” for he would have to know what he truly ignores (without mentioning the calculation problem emphasized by Mises). The knowledge problem can only be solved (or partially solved at any moment) through the existence and role of the entrepreneurial function. As Kirzner (1992: 159) puts it,

...what renders the Hayekian knowledge problem critique of central planning so devastating is the circumstances that in a market system, with decentralized decision making, *the insoluble knowledge problem confronted by central planners tends to dissolve through the entrepreneurial-competitive discovery procedure*” (Kirzner, 1992: 159; emphasis in original).

In other words, only individuals are apt to discover what must be discovered to make their plans mesh, because they are the only ones who have the incentive to do so.

By analogy, we contend that the central office in the departmental firm, becomes in certain circumstances – such as those described by Chandler– more and more confronted with an internal Hayekian knowledge problem. This emphasis is different from the main thrust of Williamson’s argument. It is not so

much that there is a problem of bounded rationality as there is a problem of sheer ignorance. In order to discover new profit opportunities, the top management must rely on its employees to make use of knowledge that it doesn't possess (Hayek, 1973). It is because of this limitation that management cannot rely on complete central planning. Just as central planners in a socialist economy, central management must rely on the entrepreneurial process to discover new profit opportunities: The multidivisional structure is an answer to the impossibility of complete central planning beyond a certain limit within the firm.<sup>22</sup>

As we saw above, organizational changes in the 1920s occurred in certain circumstances only: When firms started to develop new and different lines of products (diversification) and/or when they began to expand in remote geographical areas. These are cases in which the Hayekian knowledge problem is certainly more important than if the firms had tried to grow along their initial line of products — like Ford before World War II. It is when the strategic decision is made to diversify and/or to reach new areas, that the knowledge problem becomes serious, and that central planning reaches a limit beyond which the necessary knowledge for economic calculation is missing<sup>23</sup>.

We contend therefore that one way firms can solve the knowledge problems encountered through expansion is by changing the organizational structure and implementing a multidivisional form that allows for entrepreneurial discoveries. This is something that Chandler himself sensed in his 1962 book, but without any articulated theory of entrepreneurship, he didn't really present an entrepreneurial explanation of the structural metamorphosis (see Chandler, 1990 [1962]: 299). In that sense, our view of the complex firm is an explanation of the entrepreneurial aspect of Chandler's theory.

#### *D. Structure as a Source of Knowledge*

As a diversified firm grows under a U-form structure, a point will be reached where top management will lack the necessary knowledge for efficiently directing the organization. This problem is more fundamental than the information-overload problem on which Williamson focuses. Not only the capacity to treat the inflow of information becomes insufficient as the firm diversifies (the bounded rationality aspect), but also the managers simply lacks the information needed to continue to allocate resources efficiently. The fundamental issue herein is not

---

<sup>22</sup> Rothbard (1993 [1962]: 547-8) makes the same point from a calculation perspective. See also Klein (1996) on that issue.

<sup>23</sup> See also Minkler (1993) on the issue of firms and dispersed knowledge. Minkler seems to say that Austrian economists would have to recognize that organizations exist despite dispersed knowledge. We hope to have argued otherwise in this paper (and in Sautet 1998).

complexity per se (i.e. the difficulty to manage a momentous amount of information), but the *very existence* of the knowledge necessary to the management of the new strategy.

The M-form becomes superior to the centralized structure only if decentralization creates new knowledge and if this knowledge is being used; in other words, if profit opportunities are exploited. In the M-form, various individuals are in charge of various divisions and they can act as entrepreneurs. Divisions generally have a wide autonomy with regard to their own development, as long as they follow the general strategy of the group. Since the management in each division can focus on strategic decisions at its own level, it provides the final decision makers with data unavailable to them. In return, the general office supplies information to the various divisions in order to solve the coordination problems that arises among the divisions (Radner, 1986). Each operating unit can then be closely checked and their past and present performance can be monitored more closely. Corporate headquarters perform “knowledge direction” and exploit the flexibility afforded by incomplete contracts (Foss, 1997). For example, they may promote “organizational learning by combining hitherto separately developed knowledge and insights,” (Foss, 1995: 18), which enhances the firm’s capabilities. It is thus possible to make use of knowledge that nobody possesses as a whole, for the growth of the firm depends on many minds.

This is possible, *not* necessarily because the general management can dedicate its time to long-term planning as central planners would do in a socialist economy or in a simple firm, but because they can rely on knowledge that they don’t possess to plan the destiny of the firm. There is still some central planning in the M-form, but it relies on decentralization to function, that is to say, it relies on the fact that the knowledge necessary to the plan will be discovered during the implementation of the plan itself. Again, the knowledge that general managers obtain in the M-form is *different* from what would be obtained in the case of the U-form. The decentralized structure produces knowledge that would be *impossible* to produce in a different context.<sup>24</sup>

It is only in the case in which there are managers in charge of operational activities that this knowledge can be produced. Division managers build capabilities, become more alert to profit opportunities essential to the growth of their divisions and, in consequence, of the firm as a whole, and they provide the general management with information unobtainable otherwise. Conversely, it is only in the case in which general managers don’t deal directly with operational

---

<sup>24</sup> As Brian Loasby (1991: 55) puts it: “Different patterns of organization, we must never forget, may be expected to produce different patterns of knowledge. That is why these patterns, and their differences, are so important.”

activities that they can be alert to long-term profit opportunities and discover what would have not been discovered otherwise. The M-form is a new division of labor in the firm (and, therefore, a new division of knowledge); a division which is necessary to bring about knowledge that simply could not be discovered in, for example, a perfectly centralized structure (Foss, 1998). In that sense, the firm in its M-form structure is an organic organization (in the sense of Langlois, 1995) and its structure is fundamental to its growth.<sup>25,26</sup>

## V. Connections to Other Theories

Our overall message so far has been that the Austrian discovery perspective contains a number of distinct insights in the economic organization of firms. Our basic claim is that large, complex firms are the presence of Hayekian knowledge problems, and a consequent need, both for rules and the entrepreneurial process of discovery. We have already provided a few indications of how this view differs from other approaches to the firm; in this section, we wish to present a fuller picture. It should be stated right from the beginning that we think of most of the modern economics of organization as providing excellent static conceptualizations of the problem of efficient organization (cf. O'Driscoll and Rizzo, 1985: 124), and that in many respects these stories are complementary to the discovery perspective that we have sketched in this paper. However, much is left out of the mainstream stories. In this section, we briefly discuss the differences and complementarities between the Austrian view that we have described and selected theories of economic organization.

### A. *The Austrian Challenge*

As a general matter, we may think of the Austrian challenge to mainstream economics as a matter of pressing the question, How does order arise in an economy in which there is an extensive division of knowledge, ignorance, and genuine uncertainty – *and* where we cannot rely on such constructs as the Walrasian auctioneer, common knowledge assumptions or rational expectations to do the coordinative job? It is an implication of the preceding discussion that this challenge is applicable, *mutatis mutandis*, to firm organization. More specifically, it may be phrased thus: How is

---

<sup>25</sup> Just like the institutional setting of a society is fundamental to its development. See Vanberg (1992) on this issue.

<sup>26</sup> This analysis could also be used to understand other organizational forms, or more exactly, new refinements of the multidivisional structure. It can be applied to understand the structure of Asea Brown Boveri consisting of 5,000 profit centers or cross-functional teams at Koch Industries, for instance.

rational firm organization possible when we cannot *assume* from the outset that, for example,

- all contracting action can be compressed into one initial grand contract (which cannot be assumed because of the unavoidable emergence of novelties, for example, from entrepreneurial activities);
- principals know all the possible actions that are open to agents (which cannot be assumed because of the Hayekian knowledge problem);
- agents, for example, division managers in a firm, hold the same subjective view of reality (which cannot be assumed because of methodological subjectivism);
- decision rights and residual income rights are at any point of time efficiently assigned (which cannot be assumed because entrepreneurial activity may discover better assignments)?<sup>27</sup>

As can be inferred from inspection of these points, an Austrian view is primarily sceptical towards the more extreme, stylized approaches to economic organization. Two such will be distinguished and briefly discussed here, namely agency/mechanism design theories and nexus of contracts theories.<sup>28</sup>

### *B. Agency/Mechanism Design Theories of the Large, Complex Firm*

A prominent, although very stylized, approach to the efficient organization of large, complex firms is represented by work that can be classified as to the related branches of agency and mechanism design theories (we here neglect any subtle differences). Much of this work is an outgrowth of work in public finance and comparative systems (e.g., Hurwicz, 1972; Groves and Loeb, 1979; Radner, 1986), and the basic machinery of this literature (Groves mechanisms, the revelation principle, etc.) is indeed utilized. When applied to the large, complex firm, the basic thrust of this literature consists of the search for various "mechanisms" that will make middle managers act in accordance with the corporation's overall goals and will induce truthful revelation of local (divisional) information to the corporate center so that it can enhance its decisions.

What we find problematic about this literature is that its attempt to grapple with local knowledge is not completely successful. It is true that, formally, the corporate headquarters is assumed to be at least partially ignorant about the

---

<sup>27</sup> See Foss (1998) for a more extensive discussion of these issues.

<sup>28</sup> Much of what we have to say about these theories also apply to other parts of the modern economics of organization, such as transaction cost economics or incomplete contracts theory. See Foss (1997a&b, 1998) and Sautet (1998) for pertinent discussions.



operations of the divisions and to rely on information from these in making coordinating decisions (e.g., Groves and Loeb, 1979). Still, it may be questioned how much of the relevant knowledge can easily be communicated, given its partly tacit nature (cf. Lavoie, 1985). Moreover, the codes through which headquarters and divisions communicate – and sometimes also the decision-rules of the latter – are taken as part of the organizational design problem. The basic problem with this is that a would-be designer in actuality will need to undertake much pre-play communication in order to establish the optimal codes and decision rules – but limited communication and knowledge is the starting point of the whole exercise.

### *C. Nexus of Contracts Theories*

What is here called "nexus of contracts" theories refers to a set of theories of economic organization that have taken their lead from Alchian and Demsetz' famous 1972 paper. These include Jensen and Meckling (1976), Fama (1980) and Cheung (1983), and are distinctive in their refusal to see any essential difference between firms and markets. Firms are essentially sophisticated market contracting arrangements that revolve around particular technologies (such as "team-production") and long-term relationships, but they are not in any way qualitatively different from other market arrangements. Notably, the notion of "authority" is spurious, since intra-firm transactions are not characterized by more "authority" than ordinary market contracts. Indeed, the most extreme versions of this view come close to denying the very usefulness of not only the concept of the firm (Cheung, 1983), but also the concept of the entrepreneur (Fama, 1980). Moreover, there is also an implicit denial of the distinction that we have made between simple and complex firms. For example, although Jensen and Meckling (1976) explicitly analyze the large corporation (with an emphasis on the agency problem between managers and owners), in actuality the analysis proceeds as if they were analyzing a simple dyadic principal-agent problem. Notably, there is no mention of a Hayekian knowledge problem.

Much effort has been devoted to criticizing this view (e.g., Williamson, 1985, 1996; Hart, 1995: chapter 1), an important response (idem.) being that it neglects that the ownership rights to specialized capital with which an employee works confer bargaining power and therefore authority to the owner. Although there is clearly something to this story, our view is different. Rather, we wish to return to the Coasean (Coase, 1937) and Hayekian (Hayek, 1945, 1973) position that what ultimately distinguish firms from markets is *fiat*. Although we have argued that large, complex firms are indeed "organic organizations", it remains a category mistake to put all the emphasis on "organic" (or, market-like) and completely forget the "organization" part. Not only are firms planned by identifiable historical individuals and endowed with "rules for the performance of assigned tasks" (Hayek, 1973: 49), rather than with the open-ended, purpose-neutral rules

that characterize market organization. There is also the issue – which incidentally has been surprisingly neglected in the economics of organization – that firms can do certain things that market cannot easily do, namely engage in strategizing (Poppo, 1995; Foss, 1997b, 1998; Kirsten Foss 1998).

Specifically, in the large, complex firm, strategic decisions are centralized. Because of the specific allocation of decision rights, top-management can undertake actions that are not available (at reasonable cost) to individual agents in a market. Specifically, they can facilitate divisional coordination (Foss, 1997b) and stimulate organizational learning, settle disputes that may be hard for outside arbiters or courts to settle (Williamson, 1996), and in general save on various communication and bargaining costs through the exercise of *fiat* and through influencing decision premises and rules. The limits to these hierarchical powers are set by the inefficiencies that develop when trying to control and centralize dispersed knowledge, so that "[w]e may expect firms spontaneously to tend to expand to the point where additional advantages of 'central' planning are just offset by the incremental knowledge difficulties that stem from dispersed information" (Kirzner, 1992: 162).

## **VI. Conclusions**

This paper has made a number of claims pertaining to the economic organization of large, complex firms; claims that are not present in most of today's economics of organization. Our first unorthodox idea was the argument that there is a difference between the "simple" and the "complex" firm, the latter being characterized by a fundamental division of knowledge. A second claim was that this distinction has not been sufficiently appreciated, and that the modern economics of organization in general has neglected those coordination problems that are caused by the division of labour and which cannot be reduced to problems of incentive alignment. Even if we assumed away all incentive problems, there would be a basic coordination problem left, realistically assuming that there are interdependencies between the actions of intra-firm agents.

Given these claims, we then moved on to apply a basic Austrian perspective to the large, complex, arguing that, for example, the well-known Austrian emphasis on the entrepreneur could also enlighten our understanding of internal organization. We illustrated this by means of a new interpretation of one of the documented cases of organizational transformation in business history, the change from the U-form to the M-form.

Arguably, the Austrian view we have sketched is becoming increasingly pertinent as there is increasing empirical evidence (Zenger and Hesterly, 1997) of

disaggregation in internal governance. Thus, cross-functional teams are increasingly operating as semi-autonomous units, new initiatives to measure performance of smaller organizational subunits develop (e.g., total quality initiatives, benchmarking, activity-based accounting), group-based awards become more common, etc. Our basic interpretation of these developments is that they emerge to better exploit local knowledge and stimulate local entrepreneurship.

Finally, and perhaps most importantly, we think of the present paper as one example that Austrian economics is a living tradition in economics. We recognize that we have only scratched the surface of an adequate Austrian approach to issues of economic organization, and that much remains to be done. For example, we need more research into what implication an Austrian view may have for the issues of the existence and boundaries of the firm.

## VII. References

- Alchian, Armen A. and Harold Demsetz. 1972. "Production, Information Costs, and Economic Organization," *American Economic Review* 62: 772-795.
- Aghion, Philippe and Jean Tirole. 1995. "Some Implications of Growth for Organizational Form and Ownership Structure," *European Economic Review* 39: 440-455.
- Bartlett, Christopher and Sumantra Ghoshal. 1989. *Managing Across Borders: The Transnational Solution*. London: Hutchinson.
- Boettke, Peter. 1994. *The Elgar Companion to Austrian Economics*. Aldershot: Edward Elgar.
- Boettke, Peter and David Prychitko, eds. 1996. *Market Process Economics* (2 vols.). Aldershot: Edward Elgar.
- Boudreaux, Donald. and Holcombe, Richard. 1989 "The Coasian and Knightian Theories of the Firm." *Managerial and Decision Economics* 10: 147-54.
- Buchanan, James M. 1982. "Order Defined in the Process of Its Emergence," *Literature of Liberty* 5: 5.
- Chandler, Alfred D. 1962/1990. *Strategy and Structure*. Cambridge, MA: MIT Press.
- Chandler, Alfred D. 1977. *The Visible Hand: The Managerial Revolution in American Business*. Cambridge, MA: Harvard University Press.
- Cheung, Stephen S.N. 1983. "The Contractual Nature of the Firm," *Journal of Law and Economics* 26: 1-22.
- Coase, Ronald H. 1937. "The Nature of the Firm," *Economica* (N.S.) 4: 386-405.
- Cowen, Tyler and David Parker. 1997. *Markets in the Firm: A Market Process Approach to Management*. London: The Institute of Economic Affairs.
- Demsetz, Harold. 1988. "The Theory of the Firm Revisited," *Journal of Law, Economics, and Organization* 4: 141-161.
- Dow, Gregory K. 1990. "The Organization as an Adaptive Network," *Journal of Economic Behavior and Organization* 14: 159-185.
- Ellig, Jerry. 1996. "Organizational Economics and the Market-Based Management Framework: Toward a Common Research Agenda," *Journal of Private Enterprise*, 12:1.
- Fama, Eugene. 1980. "Agency Problems and the Theory of the Firm," *Journal of Political Economy* 88: 288-307.

- Faure-Grimaud, Antoine, Jean-Jacques Laffont, and David Martimort. 1998. "A Theory of Supervision With Endogenous Transaction Costs," *Discussion Paper TE/98/356*, London School of Economics.
- Fisher, Franklin M. 1983. *Disequilibrium Foundations of Equilibrium Economics*. Cambridge: Cambridge University Press.
- Foss, Kirsten. 1998. "The Economic Organization of Rent-Yielding Assets," forthcoming in Nicolai J. Foss and Paul L. Robertson, eds. *Resources, Firms, and Strategies*. London: Routledge.
- Foss, Nicolai J. 1994a. "The Theory of the Firm: The Austrians as Precursors and Critics of Contemporary Theory," *Review of Austrian Economics* 7: 31-64.
- Foss, Nicolai J. 1994b. *The Austrian School and Modern Economics: Essays in Reassessment*. Copenhagen: Copenhagen Business School Press.
- Foss, Nicolai J. 1994c "The Two Coasian Traditions," *Review of Political Economy* 6: 35-61.
- Foss, Nicolai J. 1997a. "Austrian Insights and the Theory of the Firm", *Advances in Austrian Economics* 4: 175-198.
- Foss, Nicolai J. 1997b. "On the Rationales of Corporate Headquarters," *Industrial and Corporate Change* 6: 313-339.
- Foss, Nicolai J. 1998. "Firms and the Coordination of Knowledge: Some Austrian Insights," *unpublished manuscript*.
- Friedman, Milton. 1953. "The Methodology of Positive Economics," in idem. *The Methodology of Positive Economics*. Chicago: University of Chicago Press.
- Groves, Theodore and Martin Loeb. 1979. "Incentives in Divisionalized Firms," *Management Science* 25: 221-230.
- Halal, William E., Ali Geranmayeh, and John Pourdehnad, eds. 1993. *Internal Markets: Bringing the Power of Free Enterprise INSIDE Your Organization*. New York: John Wiley.
- Hart, Oliver. 1995. *Firms, Contracts, and Financial Structure*. Oxford: Oxford University Press.
- Hayek, Friedrich A. 1937. "Economics and Knowledge," in idem. 1948. *Individualism and Economic Order*. Chicago: University of Chicago Press.
- Hayek, Friedrich A. 1945. "The Use of Knowledge in Society," in idem. 1948. *Individualism and Economic Order*. Chicago: University of Chicago Press.
- Hayek, Friedrich A. 1946. "The Meaning of Competition," in idem. 1948. *Individualism and Economic Order*. Chicago: University of Chicago Press.
- Hayek, Friedrich A. von. 1948. *Individualism and Economic Order*, Chicago: University of Chicago Press.

- Hayek, Friedrich A. von. 1964. "The Theory of Complex Phenomena," in idem. 1967. *Studies in Philosophy, Politics and Economics*. London: Routledge and Kegan Paul.
- Hayek, Friedrich A. von. 1973. *Law, Legislation, and Liberty, Vol.1: Rules and Order*, Chicago: University of Chicago Press.
- Hayek, Friedrich A. von. 1978. "Competition as a Discovery Procedure," in idem. 1978. *New Studies in Philosophy, Politics, Economics, and the History of Ideas*. London: Routledge.
- Hirshleifer, Jack. 1956. "On the Economics of Effective Intracompany Pricing," *Journal of Business* **29**: 172-184.
- Hurwicz, Leonid. 1972. "On Informationally Decentralized Systems," in Charles B. McGuire and Roy Radner. *Decision and Organization*. Amsterdam: North-Holland.
- Jensen, Michael C. and William Meckling 1976. "The Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure," *Journal of Financial Economics* 3: 305-360.
- Jensen, Michael C. and William H. Meckling. 1992. "Specific and General Knowledge and Organizational Structure," in Lars Werin og Hans Wijkander, eds. 1992. *Contract Economics*. Oxford: Blackwell.
- Kirzner, Israel M. 1973. *Entrepreneurship and Competition*. Chicago: University of Chicago Press.
- Kirzner, Israel M. 1985. *Discovery and the Capitalist Process*. Chicago: University of Chicago Press.
- Kirzner, Israel M. 1992. *The Meaning of the Market Process*. London: Routledge.
- Kirzner, Israel M. 1997. "Entrepreneurial Discovery and the Competitive Market Process: An Austrian Approach," *Journal of Economic Literature* 35: 60-85.
- Klein, Peter. 1996. "Economic Calculation and the Limits of Organization," *Review of Austrian Economics* **9**: 3-28.
- Kreps, David M. 1990. "Corporate Culture and Economic Theory," in James Alt and Kenneth Shepsle, eds. *Positive Political Economy*. Cambridge: Cambridge University Press.
- Kreps, David M. 1996. "Markets and Hierarchies and (Mathematical) Economic Theory," *Industrial and Corporate Change* **5**: 561-595.
- Krouse, Clement. 1990. *Theory of Industrial Economics*. Oxford: Blackwell.
- Lachmann, Ludwig M. 1971. *The Legacy of Max Weber*. London: Heineman.
- Lachmann, Ludwig M. 1986. *The Market as an Economic Process*. Oxford: Blackwell.
- Langlois, Richard N. 1986. "Coherence and Flexibility: Social Institutions in a World of Radical Uncertainty," in Israel M. Kirzner, ed. 1986. *Subjectivism*,

- Intelligibility, and Economic Understanding: Essays in Honor of Ludwig M. Lachmann*, London: Macmillan.
- Langlois, Richard N. 1992. "Orders and Organizations: Toward an Austrian Theory of Social Institutions," in Bruce Caldwell and Stephan Boehm, eds. 1992. *Austrian Economics: Tensions and New Directions*, Boston: Kluwer.
- Langlois, Richard N. 1995. "Do Firms Plan?," *Constitutional Political Economy* 6: 247-261.
- Langlois, Richard N. and Foss, Nicolai J. 1998 "Capabilities and Governance: The Rebirth of Production in the Theory of Economic Organization," forthcoming in *KYKLOS*.
- Langlois, Richard N, and Paul L. Robertson. 1995. *Firms, Markets, and Economic Change: A Dynamic Theory of Business Institutions*. London: Routledge.
- Lavoie, Don. 1985. *Rivalry and Central Planning*, Cambridge: Cambridge University Press.
- Lazonick, William. 1991. *Business Organization and the Myth of the Market Economy*. Cambridge: Cambridge University Press.
- Lewin, Peter. 1998. *Capital in Disequilibrium: the Role of Capital in a Changing World*. New York and London: Routledge.
- Loasby, Brian J. 1991. *Equilibrium and Evolution*. Manchester: Manchester University Press.
- Lucas, Robert. 1981. *Studies in Business Cycle Theory*. Cambridge, MA: MIT Press.
- Machovec, Frank. 1995. *Perfect Competition and the Transformation of Economics*. London: Routledge.
- Menger, Carl. (1883/1985). *Investigations into the Method of the Social Sciences with Special Reference to Economics*. New York: New York University Press.
- Meyer, Christopher. 1994. "How the Right Measures Help Teams Excel," *Harvard Business Review* (May-June): 95-103.
- Milgrom, Paul. 1988. "Employment Contracts, Influence Activities and Efficient Organization Design," *Journal of Political Economy* 96:42-60.
- Minkler, Alanson P. 1993a. "The Problem With Dispersed Knowledge: Firms in Theory and Practice," *KYKLOS* 46: 569-587.
- Minkler, Alanson P. 1993b. "Knowledge and Internal Organization," *Journal of Economic Behavior and Organization* 21: 17-30.
- Mintzberg, Henry. 1994. *The Rise and Fall of Strategic Planning*. New York: Prentice-Hall.
- Mises, Ludwig von. 1949 *Human Action*. London: William Hodge.
- Nelson, Richard R. and Sidney G. Winter. 1982. *An Evolutionary Theory of Economic Change*. Cambridge, Mass.: The Belknap Press.

- Nonaka, Ikujiro and Takeuchi. 1995. *The Knowledge-Creating Company*. Oxford: Oxford University Press.
- O'Driscoll, Gerald P. and Mario Rizzo. 1996. *The Economics of Time and Ignorance*. Oxford: Blackwell. Second edition with a new introduction by Mario Rizzo.
- Penrose, Edith T. 1959. *The Theory of the Growth of the Firm*. Oxford: Oxford University Press.
- Poppo, Laura. 1995. "Influence Activities and Strategic Coordination: Two Distinctions of Internal and External Markets," *Organization Science* 41: 1845-1859.
- Radner, Roy. 1986. "The Internal Economy of Large Firms," *Economic Journal* 96 (Supplement): 1-22.
- Radner, Roy. 1992. "Hierarchy: the Economics of Managing," in Mark Casson, ed. *The Theory of the Firm*. Aldershot: Edward Elgar.
- Reder, Melvin. 1982. "Chicago Economics: Permanence and Change," *Journal of Economic Literature* 20: 1-38.
- Richardson, George B. 1960. *Information and Investment*. Oxford: Oxford University Press.
- Richardson, George B. 1972. "The Organisation of Industry," *Economic Journal* 82: 883-896.
- Rothbard, Murray. N. 1962. *Man, Economy, and State*. Third edition. Auburn, Alabama: Ludwig von Mises Institute.
- Sautet, Frédéric. 1998. *An Entrepreneurial Theory of the Firm*. Ph.d.-dissertation, University of Dauphine, Paris, in collaboration with New York University.
- Schmitz, Christopher. J. (1993) *The Growth of Big Business in the United States and Europe, 1850-1939*. Cambridge: Cambridge University Press.
- Schumpeter, Joseph A. 1934. *The Theory of Economic Development; an Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*. Cambridge: Harvard University Press.
- Teece, David J. Giovanni Dosi, Richard P. Rumelt, and Sidney G. Winter 1994. "Understanding Corporate Coherence: Theory and Evidence," *Journal of Economic Behavior and Organization* 23: 1-30.
- Vanberg, Viktor. 1992. "Organizations As Constitutional Systems," *Constitutional Political Economy*, 3 (2): 223-53.
- Vaughn, Karen I. 1994. *Austrian Economics in America*, Cambridge: Cambridge University Press.
- Vickers, John. 1995. "Concepts of Competition," *Oxford Economic Papers* 47: 1-23.
- Williamson, Oliver E. 1970. *Corporate Control and Business Behavior*. Englewood Cliffs: Prentice Hall.



- Williamson, Oliver E. 1975. *Markets and Hierarchies*. New York: Free Press.
- Williamson, Oliver E. 1985. *The Economic Institutions of Capitalism*. New York: The Free Press.
- Williamson, Oliver E. 1988. "The Economics of Governance: Framework and Applications," in Richard N. Langlois, ed. 1986. *Economics as a Process: Essays in the New Institutional Economics*. Cambridge: Cambridge University Press.
- Williamson, Oliver E. 1996. *The Mechanisms of Governance*. Oxford: Oxford University Press.
- Wiseman, Jack. 1953. "Uncertainty, Costs and Collective Economic Planning," in James M. Buchanan and George F. Thirlby, eds. *LSE Essays on Cost*. London: Weidenfeld & Nicholson.
- Witt, Ulrich. 1998. "Imagination and Leadership: The Neglected Dimension of the (Evolutionary) Theory of the Firm," *Journal of Economic Behavior and Organization*
- Zenger, Todd and William S. Hesterly. 1997. "The Disaggregation of Corporations: Selective Intervention, High-Powered Incentives, and Molecular Units," *Organization Science* 8: 209-222.