The Theory of the Firm: The Austrians as Precursors and Critics of Contemporary Theory

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More than one commentator has observed that a distinct theory of *the firm* is conspicuously missing from the main body of Austrian economics (e.g., Langlois 1991, p. 2; Minkler 1991, p. 8). As two Austrian economists observed some years ago: "there is no subjectivist or Austrian theory of the firm" (O'Driscoll and Rizzo 1985, p. 123). That is still the situation.

With the term "theory of the firm," I shall set forth a theory that has something to say about the existence, the boundaries and the internal organization of the institution known as the business firm. And with the term "firm," I shall describe an organization that is planned with the express purpose of earning profit. In Hayekian terms (Hayek 1973), the firm is a "planned order," an aspect of "taxis."

That social institutions have always occupied center stage in Austrian economics is a proposition that commands widespread agreement today (Hodgson 1988; Langlois 1986, 1991). Many economists recognize the distinctiveness of, for example, the Mengerian theory of the origin of a medium of exchange (Menger 1871, chap. 8), and probably even more economists are familiar with the Hayekian account of the information providing function of the price system (Hayek 1945). Many economists also know that Hayek's insight stemmed from his involvement in the socialist calculation debate, preeminently a debate about the *organization* of economic activities. Indeed, Hayek's "The Use of Knowledge in Society" has become a standard reference in the literature on economic organization (e.g.,

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Ricketts 1987, p. 59; Milgrom and Roberts 1992, p. 56; Douma and Schreuder 1991, p. 9; Williamson 1985, p. 8, 1991, p. 160). More generally, many writers have pointed out the affinities to Austrian economics of much of what passes as "neo-institutionalism," viz. the analysis of social institutions with the aid of economic analysis (Langlois 1986).[1]

So the Austrians have at least since the beginning of the calculation debate with Mises (1920) theorized the organization of economic activities in alternative institutional forms.[2] But the institutions that have traditionally been confronted in Austrian economics are mainly central planning—either in its comprehensive or its market socialism-manifestation—and private property rights–based market organization. This means that hierarchical direction taking place *within* a market economy has been comparatively neglected.[3] Along with many other economists, the Austrians could be seen as assimilating the message of Machlup (1967) that for the purposes of market analysis, one can make do with a very stylized (anonymous) conceptualization of the firm; and economics *per se* had no business breaking up the black box of the firm. In fact, Austrian analysis of market phenomena has even manifested a tendency to dispose of the concept of the firm, resting content with analyzing the extra-Robbinsian—as Israel Kirzner puts it—activities of the entrepreneur.[4]

As I shall show, however, it is something of a doctrinal puzzle that the Austrians have never formulated a theory of the firm. This is so because many of the analytical components that are necessary to tell a coherent story about why there should be firms in a market economy were present in Austrian theorizing long before they became standard fare in neoclassical economics. I have in mind concepts such as property rights (Mises 1936), specific and complementary assets (Hayek 1931), asymmetric information (Mises 1936; Hayek 1937), the

[1]It should be noted that the term "neo-institutional" is often applied generally to modified neoclassical economics (property rights theory) (e.g., Eggertson 1990) as well as more process-oriented and heterodox influences (e.g., Langlois 1986).

[2]When I talk about "Austrians" in this article, I side-step the differences that exist between the Hayekian and the Misesian approaches to Austrian economics. While I do not deny that differences exist, research on this distinction is still only in its beginning. See Salerno (1990).

[3]Among the few Austrian contributions that deal explicitly with the theory of the firm are O'Driscoll and Rizzo (1985, pp. 122–25), Littlechild (1986, p. 35), Boudreaux and Holcombe (1989), Thomsen (1989, chap. 4), and Ikeda (1990). Contributions explicitly influenced by Austrian economics are Malmgren (1961), Ricketts (1987), Witt (1987), Loasby (1989), and Langlois (1991).

[4]The words "firm," "business enterprise" or substitute terms do not figure in the indexes to Menger (1871), Mises (1949), and Lachmann (1956, 1986).

distinction between planned and spontaneous orders (Hayek 1973), non-maximizing modes of behavior (Mises 1936; Hayek 1973; Kirzner 1973), and a basic understanding of the principal-agent relationship (Hayek 1935a, 1935b, 1940; Mises 1936).[5] These are among the concepts that have occupied center stage in recent attempts to place the theory of the firm on a solid economic footing (e.g., Alchian and Demsetz 1972; Williamson 1985).

This is not to say that the Austrians—had they pieced these concepts together—would necessarily have arrived at something similar or very close to the contemporary theory of the firm. The reason is fundamentally that whereas the modern theory of the firm has had a comparatively loyal relationship to mainstream neoclassical economics, the Austrians have consistently and continuously emphasized their differences from neoclassicism, at least as it took form after World War II. In particular, as the Austrians like to emphasize, the concepts of *market process* and *entrepreneurship* are missing from neoclassical economics in general, and, I may add, from the contemporary theory of the firm in particular. What this implies is that there may be a potential for a distinct Austrian theory of the firm.

The way the ensuing pages proceed is the following. In the next section I present a brief overview of "Contemporary Theories of the Firm," concentrating on the mainstream approach in the contemporary theory of the firm. In "Austrians on Economic Organization," I present some prominent theories and argue that the Austrians anticipated many important modern developments in the theory of the firm. But as I argue in the sections on "An Austrian Critique of the Modern Theory of the Firm" and "Towards an Austrian Theory of the Firm," the Austrians are more than merely precursors; not only is Austrian economics at variance with the modern theory of the firm in some important respects ("An Austrian Critique of the Modern Theory of the Firm"), but it is also possible to construct a distinct theory of why there should be firms on an Austrian basis ("Towards an Austrian Theory of the Firm"). Although the Austrians had (and have) a number of the essential ingredients of the theory of the firm, an Austrian theory of the firm implies adding additional ingredients and piecing them together in ways that differ from the modern theory of the firm. This is the way I resolve the apparent tension in saying that the modern theory of the firm was both anticipated by Austrians and implicitly critiqued by them.

[5]A principal-agent *relation* is said to exist when a principal wants a task to be carried out by an agent on the principal's behalf. A principal-agent *problem* exists when there is some kind of conflict of interest between the two and when the principal either cannot observe the actions of the agent (moral hazard) or cannot ascertain whether the agent has made the best use of the knowledge he possesses (adverse selection).

In other words, the purposes of this article are historical, critical and constructive, respectively. But in all three tasks, I basically adopt a method of "rational reconstruction": The Austrians can be "reconstructed" as (1) anticipating modern developments, as (2) simultaneously providing a critique of them, and, finally, as (3) having their own distinct perspective on economic organization.

Contemporary Theories of the Firm[6]

The Firm in Economics

The defining characteristic of the market economy is usually taken to be the organization of production and distribution through the price system. But the primacy of exchange is characteristic not only of the market economy but also of how economists view their discipline (McNulty 1984, p. 233). In more specific terms, firms in neoclassical (perfect competition) price theory are often taken to be identical except in terms of the product markets they serve.[7] And not only are firms often presumed to be identical; the actual description of them is the most stylized or anonymous possible. They are merely entrepreneurless production functions. This procedure, of course, is not wrong in itself; for the purpose of analysis of market level allocation it is perfectly defensible (see Machlup 1967).

But as many critics have argued, neoclassical price theory provides no rationale for the very existence of the firm, not to speak of its boundaries and internal organization. This is not just a matter of the price system operating so efficiently that there is no need for, say, any vertically integrated (hierarchical) enterprises; it is more fundamentally a matter of neoclassical perfect competition theory being inherently incapable of rationalizing anything called "the firm." All relevant productive knowledge is given, prices provide all other information, factors are totally mobile, there are no costs of ascertaining quality, etc. This implies that the theory cannot explain why buyers of goods should not simply contract with owners of factor services instead of with firms.

Coase and Post-Coasian Theory

As the story usually goes, it was Ronald Coase who in 1937 realized that not only had the firm been neglected in economics, but more importantly that it was in fact possible to use economic theory

[6]This section draws on material in Foss (1993b).

[7]As argued in Foss (1991) it was the breakthrough of the theory of monopolistic competition in the mid-1930s that established this assumption of uniformity. For an Austrian comment on this episode, see Kirzner (1979, p. 133–35).

to provide a rationale for why there should be firms in a market economy.[8] Coase's (1937) answer, in a broad outline, is that efficiency requires the substitution of firms for markets if the *transaction costs* of using markets becomes large relative to the costs of managing. Market transaction costs are the costs of discovering contractual partners, drafting and executing contracts. Beyond a central threshold of market transaction costs, hierarchical direction—what Williamson (1991) calls "intentional governance"—of the movements of goods and services becomes more efficient to all involved parties than exchange of property rights through the price mechanism, and what Williamson (1991) following Hayek calls "spontaneous governance." This provides a rationale for the *existence* of the firm.

Applying the conventional marginalist method, the *boundaries* of the firm is determined by the condition that the transaction costs of organizing an additional transaction using the market should equal the transaction costs of organizing that same transaction using the firm. And Coase finally hinted at the possibility of using transaction cost reasoning for explaining the details of internal organization.

Another aspect of the standard account of the development of the contemporary theory of the firm is that the field lay dormant for about 30 years until Armen Alchian, Harold Demsetz, and Oliver Williamson revitalized the Coasian analysis in the beginning of the 1970s (Alchian and Demsetz 1972; Williamson 1975). Indeed, almost all modern theories—most of which have taken their leads from the early seminal contributions of Alchian and Demsetz and Williamson—of the firm are considered post-Coasian in the sense that they view the firm as an efficient contract between a multitude of parties; efficient in the sense that it best facilitates exchange, given existing resource scarcities (including scarcity of information and rationality). In spite of the fact of a common Coasian origin, the contemporary theory of the firm is not monolithic (see, e.g., Holmstrom and Tirole 1989); in their attempts to operationalize, make more precise, and understand the original Coasian insights, modern theories have given rather different answers.

[8]This, of course, is not totally correct since Frank Knight in 1921 had provided an economic rationale for the existence of the firm. Basically, his theory of the firm is closely akin to the way I later in this article interpret the Austrian theory of the firm, since it is basically entrepreneurial: The firm exists as the entrepreneur's means to realize his judgment. For a comparison of Coase's and Knight's theories of the firm, and a ringing endorsement of Knight's theory, see Boudreaux and Holcombe (1989) (and for a moderator, see Foss 1993a).

In a recent article, Armen Alchian and Susan Woodward (1988) introduced a distinction between a "moral hazard approach" to economic organization, inspired by the original Alchian and Demsetz-analysis (1972), and an "asset specificity approach," best represented by the theorizing of Oliver Williamson (1975, 1985, 1991). The moral hazard approach is usually referred to as "the nexus-of-contracts approach" (Jensen and Meckling 1976; Fama 1980; Cheung 1983), and I shall use that term here. On an overall level, what makes these two approaches different is their degree of adherence to neoclassical theory; whereas the nexus-of-contracts approach is a sort of generalized (property rights) neoclassical theory, the asset specificity approach—particularly in its Williamsonian manifestation—is characterized by the import of a number of non-neoclassical concepts, particularly Herbert Simon's concept of bounded rationality (Simon 1979). They have given correspondingly different answers to Coasian questions like, "What is the precise nature of transaction costs?" "How are they best to be operationalized?" "What determines the size of hierarchical costs?" etc.

The Nexus-of-Contracts Approach

In Alchian and Demsetz's (1972) original analysis the existence of the firm is explainable in terms of the incentive problems that arise when *team production*—production that involves non-separable production functions—is combined with *asymmetric information* and *moral hazard.* In this prisoners' dilemma setting, shirkers do not bear the full consequences (costs) of their actions, and viable shirking is the result. The way the market system copes with such shirking is through contracts. The "classical capitalist firm" is characterized by the existence of one central agent, who is both a monitor who meters the performances of other agents and a residual claimant and with whom other agents enter into contracts. Market forces then guarantee efficient monitoring of team production via the incentive structure confronting the monitor-residual claimant. Viable firms are those that succeed in minimizing the costs involved in monitoring team production.

A number of analytical addenda to this basic story have been presented. Jensen and Meckling (1976) recognized that the monitoring story as told by Alchian and Demsetz was not limited to team production. And Barzel (1987) demonstrated that the agent that was most likely to end up as monitor–residual claimant (principal) was he whose contribution to the joint product was the most difficult to measure.

Such refinements of the nexus-of-contracts approach came at a cost, however. Though the basic claim was present in Alchian and Demsetz's (1972) original discussion, it became clear that within this tradition the very concept of the firm as a planned order was difficult to uphold. What I ordinarily refer to as "a firm" is simply a complex set of market contracts (Cheung 1983), only distinguished from ordinary spot market contracts by the continuity of association among input owners. Given this, it comes as no big surprise that nexus-of-contracts theorists Eugene Fama (1980) and Steven Cheung (1983) call for an abandonment of the concepts of "the entrepreneur" and "the firm," respectively. Since all allocation of resources—including those "inside" the firm—are ultimately governed by relative price movements there can be little or no room for planned direction of resources as embodied in entrepreneurial plans.[9]

The Asset Specificity Approach

In the same way that the nexus-of-contracts approach seems to have increasingly centered upon one central analytical concept, the cost of metering quality of goods and services, the contractual approach associated with Williamson (1985) has increasingly focused attention on one central character: *asset specificity.* Asset specificity is said to exist when the opportunity cost of an asset is significantly lower than its value in present use. Typically, asset specificity will involve a high degree of *complementarity* among the relevant assets. The difference between these two values is a Marshallian quasi-rent that can be appropriated through *opportunism.* The tussle for rents in bilateral monopoly situations characterized by asset specificity, opportunism, and bounded rationality is the driving force behind firms' changing boundaries. It is, in other words, costly bargaining games that underlie the existence of the firm and its efficient boundaries.

As indicated by Grossman and Hart's (1986) refinement of this mode of analysis, it is not really the contractual "ink costs," and not even the appropriation potential relating to the rents from specific assets that underlies integration *per se.* It is rather the mutual desire to implement efficient investment incentives that determines to whom the ownership rights ("residual rights")—that is, the right to determine and control the use of (physical) assets in circumstances not spelled out in the contract—will be allocated.

One of the really recalcitrant problems in modern debates on economic organization has to do with specifying the costs of internal

[9]A referee pointed out that Armen Alchian under the influence of Williamson has changed his mind on this point. See Alchian (1984, p. 36).

organization. In the absence of such a specification one cannot solve the puzzle of why the economy is not organized into one big firm (Coase 1937, p. 86). Indeed, Williamson (1985, p. 132) refers to this problem as a "chronic puzzle," and highlights it with his "problem of selective intervention": Why can't a merger of two firms not always do the same or better than two independents, since management in the merger can always intervene selectively?

One of the important attempts to identify the (incentive) costs of internal organization is Milgrom (1988), who basically asks why the hierarchical organization continues to survive in a competitive market economy despite its bureaucratic costs. Applying insights from the rent-seeking literature, Milgrom identifies the sources of bureaucratic costs as subordinate "influence activities," viz. their strategic attempts to change the actions of superiors in their own interest. Such influence activities produce influence costs that usually have a negative impact on firm profitability. As Milgrom argues, centralized authority is particularly vulnerable to influence activities; the decentralized market provides fewer targets. The reason the hierarchy may survive after all is because the existence of strict bureaucratic rules have the beneficial function of dampening the influence activities of subordinates.

Summing up, I highlight the following specific concepts as those that are crucial to telling a story about why there should be firms in a market economy. *Asymmetric information* is absolutely crucial since in the absence of knowledge dispersion there would be no transaction costs; that is, economic organization would be indeterminate. Some notion of *linkedness of resources*—either in the form of Williamson's notion of asset specificity or Alchian and Demsetz's concept of team production—seems also necessary, since in its absence there would be no rents to appropriate. Finally, a notion of *self-interest seeking with guile* (opportunism, moral hazard) also seems necessary, since in its absence there would be no need for the services of a monitor, hierarchical fiat, bureaucracy, etc.; market contracts coupled with promises—that would always be credible—would be sufficient.

On a more general theoretical level, most modern theories of the firm bear an intellectual debt to property-rights theory (Coase 1960; Demsetz 1967). The structure of contracts that constitutes the firm implies an allocation of property rights. Finally, on a methodological level modern theorists of the firm and economic organization are committed to a method of comparative institutionalism which implies that for purposes of comparison the relevant yardstick is not the unattainable ideal of general competitive equilibrium but real, attainable institutions or market outcomes (Demsetz 1969).

I have asserted that the Austrians in some important areas can be seen as precursors of modern theories of economic organization, including the theory of the firm. In the next section I shall attempt to substantiate that assertion. I shall concentrate attention on the points where the Austrians directly anticipate modern developments and neglect those where there exist variance.

Austrians on Economic Organization

Sifting through the pages of the works of prominent Austrians confirms that while they generally have had very little to say about the theory of the firm *per se*, economic organization and its institutional embodiment have always occupied center stage. The kind of economic organization issues that have primarily occupied Austrian interests are, of course, issues in comparative systems, as represented most notably by the socialist calculation debate (Mises 1920, 1936, 1949; Hayek 1935a, 1935b, 1940, 1937; Lavoie 1985). Assuredly, it is an anachronistic fallacy to criticize the Austrians for not discussing a subject matter that became established in economics only with the beginning of the 1970s. But on the other hand the Austrians had so many of the necessary ingredients of a theory of the firm that it is surprising that it was left to non-Austrian (but subjectivist) Ronald Coase to raise the questions of the existence, boundaries, and internal organization of the firm. To locate some of these ingredients in the Austrian literature is the primary purpose of this section.

Kinds of Orders and Their Governing Rules

Perhaps the most pertinent overall distinctions to be made in a discussion of economic organization are the ones between "pragmatic" and "organic" institutions (Menger 1883) and "planned" and "spontaneous orders" (Hayek 1973). While pragmatic institutions are the results of "socially teleological causes," organic institutions are "the unintended result of innumerable efforts of economic subjects pursuing individual interests" (Menger 1883, p. 158). Menger's discussion is primarily oriented towards giving an explanation of the different ways in which institutions may arise, not to the same extent towards explaining how they are preserved—and their principles of operation—once established. Hayek's (1973) distinction between planned and spontaneous orders supplements Menger's discussion in this regard, since his distinction is based on the different organizing rules they comprise; the rules supporting the spontaneous order being abstract, purpose-independent, and general, while the rules (or

commands)that support a planned order are designed and specific in nature.[10]

Although Hayek tends to strictly dichotomize not only spontaneous and planned orders but also the relevant rules that direct them—in "nomos" and "thesis," respectively—precise distinctions are in fact difficult to draw, since, for example, spontaneous orders may be of a very different generality, planned orders may comprise elements of spontaneous orders, etc. I shall touch on these issues later on, and for now be content with noting that the distinction between planned and spontaneous orders closely parallels that between "markets and hierarchies" (Williamson 1975), or as Williamson (1991) now says, between "spontaneous" and "intentional governance." Here are some of the meanings I may ascribe to the contrast between these two modes of organizing economic activities:

(1) Full-scale comprehensive planning versus price-mediated exchange on the basis of private property rights.

(2) Market socialism versus price-mediated exchange on the basis of private property rights.

(3) Firm hierarchies versus price-mediated exchange.

(4) Quasi-hierarchies (e.g., joint ventures) or decentralized organizations (e.g., franchising) versus price-mediated exchange.

(5) Firm hierarchies versus government hierarchies.

The distinctions outlined in (1) and (2) were the themes discussed in the socialist calculation debate; (3) is the distinction examined by Coase (1937); (4) has been examined by the followers of Coase, particularly Williamson (1985); and (5) has been examined by property-rights theorists. It is only speculation about the distinctions in (1) and (2) that the Austrians have systematically and comprehensively contributed (Mises 1945 is probably the most comprehensive Austrian contribution to number 5 above). But as I shall briefly argue, the Austrian contributions to the calculation debate

[10]As Hayek (1973, pp. 49, 50) puts it: "[W]hat distinguishes the rules which will govern action within an organization is that they must be rules for the performance of assigned tasks. They presuppose that the place of each individual in a fixed structure is determined by command and that the rules each individual must obey depend on the place which he has been assigned and on the particular ends which have been indicated for him by the commanding authority. . . . [T]he general rules of law that a spontaneous order rests on aim at an abstract order, the particular or concrete content of which is not known or foreseen by anyone; while the commands as well as the rules which govern an organization serve particular results aimed at by those who are in command of the organization."

provided a number of insights which are extremely pertinent for theorizing about the distinctions presented in (3) through (5).

This is not a novel observation in itself. O'Driscoll and Rizzo (1985, p. 124) report that they find Coase's (1937) insights in economic organization "congenial" because they incorporate "the essential conclusions of the economic calculation debate."[11] And many theorists of economic organization have noted the affinities of Austrian insights in the calculation debate to modern theory (e.g., Williamson 1985, p. 8; Milgrom and Roberts 1992, p. 51). I shall, however, be somewhat more explicit and detailed about where the points of similarity are.

The Socialist Calculation Debate

The Austrian insights presented in the course of the calculation debate that are directly relevant to the theory of economic organization, in the sense that they anticipate modern developments, can be summarized in the following closely connected points:

(1) the insight that welfare assessments of institutions and outcomes should not be based on a "Nirvana approach" (Demsetz 1969);

(2) the importance of change to economic organization;

(3) the understanding that an economic organization should be sensitive to the knowledge and rationality that agents possess; and

(4) an understanding of the principal-agent relationship and the importance of incentives more generally.

To start with the general methodological point, it is apparent already from Mises's (1920) opening salvo in the debate—over later Austrian contributions and until Hayek's "Use of Knowledge" article—that what really irritated the Austrians was their socialist opponents' use of unrealistic and unattainable social ideals—Nirvanas—as standards of comparison. Naturally, on such standards, capitalism would appear inefficient and wasteful. Being the first to insist that socialist economic organization too should be approached with the tools of economic analysis (and that idealized, institutionless models should be banned as standards of comparison), the Austrians may be said to be the first modern economists consistently pursuing the Smithian

[11]Coase does not seem, however, to have been directly inspired by the calculation debate, although his article contains a reference to Hayek's 1933 essay, "The Trend of Economic Thinking." As Coase has later reported (1988), he had the crucial insight already in 1931, well before the calculation debate in its Anglo-Saxon form took place.

program of comparative institutionalism: that is, using economic analysis to compare the efficiency of alternative real-world institutions for the organization of economic activities.

Now, why exactly was it—in the opinion of the Austrians—that models like Oskar Lange's (1938) model of market socialism did not conform to such a program of comparative institutionalism? The answer is contained in the remaining three points above: (1) The socialist economists neglected the role of incentives (Mises 1936; Hayek 1940); (2) made unrealistic assumptions about the amounts of knowledge that agents can possess (particularly the planning authorities); and (3) formulated their reasoning within static models that obscured all significant economic problems. Or, in a more compact formulation, basing their theories on the economics of the stationary state, market socialists such as Oskar Lange could suppress the knowledge and incentive problems of real economies.

Mises, on the other hand, insisted that "the problem of economic calculation is of economic dynamics; it is no problem of economic statics" (1936, p. 121). And Hayek later seconded Mises when he made the observation that "economic problems arise always and only in consequence of change" (1945, p. 82). As Mises (1936, 1949) recognized, in a changeless stationary state, the political authorities could implement the existing allocation as its plan and everything would continue the way it was before. The lesson to be drawn from this Misesian insight is the general one that it is only when economic change is introduced that economic organization is determinate.[12] And the specific Austrian conclusion in the calculation debate was that in the presence of economic change economic organization on the basis of private property and a price system is strictly superior on efficiency grounds. But the Austrian insight of how change and economic organization are related is of a wider applicability and can be given various interpretations.

One of these interpretations is the general Austrian one, that the entrepreneurial market process is needed to cope with the knowledge problems that economic change introduces (Kirzner 1973), and that market process performs most efficiently when fueled by well-defined and protected private-property rights that provide appropriate incentives for entrepreneurial alertness (Kirzner 1973; Mises 1949).

[12]It is precisely in such a context that Williamson (1985, p. 8 ; 1991, p. 162) praises Hayek (not Mises). Misesian insights appear when Williamson discusses the adaptive properties of the hierarchy and in this context refers to Mises's (1949) distinction between "case probability" and "class probability" (Williamson 1985, p. 58).

But a more specific and perhaps more pertinent interpretation is to interpret the Austrian insight as anticipating the point that without change there would be no transaction and information costs; that is, in the absence of the knowledge problems introduced by a changing economic reality there would be no costs of discovering contractual partners, drafting and executing contracts, monitoring production, constructing contractual safeguards, judging quality, etc. And in the absence of transaction costs, the choice between price-mediated market transactions and firm hierarchies would be indeterminate. As the Austrians recognized, in real world economies, institutions like markets and hierarchies perform the function of economizing on bounded rationality and dispersed information,[13] precisely the factors that ultimately underlie transaction and information costs.

In a doctrinal perspective, this indicates a link between the Austrian insights in the calculation debate and the Coasian insights in economic organization, though not one that was recognized either by the Austrians or Coase, probably because they had concentrated on different institutions. Where Hayek (1945) praised "the marvel" of the price system, Coase had eight years earlier established that the reason firms existed was that the "telecommunications system" of prices did not perform costlessly. Indeed, some commentators have seen the analysis of Coase and that of Hayek as strongly opposed. Of course, they are not; it is only in the kind of dynamic economic reality visualized by the Austrians that Coase's argument acquires its full force.

On a more specific level, there are several other ways in which Austrian insights presented in the course of the calculation debate anticipate or complement modern insights in economic organization. One of the rapidly expanding areas in the theory of economic organization is principal-agent theory. And in the course of the calculation debate, the Austrians anticipated several insights from this theory. They pointed out that it did *not* follow that under socialism, individual managers (agents) would act in the interest of the principals, viz. the planning authorities (e.g., Hayek 1940). And the Austrians

[13]As Nelson (1981, p. 95) comments: "I propose that serious analysis of the strengths and weaknesses of private enterprise must come to grips with [the] bounded rationality problem. Arguments for private enterprise must take the form that, given man's limitations, patched up private enterprise is as good an organizational solution as can be devised."

It should be noted, however, that the bounded rationality problem that Nelson highlights is not identical with the knowledge problem identified by the Austrians. Whereas Nelson, following Simon, primarily focuses on the problems of processing vast amounts of already existing information, the Austrians focus on the problem of *discovering* the relevant knowledge in the first place. For a careful analysis of this point, see Thomsen (1989, chap. 4).

pointed out the existence of a problem of risk allocation between principals and agents: under socialism, managers would be either inefficiently risk averse or risk loving, in the face of career concerns and the presence of an institution (the planning authorities) that could act as an insurance institution and take over the moral hazard of individual managers (Mises 1936, p. 122; Hayek 1940, p. 199).

Furthermore, socialist economic organization would supply a number of opportunities for active rent seekers (Mises 1936, 1945, 1949), that is, in modern terminology (Milgrom 1988), it would provide a number of targets for influence activities and be associated with high levels of influence costs. The market socialists, in contrast, had no grasp of the principal-agent problem, or, if they had, assumed it away; as has often been pointed out, Lange (1938) implicitly assumed continual incentive compatibility between the individual managers and the planning authorities. One of the primary virtues of the market system organized on the basis of private ownership, as Mises saw it, was that it strongly mitigated potential principal-agent problems. In the capitalist economy, the

> operation of the market [does] not stop at the doors of a big business concern . . . [It] permeate[s] all its departments and branches . . . It joins together utmost centralization of the whole concern with almost complete autonomy of the parts, it brings into agreement full responsibility of the central management with a high degree of interest and incentive of the subordinate managers. (Mises 1945, p. 47)

Breaking the corporation up into separate profit centers is the way that top management monitors subordinate managers. And anticipating Fama (1980), Mises (1945, pp. 42–7) points to the existence of career concerns as important forces mitigating managers' shirking.

Now, principal-agent theory as well as the specific Austrian incentive arguments in the calculation debate rest on more general property rights–based reasoning. For example, it is fundamentally because agents usually do not have property rights to residual income streams from the productive activities they engage in that they may shirk their duties. Let us briefly examine some Austrian pronouncements on the subject of property rights.

Property Rights

To Menger property rights are directly derived from the facts of scarcity and human rationality; as he notes

> human self-interest finds an incentive to make itself felt, and where the available quantity does not suffice for all, every individual will

> attempt to secure his own requirements as completely as possible to the exclusion of others . . . Thus human economy and property have a joint economic origin since both have, as the ultimate reason for their existence, the fact that goods exist whose available quantities are smaller than the requirements of men. Property, therefore, like human economy, is not an arbitrary invention but rather the only practically possible solution of the problem that, in the nature of things, imposed upon us by the disparity between requirements for, and available quantities of, all economic goods. (Menger 1871, p. 97)

Ownership to scarce goods—*economic* goods—should be protected by the legal order (Menger 1871, pp. 97, 100); property rights to economic goods will arise under all conceivable circumstances (p. 100), and as regards economic goods it is logically fallacious to think that property rights *per se* can be disposed of under any kind of social organization. With goods that are not scarce, the situation is of course different; here "men are communists" (p. 100). But whether a good is economic or non-economic is fundamentally a subjective category and may change over time; that is, property rights to goods will be defined when goods that were once non-economic become economic.

Menger is one of the very few economists to discuss property rights before Coase, Alchian, and Demsetz in the 1960s laid the foundation for the property-rights approach.[14] And in some respects he anticipates modern developments, particularly in the dynamic perspective in which he places the development of property rights (see Demsetz 1967). But what Menger's discussion does not incorporate is the crucial partitioning of property rights in rights to use goods, appropriate their benefits, and exchange them. Furthermore, he did not investigate how different constellations of property rights influence allocation. It is a general conclusion from the modern property-rights approach that for efficient resource allocation to be fully defined, exclusive, individual, and fully tradeable rights are necessary. Mises came much closer to such insights. In *Human Action* there is a very clear statement of "tragedy of the commons" type problems (1949, p. 652), and the insight that more precise definitions of property rights—"rescinding the institutional barriers preventing the full operation of private ownership"—will eliminate such problems.

But Mises also understood that property rights are composite rights. As he noted, rights to appropriate the rents and profits from assets ("fructus") are crucial to the efficient working of the economy:

[14]The most important contribution in the interim is probably Knight (1924) in which Pigovian welfare analysis is critiqued on property-rights grounds.

> In an economic system based upon private ownership of the means of production, the speculator is interested in the result of his speculation in the highest possible degree. If it succeeds, then, in the first instance, it is *his* gain. If it fails, then, *he* is the first to feel the loss. The speculator works for the community, but he himself feels the the success or failure proportionately more than the community. (Mises 1936, p. 182)

And one of the reasons why the "artificial market" of market socialists will not work is precisely because the transfer of goods between socialist managers is not equivalent to the transfer of goods in a capitalist economy: Under socialism it is not full property rights that are transferred; prices and incentives are accordingly perverse. On property-rights grounds, it is inherently wrong to believe that "the controllers of the different industrial units" in a socialist economy can be instructed "to act *as if* they were entrepreneurs in a capitalistic state" (1936, p. 120; see also Mises 1949, pp. 702–5).

Where Mises perhaps most explicitly anticipates modern developments—specifically the modern work on how financial markets monitor management—is when he points out that for the efficient functioning of the economy, capital markets are absolutely crucial. They alone secured that the calculation problems in a dynamic economy could be solved through "dissolving, extending, transforming, and limiting existing undertakings, and establishing new undertaking" (1936, p. 215). Only unhampered capital markets and markets for corporate control could perform the two crucial tasks of monitoring management—a principal-agent problem—and pricing assets correctly. Or as Mises summarizes it:

> Under Capitalism, the capitalist decides to whom he will entrust *his own* capital. The beliefs of the managers of joint stock companies regarding the future prospects of their undertakings and the hopes of project-makers regarding the profitability of their plans are not in any way decisive. The mechanism of the money market and the capital market decides. This indeed is its task: to serve the economic system as a whole, to judge the profitability of alternative openings and not blindly to follow what the managers of particular concerns, limited by the narrow horizon of their own undertakings, are tempted to propose. (1936, p. 122)

Contrast this with Lange's (1938, p. 110) assertion about "private corporation executives, who practically are responsible to nobody." Modern theory would be more on Mises's side than on Lange's.

Capital Theory and Business Cycle Theory

While the connection between the Austrian insights in socialist economic organization and the role of property rights on the one hand and the theories of economic organization seems rather evident, capital theory and business cycle theory seem to be subjects much less connected to the theory of economic organization. The reason these theories are mentioned here is because they supply the last component in the set of concepts that are needed to make a coherent statement about economic organization in general and the firm in particular. The relevant component has to do with the intertemporal structure of production highlighted in Austrian capital and business cycle theory (e.g., Hayek 1931, 1941; Lachmann 1956).

To say that the production process of the economy is a matter of a series of stages of production that bears a temporal relationship to final consumption (Menger 1871; Hayek 1931, 1941; Lachmann 1956) is equivalent to saying that the relevant productive activities are in a relation of *complementarity* to each other. And to say that expansion of credit may introduce maladjustments in the structure of production that has to be worked out over time (Hayek 1931) is equivalent to indicating that some activities may be *specific* to each other (see also Lachmann 1956). These relations can only be adequately understood in a temporal perspective such as the one in Austrian capital theory and business cycle theory (ibid.); they are obscured in the usual production–function view of the productive process. And a phenomenon like vertical integration is much easier to portray and comprehend within a sequential framework like the Austrian than it is within a temporal framework such as the production–function view. As recent work in the theory of the firm has demonstrated, the notions of complementarity between resources—for example, in the form of Alchian and Demsetz's (1972) team production and asset specificity—are necessary to telling a coherent story about firms.

Summing Up

In the preceding sections I have argued that the Austrians anticipated a number of insights that have become central in recent attempts to understand economic organization in general and the firm in particular. The roles of knowledge, incentives, and property rights were strongly in focus in the Austrian theory, particularly in the context of the socialist calculation debate. This provides the opportunity to speculate why the Austrians did not piece all these components together into something like the contemporary theory of economic organization in general and the theory of the firm in particular, and why

that task was allotted to Ronald Coase. The candidates for explanation are many and very different.

One of them has to do with the allocation of research effort: The Austrians were continuously a rather tiny group of economists (unless a very far-reaching definition of "Austrian" is adopted), and the themes of the time, particularly in the 1930s, were very pressing; the subtle details of the economic organization of capitalist economies may have seemed to be of minor interest compared to debates with the market socialists on large-scale social reorganization, with Keynes on monetary policy, and with meeting the full-scale attack on Austrian capital theory that Frank Knight launched at almost the same time. But these debates meant the virtual elimination of the Austrians as a school.

And herein is a reason why the theory of economic organization in general and the theory of the firm in particular had to await the beginning of the 1970s before it could start blossoming: The virtual elimination of the Austrian school and the increasing focus on institutionless, idealized, formal models following World War II meant that preoccupation with the subject of institutions became regarded as the domain of Veblen-type "old" institutionalists, whom very few formal economists took seriously. However, developments in the 1960s in formal theory—e.g., the economics of information and uncertainty—together with developments in property-rights theory implied that the theory of economic organization could be increasingly addressed with economic tools. But this rather slow process could have been speeded up, had the earlier Austrian insights in economic organization not been so consistently neglected or misrepresented (on this last issue, see Lavoie 1985). Perhaps I may talk about a Kuhnian "loss of content" here.

It would be tempting in this context to say that Austrian theory simply was poorly articulated and "appreciative," not "formal" (these are Nelson and Winter's 1982 concepts). In this interpretation, serious attention to the details of economic organization simply had to await developments in basic microeconomic tools. Now, this may be true on the levels of analytical precision and operationalization. But obtaining his seminal insight, Coase (1937) simply applied the economic tools of his day, that is, substitution at the margin, and added the concept of transaction costs. There is no inherent reason why Austrian theory would not have been able to present a similar insight, particularly not that it was too poorly articulated.

I have to rest content, it seems, with noting that the sort of intellectual creativity that produces new theoretical insights is a function of many factors, particularly a set of components that can

be pieced together, a specific context that indicates the existence of some important and unexplained phenomenon, and finally a creative spark. As argued, the components were there; but what may have been missing was probably the insight that these components could fruitfully be pieced together into something like a theory of the firm, as well as some intellectual context that could initiate such creativity.[15]

Here it is tempting to propose that it was precisely the Austrian engagement in the calculation debate that blocked the application of general Austrian insights to the theory of the firm. Consider the following reasoning, akin to the one applied by Hayek (1945):

(1) economically important knowledge is local and often tacit;

(2) efficiency dictates that such knowledge be utilized by those who are closest to it;

(3) the market allows this and is, therefore, efficient;

(4) to stay in the market one has to perform efficiently;

(5) but I know that some firms can be observed to stay in the market;

(6) the firm uses centralized decision-making (cf. Minkler 1991, p. 9).

And that violates statement (2). Stated somewhat differently, what the Austrians did not supply was economic principles that could *discriminate* between firm and market on efficiency grounds. To do this was left to Ronald Coase and his later followers.

An Austrian Critique of the Modern Theory of the Firm

In the discussion of the foregoing sections I have deliberately suppressed those points where Austrian theory is in conflict with the modern theory of economic organization in general and the theory of

[15]The most comprehensive older Austrian discussion of economic organization within a capitalist economy appears in Mises's *Socialism* (1936), where vertical and horizontal integration and disintegration—among other things—is discussed in 7 pages (pp. 327–33). Here Mises explains that the firm's optimal size is determined "by the complementary quality of the factors of production," but does not, unfortunately, expand on this (p. 328). The discussion is formulated in the context of the Smithian perspective on the progressive division of labor. Rothbard (1962, pp. 544–50) discusses vertical integration and the size of the firm. Applying Austrian insights from the calculation debate, Rothbard argues that it is increasing calculation difficulties as the firm increases that set limits to the size of the firm. Despite a favorable reference to "the challenging article of R. H. Coase" (p. 901), there is no mention of transaction costs.

the firm in particular, and highlighted the points where the Austrians could be seen as precursors. But scattered in the Austrian literature there is a critique of contemporary economic orthodoxy that has implications for the theory of the firm, too, and perhaps particularly for the nexus-of-contracts part of modern theory. The critique of orthodoxy I have in mind is the strongly related standard Austrian critique that neoclassical economics is too prone to:

(1) neglect the distinction between spontaneous and planned order (Hayek 1973; O'Driscoll and Rizzo 1985);

(2) neglect the market process (Mises 1949; Hayek 1945; Kirzner 1973; O'Driscoll and Rizzo 1985; Lachmann 1986);

(3) neglect the activities of the entrepreneur (Lachmann 1986); and

(4) objectify costs (Vaughn 1982).

Let us see if this standard critique can be applied to the theory of the firm (see also Boudreaux and Holcombe 1989; Foss 1993a).

Spontaneous and Planned Orders

With regard to the distinction between planned and spontaneous orders there are two fundamental overall errors one can commit at the level of economic organization; the first one is to argue that what looks like a spontaneous market order is in fact the result of the plans of, typically, big enterprise, or more broadly to overlook spontaneous order altogether.[16] Historically, such arguments have been important to many proponents of socialism. The second error is to argue that spontaneous market forces are so pervasive that what looks like planned orders are in reality spontaneous orders. If the first kind of error—the "undervaluation of spontaneous governance" (Williamson 1991, p. 160)—were common in the days of the socialist calculation controversy, it is the second type of error that is committed in modern contributions to the nexus-of-contracts perspective. As "nexus" theorists, Michael Jensen and William Meckling assert,

[16]Simon's (1991, p. 27) parable of the "confused" mythical Martian is illustrative here: The Martian is approaching the Earth with a special telescope that reveals social structures. Boundaries of firms show up as green contours, and market transactions show up as red lines. Simon then states that "A message is sent back home, describing the scene, would speak of "large areas bounded in green connected by a web of red lines." It would not speak of "a network of red lines connecting green spots."

> it makes little or no difference to try to distinguish those things which are "inside" the firm (or any other organization) from those things that are "outside" of it.
>
> *The firm is not an individual.* It is a legal fiction which serves as a focus for a complex process in which the conflicting objectives of individuals . . . are brought into equilibrium within a framework of contractual relations . . . the behavior of the firm is like the behavior of the market; i.e., the outcome of a complex equilibrium process. (Jensen and Meckling 1976, p. 327)

Assuredly, the firm may itself, in a sense, be said to incorporate aspects of an exchange process, besides being embedded in an overall societal exchange process; after all, a firm's internal organization is characterized by various incentive schemes, such as internal job ladders. But this does not make the firm a spontaneous order, as Jensen and Meckling seem to imply; the relevant exchange process is still subordinate to some overall purpose, which is sufficient to make it qualify as a planned order. Furthermore, conceptualizing the firm the way Jensen and Meckling do basically disposes of the very problem that Coase set out to answer in 1937: Why do firms as planned, hierarchical entities arise at all in a market economy? Since movements of relative prices in the nexus-of-contracts view of economic organization basically underlie all allocation—including that "inside" the firm—there can be no room for entrepreneurship and planned direction of resources (see, for example, Boudreaux and Holcombe 1989). This is the fundamental reason "nexus" theorists Eugene Fama (1980) and Steven Cheung (1983) want to eliminate the concepts of the entrepreneur and the firm, respectively.

The Neglect of Process

The neglect of process is most acutely present in the most neoclassical of modern approaches to economic organization, the nexus-of-contracts approach. Although this approach is probably the one among modern approaches that most emphatically emphasizes the firm's (or, rather, "firm-like organization's") embeddedness in a web of market transactions, no attention is given to the market *process*. All (contractual) outcomes are efficient equilibrium outcomes. Much of this has to do with the way the nexus-of-contracts approach connects to property-rights theory, and particularly the reasoning contained in the Coase theorem (Coase 1960).[17] A common but often

[17]In fact, the nexus-of-contracts approach is much closer to the reasoning in Coase's 1960 contribution than it is to Coase's 1937 contribution (Foss 1993c).

implicit interpretation of the Coase theorem is that if only property rights are well defined, reaching an optimal state is *unproblematic,* automatic. Of course, this is not so; neglecting problems of the empty core and trading under bilateral monopoly, it is obvious that agents need to *discover* opportunities for profitable trade before they can act on them (Kirzner 1973, p. 227). This process of discovery is neglected in many versions of the Coase theorem and in the nexus-of-contracts approach as well.

Process arguments figure somewhat more prominently in the theorizing of Williamson, particularly in the context of evolution of contract execution. Whereas contracting in the nexus of contracts is efficient on an *ex ante* basis, "the economics of time and ignorance" (O'Driscoll and Rizzo 1985) is present in Williamson's theory to the extent that he attempts to give a real-time account of contract execution (Williamson 1985). One consequence of this is that various *ex post* contracting institutions that exist to mitigate problems of *ex post* opportunism are given considerable attention (see further, Foss 1993a, 1993c). And in seeking the rationale for the existence of the firm, Williamson introduces the concept of "The Fundamental Transformation," viz. the semi-process argument that in the course of contract execution, what was initially a "large numbers" situation with many contractors may turn into a "small numbers" situation (e.g., a bilateral monopoly). But this does not mean that Williamson systematically places the firm or other kinds of economic organization in a market process context. Markets that are "large numbers" are implicitly taken to be in continuous equilibrium.

The Neglect of the Entrepreneur

Neglect of the market process usually goes hand in hand with neglect of the entrepreneur. It is not surprising, then, that the approach that pays least attention to the market process, the nexus-of-contracts approach, is also the one that pays least attention to the activities of the entrepreneur; indeed, it explicitly attempts to dispose of the very concept (Fama 1980). The reason for this, as argued, is the inability within the nexus-of-contracts tradition to uphold the distinction between planned and spontaneous order. Furthermore, the services of the entrepreneur is equivalent to the services of all

[18]See Fama (1980). This assertion goes back to Coase (1937). As he remarked in a critique of Knight (1921), Knight erred in seeing entrepreneurial judgment as a reason for the existence of the firm, since "we can imagine a system where all advice or knowledge were bought as required" (1937, p. 92). Coase totally missed Knight's point: it is precisely because idiosyncratic entrepreneurial judgment cannot be "bought as required" that the firm is needed (see also Boudreaux and Holcombe 1989; and Foss 1993a, 1993b).

other factor owners, and can be bought on markets as well.[18] Or, in other words, what may look like entrepreneurial services are in fact managerial services. And in the world portrayed in the nexus-of-contracts approach there is in fact no need for the services of the entrepreneur, since all contracting is efficient on an *ex ante* basis, implying that all gains from trade have been discovered and that no reallocations of property rights during contract execution have to take place.

Despite the fact that the account of agency in Williamson's theory is more dynamic than the one in the nexus-of-contracts literature,[19] no attention is given to entrepreneurship. An aspect of this is that questions of innovation and the creation of markets are (deliberately) suppressed (Williamson 1985, p. 142). As Williamson (1985, p. 87) points out, it is a heuristic starting point for his theory that "in the beginning there were markets." And since markets are given, so also are inputs, outputs, and technology.[20] As it is the case with the nexus-of-contracts approach, the agents that occupy Williamson's attention are *managers* of *existing* transactions, shifting transactions over the boundaries of the firm. In Kirzner's (1973) terms, they are "Robbinsian maximizers"; not alert entrepreneurs.

Regarding the neglect of process and entrepreneurship in modern theories of the firm, I may observe that in a sense process arguments and entrepreneurship are necessary for modern theories. Austrian economics and modern theories of the firm can be seen as complementary for the same reason that Hayek's "The Use of Knowledge in Society" and Coase's "The Nature of the Firm" can be seen as complementary: It is precisely in the kind of dynamic economic reality envisaged by the Austrians that questions of economic organization become really pertinent. To update insights from the calculation debate, there would be no transaction or information costs in a stationary state; hence, economic organization would be indeterminate. So I need change to make sense of transaction costs and economic organization. In such an interpretation, modern theories of the firm implicitly appeal to a changing and dynamic reality (Foss 1993a, 1993c). In such a "changing and dynamic reality" transaction costs arise because of the need, among other things, "to discover what the relevant prices are" (Coase 1937, p. 83). But who will perform this act of discovery if not entrepreneurs?

[19]For example, Williamson's concept of "opportunism" is broader than the moral hazard assumption of the nexus-of-contracts tradition.

[20]This is not *strictly* correct since Williamson's "Fundamental Transformation" is a story about changes in inputs and technology (Foss 1993a, 1993b, 1993c).

On a more general level, it can be argued that the neglect of process and entrepreneurship has meant that the kind of knowledge and coordination problems emphasized in Austrian literature (Hayek 1937; Kirzner 1973) are not present in the contemporary theory of the firm. The firm does not exist because it solves coordination of knowledge-type problems; the reason for its existence lies in incentive considerations. In the nexus-of-contracts approach, the existence of the firm has only to do with mitigating free-rider-type problems; in Williamson's approach, the firm exists to dampen incentives to opportunism (see further, Foss 1993b). As I shall argue in the next section, "Towards an Austrian Theory of the Firm," the type of coordination problems that interest Austrians should be incorporated in a more complete theory of the firm.

Costs

In equilibrium, costs can be said to be "objective" in the sense that they are accurately measured by prices; factors of production, for example, are paid their (marginal) opportunity costs. But outside equilibrium, prices do not fully reflect opportunity costs, simply because the marginal conditions are not satisfied. The inherent subjectivity of costs is only really obvious here. And the equilibrium theorist is therefore too prone to "objectify" costs, to assume, in other words, that real prices accurately measure opportunity costs (Buchanan 1969).

The tendency to neglect the inherent subjectivity of costs is manifest in modern theories of economic organization. This is not just a matter of a lack of a consistent subjectivist (opportunity cost) definition of the concept of transaction costs. It is also a matter of *production costs* not being allowed to influence the make-or-buy decision. As Harold Demsetz (1988, p. 147) has argued:

> The emphasis that has been given to transaction costs . . . dims our view of the full picture by implicitly assuming that all firms can produce goods or services equally well.

This reflects the common simplifying assumption that productive knowledge is given in explicit form to everybody. But given the facts of the dispersion of knowledge (Hayek 1945), the tacit nature of much of the economically relevant knowledge (Hayek 1935b, pp. 154–55; Nelson and Winter 1982), the distribution of entrepreneurial capabilities (Knight 1921), the Smithian benefits of specialization, and the positive costs of information, obviously this cannot be so. So even in equilibrium, production costs will differ. And outside equilibrium,

production costs may differ even more since factor prices do not measure the entrepreneur's or manager's subjective appraisal of the costs of production. Furthermore, as Hayek (1940, p. 196) points out, low-costs methods of production have to be *discovered* "and discovered anew, sometimes almost from day to day, by the entrepreneur."

What this implies to the theory of economic organization is that (subjective) production costs may in fact enter the make-or-buy decision; entrepreneurs may decide to bring some transaction under the corporate umbrella simply because its implied cost of production in the firm is lower than the price that would have to be paid for it in the market (Foss 1993b).

Summing Up

It seems that the relationship between modern theories of economic organization and Austrian economics is more encompassing than the issues of the Austrians as precursors and critics. In the corpus of Austrian economics, there are a vast number of insights that, as argued in this section, are not present in the contemporary theory of the firm. But there is also a constructive aspect to this, since it is possible to utilize specific Austrian insights not only to supplement existing theories of the firm, but also to construct a distinct Austrian theory of the firm. To argue this is the purpose of the following section.

Towards an Austrian Theory of the Firm

"Clearly, much more work needs to be done on a subjectivist or Austrian theory of firm behavior" (O'Driscoll and Rizzo 1985, p. 125).

A Toolbox

Our Austrian/contemporary theory of the firm toolbox now includes:

(1) a distinction between planned and spontaneous orders;

(2) the market process as a process of entrepreneurial discovery;

(3) property rights (incentives);

(4) specificity and complementarity of assets;

(5) the subjectivity of costs (including production costs);

(6) the private and tacit nature of knowledge ("impactedness"); and

(7) transaction and information costs.

Let us first examine in which respects some of these Austrian insights may *complement* the contemporary theory of the firm, and then briefly indicate how a distinct Austrian theory may be constructed.

Austrian Economics as Complementing The Contemporary Theory of the Firm

Where Austrian insights have the most to offer to the contemporary theory of the firm is on the level of process and knowledge. To start with the knowledge issue, the Austrian insight that most economically relevant knowledge is local and tacit is not systematically incorporated into contemporary Coasian theories of the firm, at least with regard to production knowledge (Demsetz 1988). In the non-Coasian work of Penrose (1959) and more recently Nelson and Winter (1982) on the theory of the firm, the firm is seen as possessing a set of "capabilities"—stocks of knowledge that are idiosyncratic to the relevant firm—a view of the firm that harmonizes with Hayekian insights about knowledge (Hayek 1945).

As O'Driscoll and Rizzo (1985, p. 124) put it, with reference to Nelson and Winter (1982), this view of the firm furthermore applies "a Hayekian theory of rules and evolved market institutions to firm behavior," in the sense that firms are placed in an evolutionary setting, incorporating both selection through the market and conscious adaptation (though not maximization), and portraying the firm as equipped with a set of "genotypes"—"routines"—on which these effects ultimately operate. Like Hayek's (1973) rules, Nelson and Winter's (1982) routines are stable and mostly tacit patterns of social behavior that are followed—largely unconsciously—because they produced success in the past, i.e., coordinated individual actions relatively successfully. It is from the firm's stock of routines or capabilities that its strategies and actions emerge.

However, not all routines or capabilities are equally efficient. And this provides a room for a view of the market as a continuous disequilibrium process, in which, for example, certain routines are selected against, in the sense that their share of the overall pool of routines is falling, closely akin to the way that Hayek characterizes cultural evolution. Such a view is consistent with Kirzner's (1979, p. 134) point that

> under conditions of disequilibrium, when scope exists for entrepreneurial activity, there is no reason genuine disparities may not exist among different producers.

Summing up, the "evolutionary" or "capabilities" view of the firm is broadly consistent with Austrian theory since it incorporates decentralized tacit knowledge, learning, and a commensurate role for the entrepreneur.

However, as previously noted, it may be somewhat contradictory to apply insights from the theory of spontaneous order—evolved rules, coordination, etc.—to a planned order, that is, the firm. The market or price system—the paradigmatic spontaneous order—was described by Hayek as

> a sort of discovery procedure which both makes the utilization of more facts possible than any other system, and which provides the incentive for constant discovery of new facts which improve adaptation to the ever-changing circumstances of the world in which we live. (1968, p. 236)

But may we not say that the firm, too, is a learning system in some sense? I think we can, and, in fact, should. But what saves us from committing the failure of identifying what is ultimately a planned order—the firm—as a spontaneous order, is the notion that the firm, like the entrepreneur, learns about *local* facts. The firm is a local learning system, not a global one, such as the spontaneous order of the market.

To put forward such a view of the firm is implicitly to criticize the contemporary (Coasian) theory of the firm. For, as noted, this theory is largely a static affair that pays little or no attention to the creation of markets, and assumes that inputs, outputs and technology are given, so that the economic problem has only to do with combining these in a transaction cost minimizing manner. But it is also to suggest that the Coasian and Austrian/evolutionary/capabilities view of the firm may be fruitfully combined (see also Langlois 1991). Conceptualizing the firm as a learning, evolved entity implies that the transaction costs associated with, for example, the firm's governance of internal transactions may change over time, e.g., may fall.[21] And conceptualizing the market as a learning system, too, implies that transaction costs associated with market exchange will also change. Based on an Austrian process-oriented view, it becomes

[21]This would involve more, for example, than management's increased knowledge about the capabilities of the firm's employees. It would also involve the formation of what business analysts call "corporate culture," that is, a set of stable firm-specific rules that delimits intra-firm behavior. Culture does more than solve Austrian-type coordination problems; it may also dampen various sorts of proclivities to moral hazard, and thus harmonize incentives. For a relevant early discussion, see Malmgren (1961).

conceptually possible, then, to theorize how the organization of transactions change over time, that is, how the boundaries of the firm change.

Summing up, I may conclude that Austrian insights complement the contemporary (Coasian) theory of the firm to the extent that one wants to go beyond merely addressing the efficient organization of existing inputs and outputs, and incorporate dynamic factors, such as learning. But it is also possible to construct a theory of the firm that is distinctively Austrian. To loosely indicate the character of such a theory is the purpose of the following section.

Elements of an Austrian Theory of the Firm

The Austrian concept that is most conspicuously neglected in the contemporary theory of the firm is probably that of the entrepreneur. Or rather, to the extent that "the entrepreneur" is mentioned, he is identified with the manager (see already Coase 1937). This simply continues a tendency in price theory to "understand the notion of the entrepreneur as nothing more than the locus of profit-maximizing decision-making within the firm" (Kirzner 1973, p. 27). However, the role of the manager is distinct from that of the entrepreneur, since the entrepreneur—to be an entrepreneur—is always occupied with the setup of new means structures. Neither is he *necessarily* to be identified with the owner/manager of the firm; what this last person maximizes *may* not be entrepreneurial profit, but rather Ricardian and Paretian rents from already acquired resources. This leads us back to the founding of firms as the relevant domain for exercising entrepreneurship. As Kirzner (1973, p. 52) explains, the concept of the entrepreneur is primary to that of the firm to the extent that

> The firm . . . is that which results *after* the entrepreneur has completed some entrepreneurial decision-making, specifically the purchase of certain resources.

But when we link this initial entrepreneurial purchase decision to the later existence of the firm, we may in a sense say that the entrepreneur continues his activities to the extent that he deploys the firm's resources in exceptionally profitable ventures.

What should interest us in this perspective is why the firm is needed at all? Why is the firm and entrepreneurial direction of resources necessary? Why is it necessary to make a distinction between "plan complementarity, the complementarity of [resources] within the framework of one plan, and structural complementarity, the overall complementarity of [resources] within the economic system," where

the first type of complementarity "is brought about *directly* by entrepreneurial action," while the second kind is brought about by the operation of the market (Lachmann 1956, p. 54)? One could, of course, provide Coasian answers to such Coasian questions.[22] But a more congenial, and in some respects also more interesting, way is to look for an explanation in the peculiar character of entrepreneurship.

We have it from Coase (1937) and Fama (1980) that entrepreneurship not only cannot provide a rationale for the firm, but more importantly is largely an irrelevant concept since the entrepreneur's services can be purchased in the market. What some theorists insist on calling an "entrepreneur" is simply an owner of some specialized human capital, whose services have a market price and an opportunity cost. To such assertions, we may invoke such questions as, who *decides* to hire entrepreneurs? Who *discovers* that some agents possess some superior stocks of human capital, etc.? What such questions indicate is that we simply cannot escape using the concepts of entrepreneur and alertness to hitherto undiscovered opportunities if we want to discuss market dynamics of almost any kind. And that is basically Kirzner's point (1973, 1979); to "move" the market, we have to transcend Robbinsian maximizing and add the category of entrepreneurial alertness. Furthermore, as Kirzner argues, entrepreneurship is—*contra* Coase and Fama—categorically different from all other factor services since it has no opportunity cost. Pure entrepreneurship is primarily an act of perception. What has all this to do with the firm?

What is noteworthy about Kirzner's argument is perhaps first of all that he argues that entrepreneurship is fundamentally non-contractible. One interpretation might be that entrepreneurial alertness—or "judgment," as Frank Knight called the same behavioral quality—is so very much inside a given individual's head—that is, tacit—that it is too "impacted" to be traded. In exploiting pockets of ignorance in the market, the entrepreneur applies this knowledge when he discovers what the market did not realize was available or even needed at all. Kirzner's pure arbitrating entrepreneur can in principle do this. But sometimes the realization of the entrepreneur's idiosyncratic judgment will require the formation of a firm.

Fundamentally, there are three different economic ways in which one can utilize knowledge that is specific to oneself:

[22]That would, however, lead one into (fallaciously) identifying the firm with vertical integration. On this, see Boudreaux and Holcombe (1989) and Foss (1993a).

(1) sell one's services through a contract;

(2) utilize it for arbitrage purposes; or

(3) start a firm.

The options that Kirzner considers are primarily (1) and (2). But option (3) is also relevant. And that brings us somewhat away from Kirzner's theory of the entrepreneur, and closer to the Turgot-Böhm-Bawerk-Rothbard view of the *capitalist*-entrepreneur who also owns capital.[23] One way to interpret option (3) is that non-contractability of entrepreneurial judgment may lead to the formation of a new firm,[24] incorporating a new resource use. The economic reason? There is simply no relevant market through which the entrepreneur's idiosyncratic vision can be communicated; knowledge transmission costs are exorbitant (see Silver 1984). The "telecommunications system of prices" fails as a means of coordination; conscious entrepreneurial direction "supersedes" (Coase 1937) the market.

Notice that this explanation of the existence of the firm has nothing to do with incentives; it is a story about market coordination that fails due to lack of necessary intersubjective points of orientation, that is, lack of so-called "Schelling points."[25] The thing to note about this explanation is that it should appeal to those bent on Austrian subjectivism; it takes to almost an extreme (some would say, seriously) the Austrian notions that "different men know different things" (Hayek) and "different men have different thoughts" (Lachmann).

This explanation can be extended from the issue of the existence of the firm to the boundaries issue. As Lachmann (1956, p. 131) notes:

> We are living in a world of unexpected change; hence, [resource] combinations . . . will be ever changing, will be dissolved and reformed. In this activity we find the real function of the entrepreneur.

Now, in his attempt to carry out his plan the entrepreneur will not bring all the economic activities that are complementary to the

[23]Arguably, Mises took this last position. Thanks to Murray Rothbard for this point.

[24]In Foss (1993a, 1993b) I argue that this was basically Knight's (1921) theory of the firm. It should be noted that in a Knightian context, there is also a moral hazard to firm formation, since the entrepreneur's services—because of their tacitness—are particularly susceptible to moral hazard—and adverse selection problems (on this, see Barzel 1987).

[25]As Malmgren (1961) argued, the emergence of behavior-coordinating Schelling points is not only a characteristic of the market, but perhaps even more of the firm. Fundamentally, when business analysts talk about firms as possessing different "cultures," what they—in this interpretation—mean is that firms come equipped with different Schelling points.

execution of his under his own ownership. Many goods and services can be acquired through the market without problems. But "in a world of unexpected change" there will sometimes arise a need for new resource combinations, involving, for example, new kinds of inputs. Unexpected change will feed plan revisions. And such revisions may result in changes in the boundaries of the firm. The reason? New combinations of resources will sometimes involve new inputs that are totally specific to the firm (Lachmann 1956). But it is often not possible to transmit precise knowledge about input requirements over the boundaries of the firm without high levels of information costs. Economizing on such costs may dictate internalization of production of the relevant input (Silver 1984).

Furthermore, the entrepreneur may decide to internalize the transaction simply because he thinks that his firm can produce the needed equipment in a more productive cost-effective way than can the market (other firms). The opportunity costs of purchase in the market are prohibitive, not necessarily because of incentive problems because of opportunistic suppliers, but simply because—as the entrepreneur ascertains the situation—the firm can produce more cost-efficiently. The reason? The firm as an evolved entity with a bundle of various resources held together by entrepreneurial direction and the rules that evolve within the framework of purpose defined by the entrepreneur, is fundamentally an entity that is specialized in *knowledge*. And such knowledge is costly to transfer (Demsetz 1988). So whether we look on it from the angle of knowledge-transmission costs or from that of production costs, we are led to a dynamic theory of firm boundaries, one that takes seriously the Austrian notions of dispersal, subjectivity, and tacitness of knowledge.

Conclusion

In the above, I have taken the theme of Austrian economics and economic organization through several variations. I hope to have taken steps towards establishing that not only were the Austrians important precursors of the contemporary theory of economic organization, but they may also contribute to existing theory as well as provide their distinctive perspective on economic organization. Space limitations have dictated, however, that I have been able to only scratch the surface. Assuredly, there is much more to be done on all the three themes I have been discussing, particularly on the last, constructive one.

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