

Tryk: Handelshøjskolens Reproduktionsafdeling  
Oplag: 60  
ISBN: 87-7869-025-0  
ISSN: 0905-0841  
Publikation: 1998-6  
August 1998

# Market Process Economics and the Theory of the Firm

by

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Revised, August 14, 1998

Prepared for Ron Sanchez,  
*Beyond the Boundaries of the Firm*,  
Elsevier

# I. Introduction

The present paper is about research heuristics and methods within the field of economic organization. Its basic message is that the theory of economic organization can benefit from what is here referred to as “market process theory”, particularly in its Austrian manifestation. Fundamentally, this is because the modern economics of organization (principal-agent, incomplete contracts, transaction cost economics) confronts a number of both basic and crucial issues related to firm organization that it is ill-equipped to handle, but which market process economics is helpful for gaining some understanding of. It is necessary to briefly explicate, first, what is meant by “market process theories” and, second, what these issues are.

As the name indicates, market process theory focuses on the production of change and on adjustments to change; unlike mainstream economics it places entrepreneurs and technological change centerstage at the analysis. Although often associated with the Austrian school of economics (e.g., Mises 1949; Hayek 1948; Kirzner 1973; O’Driscoll and Rizzo 1985; Lachmann 1986), the position taken here is that market process economics is considerably broader in scope, encompassing also evolutionary (Nelson and Winter 1982), Schumpeterian (Schumpeter 1934) and post-Marshallian economics (Loasby 1991) and, in fact, also some contributions with a more formal, neoclassical character (e.g., Fisher 1983) (Boettke and Prychitko 1998: ix; Foss and Christensen 1998).

It is characteristic of all contributions to market process economics that they fundamentally see economic activities as a matter of producing, utilizing and disseminating knowledge that is valuable, but also typically dispersed, tacit, fleeting, and subjective. The point of view taken and defended here is that this perspective need to enter the theory of economic organization to a much greater extent than it has done so far, even in the so-called “knowledge-based approach to the firm” (e.g., Demsetz 1988; Conner and Prahalad 1996).

Like markets, firms are vehicles for generating and utilizing local knowledge, and, like markets, they may offer systems of property rights and incentives (Holmström and Milgrom 1994) that support this process. In these respects, firms are indeed “like markets”, their organizing principles are identical. Intuitively, there is in fact not much that markets can do that firms cannot do, and *vice versa* (cf. Stinchcombe 1985). The theory of the firm may too often have been characterized by an overdrawn dichotomy between the spontaneous forces of the market and the order-giving of hierarchy (e.g. Lazonick 1991). We are not talking about mutually exclusive discrete governance choices; rather, markets have elements of hierarchy and firms have elements of the price mechanism.<sup>1</sup>

To repeat, the argument in this paper is that the theory of economic organization will benefit from being more conscious about in which ways firms are “market-like”, and be so in ways that go beyond the traditional debate on transfer-pricing (Hirshleifer 1956) and are much more influenced by market process economics, particularly Austrian economics. It will be beneficial because better understanding the market-like aspects of firm organization will lead to a better understanding of a number of real phenomena that are simply rather hard (if perhaps not ultimately impossible) to conceptualize and explain through the lens provided by the modern economics of organization. These phenomena include the increasing internal disaggregation of large firms (Zenger and Hesterly 1997), total quality management practices, and the very phenomenon of leadership.

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<sup>1</sup> On the other hand, it is also incorrect to state that there firms are merely special market arrangements, distinguished *only* by legal matters and by the continuity of association between input owners. There are things that firms can do that markets can only do at prohibitive costs. More on this in section IV.

## **II. The Modern Economics of Organization: Suppressing Process and Dispersed Knowledge**

As Brian Loasby (1976) forcefully points us, economics is a study of coordination in systems, not of individual decision-making *per se*. But systems may be defined at different levels and the word “coordination” has a number of meanings. Moreover, coordination may be thought of as something happening in time – for example, as an equilibrating process (Kirzner 1973) – or it may be represented as something accomplished, for example, as an equilibrium state.

Intuitively, the lay man, the casual reader of the business press or the MBA student may give several reasons for the importance of coordination and mechanisms of coordination. Isn't the essence of organization is coordinated response to volatility? And isn't almost any real organization full of coordinative mechanisms, such as standardization of work processes, skills, norms and products, informal communication, transfer prices, culture, and explicit supervision, mechanisms that have the purpose of making knowledge, intentions, and plans dovetail.

### *A. Coordination - and Incentive Coordination*

Given this richness of coordination mechanisms, one is certainly excused for thinking that the modern economics of organization has chosen an extremely exclusive, if not to say narrow, research strategy. *The* meaning of coordination in the modern economics of organization is that of mitigating the effects of incentive-conflicts.<sup>2</sup> Thus, incentive-conflicts are ubiquitous and opportunism

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<sup>2</sup> Technically, the modern economics of organization does not really consider what is usually called “coordination problems”, but rather “prisoners dilemma” games. In the former, the pay off space of the game is such that at any equilibrium point, not only does no player have any incentive to change his behavior (given others' behavior), but no player wishes any other player to change as well. In PD games, any player has an incentive to change his behavior, given other players' behavior. Because of this, for any

doesn't disappear because of, notably, vertical integration (Hart 1995). Indeed, from the point of view of the modern economics of organization, the above coordination mechanisms are not characteristic of any type of economic organization in particular; they are choice variables that parties to any transaction may choose as they see fit. What is essentially different is only the allocation of property rights. What vertical integration and various other contractual arrangements may do is simply to change the incentives to engage in opportunistic behavior. It is worth spending some time on clarifying this understanding of coordination.

Many coordination problems may be given a representation in terms of basic game theory. In such a setting, economic agents are represented as choosing game forms and equilibria thereof for regulating their trade. Efficiency requires, of course, that if agents can find a game form and an equilibrium thereof that allows them to do better, they will do so (Wernerfelt 1997). For example, we may think of two agents that confront the following two possible extremely simple games.

		Game 1				Game 2	
		B				B	
		x	y			x	y
A	x	1, 1	0, 0	A	x	1, 1	0, 0
	y	0, 0	2, 2		y	0, 0	3, 3

In this simple situation, (Pareto) efficiency requires that agents choose game 2 and play the (3,3) equilibrium. In such simple situations, problems of

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equilibrium, there is some pure strategy n-tuple that is Pareto superior. In this paper, however, I use "coordination problems" to cover both types of interaction problems.

economic organization are normally taken to be absent, because there are no incentive conflicts. However, it is easy to see that this may be unwarranted. For example, consider game 3:

Game 3			
		B	
		x	y
x		2, 2	0, 0
A			
	y	0, 0	2, 2

Here we have two optimal and identical equilibria; the problem is that there is nothing whatsoever in classic game theory to tell us which equilibrium will be chosen (Sugden 1989). There certainly is a coordination problem, but not one that is treated in the modern economics of organization. In order to arrive at the type of coordination problems that *are* considered here, we slightly modify the pay-offs in game two (cf. Wernerfelt 1994: 465), so that the players now confront game 4 and 5:

Game 4				Game 5			
		B				B	
		x	y			x	y
x		2, 2	0, 0	x		2, 2	0, 0
A				A			
	y	0, 0	4, 1	y		0, 0	4-u, 1+u

The problem here is that the Pareto criterion is too weak to select a unique equilibrium, since both the (2,2) and (4,1) may be equilibria on this criterion. Now, obviously the (4,1) equilibrium has a higher joint surplus than the (2,2) equilibrium, and therefore it will be in A's interest to bribe B to play the y-strategy. If  $u$ , the bribe, lies between 1 and 2, the equilibrium corresponding to both A and B playing y will be efficient, and, hence, be chosen. Thus, efficiency now implies that the agents agree on (contract on) maximizing and somehow splitting the joint surplus. In this situation a market failure occurs when bribes cannot be sustained in equilibrium. This may be dependent on the timing of the game. For example, if A gives B the bribe before the game begins, B will not choose the y-strategy, which means that A will decide not to give B any bribe. Or, A may promise B to pay the bribe after game, but B will realize that this will not be in A's interest, and will still choose the x-strategy. Although the (2,2) equilibrium is still efficient, it is not joint-surplus maximizing.

These market failures may be remedied through contractual means; for example, A may agree to pay B a compensation if he does not pay  $u$ , or B may agree to pay A a compensation if he does not choose the y-strategy after receiving  $u$ . However, such contracts may not always be feasible. Contracts fail in the sense that they cannot completely safeguard against the reduction of surplus/loss of welfare stemming from incentive conflicts. Such contract failure may take various forms.

Notably, in a dominant branch of today's economics of organization, contracts are seen as *incomplete* in the sense that some contingencies are left out for whatever reasons, such as information costs, the limitations of natural language, the unavoidable emergence of genuine novelties, etc.<sup>3</sup> In the context of the example above, A may be confronted with a contingency that is not covered by the contract, refuse to pay B the bribe, and B may have no recourse. Or, while it may be possible for partners to agree on contract terms, these may not

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<sup>3</sup> Although I don't here discuss the principal/agent approach, the other dominant approach in the modern economics of organization, the critical comments also apply to this approach.

be enforceable by a third party, such as a court. In the latter case, contract terms are said to be “non-verifiable”. Or, the costs of contracting may outweigh the gains. In all of these cases, it may not be possible to sustain the first-best outcome, that is, the one that unambiguously maximizes joint-surplus. Since complete contingent contracts cannot be written, parties to a contract may find it necessary to renegotiate their contracts after the contract has been signed, either because they encounter states of nature about which the contract is silent or where the contract specifies inefficient terms. Crucially, it is assumed, however, that the outcome of the renegotiation process can be foreseen at the time of drafting contracts and that the process does not involve costly bargaining (hence, is efficient). Nevertheless, the very fact of the possibility of renegotiation may be sufficient to cause inefficient levels of investment in relation-specific assets. Thus, incentive conflicts produce a welfare loss.

The remedy is to choose an efficient allocation of ownership rights, that is, the rights to control the use of assets in states of nature that are not described in the contract. The interest then centers on which pattern of ownership rights lead to the most efficient outcome; the pattern depending on the characteristics of the assets (e.g., whether they are complementary), on whose assets are most important to the joint surplus, and on who is most responsive to incentives, since ownership by one of the parties will attenuate the incentives of the other party. The bottomline is that the efficient ownership arrangements primarily turn on the trade-off between incentives for the buyer and the seller.

### *B. Suppressing Process and Dispersed Knowledge*

Although Oliver Williamson’s (1985, 1996) version of transaction economics is a partial exception, the modern economics of organization is quintessentially neoclassical in portraying agents as not only maximizing, but also very well informed indeed (Hart 1990, 1995). For example, it is assumed that an agent can foresee the pay-offs from a relation, even if that relation involves a highly

uncertain innovation and the agents have no knowledge about the innovation itself (that knowledge is supposed to be produced during the relation) (Tirole 1998). In fact, in some models there are no asymmetric information or uncertainty at all. In models that do feature asymmetric information (e.g., about the realization of a stochastic variable and the agent's effort level in principal/agent models), everything else but a few variables is assumed to be common knowledge.

Of course, these modeling strategies are caused by the attempt to keep the setting (extremely) simple, so that the analyst can sink his teeth in the essence of the matter, which is simple incentive conflicts, mostly in bilateral settings (as in the example above). Moreover, the literature only looks on equilibria and the "how to get there" problem is not fundamentally an issue. Because the knowledge and rationality assumptions are so far reaching, agents are simply assumed to instantaneously calculate their way to the equilibrium. The knowledge issue and the process issue are thus closely connected.

The approach followed by the modern economics of organization has to a large extent been a successful one. Both principal/agent, complete contracts theory and Williamsonian transaction cost economics have been immensely helpful. But this should not lead one to forget how narrowly coordination problems, and therefore problems of economic organization, are portrayed in this body of thought. For example, while assuming that agents can think their way to equilibrium, as it were, may not be an unreasonable approximation for small-scale settings, it may not be so for larger and more complex interaction situations. Moreover, only incentive coordination is considered. In the context of the examples above, game no. 5 is the ruling paradigm. But surely, we can imagine interesting coordination problems that don't turn on incentive problems and that may have a bearing on problems of economic organization. Finally, all process issues, including learning, are suppressed, so that agents are assumed to know what type of game they are playing, what gameforms are available for regulating their trade, which strategies are available, what the pay-offs are, etc.

The bottomline is that in the modern economics of organization, knowledge is not truly dispersed (except for a few variables, everything is common knowledge), and problems of uncertainty are essentially side-stepped (agents are supposed to be able to choose the efficient governance structure/gameform *ex ante*). As a result, the class of permissible coordination problems is greatly reduced relative to the one that a less restrictive research strategy may allow for (see further Langlois and Foss 1998). And as further result, some phenomena are hard to make sense of when perceived through the conceptual lens provided by the modern economics of organization. Thus, managers provide the right incentives – and that’s it!

That there is a different research strategy and that it may make a difference for how we perceive of economic organization is the theme of the following sections. More specifically, I shall turn to market process economics and ask what it has to offer with respect to the analysis of economic organization. The reason for doing so has to do with the type of critique that has been launched in this section; it is a critique that centers on the fact that the modern economics of organization is equilibrium economics. And “[m]arket process theorists of all varieties share in common a profound dissatisfaction with the way equilibrium economics looks at the world” (Kirzner 1992: 41).

### **III. Market Process Economics: Placing Process and Dispersed Knowledge Centerstage**

In the preceding section I criticized the modern economics of organization for trivializing the dispersion of knowledge and for suppressing process. But what

is the basis of this critique? And how does it matter? In this section, I attempt to address the first one of these two questions.

### *A. What is Market Process Economics?*

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 some “concerted” research effort<sup>4</sup>, taking place under the banner of “market process economics” (Boettke and Prychitko 1998). This line of thought 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). Fundamentally, these streams attempt to conceptualize and understand the mechanisms that drive disequilibrium processes of change, although these mechanisms are conceptualized somewhat differently among the streams. For example, evolutionary economics give more attention to forces of inertia than Austrian economics does. In the following, I concentrate on giving a brief *signallement* of Austrian economics, supplementing with references to other streams in market process economics when appropriate.

### *B. Austrian Economics*

Arguably, the core concept of Austrian economics is that of “market process”, that is, active rivalry. In contrast, there is a tendency in mainstream economics to conceptualize competition in terms of consistency of maximizing decisions taken by consumers and producers. Thus, competition is understood in terms

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<sup>4</sup> Historically, the suppression of process in economics is largely a post Second World War phenomenon (Foss 1994; Machovec 1995).

of equilibrium (competitive equilibrium). Moreover, since equilibrium basically means a state of rest (at least in older conceptualizations), this conceptualization gives a distinctly *static* character to the concept of competition (but see Vickers, 1995). However, as Friedrich Hayek noted more than fifty years ago, the economist's equilibrium understanding of competition differs significantly from lay understanding:

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 (Hayek, 1948: 96).

Furthermore, Hayek argued that by portraying competition as a tranquil state rather than as a rivalrous process, what we want from competition, and how we get it, becomes basically obscured. If competition is indeed best understood in static terms – as a state characterized by large number of sellers and buyers, perfect information, consistency between the maximizing decisions of consumers and producers, with the implied welfare properties – then it is not necessarily unreasonable to think that this situation can best be achieved by public intervention (e.g., market socialism), or at least, that public policies can help society approximate the competitive equilibrium. But this basically misconstrues the nature of competition, what we can expect to get out of competition, and how competition is best promoted. Briefly, competition should not be understood as a static state of affairs, but as a rivalrous process. More specifically, competition is fundamentally a procedure for discovering

... *who* will serve us well: which grocer or travel agency, which department store or hotel, which doctor or solicitor, we can

expect to provide the most satisfactory solution for whatever personal problem we may have to face (Hayek, 1948: 97).

This knowledge is not in any meaningful sense *given* to a single mind who can somehow disseminate it across the economic; we rely on competition as the mechanism for mobilizing and disseminating such dispersed knowledge. It is important to appreciate that when Austrians and other market-process theorists talk about dispersed knowledge, what they have in mind is not “imperfect” or “asymmetric information” as these are understood in mainstream economics (e.g. Nalebuff and Stiglitz 1983). Although these are important analytical categories, there is a further category that is not treated in mainstream economics, namely sheer (or unknown) ignorance. Becoming aware of something (e.g., a profit opportunity) that one had previously overlooked (and not *searched* for) is what is meant by discovery. Kirzner’s argument (which is discussed more fully below) is then that the competitive market is a superior setting for generating entrepreneurial discoveries through the exercise of alertness. For although the entrepreneur may not search for any profit opportunity in particular, the lure of pure profit may nevertheless lead him to continually scan the horizon, as it were (Kirzner 1997: 72).

We rely, in short, on competition because it is an *effective procedure for discovering knowledge that we do not yet know is available or indeed needed at all* (Hayek 1968). To the extent that this is the social function of competition, it is to misconstrue competition to portray it as a state in which each market participant has either deterministically perfect or stochastically perfect knowledge. More broadly, it is to misunderstand the character of the economic problem facing society:

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 (Hayek 1945: 78).

What seems to have prompted the emergence of these insights is Hayek’s involvement during the nineteen-thirties in a debate on the economic feasibility of socialism, now called “the socialist calculation debate” (Lavoie 1985). Hayek’s socialist opponents here either maintained that all relevant knowledge could in fact be centralized, or, if it could not, the problem could be solved by telling socialist managers to obey simple price-setting rules that would lead to an optimal allocation of resources.

Against this, Hayek argued that the market socialists basically overlooked 1) problems of incentive compatibility, 2) tacit local knowledge (which couldn’t be centralized) and 3) the need for rapid adaptation to unexpected contingencies/novelties (which made centralization inefficient). With respect to the last point, Hayek observed that

[i]f 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 1945: 83-84).

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 and competition ensures that best use is indeed made of these rights.

However, it has been left to Israel Kirzner (1973, 1992) in particular to elaborate the details of the Austrian view of the market process. In doing this, he has put primary emphasis on the entrepreneur. As Kirzner (1973: 14) argues, "...our confidence in the market's ability to learn and to harness the continuous flow of information to generate the market process depends crucially on our belief in the benign presence of the entrepreneurial element". The foundation of this claim lies in Kirzner's distinction between "*Robbinsian maximizing*" and "*entrepreneurial alertness*". The first behavioral category conforms to the standard picture of economic man as basically applying *given* means to best satisfy *given* but conflicting ends in a fundamentally mechanical way (Robbins 1934). Since everything is given, action becomes purely a matter of calculation. Kirzner points out that within this conceptualization of behavior, the discovery of new means, of new ends, and the setting up of new means-ends structures simply cannot be rationalized.

As a result, the dynamic market process cannot be understood in terms of the passive mode of behavior of Robbinsian maximizing; we need another behavioral quality, the quality of entrepreneurial alertness to hitherto unexploited profit opportunities. This alertness factor ranges from the discovery of a ten dollar bill on the street to the discovery of a need for a new potentially extremely profitable drug. Thus, entrepreneurs are discoverers; they discover new resource-uses, new products, new markets, new possibilities for arbitrage, in short, new possibilities for profitable trade.

Combining his notion of entrepreneurial behavior with Hayek's notion of the market as a dynamic process, Kirzner paints a broad picture of the market process as a continual process of entrepreneurial discovery of hitherto unnoticed opportunities for pure profit. The profits earned in this process are

discovered profits – profits that are earned because of the discovery, creation and exploitation of profit opportunities *that would not be grasped in the absence of entrepreneurial activity*. Thus, the entrepreneurial function is beneficial because it alleviates the problem introduced by the division of knowledge. It is not only that entrepreneurial activity reduces our lack of knowledge about which products, processes, new organizational forms, etc. are needed; it is more fundamentally that entrepreneurial activity alleviates our ignorance about what we don't know.

### *C. The Firm, Austrian Economics, and the Modern Economics of Organization*

Let me begin by tackling a seeming paradox. Market process economics is normally taken to be first and foremost a theory of the *market* process. In contrast, market process economics is not seen as containing a theory of the firm, and one seeks in vain for any details about firm organization in at least the corpus of Austrian literature (although there is more on the firm in such works as Nelson and Winter 1982 and Loasby 1991).<sup>5</sup> However, the claims presented and defended here are 1) that market process economics represents a powerful critique of the modern economics of organization, and 2) that it contains a number of distinct insights in economic organization. Thus, I shall argue that it is in fact possible and fruitful to apply ideas developed in the context of furthering the theory of markets to the theory of the firm.

Let us begin by considering point 1); the other point will be treated in the next section. On the overall level, the Austrian challenge consists in posing the question, How does order arise in an economy in which there is an extensive division of knowledge, and in which novelties can be expected to emerge – *and* where we cannot rely on such constructs as the Walrasian auctioneer, common knowledge assumptions or “rational expectations” to do the job? Applied to

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<sup>5</sup> For discussions of the reasons for this neglect, see Foss (1994, 1997).

firms, the radical subjectivist challenge may be rephrased thus: How is rational firm organization possible when we cannot simply assume from the outset that

- all contracting action can be compressed into one initial grand contract, as in the principal/agent paradigm – because of the occurrence of novelties;
- principals know all the possible actions that are open to agents – because of the division of knowledge;
- agents, for example, division managers in a firm, hold the same cognitive constructs – because of different subjective perceptions of reality;
- decision rights are efficiently assigned – because entrepreneurial activity may discover better assignments;
- agents can perform dynamic programming and perfectly foresee their pay-offs (or at least the distribution thereof) (Kreps 1996) – because of the occurrence of novelties;
- etc.,

but must think of these as either non-permissible abstractions (e.g., the complete contracting assumption) or as *explananda* rather than data (the efficient assignment of decision rights).

In short, the Austrian challenge consists in portraying coordination problems as a good deal more complicated and messy than they are portrayed in the modern economics of organization. In the latter, there has been a clear tendency to focus on situations where everything is coordinated, but for a single variable or relation. For example, in the canonic principal-agent set-up, the principal knows the range of courses that are open to the agent, his preferences and the probabilities distribution of the stochastic variable that impinges on the agent's output. His only problem is that he cannot observe the agent's effort. However, he is able to design a second-best incentive scheme (at no contracting cost). In this set-up, and in virtually all other organizational economics models, any process of entrepreneurial

discovery is completely suppressed by assumption. Knowledge is not truly dispersed.

## **IV. Organizing Discovery Processes: A Market Process Perspective on Firms**

In this section, I briefly explore the constructive implications for the theory of the firm of adopting a market process view.

### *A. Dispersed Knowledge and Economic Organization: General*

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.<sup>6</sup> They are set in motion, as it were, by conscious intention rather than by spontaneous forces. Nevertheless, firms of even a moderate size confronts a Hayekian knowledge problem, which is bound to produce outcomes that are, at least to some extent, unanticipated and unintended to (top-)management. If management is unable to centralize all dispersed and tacit knowledge possessed by the employees, an implication will be that they will in general have a more fine-grained understanding of their environments than their bosses. In addition, they are likely to also know more about the realizations of their action sets (Minkler 1993). As Sautet (1998) points out, management confronts a “double Hayekian knowledge problem”: it is not just that it doesn’t know what it doesn’t know in the *market*; it is also the case that it doesn’t know what it doesn’t know about the firm’s *employees*.

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<sup>6</sup> Indeed, Vanberg (1994) talks in this connection of the firm’s “constitution”.

These are implications of the division of knowledge that are not treated in the modern economic of organization, for the obvious reason that they mean the introduction of phenomena that are hard to handle in formal terms, notably unexpected events (the agent may choose an action that the principal does not know), learning (the agent may expand his action set in ways that are not foreseen or even understood by the principal) and diverging “theories” (the principal and the agent may have different views of relevant causal relations).

The practical implication is that because an employee has finer and wider knowledge of the realization of his action set than his boss, he may arrive at different conclusions as to how certain events that are relevant to the firm should be handled and what their consequences may be. There is, therefore, a powerful argument that the agent should possess extensive decision rights so that he is actually enabled to exercise his entrepreneurial alertness. Of course, this insight lies behind the contemporary emphasis on quasi-autonomous teams (Semler 1989; Meyer 1994).

### *B. Planning*

Taken to their logical extremes, both popular management thinking on teams and an extreme emphasis on local knowledge may seem to lead to a denial of the need for firms, for they both seem to be simply contractual institutions for the efficient exploitation of dispersed knowledge. There is no real difference between them, a view often associated with the so-called “nexus of contracts view” in the contemporary theory of the firm (Cheung 1983).

It is true that it is indeed hard to find a sharp dividing line between firms and markets, in principle as well as in practice. However, there are nevertheless things that real-life firms can do that real-life markets seldom are capable of, and *vice*

*versa*. For example, real-life firms can combine strong decentralization with planning and hierarchy (as the case of Asea-Brown-Boveri confirms). The fact that we cannot have detailed top-down planning that mobilizes and incorporates all dispersed and tacit firm does not mean that we cannot have some sort of planning.

Most large-scale firms 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 and tacit knowledge can be mobilized, a regular strategic planning exercise does 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). This knowledge may be used for the purpose of transferring superior practices to other parts of the organization.<sup>7</sup> Thus, it is suggested here that such a directed planning exercise is something that *markets* cannot do, but firms can.

### *C. Leadership and Management*

Planning, however, is sometimes no more than defining and having a policy to emergent events. In such cases, “leadership” may be a better word. In an Austrian world, adapting to emergent events is a key problem and while markets have sometimes been argued to accomplish such adaptation in a superior way (relative to central planning) (Hayek 1945), we should recognize that firms may sometimes beat the market here (cf. also Kreps 1990). However, first we have to tackle the problem of how one can one speak of a “policy to emergent events”; isn’t this a contradiction in terms, for the simple reason that what is unanticipated cannot be planned for?

As the Austrian economists, O’Driscoll and Rizzo (1985) point out, this is not necessarily the case. Referring to the work of philosopher-sociologist, Alfred

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<sup>7</sup> In fact, there is a strong argument that it is precisely the ability to transfer at low cost successful practices that gives multinational firms a competitive edge not only over domestic firms but also over the market (Bartlett and Ghoshal 1989).

Schütz, they point out that events have “typical” and “unique” features (Langlois 1986: 182). Typification is an aspect of the way in which agents (including firms) perceive their environment. Typical features are those elements of the environment that are stable, while the unique features are non-repeatable and idiosyncratic. While we can often clearly foresee typical features, we often have to let time pass before we can fill in the unique features. It is the mix of typicality and uniqueness in most actual events that makes it possible, after all, to have a “policy to emergent events”.

However, the mix of typical and unique features in actual (emergent) events also means that coordination problems are typically *hierarchical*. As Calvert (1992: 12) points out, the ongoing interactions of real life, for example, inside large firms, are not simple repeated games. There is unlikely to be an exact correspondence between players, strategies and outcomes in various “repetitions” of “the game”. Instead, there is a Hayekian division of knowledge, implying that players are likely to have incomplete information about other players, previous plays, etc. In this situation, there is likely to be multiple equilibria, but, unfortunately, behavior that is appropriate for play in one equilibrium may be inappropriate for another equilibrium; equilibrium strategies are not interchangeable. The problem of selecting the right equilibrium is clearly a higher-order coordination problem.

Thus, one may think of the act of choosing which coordination game to play, of making sense out of new events (and communicating this), etc. as more fundamental than the problem of inducing agents to make specific actions within an already well-understood decision situation. The higher in the hierarchy a coordination problem is placed, the more abstract the solutions(s) are likely to be. we may think *management* in an Austrian perspective as consisting of solving (or helping to solve) “lower-level” coordination problems, while *planning* (or leadership) is the higher-level activity of selecting “precedents” or “focal points” that may assist in management as well as in judgment exercised on the shop floor. Relative to the market, the firm may have an advantage, because it can use the mechanisms of planning and leadership to reduce the severity of coordination

problems: whereas in market interactions, agents may have to home in on a coordinated state through trial and error, *fiat* may sometimes be a low cost mechanism for finding the right equilibrium.<sup>8</sup>

#### *D. The Boundaries of the Firm*

Seemingly, this idea runs counter to the main message of the socialist calculation debate that decentralized market processes are more likely to find efficient solutions than centralized schemes are capable of. But this is not necessarily so. It is more correct to say that the presence of dispersed knowledge is a constraint on the efficiency of planning. Planning isn't always inefficient, but it has its limits.

Applied to firms, this means that the dispersion of knowledge acts as a constraint on the size and the boundaries of the firm, although it is almost completely neglected in contemporary theorizing on the firm. One reason why the dispersion of knowledge matters is that dispersed knowledge means *different* knowledge, and (very) different knowledge is not easily managed in the same organization, as Richardson (1972) pointed out more than twenty-five years ago. While a mainstream perspective cannot easily handle this insight,<sup>9</sup> it goes naturally with an Austrian subjectivist perspective.

On the other hand, firms can alleviate the knowledge problems they face by means of organizational innovations. As I discuss in the next sub-section, the M-form was one such innovation. One, more contemporary, organizational innovation that help to reduce firms' knowledge problems may be the increasing use that large corporations are making of internal disaggregation, that is, making the corporation consist to a larger extent of smaller, more autonomous units that are treated more like external subcontractors. While this

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<sup>8</sup> For a transaction cost approach to this, see Kirsten Foss (1998).

<sup>9</sup> For example, Hart (1995) argues that strongly complementary assets should always be managed in the same organization – a proposition that clearly may not hold if the assets in question are strongly “dissimilar” in Richardson’s (1972) terminology.

organizational innovation clearly has the effect of mimicking market (high-powered) incentives, it has also has more knowledge-related beneficial effects. It is simply easier to observe and reward agents in a small-scale setting, because knowledge problems are less severe. Moreover, the increasing use of the price mechanism that internal disaggregation implies is not only a matter of exploiting the high-powered incentives of this mechanism, but also of making use of a mechanism than in large scale systems may be a more efficient mechanism for conveying knowledge than planning and direction.

### *E. The Diversified Firm*

To repeat, the modern economics of organization almost exclusively focuses on what I have called “incentive coordination”. This also goes for the analysis of internal organization such as what has become known as the “M-form”. Here, analysis is cast almost entirely in terms of reducing incentive conflicts, that is, choosing the right profit and cost centers, and constraining rent-seeking efforts on the part of hierarchical subordinates (Williamson 1985; Milgrom 1988). However, another, Austrian-style, interpretation is possible (Foss 1997; Sautet 1998).

In an Austrian story the advantages of the M-form may have more to do with the knowledge-related advantages of increasing the internal division of labour. It is not only that some organizational arrangements may lead to a better use of dispersed knowledge than others. It is also that the division of labour promotes the growth of knowledge (Loasby 1994), and some divisions of labour can only be achieved by certain organizational arrangements. For example, the M-form frees top-management of daily operational control, so that they become more able to specialize in the sort of overall, strategic judgment that both Frank Knight (1921) and Edith Penrose (1959) in different ways highlighted in their theories of the firm. In other words, the M-form may promote a growth of knowledge that simply couldn't take place under other organizational arrangements, such as the U-form. Organizational structures

thus both constrain and enable processes of entrepreneurial discovery. In doing this they may lead to the creation of different real options.

### *F. Real Options and Economic Organization*

The notion from market process economics that markets are “discovery procedures” means that they mobilize a beneficial entrepreneurial discovery process. And one, broadly Schumpeterian, interpretation of this is that markets are successful arenas for social experimentation with products, processes, types of organization, etc. (Rosenberg 1994). Social experimentation, in turn, is facilitated by flexibility: it is because of the flexibility afforded by freedom of contract and alienable property rights that inherently uncertain commercial experiments can be (comparatively) quickly and efficiently set up and tested.

However, both markets *and* firms may be seen as embodiments of flexibility and therefore possible arenas for commercial experimentation. In fact, as Coase (1937) stressed, and as modern writers have argued in more detail (Loasby 1994; Langlois and Robertson 1995; Williamson 1996; Foss 1996; Kirsten Foss 1998), one of the primary advantages of an entity consisting of incomplete contracts and authority relations is precisely the superior flexibility that this arrangement may confer. Here is a problem, for if both firms and markets (and intermediate forms) are seen as instruments of adaptation and flexibility, it is hard to use these notions to discriminate between them.

However, one *possible* way of conceptualizing the market process theory notion that firms and markets may embody flexibility is to say that they both have *option value* in an uncertain world, in the sense of, for example, Dixit and Pindyck (1994). In other words, firms and markets may (also) be seen as portfolios of real options. For example, as Ron Sanchez (1993) points out, firms may be flexible in terms of, for example, *which products* they wish to produce, *when* they will produce (and develop and market) these products, and *how* the

production (and sale and marketing and development) of the products should be *organized*. Such options are to a large extent the result of the imagination of the management team. For example, what Penrose (1959) calls the firm's "productive opportunity set" – which encompasses all of the opportunities that the firm's management can see and can (but doesn't have to) take advantage of – clearly constitutes a set of real (product) options. Therefore, real options are products of entrepreneurial imagination, but they can, in principle, be valued using the same tools that have been developed in the context of financial options. A rational options strategy – that is, a set of decisions relating to which options to invest in – does indeed require a vision of possible futures, an idea of "the imagined deemed possible" (Shackle 1972).

The interesting thing about real options theory in the present context is that it provides one possible bridge between market process economics and economic organization. Here, a possible starting point is supplied by Loasby's (1994) suggestion that we should look upon ongoing (and well-developed) markets as embodying options for future contracts, an idea that clearly dovetails with the Austrian emphasis on the flexibility of the market (Hayek 1945, 1946). Translated into the terminology used here, an ongoing, well-developed market provide *options to wait* and *options to abandon* to firms: they allow firms to defer the acquisition of inputs and make it contingent on an actual, future need, and they allow firms to get rid of unconsumed inputs (Sanchez 1993: 272). Likewise, participating in networks and other sorts of interfirm arrangements may increase the number of real options available to firms, for example, by providing better access to other firms' capabilities (thus allowing the firm to extend its technological capabilities and generate more product options), to "thin" input markets, and to the collective capabilities of the network. Thus, these institutions constitute part of the enabling context of entrepreneurship: they are largely makes "the imagined" possible.

The other side of the coin is, of course, that internalization forfeits the option to wait to acquire inputs; it cuts off the firm from a contingent deferral

of the commitment to incur the cost of inputs. From this perspective alone, firms should internalize only a few inputs that are exceptionally difficult to obtain through markets or networks and are capable of generating superior options values for the firm (Sanchez 1993). This is in line with standard organizational economics (e.g., Williamson 1996) in which vertical integration is also seen as an option of last resort.

On the other hand, we cannot condemn vertical integration *en bloc* for it may have other advantages that only become clear in an options perspective. For example, vertical integration may help firms reduce costs of production. But reducing costs of production means that *experimenting* in the market place with different product varieties becomes less expensive; that is, vertical integration may actually help testing various product options.<sup>10</sup> Similarly, diversification can be rationalized in terms of its lowering costs of production because of economies of scope and therefore also making experimentation with new products relatively cheaper.

These examples show two things. First, there is intertemporal complementarity – a favorite Austrian theme (Lachmann 1986) – between options and decisions: a decision to integrate influences positively a later decision to experiment with products in the market place, and *vice versa*. This implies that we can also in this way find a room for *learning* in the theory of the firm, since learning (from experimenting) is dependent on economic organization.

Second, the choice between alternative types of economic organization – that is, whether to integrate or not – will depend on an estimate of the value of experimenting with products in the market place, that is, on the estimated value of learning. However, as Lachmann points out, “the future is unknowable, though not unimaginable. Future knowledge cannot be had now, but

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<sup>10</sup> Relatedly, setting up a controlled experiment may be more difficult across boundaries of firms and in particular if interdependencies exist between many different firms (Kirsten Foss 1998). Thus, vertical integration may be undertaken in order to economize with the costs of carrying out experimental activity.

it can cast its shadow ahead. In each mind, however, the shadow assumes a different shape, hence the divergence of expectations” (Lachmann, 1976: 59). Therefore, what is for the firm the efficient proportion between market and hierarchy depends on a vision of possible futures, including a vision of which products the firm can produce in the future, which inputs are necessary for producing these products, and an estimate of whether input markets can be expected to be well-behaved or not (Sanchez 1993: 276). Such a vision may very well turn out to be wrong. Thus, we can find a room for error and indeed for an ongoing market process in our story. The theory of the firm and market process economics join hands in this way, too.

## **V. Conclusion**

A common charge against market process economics is that it is barren and destructive rather than constructive. Market process theorists spend their criticizing the mainstream but does not contribute much themselves. The message of this paper is that although this view may historically have some truth to it (Foss 1994b: chapter 10), it need not be so: market process theories contain a number of useful ideas that can further the understanding of economic organization, and do so in ways that are rather different from those of the modern economics of organization.

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