

Austrian economics and the transaction cost approach to the firm

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As the transaction cost theory of the firm was taking shape in the 1970s, another important movement in economics was emerging: a revival of the ‘Austrian’ tradition in economic theory associated with such economists as Ludwig von Mises and F. A. Hayek (1973; Dolan, 1976; Spadaro, 1978). As Oliver Williamson has pointed out, Austrian economics is among the diverse sources for transaction cost economics. In particular, Williamson frequently cites Hayek (e.g., Williamson, 1985, p. 8; 1991, p. 162), particularly Hayek’s emphasis on adaptation as a key problem of economic organisation (Hayek, 1945). Following Williamson’s lead, a reference to Hayek’s ‘The Use of Knowledge in Society’ (Hayek, 1945) has become almost mandatory in discussions of economic organisation (e.g., Ricketts, 1987, p. 59; Milgrom and Roberts, 1992, p. 56; Douma and Schreuder 1991, p. 9). However, there are many other potential links between Austrian and transaction cost economics that have not been explored closely and exploited.

This chapter argues that characteristically Austrian ideas about property, entrepreneurship, economic calculation, tacit knowledge, and the temporal structure of capital have important implications for theories of economic organisation, transaction cost economics in particular. Austrian economists have not, however, devoted substantial attention to the theory of the firm, preferring to focus on business-cycle theory, welfare economics, political economy, comparative economic systems, and other areas. Until recently the theory of the firm was an almost completely neglected area in Austrian economics, but over the last decade, a small Austrian literature on the firm has emerged.¹ While these works cover a wide variety of theoretical and applied topics, their authors share the view that Austrian insights have something to offer students of firm organisation.

The Austrian school of economics

The Austrian school was born with the publication of Viennese professor Carl Menger’s *Grundsätze der Volkswirtschaftslehre* (Menger, 1871) in 1871, making the Austrian school one of the three great ‘marginalist’ traditions (along with the approaches of William Stanley Jevons and

Léon Walras). Menger offered a unique account of the pricing process, the structure of capital, and the causes of economic fluctuations, along with an emphasis on explaining institutions, that differed substantially from the Marshallian, Walrasian, and Keynesian approaches that came to dominate the economics profession. Like Jevons and Walras, Menger emphasised subjectively held consumer wants as the source of economic value (as opposed to the classical view that production costs determined value). Unlike the neoclassical approach, however, Menger's approach to economics was causal and realistic, seeking to explain real-world prices and institutions in terms of the subjective values, plans, and actions of market participants.

The Austrian school rose to prominence in the late nineteenth and early twentieth centuries in Europe and the US under the influence of Menger, Eugen von Böhm-Bawerk, Frank A. Fetter, Herbert J. Davenport, Philip Wicksteed, Mises, Lionel Robbins, and Hayek, but fell into obscurity by the end of the 1930s. Important contributions to the Austrian tradition were added later by Mises (1949), Rothbard (1956, 1962, 1963a, 1963b), Kirzner (1966, 1973), and Lachmann (1956), but at least publicly, the Austrian tradition lay dormant. When the 1974 Nobel Prize in economics went to Hayek, interest in the Austrian school was suddenly and unexpectedly revived. Already that year an 'Austrian revival' was underway, led by students and followers of Rothbard and Kirzner (Dolan, 1976; Vaughn 1994; Salerno, 2002). Since then, the modern Austrian school has become an important 'heterodox' tradition within the milieu of contemporary economics, now featuring its own academic journals, professional societies, graduate programs, and sponsoring organisations.

Throughout its history, the Austrian school has developed many of its key ideas as alternatives to other, more dominant perspectives. Menger's subjectivist, marginalist approach challenged the classical theory of value, and Menger later engaged the German Historical School in a lengthy debate on the proper scope and method of economics. Mises refined his views on monetary calculation during the socialist calculation debate, and Hayek developed and extended his and Mises's theory of business cycles in the course of several encounters with Keynes. Similarly, the Austrian literature on the firm challenges important aspects of other, more popular perspectives on economic organisation, entrepreneurship, and strategic management.

The Austrians as precursors to transaction cost economics

While the Austrians until recently had little to say about the theory of the firm per se, problems of economic organisation and its institutional embodiment have always occupied centre stage within the Austrian tradition. This includes, most obviously, issues in comparative systems such as the socialist calculation debate (e.g., Mises 1920, 1936; Hayek, 1935, 1945; Lavoie 1985). Indeed, it is surprising that the Austrians had so many necessary ingredients for a theory of the firm and yet it was left to non-Austrian Ronald Coase to frame and analyse the problem of the existence, boundaries, and internal organisation of the firm.

Kinds of orders

Perhaps the most pertinent overall distinctions to be made in a discussion of economic organisation are the ones between ‘pragmatic’ and ‘organic’ institutions (Menger 1883) or ‘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 aims primarily to explain the different ways institutions arise, not how they are preserved, or their principles of operation once established. Hayek’s (1973) distinction between planned and spontaneous orders supplements Menger’s discussion in this regard, because his distinction is based on the different organising rules these orders comprise. The rules supporting spontaneous order are abstract, purpose-independent, and general, while the rules (or commands) supporting a planned order are designed and specific in nature. Although Hayek tends to distinguish sharply not only between spontaneous and planned orders, but also between the relevant rules that direct them – *nomos* and *thesis*, respectively – precise distinctions are difficult to draw: spontaneous orders may be more or less general, planned orders may comprise elements of spontaneous orders, etc. Obviously, the overall distinction between planned and spontaneous orders closely parallels that between ‘markets and hierarchies’ (Williamson, 1975), or ‘spontaneous’ and ‘intentional governance’ (Williamson, 1991).

The socialist calculation debate

Of course, the interwar debate on the economic efficiency of socialism is a prime example of contrasting ‘spontaneous’ and ‘intentional’ modes of governance, albeit on an economy-wide

level. However, the debate yielded numerous insights that have been important to later developments in the theory of economic organisation, including transaction cost economics, such as (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 organisation; (3) the understanding that an economic organisation 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 (see Foss, 1994). Thus, it is apparent already from Mises's (1920) opening salvo in the debate that what really irritated the Austrians was their socialist opponents' use of unrealistic and unattainable standards of comparison. Naturally, on such standards, capitalism would appear inefficient and wasteful. To the Austrians, socialist economists (including the proponents of market socialism) neglected the role of incentives (Mises 1936; Hayek 1940); made unrealistic assumptions about the amounts of knowledge that agents can possess (particularly the planning authorities); and formulated their reasoning within static models that obscured all significant economic problems. 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 added that 'economic problems arise always and only in consequence of change' (1945, p. 82). In Salerno's (1994, p. 121) words, Mises 'makes it crystal clear that the static prices mathematically imputed from perfect knowledge of the economic data would not lead to a dynamically efficient allocation of resources. The latter can only be achieved by the entrepreneurially appraised prices that are generated by the historical market process.'

One way to interpret this Austrian insight is that absent change there are no transaction and information costs; that is, in the absence of the knowledge and appraisal problems introduced by economic change there would be no costs of identifying contractual partners, drafting and executing contracts, monitoring production, constructing contractual safeguards, judging quality, and so on. In the absence of transaction costs the choice between price-mediated market transactions and firm hierarchies is indeterminate. This indicates a link between Austrian insights in the calculation debate and Coasian insights in economic organisation, though these links were not recognised either by the Austrians or by Coase, probably because they were focusing on different institutions: When 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. Instead, however, it is only in the kind of dynamic economic reality visualised by the Austrians that Coase’s argument acquires its full force.

Incentives and property rights

One of the rapidly expanding areas in the theory of economic organisation is principal-agent theory. The Austrians made several arguments that in important ways anticipate this theory. They pointed to agency problems under socialism such as risk allocation (e.g., Hayek 1940). Under socialism, they noted, 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). Moreover, the Austrians pointed out that socialist economic organisation would encourage rent seeking (Mises 1936, 1944, 1949).

A primary virtue of a market system organised on the basis of private ownership, as Mises saw it, is the strong mitigation of 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 centralisation 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 1944, p. 47). Breaking the corporation into separate profit centres is the way that top management monitors subordinate managers. Anticipating Fama (1980), Mises (1944, pp. 42-47) points to career concerns as important forces mitigating manager shirking. To be sure, both principal-agent theory and the specific Austrian incentive arguments in the calculation debate rest on more general property-rights 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.

While Austrian thinking about the economic function of property rights begins with Menger (e.g., 1871, p. 97, 100), the most advanced Austrian thinking on the matter is represented by Mises’s work. For example, Mises (1936, p. 182) clearly explains that property rights are composite rights, and he argues that well-defined residual-income rights are crucial to the

efficient working of the economy. A central reason 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. Where Mises perhaps most explicitly anticipates modern developments, specifically work on the market for corporate control, is where he describes the critical role of capital markets for the efficient functioning of the economy. Securities markets facilitate the most important kind of economic calculation in a dynamic economy through ‘dissolving, extending, transforming, and limiting existing undertakings, and establishing new undertakings’ (1936, p. 215).²

Capital theory and business cycle theory

Capital and business-cycle theory seem less-closely connected to the theory of economic organisation. However, they supply the last component in the set of concepts needed to make a coherent statement about economic organisation in general and the firm in particular. The relevant component is the intertemporal structure of production highlighted in Austrian capital and business-cycle theory (e.g., Hayek, 1931, 1941; Lachmann, 1956). To the Austrians, the economy’s production process represents a series of stages of production, each of which bears a temporal relationship to final consumption (Menger, 1871; Hayek, 1931, 1941; Lachmann, 1956). In other words, there are important *complementarities* among production processes. Moreover, credit expansion introduces maladjustments in the structure of production that have to be worked out over time (Hayek, 1931), which means that some resources or activities are specific to each other and to particular production processes (see also Lachmann, 1956). These relationships can only be understood fully in a framework that emphasises the time structure of production, like Austrian capital and business-cycle theory (*ibid.*); they are obscured in the usual production-function view of economic activity in which capital is homogeneous and production is timeless. Vertical integration is also much easier to portray and comprehend in a sequential framework than the atemporal framework of neoclassical microeconomics. As recent work in the theory of the firm has demonstrated, notions of complementarity and specificity are needed to tell a coherent story about the firm (Hart, 1995; Williamson, 1996).

Austrian economics and the contractual perspective on the firm

There is some debate within the Austrian literature about the basic Coasian approach and its compatibility with the Austrian perspective. O'Driscoll and Rizzo (1985, p. 124), while acknowledging Coase's approach as an 'excellent static conceptualization of the problem,' argue that a more evolutionary framework is needed to understand how firms respond to change. Some Austrian economists have suggested that the Coasian framework may be too narrow, too squarely in the general-equilibrium tradition to deal adequately with Austrian concerns (Boudreaux and Holcombe, 1989; Langlois, 1994). However, as Foss (1993) has pointed out, there are 'two Coasian traditions.' One tradition, the moral-hazard or agency-theoretic branch associated with Alchian and Demsetz (1972), studies the design of ex ante mechanisms to limit shirking when supervision is costly. Here the emphasis is on monitoring and incentives in an (exogenously determined) agency relationship. The above criticisms may apply to this branch of the modern literature, but they do not apply to the other tradition, the governance or asset-specificity branch, especially in Williamson's more heterodox formulation. Williamson's transaction cost framework incorporates non-maximising behaviour (bounded rationality); true, 'structural' uncertainty or genuine surprise (complete contracts are held not to be feasible, meaning that all ex post contingencies cannot be contracted upon ex ante); and process or adaptation over time (trading relationships develop over time, typically undergoing a 'fundamental transformation' that changes the terms of trade). In short, 'at least some modern theories of the firm do not at all presuppose the 'closed' economic universe – with all relevant inputs and outputs being given, human action conceptualized as maximization, etc. – that [some critics] claim are underneath the contemporary theory of the firm' (Foss, 1993, p. 274). Stated differently, one can adopt an essentially Coasian perspective without abandoning the Misesian view of the entrepreneur as an uncertainty-bearing, innovating decision maker.³

Economic calculation and the limits to the firm

One approach to developing a uniquely 'Austrian' approach to the firm is to start with the basic contractual approach, and the Coasian *explananda* of the firm's existence, boundaries, and internal organisation, and add concepts of entrepreneurship, economic calculation, the time-structure of production, and other elements of the Austrian tradition. For example, the limits to firm size can be understood as a special case of the arguments offered by Mises (1920) and

Hayek (1937, 1945) about the impossibility of rational economic planning under socialism (Klein, 1996). Kirzner (1992, p. 162) adopts this approach in interpreting the costs of internal organisation in terms of Hayek's knowledge problem: 'In a free market, any advantages that may be derived from 'central planning' . . . are purchased at the price of an enhanced knowledge problem. We may expect firms to spontaneously expand to the point where additional advantages of "central" planning are just offset by the incremental knowledge difficulties that stem from dispersed information.'

What, precisely, drives this knowledge problem? The mainstream literature on the firm focuses mostly on the costs of market exchange, and much less on the costs of governing internal exchange. The new research has yet to produce a fully satisfactory explanation of the limits to firm size (Williamson, 1985, chapter 6). Existing contractual explanations rely on problems of authority and responsibility (Arrow, 1974); incentive distortions caused by residual ownership rights (Grossman and Hart, 1986; Holmström and Tirole, 1989; Hart and Moore, 1990); and the costs of attempting to reproduce market governance features within the firm (Williamson, 1985, chapter 6). Rothbard (1962, pp. 544–50) offers an explanation for the firm's vertical boundaries based on Mises's claim that economic calculation under socialism is impossible. Rothbard argues that the need for monetary calculation in terms of actual prices not only explains the failures of central planning under socialism, but places an upper bound on firm size.

Rothbard's account begins with the recognition that Mises's position on socialist economic calculation, as noted above, is not about socialism per se, but the role of prices for capital goods. Entrepreneurs allocate resources based on their expectations about future prices, and the information contained in present prices. To make profits, they need information about all prices, not only the prices of consumer goods but the prices of factors of production. Without markets for capital goods, these goods can have no prices, and hence entrepreneurs cannot make judgments about the relative scarcities of these factors. In any environment, then – socialist or not – where a factor of production has no market price, a potential user of that factor will be unable to make rational decisions about its use. Stated this way, Mises's claim is simply that efficient resource allocation in a market economy requires well-functioning asset markets. To have such markets, factors of production must be privately owned.

Rothbard's contribution is to generalise Mises's analysis of this problem under socialism to the context of vertical integration and the size of the organisation. Rothbard writes in *Man, Economy, and State* that up to a point, the size of the firm is determined by costs, as in the textbook model. However, 'the ultimate limits are set on the relative size of the firm by the necessity for *markets* to exist in every factor, in order to make it possible for the firm to calculate its profits and losses' (Rothbard, 1962, p. 536). This argument hinges on the notion of 'implicit costs.' The market value of opportunity costs for factor services – what Rothbard calls 'estimates of implicit incomes' – can be determined only if there are external markets for those factors (pp. 542–44). For example, if an entrepreneur hires himself to manage the business, the opportunity cost of his labour must be included in the firm's costs. Yet without an actual market for the entrepreneur's managerial services, he cannot know his opportunity cost; his balance sheets will therefore be less accurate than they would if he could measure his opportunity cost.

The same problem affects a firm owning multiple stages of production. A large, integrated firm is typically organised into semi-autonomous profit centres, each specialising in a particular final or intermediate product. The central management of the firm uses the implicit incomes of the business units, as reflected in statements of divisional profit and loss, to allocate physical and financial capital across the divisions. To compute divisional profits and losses, the firm needs an economically meaningful transfer price for all internally transferred goods and services. If there is an external market for the component, the firm can use that market price as the transfer price. Without a market price, however, the transfer price must be estimated, either on a cost-plus basis or by bargaining between the buying and selling divisions; such estimated transfer prices contain less information than actual market prices.

The use of internally traded intermediate goods for which no external market reference is available thus introduces distortions that reduce organisational efficiency. This gives us the element missing from contemporary theories of economic organisation, an upper bound: the firm is constrained by the need for external markets for all internally traded goods. In other words, no firm can become so large that it is both the unique producer and user of an intermediate product; for then no market-based transfer prices will be available, and the firm will be unable to calculate divisional profit and loss and therefore unable to allocate resources correctly between divisions.⁴ Of course, internal organisation does avoid the holdup problem, which the firm would face if

there were a unique outside supplier; conceivably, this benefit could outweigh the increase in ‘incalculability’ (Rothbard, 1962, p. 548).

Like Kirzner (1992), Rothbard viewed his contribution as consistent with the basic Coasian framework. In a later elaboration of this argument (Rothbard, 1976, p. 76), he states that his own treatment of the limits of the firm:

serves to extend the notable analysis of Professor Coase on the market determinants of the size of the firm, or the relative extent of corporate planning within the firm as against the use of exchange and the price mechanism. Coase pointed out that there are diminishing benefits and increasing costs to each of these two alternatives, resulting, as he put it, in an “‘optimum’” amount of planning’ in the free market system. Our thesis adds that the costs of internal corporate planning become prohibitive as soon as markets for capital goods begin to disappear, so that the free-market optimum will always stop well short not only of One Big Firm throughout the world market but also of any disappearance of specific markets and hence of economic calculation in that product or resource (Rothbard, 1976, p. 76).

‘Central planning’ within the firm, then, is possible only when the firm exists within a larger market setting. Ironically, the only reason the Soviet Union and the communist nations of Eastern Europe could exist at all is that they never fully succeeded in establishing socialism worldwide, so they could use world market prices to establish implicit prices for the goods they bought and sold internally (Rothbard, 1991, pp. 73–74).

Entrepreneurship and Austrian capital theory

The close relationship between the Misesian concept of entrepreneurship as action under uncertainty and the ownership and control of resources suggests a bridge between entrepreneurship and the mundane activities of establishing and maintaining a business enterprise. Foss and Klein (2005) and Foss, Foss, Klein, and Klein (2007) offer an entrepreneurial theory of the economic organisation that combines the Knight-Mises concept of entrepreneurship as ‘judgment’ and the Austrian approach to capital heterogeneity. In Knight’s formulation, entrepreneurship represents judgment under ‘true’ uncertainty that cannot be assessed in terms of its marginal product and which cannot, accordingly, be paid a wage (Knight 1921, p. 311). In other words, there is no market for the judgment that entrepreneurs rely on, and therefore exercising judgment requires the person with judgment to start a firm. As Mises (1949,

p. 585) puts it, ‘the real entrepreneur is a speculator, a man eager to utilize his opinion about the future structure of the market for business operations promising profits. This specific anticipative understanding of the conditions of the uncertain future defies any rules and systematization.’

Of course, judgmental decision makers can hire consultants, forecasters, technical experts, and so on. However, in doing so they are exercising their own entrepreneurial judgment. Judgment thus implies asset ownership, for judgmental decision-making is ultimately decision-making about the employment of resources. The entrepreneur’s role, then, is to arrange or organise the capital goods he owns. As Lachmann (1956, p. 16) puts it: ‘We are living in a world of unexpected change; hence capital combinations . . . will be ever changing, will be dissolved and reformed. In this activity, we find the real function of the entrepreneur.’

Austrian capital theory provides a unique foundation for an entrepreneurial theory of economic organisation. Neoclassical production theory, with its notion of capital as a permanent, homogeneous fund of value, rather than a discrete stock of heterogeneous capital goods, is of little help here. Transaction cost, resource-based, and property-rights approaches to the firm do incorporate notions of heterogeneous assets, but they tend to invoke the needed specificities in an ad hoc fashion to rationalise particular trading problems – for transaction cost economics, asset specificity; for capabilities theories, tacit knowledge; and so on. The Austrian approach, starting with Menger’s (1871) concepts of higher- and lower-order goods and extending through Böhm-Bawerk’s (1889) notion of roundaboutness, Lachmann’s (1956) theory of multiple specificities, and Kirzner’s (1966) formulation of capital structure in terms of subjective entrepreneurial plans, offers a solid foundation for a judgment-based theory of entrepreneurial action.

One way to operationalise the Austrian notion of heterogeneity is to incorporate Barzel’s (1997) idea that capital goods are distinguished by their *attributes*. Attributes are characteristics, functions, or possible uses of assets, as perceived by an entrepreneur. Assets are heterogeneous to the extent that they have different, and different levels of, valued attributes. Attributes may also vary over time, even for a particular asset. Given Knightian uncertainty, attributes do not exist objectively, but subjectively, the minds of profit-seeking entrepreneurs who put these assets to use in various lines of production. Consequently, attributes are manifested in production decisions and realised only ex post, after profits and losses materialise.

Entrepreneurs who seek to create or discover new attributes of capital assets will want ownership titles to the relevant assets, both for speculative reasons and for reasons of economising on transaction costs. These arguments provide room for entrepreneurship that goes beyond deploying a superior combination of capital assets with ‘given’ attributes, acquiring the relevant assets, and deploying these to producing for a market: Entrepreneurship may also be a matter of experimenting with capital assets in an attempt to discover new valued attributes.

Such experimental activity may take place in the context of trying out new combinations through the acquisition of or merger with another firms, or in the form of trying out new combinations of assets already under the control of the entrepreneur. The entrepreneur’s success in experimenting with assets in this manner depends not only on his ability to anticipate future prices and market conditions, but also on internal and external transaction costs, the entrepreneur’s control over the relevant assets, how much of the expected return from experimental activity he can hope to appropriate, and so on. Moreover, these latter factors are key determinants of economic organisation in modern theories of the firm, which suggests that there may be fruitful complementarities between the theory of economic organisation and Austrian theories of capital heterogeneity and entrepreneurship.

Foss, Foss, Klein, and Klein (2007) show how this approach provides new insights into the emergence, boundaries, and internal organisation of the firm. Firms exist not only to economise on transaction costs, but also as a means for the exercise of entrepreneurial judgment, and as a low-cost mechanism for entrepreneurs to experiment with various combinations of heterogeneous capital goods. Changes in firm boundaries can likewise be understood as the result of processes of entrepreneurial experimentation. And internal organisation can be interpreted as the means by which the entrepreneur delegates particular decision rights to subordinates who exercise a form of ‘derived’ judgment on his behalf (Foss, Foss, and Klein, 2007).

Witt (1998, 1999) offers another approach to combining an Austrian concept of entrepreneurship with the theory of the firm. Entrepreneurs require complementary factors of production, he argues, which are coordinated within the firm. For the firm to be successful, the entrepreneur must establish a tacit, shared framework of goals – what Casson (2000) calls a ‘mental model’ of reality – which governs the relationships among members of the

entrepreneur's team. As Langlois (1998) points out, it is often easier (less costly) for individuals to commit to a specific individual, the leader, rather than an abstract set of complex rules governing the firm's operations. The appropriate exercise of charismatic authority, then, facilitates coordination within organisations (Witt, 2003). This approach combines insights from economics, psychology, and sociology, and leans heavily on Max Weber. Leaders coordinate through effective communication, not only of explicit information, but also tacit knowledge – plans, rules, visions, and the like. The successful entrepreneur excels at communicating such models.

Here, as in Coase (1937), the employment relationship is central to the theory of the firm. The entrepreneur's primary task is to coordinate the human resources that make up the firm. Foss, Foss, Klein, and Klein (2007), by contrast, focus on alienable assets, as in Knight (1921). They define the firm as the entrepreneur plus the alienable resources the entrepreneur owns and thus controls. Each approach has strengths and weaknesses. The cognitive approach explains the dynamics among team members but not necessarily their contractual relationships. Must the charismatic leader necessarily own physical capital, or can he be an employee or independent contractor? Formulating a business plan, communicating a corporate culture, and the like are clearly important dimensions of business leadership. But are they attributes of the successful manager or the successful entrepreneur? Even if top-level managerial skill were the same as entrepreneurship, it is unclear why charismatic leadership should be regarded as more 'entrepreneurial' than other, comparatively mundane managerial tasks such as structuring incentives, limiting opportunism, administering rewards, and so on. On the other hand, the judgment approach does not generalise easily from the one-person firm to the multi-person firm.

Conclusion

Transaction cost economics, while firmly rooted in the neoclassical economics tradition, has always drawn upon a broad range of sources in law, organisation theory, economic sociology, political science, history, as well as a diverse set of economists from behavioural, 'old' institutional, and other 'heterodox' traditions. The Austrian school, while providing some direct influence mainly through Hayek, has not had as much influence as one might imagine, given the Austrians' rich heritage in the areas of property rights, knowledge, incentives, and institutions. This essay highlights some possible bridges between the Austrian and new institutional

literatures and points to the emerging Austrian literature on the theory of the firm. We expect this to be a growth area in the years to come.

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Notes

- ¹ Examples include Langlois (1992, 1995, 2002), Minkler (1993a, 1993b), Foss (1994, 1997, 1999, 2001), Klein (1996, 1999, 2008), Young, Smith, and Grimm (1996), Lewin (1998), Dulbecco and Garrouste (1999), Ionnanides (1999), Witt (1999), Yu (1999), Sautet (2000), Foss and Foss (2002a, 2000b), Lewin and Phelan (2000), Foss and Christensen (2001), Klein and Klein (2001), Foss and Klein (2002), Foss, Foss, Klein, and Klein (2002), Adelstein (2005), Ng (2005), Foss, Foss, and Klein (2007), Pongracic (2009), and Walsh (2009).
- 2 See also Klein (1999).
- 3 Foss and Foss (2000) argue, more generally, that contractual and knowledge-based theories of the firm are fundamentally complements, not rivals. For more on the Misesian theory of the entrepreneur see Foss, Foss, Klein, and Klein (2007), Klein (2008), and Salerno (2008).
- 4 Note that in general, Rothbard is making a claim only about the upper bound of the firm, not the incremental cost of expanding the firm's activities (as long as external market references are available). As soon as the firm expands to the point where at least one external market has disappeared, however, the calculation problem exists. The difficulties become worse as more and more external markets disappear, as 'islands of noncalculable chaos swell to the proportions of masses and continents. As the area of incalculability increases, the degrees of irrationality, misallocation, loss, impoverishment, etc., become greater' (Rothbard, 1962, p. 548).