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Abstract

This essay addresses the role of transaction cost economics (TCE) in advancing the resource-based view. In particular, it is argued that TCE has the potential to remedy a number of weak spots in the RBV, such as the absence of attention in the RBV to the interaction between value creation and value appropriation. This and other weak spots in the RBV stem from not taking account of transaction costs to a sufficient extent. Integrating TCE with the RBV adds new insight into the analysis of sustained competitive advantage.

Keywords

The resource-based view, transaction cost economics, sustained competitive advantage.

I. Introduction

For a long time, the strategic management field was fairly sympathetic to work in economics on transaction costs and their role in structuring economic organization.¹ At least until the mid-1990s, many accepted that “[w]ithin strategic management, transaction cost economics is the ground where economic thinking, strategy, and organizational theory meet” (Rumelt, Schendel and Teece 1994: 28). In particular, the work of Oliver Williamson (Williamson 1975, 1985) was heavily cited and used. However, during the 1990s, transaction cost economics (henceforth, “TCE”) became increasingly subject to critical discussion, and even became something of a favorite *Prügelknabe* for many a strategy scholar. Writers associated with resource-based, capabilities, knowledge-based, etc. approaches have been particularly vocal critics, and have explicitly used the critique of TCE as a starting point for developing their own approaches to the firm (e.g., Kogut and Zander 1992; Conner and Prahalad 1996; Ghoshal and Moran 1996). In complete contrast to these writers, the central contention of this paper is that the resource-based view (henceforth, the “RBV”) needs transaction cost insights in order to take the next step in its evolution. Note that the attention in this paper is on what may be called the “pure” RBV, exemplified by such writers as Barney (1991) and Peteraf (1993), and not on the various related approaches such as dynamic capabilities or competence approaches.

For the purposes of this paper, we take TCE to be founded on the notion that there are costs of exchanging, protecting and capturing property rights (Barzel 1997). Property rights over resources consist of the rights to consume, obtain income from, and alienate these resources. Less abstractly, transaction costs depend on, for example, such transactions characteristics as specificity and measurability. Agents are assumed

¹ In addition to Williamson’s work, this kind of work also includes other parts of new institutional economics, notably property rights economics (e.g., Barzel 1997), as well as various contributions to contract theory (e.g., Holmström and Tirole 1989; Hart 1995). In the present paper I refer to all of this work as “transaction cost economics.” This may be somewhat imprecise, but may be defended by “new institutional economics” being a much less well-established term in strategic management than transaction cost economics. See Furubotn and Richter (1997) for a general presentation of the new institutional economics.

to try to economize with these costs. This involves choices between alternative contracts, governance structures and institutions for organizing transactions with different characteristics. While this characterization of course includes Williamson's approach, it is not restricted to it. In fact, it is arguable that over-concentration on the part of the critics of TCE on specific (Williamsonian) parts (i.e., opportunism and asset specificity) the overall body of TCE arguments has led to a corresponding lack of appreciation of the large potential reach of basic TCE arguments in strategy research (Foss 2003).²

It will be argued in this paper that TCE arguments are fundamentally important to strategy research in general, and to the RBV in particular. In order to develop this argument, we first briefly assess the RBV, and identify a number of weaknesses in the present version of this approach that may be ascribed to insufficiently taking account of transaction costs (*"The Resource-based View: Key Tenets, Recent Evolution, and Selected Weaknesses"*). We then sketch a transaction cost research program that harmonizes with the RBV, and suggests specific ways in which TCE furthers RBV (*"Enter Transaction Costs"*).

II. The Resource-based View:

Key Tenets, Recent Evolution, and Selected Weaknesses

Key Tenets of the RBV

The dominant contemporary approach to the analysis of sustained competitive advantage is the RBV, initiated in the mid-1980s by Wernerfelt (1984), Rumelt (1984) and Barney (1986), and further developed by these and other writers. Economic equilibrium, particularly in the form of "competitive equilibrium" (i.e., equilibrium under perfectly competitive conditions), is central in this approach (Foss 2003). Indeed, it is arguable that it is not until the advent of the RBV that the key issue of strategic management becomes framed as the problem of achieving sustained

² Admittedly, transaction cost scholars themselves are partly to blame, because most applied TCE in economics as well as in management studies has only pursued a Williamsonian research agenda, with

competitive advantage in the sense of earning efficiency rents in equilibrium.³ In developing this view, the RBV owes a heavy debt to the Chicago School in industrial organization, as has been argued elsewhere in some detail (Foss 2000, 2003),

The fundamentals of the RBV are now familiar, and may be very briefly stated by means of the reference to Peteraf's (1993) excellent summarizing paper.⁴ This is a paper in which the equilibrium orientation of the RBV are very clearly brought out, right down to the accompanying diagrams that illustrate competitive advantage in terms of a conventional demand and supply apparatus where a firm is portrayed as having a sustained competitive advantage because of lower costs of production due to some inimitable technological resource (as in Lippman and Rumelt 1982).

According to Peteraf, resources yield a SCA to the firm that controls them when they meet four conditions:

... four conditions underlie competitive advantage, all of which must be met. These include superior resources (heterogeneity within an industry), *ex post* limits to competition, imperfect resource mobility and *ex ante* limits to competition.

While heterogeneity is not precisely defined in Peteraf (1993), indications of its meaning are given by arguing that resource bundles differ across firms in terms of efficiencies and that these different efficiencies give rise to different levels of value creation. These efficiency differences may translate into differences in rents. While heterogeneity is the condition under which a firm may generate a rent/differential profit, the remaining three conditions are sufficient to realize these rents and make them sustainable. Thus, "*ex ante* barriers" means that factor markets do not appropriate all of the rent from a resource (Barney 1986); "imperfect mobility" means that not all of the rent differential is eliminated through factor market competition (i.e., factors appropriating all of the surplus); and the condition of "*ex post* barriers" means

its over-riding emphasis on asset specificity and opportunism.

³ This is a special case of a broader view that "[t]he field of strategy is concerned with the conditions under which the microeconomic equilibrium of homogenous firms with zero profits can be overcome" (Knott 1998: 3).

⁴ For a comparison of Peteraf (1993) to Barney (1991), see Foss and Knudsen (2003).

that the rent differential is not eliminated through product market competition (e.g., Dierickx and Cool 1989).⁵

Recent Evolution of the RBV

Peteraf's identification of the four "cornerstones" of sustained competitive advantage provides a first way to put the strengths and weaknesses of the RBV into perspective, as well as to describe the evolution of the RBV.

Heterogeneity. It has often been argued that the work of Penrose (1959) is the single most important precursor of the RBV.⁶ In terms of the Peteraf cornerstones distinction, Penrose's main interest was in pinning out the notion of firm heterogeneity in terms of the services that can be derived from resources, and there is little in her discussion that relates to the other cornerstones. In fact, her work is not about competitive advantage at all. Still, it can be argued that Penrose's contribution represents the first sustained attempt to argue for the importance to strategic analysis of resource heterogeneity, and that the RBV is thoroughly Penrosian in the sense that it makes the same argument for resource heterogeneity. Given this, the causes of firm heterogeneity have been surprisingly under-researched in the RBV, given that the approach is supposed to start out from this condition, and that part of the marketing effort of RBV scholars has been to argue that the RBV in contrast to industrial organization economics places firm heterogeneity centerstage. It is perhaps telling that a recent special issue of the *Strategic Management Journal* (October 2003) on the RBV was (sub)titled "Towards a Theory of Competitive Heterogeneity"!

Ex post barriers to competition. Lippman and Rumelt (1982), Rumelt (1984) and Wernerfelt (1984) added the cornerstone of "ex post barriers" (although their respective

⁵ Unfortunately, Peteraf is not entirely forthcoming about whether her conditions constitute the minimum set of *jointly* necessary conditions for SCA, or whether they are *individually* necessary conditions, or whether they are merely collectively *sufficient* for SCA. However, she does say that all conditions must be met (Peteraf 1993:), that the four conditions are "related" (p.185), that heterogeneity is "necessary for sustainable advantage but not sufficient," and that we require "ex post limits to competition as well." Because the conditions are related, Peteraf spends some time explaining how the meeting of one condition may mean that another one is also met. She does, however, not say that the four conditions constitute the bare minimum necessary (and sufficient) conditions for SCA, and guards her discussion by saying that the four conditions are "distinct," yet "related."

⁶ For an attempt to contest this view, see Foss (2000).

terminologies differed from this). This gave rise to a spate of work, of which Dierickx and Cool's (1989) short, but extremely influential, discussion still stands out, and which was taken up with examining 1) the generic mechanisms that may sustain competitive advantage (e.g., Dierickx and Cool 1989; Reed and DeFilippi 1990) and 2) classify resources on the basis of their potential contribution to sustainability (e.g., Grant 1991). Notable empirical work has also grown out of this focus, such as Miller and Shamsie's (1996) discussion of the sources and sustainability of competitive advantage in the Hollywood film studios in terms of "property-" and "knowledge-based" resources.

Ex ante barriers to competition. Barney (1986) established the cornerstone of "ex ante barriers" to competition with his strategic factor market argument, that is, the argument that informational asymmetries are needed to produce that divergence between resource price and discounted net present value that is a condition of competitive advantage. Some of the most innovative recent work in the RBV has been the refinements and extensions of this argument, notably in the works of Richard Makadok (e.g., Makadok and Barney 2001; Makadok 2003). Thus, Makadok and Barney (2001) develop the Barney (1986) factor market argument into a story of information acquisition in which the ultimate determinant of competitive advantage is the firm's skill at researching the future value of resources.

Immobility. The perhaps least examined cornerstone has, until rather recently, been that of "immobility." The notion that those input owners whose services are regularly acquired by the firm (notably employees) have bargaining powers and that the distribution of these powers determine how surplus is split, surfaced rather lately in the RBV (although Wernerfelt 1989 was quite explicit about it).⁷ Russell Coff's (1997, 1999) work in particular has drawn attention to this. Lippman and Rumelt (2003b) show how game theoretical bargaining theory may inform an RBV perspective on how rents are split between resource owners.

⁷ Perhaps this is because immobility is hard to distinguish from factor market competition, and may be placed under "ex ante barriers to competition." Surprisingly, while bargaining power has been important in connection with "immobility," it has played no role in connection with the "ex ante barriers to competition" cornerstone (leading to the incorrect conclusion that with perfect factor markets, the supply side will always appropriate all rent).

Thus, it is apparent that some of the cornerstones have attracted more attention than other ones, and that the theoretical evolution of the RBV during the last twenty years is a matter of 1) gradually expanding the understanding of the determinants of sustained competitive advantage in the sense of incorporating more determinants and 2) refining the analysis of each individual determinant (i.e., “cornerstone”). The RBV has not yet completed this evolution. Thus, disproportionate attention has been paid to, notably, the “*ex post* barriers to competition” condition, usually in the form of trying to clarify which resource attributes make resources costly to imitate. However, as will be argued, the understanding of this condition is still incomplete.

Some Shortcomings of the Resource-based View

Looking back at the twenty years of evolution of the RBV, it is easy to jump to the conclusion that the application of economic equilibrium theory (of the specific Chicago School variety, e.g., Demsetz 1973) in many ways furthered the field by reconciling strategic management and industrial organization economics in a way entirely different from Michael Porter’s (1980). It expanded the vocabulary and the toolbox of the strategy field significantly by introducing efficiency rents, factor market imperfections, costly-to-imitate resources and other Chicago insights. However, this came at a price: Unwanted excess baggage was also introduced in the strategy field.

The excess baggage in question is the competitive equilibrium (or “perfect competition”) model with its many constraining assumptions (Hayek 1948; Machovec 1995; Makowski and Ostroy 2001; Foss 2003). The competitive equilibrium that are used in RBV core contributions (such as Lippman and Rumelt 1982; Barney 1991; Peteraf 1993) may not entirely be of the perfect competition textbook variety. For example, some superior technology may be costly to imitate (Demsetz 1973; Lippman and Rumelt 1982) or there may be some asymmetric information in factor markets (Demsetz 1973; Barney 1986). Still, the basic model is one of instantaneous market clearing in markets populated by traders with no bargaining power, and firms that –

within a given industry – are essentially identical. We can see the legacy of the competitive equilibrium model in a number of the shortcomings of the RBV.⁸

No theory of the firm. The view of the firm in the competitive model is what Williamson (1996) calls the “production function view,” which is an important part of the neoclassical theory of production, as stated in basic economics textbooks. While this view has been contrasted with the RBV (e.g., Conner 1991), it is not clear what exactly is the difference between saying that the firm is a production function and saying that the firm is a bundle of resources. True, “resources are heterogeneous” in the RBV whereas “inputs are (usually) homogeneous” in the production function view. But the latter assumption is simply made for calculational convenience. The production function describes the relation between inputs, that is, resources, and output, and such a production function may of course be constructed for any firm (Wernerfelt 2003). It is not logically committed to an assumption of resource homogeneity. In fact, some of the critical assumptions of the production function carry over to the RBV.

From a TCE point of view, there are two problems with the production function view. First, it contains no predictions with respect to the optimum scope of the firm (Teece 1982; Williamson 1996).⁹ Second, it assumes what should be explained, namely that input factors (resources) are optimally used inside a firm. Because its view of productive activities is not essentially different from that of the production function view, the RBV similarly contains no implications for the optimum scope of the firm and similarly works from the assumption that resources are optimally used inside the firm. Differences in competitive advantages are therefore not a matter of how well resources are organized or managed, but of the inherent efficiencies of the resources that firms control. This means that there is little or no attention to the managerial task or to organizational matters in the RBV. To talk of the “resource-based view of the firm” may therefore be a bit of a misnomer, because the RBV says very little about firm

⁸ Foss (2003) discusses other shortcomings. Lippman and Rumelt (2003a) focus on the partial equilibrium nature of much RBV reasoning.

⁹ Relatedly, it is hard to see what is distinctly resource-based about Conner and Prahalad’s (1996) “resource-based theory of the firm.”

organization and because it is not clear how the view fundamentally differs from basic economic production theory.

Neglect of the interaction between value creation and value capture. It is a key insight of economics that determining the size of the pie is something different from dividing the pie, and that dividing the pie may influence the size of the pie. Economists often conceptualize this insight – which, as we shall later see, only holds true if (some) transaction costs are positive -- in terms of interaction between allocation (creating value) and distribution (dividing value). It is crucially important for understanding the economic implications of reward systems and the allocation of property rights. Much of the modern economic theory of the firm revolves around it, the “hold up problem” (Hart 1995; Williamson 1996) being an important manifestation of the expected sharing of surplus impacting on the creation of that surplus (through the effect on investment incentives). And, yet, it is an insight that is conspicuously and surprisingly absent from the RBV.

Important recent work by Russell Coff (1997, 1999) and Lippman and Rumelt (2003) has done much to introduce and refine the understanding of how rents are split through bargaining processes between the various resource owners. However, even this work fails to connect the splitting of rents to the creation of rents. There are a number of unfortunate consequences of this. First, incentives for creating value are not fully understood. Second, the dissipation of value caused by resource owners fighting for larger distributional shares cannot be represented. Third, the notion that value may be created by “getting the incentives” right and by reducing dissipation of value cannot be captured by the RBV.

Incomplete identification of relevant resources. Because of the above points, the RBV identifies only a subset of the resources that may be strategically relevant, that is, cause those efficiency differences that may give rise to sustained competitive advantages. Thus, implicit adherence to the production function view means that there can be no differences in the efficiency with which resources are managed and organized. And neglect of the interaction between value creation and value capture means that firms cannot gain a sustained competitive advantage from better

controlling dissipation and offering better incentives. Thus, HRM practices or reward systems disappear from the set of potentially strategic resources. So do seemingly mundane practices, such as packaging, sorting, etc.

To illustrate, consider the strategy that a major player in the World's diamond industry, the DeBeers cartel has adopted for organizing sales to its customers. The customer informs DeBeers of his or her wishes with respect to the number and quality of stones. DeBeers then offers the customer a packet of stones, a "sight," that roughly corresponds to the customer's wishes. The sight is offered on a "take-it-or-leave-us-permanently" basis. The price is calculated on the basis of the gross characteristics of the stones, and no negotiation over the price is possible.

Economists (Barzel 1982; Roy and Kenney 1983) writing from the perspective of transaction cost economics argue that these practices – that look conspicuously like monopolistic abuse – are instruments of maximizing the created value in firm-customer relations by reducing the costs customers otherwise would have expended on sorting and negotiating. Sorting and bargaining costs are effectively eliminated, so that DeBeers' practice maximizes the total created value that the parties to the transaction can split between them. Similar arguments apply to practices such as pre-packaging of food or block booking in the movie industry (Barzel 1982, 1997; Roy and Kenney 1983).

Such arguments are instances of the broader TCE proposition that agents when faced with potential reductions in the value they can derive from transactions will put mechanisms – such as sales practices (e.g., packaging and sorting), contracts, governance structures, organizational types, institutions – in place that reduce (if not eliminate) those losses by influencing the incentives of the participating agents (Akerlof 1970; Hart 1995; Williamson 1996; Furubotn and Richter 1997). Williamson (1994) thinks that choices relating to these mechanisms are so fundamental that "economizing is the best strategy." Presumably this is because governance and contractual choices are ubiquitous, must be made by all firms, and can have important impact on performance, whereas strategizing, which appeals to a market power perspective, is only open to major players (Teece, Pisano and Shuen, 1997: 513).

Whatever that may be, the implication for the RBV seems clear: If a resource is “anything that may be thought of as an advantage to a firm,” the above mechanisms may be resources.

Summing Up

The above shortcomings are selected ones in the sense that they have been chosen to illustrate a point; namely, that neglect of transaction costs leads to an incomplete understanding of the cornerstones of competitive advantage. Thus, firm and resource *heterogeneity* is under-estimated because the absence of transaction cost reasoning in the RBV means that not all relevant resources are identified (or, if they are identified, it cannot be adequately explained why they are valuable) and that firms operate at the frontier of their production possibility sets. Heterogeneity can only be ascribed to differences in firms’ endowments (Foss and Knudsen 2003), not to the way in which these resources are organized and managed. Because the interaction of value creation and value appropriation is not explicitly addressed the feedback loop from (expected) *ex post competition* to value creation is not addressed. *Ex post competition* is limited to competition in terms of imitation and substitution (Barney 1991), and the (*ex post*) capture of value represented by moral hazard and adverse selection is not addressed (Foss and Foss 2004), because these phenomena can only take place in a positive transaction cost world. The Barney (1986) strategic factor argument (i.e., *ex ante barriers to competition*) is developed without reference to transaction costs. Etc.

As Coase (1992: 716) notes: “Businessmen in deciding on their ways of doing business and on what to produce have to take into account transaction costs ... In fact, a large part of what we think of as economic activity is designed to accomplish what high transaction costs would otherwise prevent.” Transaction costs should be an integral part of strategic management. In particular, the following section discusses how transaction cost notions may further the RBV and contribute to remedying the above shortcomings.

III. Enter Transaction Costs

The RBV and TCE

The argument that the RBV may be furthered by TCE insights is not a new one *per se*. To mention just a few examples, Rumelt (1984) argued “... it appears obvious that the study of business strategy must rest on the bedrock foundations of the economist’s model of the firm” (1984: 557), by which he meant Williamsonian TCE. Teece’s (1982, 1986) work on corporate diversification and the organization of the innovative process made use of both TCE and RBV arguments. Mahoney and Pandian (1992) argued that the TCE and the RBV were broadly complementary. Williamson (1999) sketched a number of ways in which a contractual (TCE) focus may strengthen RBV reasoning. Madhok (2002) made related points, but from the point of view of the RBV rather than TCE. Following up on these methodological arguments, a number of recent contributions have integrated RBV and TCE insights in concrete empirical applications; for example, Silverman (1999) developed an integrated RBV-TCE framework in his approach to corporate diversification. The present application of TCE to the RBV is, however, entirely different from the arguments in these papers.

Expositions of economic approaches to strategy often begin from the logic of the competitive equilibrium model (e.g., Oster 1999). One or two monkey wrenches — some kind of transaction or at least information costs — are then thrown into this perfect machinery so as to “explain” competitive advantage. However as Makowski and Ostroy (2001: 529) note, “[w]ith the standard model as the point of departure, the simplicity of price-taking behavior leaves the perfect competitor unprepared for the entirely new strategic considerations he confront when transaction costs are positive.” Therefore, the relevant “imperfections” are introduced in a highly selective manner. For example, asymmetric information may be invoked on input markets, so that firms may acquire inputs at a price below their discounted net present values (Barney 1986). Or, firms entering an industry may draw from a distribution of technologies of different efficiencies, efficiency differences being sustained in equilibrium through invoking costs of imitating (superior) technologies (Lippman and Rumelt 1982). It has been argued elsewhere (Foss 2003) that an adherence to this approach has caused some of the shortcomings of the RBV, including not sufficiently taking note of transaction costs.

Coasian Methodology

The present approach (see also Foss 2003; Foss and Foss 2004) instead adopts a Coasian approach to reasoning about the causes of real-world phenomena in which there is no specific assumptions about, for example, market structure. Boundary conditions instead relate to the presence of transaction costs. More specifically, essentially the same strategy that Coase (1937, 1960) followed is advocated here for strategic management research: Examine an extreme setting (i.e., the Coase theorem setting) to see what this tells us about the phenomenon that we are interested in understanding (i.e., the firm (Coase, 1937), the law (Coase, 1960) and strategic management (this paper)), and then demonstrate that this understanding is furthered by the introduction of transaction costs, in fact, that transaction costs are *necessary* to make sense out of the relevant phenomenon.

A major point in Coase (1960) is that although economists have routinely assumed that transaction costs — that is, the cost of exchanging, protecting and capturing property rights — are zero, they have not really, and certainly not fully, examined the radical consequences of this assumption. In order to drive this point — made in the context of the economic analysis of externalities — home, Coase supplied several analytical innovations.

One is that for many purposes, it is more useful to think of what is being exchanged in markets as *property rights* rather than physical goods *per se*. Thus, when a firm buys a machine, its acquisition of ownership to the machine is simultaneously the acquisition of a whole bundle of property rights, such as the rights to use, derive income from, sell the machine, lease it out, etc. These rights are constrained not only by the law, but also by norms and by other means of private enforcement. One of the Coase's most skilled followers, Yoram Barzel (1982, 1997), argues that goods (resources) are composed of "attributes," that is, different functionalities and uses, and that property rights are defined to such attributes. For example, a Hi-Fi system can be used for playing different kinds of music, for manipulating the level of the bass, for playing loud, and so on. However, the functionality of a Hi-Fi system that allows it to deliver the service of playing extremely loud music may not be realized if the law or

neighborhood norms prevent these services. The use rights of the owner are constrained. Usually, resource attributes are bundled because it would be too costly to specify them all in a contract (Foss and Foss 2001, 2004).

In the actual world, defining (e.g., writing contracts), exchanging, protecting (e.g., fencing a private parking space) and capturing (e.g., stealing) property rights are costly activities. Coase famously argued that these costs underlie a host of institutions and institutional arrangements, including important aspects of the law. This insight clearly harmonized with his earlier (Coase 1937) insight that the existence of the firm is rooted in the costliness of the price mechanism. In order to develop this argument, Coase (1960) began from a zero cost setting, and traced the allocative consequences of different assignments of liability. His conclusion, essentially what became famous as the “Coase theorem,” was that different assignments of liability would not matter to allocative efficiency. The law of liability can only make an allocative difference in a positive transaction cost regime; it has no rationale if transaction costs are zero, just as the firm has no economic rationale under those conditions. The argument here is that exactly the same kind of reasoning may be used to develop insights into the economics of firm strategy, particularly the RBV.

The Zero Transaction Cost Setting

The Coase Theorem as starting point. One way of stating the Coase theorem is that in the absence of transaction costs, all the value that can conceivably be created from the exchange and use in production of the available resources in the economy will, in fact, be created. An underlying assumption is that in such a surplus-maximizing equilibrium, players have full information (Barzel 1997). Therefore, there are no costs of bargaining and of measuring the attributes of resources, and property rights to (all attributes of) all resources are defined and protected at zero cost. Because the costs of exchanging property rights are zero, all property rights to all attributes will be tradable.¹⁰ All rights will therefore move to their highest valued uses, so that the

¹⁰ For this reason, the very notion of a “resource,” strictly speaking, dissolves in this extreme world. Exchanges will only involve attributes.

total value that resources can create, and which therefore will be imputed to them, will be at its maximum.

If indeed bargaining costs are zero, the issue of value creation can furthermore be separated from that of the appropriation of value. Thus, we may imagine the parties to a contract to follow a two-step procedure in which they first agree on the mix of activities that maximize their joint surplus, and then in the next step split this surplus through the prices and side-payments that emerge from bargaining. How they will split value, that is, how much value each agent can appropriate, will depend on a host of factors, and specific assumptions are necessary to derive insight into this (Lippman and Rumelt 2003b). Value may be divided in any possible way within the bounds given by opportunity costs and reservation prices. However, the Coase theorem implies that bargaining processes are instantaneous, consume no resources, and that there is no feedback effect from splitting value to creating value. Essentially, this implies that any organizational arrangement will be as efficient as any other (i.e., resulting in the same value creation).

Finally, just as the creation and splitting of value (i.e., the appropriation of value) presents no real problems, in the sense that these are costless processes in the Coasian setting, so the protection of value against other agents' capture cannot be a problem either. This is because there will be no problem of protecting the value created in the coalition from, for example, would-be imitators, since in a zero transaction costs setting property rights can not only be costlessly exchanged but also costlessly protected (Barzel, 1997). Thus, zero costs of protection imply infinite costs of capturing property rights from other agents.

Strategic management when transaction costs are zero. Much of what we understand by strategic management evaporates in a zero transaction cost world: Maximum value is created instantaneously, all rent streams are perfectly protected; bargaining over the division of these streams takes place instantaneously and costlessly; there are no problems of implementing a strategy (since organizational costs would be zero), etc. In sum, the creation and appropriation of value pose no problems whatsoever. Arguably, a significant part of the content of strategic management lies in

all these processes *not* being instantaneous, costless and unproblematic. Settings such as the one underlying the Coase theorem (or its distant cousin, competitive equilibrium) leave very little room for genuine strategic choices. Still, a starting point in a situation with zero transaction costs is helpful for at least two reasons: First, it indicates *where* we should make adjustments to obtain a more realistic understanding of strategic issues. The relevant "adjustments" are a matter of introducing transaction costs. Second, it provides a benchmark (namely optimum resource allocation/value creation), relative to which we may assess changes in the real, positive transaction cost world.

Implications for the RBV of Transaction Costs

Transaction costs and competitive advantage. The transaction costs of exchanging, protecting and capturing property rights both directly and indirectly influence value creation. For example, measurement and bargaining costs directly eat into created value. So do costs expended on protecting property rights. When the latter costs are positive, some agents will expend resources on capturing property rights controlled by other agents. These costs in turn induce "deadweight welfare losses," that is, some transactions that would have been concluded under zero transaction costs are not carried out (Akerlof, 1970; Williamson, 1996; Hart, 1995). The emphasis on *ex post* competitive imitation in the RBV is one instance of capture of property rights, but there are many others. For example, when forming expectations about future resource values (Makadok and Barney 2001), managers should not only assess the imitability of resources, but also the hold-up and moral hazard potential that may be associated with specific resources.

Implication: The contribution to competitive advantage of a resource depends not only on its use and its scarcity and the amount of competitive imitation, but also on the costs of controlling (other) property rights to the resource, that is, transaction costs. Estimating competitive advantages must involve taking such costs into account.

Getting to grips with how transaction costs influence (expected) competitive advantages will allow RBV scholars to establish the link between value creation and appropriation that is currently not explored in the RBV. The reason that it is

transaction costs that establish this link (i.e., with zero transaction costs, creating and appropriating value are independent processes). This will bring economic organization (the theory of the firm) much more directly into the picture, because, loosely, contracts and governance structures serve to maximize created value, given transaction costs.

Transaction costs and ex post competition. The general point about the potential importance of transaction costs to resource value also applies to the cornerstone of (barriers to) *ex post* competition. Of course, costs expended on protecting against competition need to be economized. However, property rights can also be protected through such means as establishing private orderings (Williamson 1996), deterring entry (Tirole 1988), writing enforceable contracts, adopting sales strategies to avoid adverse sorting, as in the DeBeers example (Barzel 1982; Roy and Kenney 1983), and the corresponding costs need to be economized, too. To see that capture goes beyond competitive imitation, consider a hypothetical firm that is launching a new innovative gizmo. It produces the gizmo using very complex resource combinations that because of the complexity are effectively inimitable. The gizmo turns out to be a huge commercial success. Because of the heavy uncertainty and asymmetric information related to the commercial potential of the device, only a fraction of future rents have been appropriated by factor markets. The firm is the only major employer in the area, so employees are rather immobile. Producing the gizmo would seem to be "... a value creating strategy not simultaneously being implemented by any current or potential competitors and ... these other firms are unable to duplicate the benefits of this strategy" (Barney 1991: 102), that is, to realize a sustained competitive advantage. However, all employees receive a flat wage and the company does little to monitor the shirking that develops. The shirking eventually becomes so widespread that the company's profitability is on par with its competitors.

Implication: Sustainability of competitive advantage depends not only on controlling capture in the form of competitive imitation and substitution, but also on other kinds of capture such as moral hazard, adverse selection and hold-up. Estimating sustainability must take such capture and the costs of controlling it into account.

Improved understanding of resource heterogeneity. While TCE — like the RBV — contains little that helps to explain *why* firms are *ultimately* different in the sense that it does not deal with entrepreneurship, it provides insight into heterogeneity that goes beyond the RBV. Because of its emphasis on property rights, resources are multi-dimensional in the TCE. Thus, a resource is a bundle of property rights to various resource attributes, such as uses and functionalities. Attributes are typically bundled into resources because of costs of exchanging individual attributes, including the costs of protecting these attributes (Foss and Foss 2001, 2004).

Implication: Resources are not given, but are outcomes of processes of economizing with such transaction costs. Therefore, what is physically the same resources to different firms may economically be different resources, for example, because the relevant firms are not equally capable of protecting the relevant attributes.

For example, licensed technological knowledge may be protected more strongly by one firm than by another firm that also licenses the relevant knowledge. Economically, the licensed knowledge will be different goods.

New resource categories. A TCE perspective directs attention to those resources that may be advantages to firms in the sense that they increase created (and appropriated) value, that is, specific ways of sorting goods (e.g., in the retailing and industries such as fruit and vegetables), sorting customers (e.g., credit classes in banking), contracting, the use of private orderings, etc. (Barzel 1997; Williamson 1996). The conjecture here is that these resources are important sources of heterogeneity and competitive advantages in a number of industries. However, they have been largely neglected in the RBV, perhaps because these resources only exist if a positive transaction cost world is assumed.

IV. Conclusions

The RBV has proven to be an influential and useful analytical structure for the analysis of many strategic issues. However, it is also like a ten to fifteen years old building that was built by a few key contractors on a tight completion deadline and on the basis of somewhat different inputs (Foss and Knudsen 2003). Some of the limitations are

beginning to show up. First, the RBV building was constructed on a foundation – the competitive equilibrium model – that makes it hard to extend the building. Second, some essential materials – namely transaction costs – were not used to a sufficient degree. A number of deficiencies have resulted, of which some have been sketched here. Accordingly, the repair effort should be a fundamental one, and will have to be directed at building a better foundation and adding the essential material of transaction costs. The first kind of repair effort has been initiated by Lippman and Rumelt (2003a&b); the second one is that sketched out in the present paper. Future work will concentrate on not just sketching, but actually fleshing out the RBV-TCE synthesis.

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