How property rights economics furthers the resource-based view: resources, transaction costs *and entrepreneurial discovery*

Jongwook Kim*

Department of Management,
College of Business and Economics,
Western Washington University,
351 Parks Hall, 516 High Street,
Bellingham, WA 98225, USA
Fax: (360) 650-2398 E-mail: jongwook.kim@wwu.edu
*Corresponding author

Joseph T. Mahoney

Department of Business Administration,
College of Business,
University of Illinois at Urbana-Champaign,
140C Wohlers Hall, 1206 South Sixth Street,
Champaign, IL 61820, USA
Fax: (217) 244-8257 E-mail: josephm@uiuc.edu

Abstract: An understanding of Austrian entrepreneurship, in conjunction with property rights, resource-based and transaction costs theory allow us to understand economic rent generation as a dynamic process. The current paper expands Foss and Foss' (2005) application of property rights theory in explaining economic value creation to include not only economising on transaction costs, but also Austrian entrepreneurial discovery for generating new combinations and adaptive responses for transaction costs economising, particularly as a basis for managing strategic change.

Keywords: Austrian entrepreneurship; property rights; resource-based; transaction costs theory.

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Biographical notes: Jongwook Kim received his PhD in Strategic Management from the University of Illinois at Urbana-Champaign in 2004. He is an Assistant Professor in the Department of Management at Western Washington University. His research interests include strategic alliances, dynamic capabilities, and property rights theory, in particular, in the transfer of intellectual property rights across firm boundaries and the choice of organisational forms. He has recently published in *Managerial and Decision Economics* and *International Journal of Learning and Intellectual Capital*.

Joseph T. Mahoney received his PhD in Business Economics at the Wharton School of Business at the University of Pennsylvania in 1989. He joined the Faculty of the College of Business at University of Illinois at Urbana-Champaign in 1988 and was promoted to Full Professor in 2003. His research interest is organisational economics. In particular, the behavioural theory of the firm (stakeholder theory), transaction costs theory, property rights theory, agency theory, real options theory and dynamic resource-based theory. He has published 35 articles in major research journals such as *Journal of Management, Journal of Management Studies*, and *Strategic Management Journal*. In 2005, Sage Publications published Joe's book on *The Economic Foundations of Strategy*, which is intended for first-year doctoral students studying economics and strategic management.

1 Introduction

Foss and Foss (2005) articulate how property rights theory suggests that in the process of clearly defining property rights, transaction costs are reduced, thus creating economic value.[1] Because some part of the total value created by an economic activity – transaction costs, broadly construed – is typically expended in the process of implementing the relevant transactions necessary for economic value creation, finding ways to make such transactions less costly to implement should increase the realised economic value. Therefore, by more clearly defining property rights (and decreasing the transaction costs), it is possible to maximise economic value since the full value of a particular resource can then be appropriated. In effect, one of the key arguments of Foss and Foss (2005) is that the firm can appropriate more of the economic value created by resource utilisation by defining more clearly the property rights to those resources.

Moreover, Foss and Foss (2005) go further and make an important theoretical point that the source of the economic value is not inherent in the resource itself, but rather that economic value creation is an *outcome* of the process of economising on transaction costs incurred in the transaction involving such a resource. This claim is consistent with the so-called Coase Theorem (Coase, 1960, 1988), which maintains that where the economic cost of transacting is nil, resources are utilised in ways that maximise economic value. However, there is a subtle (but key) difference. Whereas Coase (1960) makes the argument in terms of a Pareto-optimal equilibrium, Foss and Foss' (2005) view is closer to an 'Austrian' perspective, in the tradition of Mises (1949), Hayek (1948) and Kirzner (1973). Foss and Foss (2005) provide an Austrian perspective at least in part because the arguments are process-oriented, and also because the role of the entrepreneur is treated as an endogenous element in the framework (Kirzner, 1973; Jacobson, 1992). However, the starting point in their argument of assuming a ('Coasean') world of zero transaction costs (which is also the Pareto-optimal state) and introducing transactions costs is clearly in the neoclassical tradition. An Austrian entrepreneurial perspective does not assume that a Pareto-optimal state is knowable, but rather it is the endogenous entrepreneurial function to move toward such a state. The entrepreneurial function is critical for the creation of competitive advantage through stimulating strategic changes internal to the firm (i.e., *internal entrepreneurship*, Burgelman, 1983). Moreover, strategic change management could even encompass a broader, market-level creation of economic value, such as creating technological discontinuities (Tushman and

Anderson, 1986) or architectural innovations (Henderson and Clark, 1990). An Austrian entrepreneurial perspective can serve to illuminate the linkages between resource-based theory and property rights theory, particularly with respect to how firms can set new rules of the game by ingenious and efficient adaptive solutions.

The current paper considers how property rights theory can, in conjunction with resource-based theory, allow us to understand economic rent generation as a dynamic process. First, we provide a brief critique of Foss and Foss' (2005) arguments, where we suggest that a more dynamic theory that fully accounts for the endogenous adaptive function of the firm, which is critical for economic value creation.[2] Second, we maintain that Foss and Foss' (2005) application of property rights theory in explaining economic value creation needs to be expanded so that it includes not only economising on transaction costs but also generating new combinations and adaptive responses to transaction costs. Third, a key contribution of property rights theory is in partitioning a resource into bundles of property rights (not all of which are confined to exclusive ownership rights), so that new resource combinations often leverage resources that may span organisational boundaries. And lastly, we provide a discussion and conclusions section.

2 A critique of Foss and Foss (2005)

A key contribution of Foss and Foss (2005) is to suggest property rights theory to complement resource-based theory (Rumelt, 1984; Barney, 1986, 1991; Mahoney, 1995, 2001; Teece et al., 1997) since resource-based theory itself has only indirectly dealt with property rights issues (with a few exceptions: Wernerfelt, 1984; Amit and Schoemaker, 1993; Peteraf, 1993, Coff, 1997; Kim and Mahoney, forthcoming).[3] However the concept of economic value creation in Foss and Foss (2005) is relatively static with emphasis on achieving full wealth potential via transaction costs economising.

A more dynamic aspect of property rights theory that considers how 'new rules of the game' are often enacted to deal with different contracting situations in searching for an efficient adaptive response (Libecap, 1989; North, 1990) can be fruitfully joined with resource-based discussions on value creation.[4] The process of creating economic value through defining and protecting property rights over potentially value-creating resources and the gradual evolution towards setting up efficient institutions can be viewed analogously to how Schumpeterian 'new combinations' (Schumpeter, 1942) are generated dynamically to increase the size of the pie. Indeed, despite the numerous failures to arrive at efficacious contracts and efficient institutions (Libecap, 1989; North, 1990; Kim and Mahoney, 2002, 2005), many of the successes (Davis and North, 1971; Libecap, 1989) are examples of ingenious adaptive responses to given contracting and/or institutional situations that go beyond merely economising on transaction costs. The current paper suggests an evolutionary jump[5] (i.e., *punctuated equilibria*; Ghemawat, 1991) towards Pareto improvements in wealth creation resulting from Schumpeterian 'new combinations' rather than exclusively focusing on decreasing transaction costs to capture more economic value along a known and fixed productivity frontier.

Foss and Foss (2005) suggest at least two important ways to create economic value. First, the individual firm creates economic value by appropriating value in a bargaining situation so that the firm is able to capture more of the economic value that has been

created by a particular economic activity. However, in this instance, economic value is not really created *per se* since the focus is on value appropriation (an issue of the *distribution* of economic value) rather than the *creation* of economic value. Thus, the system (i.e., the value chain) as a whole does not actually increase the sum total of its value created, but is actually a zero-sum situation. Second, the individual firm is able to reduce the transaction costs that would otherwise have gone into bargaining and various other attempts to capture economic value. Economising on such transaction costs may be possible through more efficient governance mechanisms or institutions, whether they be formal (e.g., effective legal systems) or informal (e.g., norms of behaviour that lead to effective self-enforcement of agreements). By reclaiming what had been transaction costs (i.e., the time and effort that goes into bargaining) firms are able to create economic value, which can be considered a positive-sum situation.

The theoretical point that economic value is created in the process of protecting property rights over resources is an important one. However, Foss and Foss' (2005) discussion of economic value creation can be extended by emphasising more a dynamic dimension of the economic rent generation process that is the core of resource-based theory.[6] Economic rents are the returns to resource utilisation in excess of the required rate of return necessary to employ those resources. These economic rents are some combination of:

- the returns that the firm can appropriate from resource utilisation
- the returns to entrepreneurial activities.

Foss and Foss' (2005) argument focuses more on the economic returns from appropriation rather than on entrepreneurial rents (Rumelt, 1987), which are closer to the Schumpeterian notion of new resource combinations and entrepreneurial alertness (Kirzner, 1973).

Because the emphasis is on economising on a pie that is fixed in size, the notion of economic value creation in Foss and Foss (2005) is static. The starting point is the implicit assumption that resources are being fully utilised except for transactions costs – hence the concept is one that is static and incremental in its view of the role of the firm in creating value. A limitation of the generalisability of the DeBeers diamond example is that the criteria for determining the economic value of diamond as a commodity are fairly well established,[7] which often contrasts greatly with the case of creating and utilising invisible assets (Itami and Roehl, 1987) or knowledge assets (Nonaka and Takeuchi, 1995) where new, hitherto unknown resource combinations are possible – i.e., there is room for a more dynamic entrepreneurial function that goes beyond economising on transaction costs.

3 Towards a dynamic theory of economic value

Foss and Foss (2005) emphasise economising on transaction costs, where a transaction is in place and is already generating a certain level of economic value. However, one can envision transactions that are not even implemented due to transaction costs concerns, which is essentially 'money left on the table'. Indeed, the very reason that vertical integration is considered in transaction cost economics (Williamson, 1985, 1996) is precisely due to the fact that there is potential economic value to be created by the

combining of resources, especially by investing in co-specialised (Teece, 1986) assets that might not otherwise take place in the market due to concerns about moral hazard and other forms of opportunism (Williamson, 1975). These considerations lend greater weight to Foss and Foss' (2005) arguments for economising on transaction costs. It should be noted, however, that while economising on transaction costs may increase economic value created, the very process of searching for transaction partners and for the correct prices (i.e., generating transaction costs) is not necessarily wasteful. The search process that results in increased transaction costs being realised may serve an important function: it is the foundation of entrepreneurial discovery and innovation (Kirzner, 1973). Foss and Foss' (2005) basic arguments can thus be extended by bringing to the foreground of our theoretical attention an important economic benefit of the competitive process, which may lead to (Schumpeterian) new resource combinations that have not been hitherto envisioned (Nelson and Winter, 1982).

3.1 Discovery and innovation

In a strictly static sense, it is correct that by economising on the costs of searching for the correct prices and the costs of searching to join the appropriate buyers with the sellers should increase economic value. Where the maximum potential economic value from the transaction is a given, so that the productivity frontier is known and fixed in economic value, and where the new information from dynamic process of searching for the right buyers and sellers and searching (and bargaining) over prices cannot be transferred over to other transactions (i.e., where there is no learning), then economising on transaction costs within this specific setting should logically be the main method of economic value creation. Moreover, if we explicitly consider the potential economic value that might have been foregone due to transaction costs concerns, then Foss and Foss' (2005) argument for economising on transaction costs is even more crucial.

Consider an economic value creating transaction that requires a relation-specific investment in co-specialised assets, which may not be implemented due to the high-level of potential opportunism by either one or both of the transacting partners. Such a relation-specific investment that is expected to create economic value will be made only if there is some assurance that the investing party will not be exposed to opportunism. Thus, it is not simply the economic costs of searching for partners, or the economic costs of monitoring and enforcing agreements – collectively 'transaction costs' – but also the economic opportunity costs of potential value-creating transactions foregone that need to be considered as well. Specifically, if economising on transaction costs allows the firm to invest in opportunities that might otherwise have been foregone, the benefits to the firm go beyond static efficiency since we are now considering future opportunities that might not be possible for firms who had not made investments in co-specialised assets (i.e., this benefit is analogous to the benefit from acquiring real options; Kogut, 1991; Chi, 2000).[8]

Where the optimal economic value created is known so that there is 'no surprise' as a result of the entrepreneurial function, the economic opportunity costs of not implementing a transaction are likely to be low. However, if we adopt the Austrian perspective that accounts for the entrepreneurial function in a dynamic way in circumstances where the productivity frontier is unknowable (or at least, not fixed in value), then the economic opportunity costs of a potentially value creating transaction that is foregone are potentially quite high.

The focus on the static economising of transaction costs therefore needs to be extended to better explain all aspects of the dynamic process of defining and securing property rights over resources. The evolutionary process of defining and securing property rights (Alchian, 1965; Libecap, 1989) is analogous to real options in that setting up efficient institutions that facilitate value creating investments (i.e., investments in co-specialised assets) is essentially laying the groundwork for adaptive response to new information (whether it is about the future state of the world, the likelihood of partner firm's opportunism, etc.) as it is revealed to the firm over time. Moreover, the struggle for defining and securing property rights often leads to ingenious solutions (Alchian, 1965; Libecap, 1989). Realising transactions where such transactions might not have been feasible before is a function of new resource combinations and the leveraging of key resources and capabilities as can be witnessed in various contexts such as corporate governance (Rediker and Seth, 1993), strategic alliances (Hamel, 1991; Hagedoorn, 1993; Hennart, 1993), and equity joint ventures (Hennart, 1988; Oxley, 1997). Well-defined property rights often lead to new resource combinations whether it is within the boundaries of a single firm or may reach across individual firm boundaries.

As Alchian stated:

> "The variety of joint sharing of property rights and ownership rights is a testimony to man's ingenuity." Alchian (1965, p.136)

Instead of outright integration in response to problems of opportunism, firms often devise ingenious solutions to transaction costs problems. For instance, options contracts that ensure contingent ownership structures can prevent the dilution of economic incentives for both parties of the joint venture (Noldeke and Schmidt, 1998). Such strategic (real) options that allow firms to make decisions with better information – which may be an indication of learning taking place – create new upside potential for economic value creation. Indeed, many firms often enter joint ventures as intermediate steps toward making acquisitions (Balakrishnan and Koza, 1993) – that is, joint ventures are in effect call options, or options to buy (outright acquisitions) at a future point in time (Kogut, 1991). The capability to schedule investment decisions in such an open-ended manner allows for the greater upside potential (without as much downside losses) to be realised as new information is revealed.

In many strategic alliances, specific control rights are important considerations in the bargaining process. For instance, in venture capital agreements, entrepreneurs often relinquish control rights to gain access to capital (Hellmann, 1998). In biopharmaceutical strategic alliances between biotechnology startups and pharmaceutical firms, the extent of control rights that biotechnology startups are able to maintain over their research and development activities is a function of the availability of capital from such sources as pharmaceutical firms who enter into these alliances with biotechnology firms (Lerner and Tsai, 2000). The unbundling of control rights in biopharmaceutical strategic alliances is one example of institutional adaptation to a contractual setting that is characterised by high uncertainty in the form of adverse selection problems as well as ex post opportunism problems. Pharmaceutical firms who provide capital and expertise in downstream commercialisation activities (as opposed to biotechnology firms who specialise in upstream R&D activities) are able to safeguard their investment against adverse selection by setting up investment in stages, as a sequence of real options (growth and/or abandonment options), as well as safeguard against potential *ex post* opportunism

problems by controlling key stages of the development process via acquisition of certain control rights.

3.2 Resources as bundles of property rights

Property rights theory contributes to resource-based theory by suggesting that resources be defined as bundles of property rights, and therefore encouraging the view that certain *partitions* of resources can be disaggregated and then recombined according to necessary usage. Because property rights over resources can be partitioned and thus are multi-faceted (Alchian and Demsetz, 1973; Ostrom, 1990, 2000) as a result, property rights to use a resource may be held separately from the property rights to buy or sell that same resource. By relaxing the assumption of resource-based theory that the resource is the *irreducible* unit of analysis and defining resources as bundles of property rights, it becomes possible for firms to allocate these bundles of partitions of property rights (subsets of the hitherto irreducible resources) to those parties (i.e., other firms) who can create the most economic value from utilising the various bundles. Of course, to achieve net increases in economic value, the transaction costs of searching, distributing, and re-aggregating these bundles becomes critical. Indeed,

> "The potential value that a resource owner can create and appropriate does not only depend on supply and demand conditions for the entire bundle of property rights, but also on how this bundle is constrained, the transaction costs involved in realizing the value of individual property rights, and the transaction costs of controlling the property rights to the attributes that constitute the resource." (Foss and Foss, 2005, p.544)

Understanding resources as bundles of property rights not only makes it possible to better define these resources, but is also consistent with Penrose's (1959) initial theoretical insight that it is not the resources themselves but how the services of these resources are utilised that is critical for understanding resources as a source of competitive advantage (Kor and Mahoney, 2000, 2004; Tan and Mahoney, 2005). Moreover, firms can (if ingenious enough) bundle these property rights in various ways in response to such problems as scarcity of resources (Coase, 1960; Alchian, 1965), thus underscoring the significance of the endogeneity of resource combinations enacted by the firm.

At the societal level, property rights theory explains how institutions in prosperous economies evolve over time to adapt to contracting situations so as to allocate resources more efficiently. At the firm level, the implication is that the firms that survive over time are those that are better able to adapt to new contracting situations by allocating resources to generate economic rents. This implication is consistent with both Penrose's (1959) discussion on how managers shape a firm's *subjective productive opportunity set* as well as discussion of the entrepreneurial function (Kirzner, 1973) as generating Schumpeterian new combinations.

The property rights insight of the evolutionary process towards an efficient adaptive response to new contractual situations and its Austrian corollary of the entrepreneurial discovery process (Kirzner, 1973) are critical for extending Foss and Foss' (2005) argument that economic value creation is realised by the process of economising on transaction costs. In defining bundles of property rights that are the productive resources, successful firms are able to (by both luck and skill; Kirzner, 1997) position themselves to benefit from new opportunities. For instance, in biotechnology, investing pharmaceutical firms place bets on a variety of potential technologies not only through formal

alliances that are reported publicly, but also through a myriad of informal agreements (Powell et al., 1996). This network of relationships – both formal and informal – is critical for staying informed about technological changes at the frontiers of new research and to be in a position to utilise these new discoveries. Such growth (real) options that allow firms to make decisions with better information create new upside potential for economic value creation without the downside risk. Being able to leverage external sources of knowledge (i.e., *absorptive capacity*; Cohen and Levinthal, 1990) can be a source of competitive advantage, one that requires *entrepreneurial alertness* (Kirzner, 1973). In fact, firms can develop capabilities that not only allow them to utilise external sources of innovation and knowledge, but also place themselves in a position to better anticipate (being alert to) changes in the information set available to them (Cohen and Levinthal, 1994). The example of Japanese automakers like Toyota actively learning and exchanging new knowledge with their parts suppliers (Dyer, 1997) is another case in point of how firms can better define resource combinations (or define interfirm relationships) to create economic value.

This idea brings us to another key property rights insight that can inform economic value creation: resources and capabilities that form the basis for competitive advantage do not necessarily have to be within firm boundaries. Since resources are bundles of property rights, resources can logically be separated from the owners of the resources to the productive function of the firm. The logical implications of this property rights insight for resource-based theory is that it is not necessarily the resources themselves that have to be 'owned' by the individual firm, but the economic rents that accrue to the individual firm should be understood to be the result of how that firm utilises a set of resources, so that the economic rents cannot be realised without that firm's participation. Fundamentally, economic rents accrue to resource owners, not to the resources themselves (Coff, 1999). Indeed, competitive advantage is consistent with a resource being tied to other resources within the firm (becoming relation-specific) in an economically value-creating way (e.g., via *co-specialisation* and *combinative capabilities*; Teece, 1986; Kogut and Zander, 1992). Resources that are potentially sources of competitive advantage for a particular firm are those resources for which that firm holds property rights.

This definition of resources includes even those resources that are not 'owned' by the firm but also resources that can be leveraged by the firm. For instance, human capital is 'owned' by human resources (in the absence of slavery), not the firm employing those human resources. Because human capital cannot be alienated from human resources, firms often leverage power over human capital through ownership and control of non-human assets (Hart, 1995).[9] By setting rules of the game within the organisation (and by extension, in its relationships with various input providers to the firm's value-creating process), the firm is able to internalise the contractual externalities that are present and thereby capture this additional economic value (Holmstrom, 1999). Another example of the firm internalising external resources is when the firm leverages technological knowledge that it does not 'own' (i.e., external parties have developed some new technology). This superior capability (i.e., *absorptive capacity*, Cohen and Levinthal, 1990) can indeed be considered a source of competitive advantage for that firm. The critical point that property rights theory suggests – and the implication property rights theory has for resource-based theory – is that the firm is the focal point of *how* a set of resources is utilised (i.e., in effect, *de facto* ownership of key resources), not so much whether the firm has *de jure* ownership over that set of resources.

4 Discussion and conclusions

Neoclassical economics assumes secure property rights, and Coase (1960) portrays such a perfectly competitive environment, leading some to mistakenly refer to perfect competition where property rights are perfectly secure as 'Coasean', but in fact, Coase (1988) is using this ideal state where private costs equal public costs to make the more important point of the need to understand how the world of *positive* transaction costs operates. In a world of positive transaction costs, economising on these transaction costs represent the struggle to more clearly define property rights to resources. Applying the insights of the Coase Theorem (Coase, 1960), Foss and Foss (2005) demonstrate that through utilisation of such resources as transaction cost-minimising managerial practices, it is possible to create economic value added. Foss and Foss' (2005) main contribution is to point out how certain firm-specific resources may allow the firm to economise on these transaction costs, and thereby generate economic value added.

In the current paper we maintain that Foss and Foss' (2005) arguments concerning appropriation can be extended to include a more dynamic aspect of resource utilisation, which includes not only economising on transaction costs, but also the dynamic search for increasing entrepreneurial rents (Kirzner, 1973; Rumelt, 1987). In a purely static setting, emphasis on economising is sufficient to explain how defining property rights to resources more efficiently should lead to economic value creation. However, implicit in the (dynamic) evolutionary process of defining property rights – at a macro level, establishing property rights regimes or institutional settings, at a micro level, choosing governance arrangements and adapting organisational processes – economic actors, such as firms, discover new solutions to problems, and in doing so define property rights in ways that were not available before. In short, the evolutionary process is one of *entrepreneurial discovery* (Kirzner, 1973) in defining and redefining property rights over potentially value creating resources (Kim and Mahoney, 2002). Moreover, this dynamic process is analogous to how firms utilise real options for future growth opportunities, such as firms utilising additional informational advantages of equity joint ventures (over less hierarchical modes of governance) to reach a better adaptive solution in acquisition strategies (Balakrishnan and Koza, 1993).

The process of creating economic value through defining and protecting property rights is a critical consideration for achieving dynamic economic value creation. For a more complete understanding of economic value creation, we must go beyond comparative static economising by accounting for a dynamic process of discovery and innovation. Indeed, the joining of a dynamic resource-based theory with property rights theory (Kim and Mahoney, 2002) stands to provide just such a rich context for future research by clarifying the relationship between potentially value-creating resources and realised economic rents at the individual firm level, with a key emphasis on better understanding the economic foundations of strategy (Mahoney, 2005).

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Notes

[1]Seminal works in the property rights tradition would include: Coase (1960), Alchian (1965), Demsetz (1967), Cheung (1970, 1983), Libecap (1989), North (1990) and Barzel (1997). For an excellent review of the property rights literature, see Eggertsson (1990).

[2]To be sure, transaction cost economics concurs that adaptation is the central problem of economic organization and considers both autonomous adaptation of a spontaneous kind (Hayek, 1948) and cooperation adaptation of an intentional kind (Barnard, 1938). Also, the concept of "fundamental transformation" (Williamson, 1985) captures the process of lock-in over time. Nonetheless, the details of the *processes* by which transaction costs economising takes places require further inquiry.

[3]Lippman and Rumelt (2003a, 2003b) directly deal with the issue of bargaining within the framework of resource-based theory. Asher et al. (2005) and Kim and Mahoney (forthcoming) argue for a stakeholder view to better deal with rent appropriation between key input providers within the firm or among contracting partners.

[4]In many ways, the Austrian influences (Hayek, 1948; Mises, 1949; Kirzner, 1973, 1997) on evolutionary economics (Nelson and Winter, 1982), resource-based theory (Kor et al., forthcoming) and the dynamic capabilities perspective (Teece et al., 1997) have the potential to inform property rights theory.

[5]The evolution of institutions that we are particularly interested in is closer to the Lamarckian evolution as discussed in Nelson and Winter (1982), rather than Darwinian evolution, as in population ecology (e.g., Hannan and Freeman, 1977).

[6]See Mahoney and Pandian (1992), Amit and Schoemaker (1993) and Peteraf (1993) for a discussion of economic rents from a resource-based perspective.

[7]The example is somewhat analogous to the success in establishing property rights for mining for gold in Nevada and California in the 19th Century gold rush (Libecap, 1989). Where the potential economic benefits of setting rules (arbitrary as those rules may have been; essentially 'squatter's rights' in the gold rush example) outweigh the economic costs of finding the exact social costs of finding the Pareto-optimal prices, any reservations about skewed distribution (ex post) of the wealth will not deter rule setting. Moreover, since the economic value of diamonds is fairly well established, there is little information asymmetry between the bargaining parties that may lead to a failure in the process of rule setting.

[8]For a recent discussion of a real options perspective in the context of resource-based theory, see Mahoney (2005).

[9]Conversely, where human resources have substantial bargaining power over the firm, they are able to reserve their residual rights to withdraw their human capital from the value-creating process. Therefore, the firm may only earn normal economic returns on human capital (Kim and Mahoney, forthcoming). See Rajan and Zingales (1998) for an excellent discussion of how human resources can have residual control over portions of the firm's resources (*de jure* ownership) without *de facto* ownership.