An Analysis of Entry Barriers from a Property Rights Perspective

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Abstract

We use a broad conception of property rights and transaction costs in order to derive more precise conclusions from the market power perspective on competitive strategy. In particular, we examine the way in which property rights and transaction costs influence the effectiveness of entry barriers as means of positioning against market forces in an industry. In the market power perspective the entry deterring potential of entry barriers depend on whether or not the residual demand in the industry allows for sufficient profits to cover an entrant's sunk cost of entry and cost of production. From a property rights perspective this is a much too narrow focus as the analysis neglects the incentives that buyers and suppliers to the industry have to take action against the potential damage caused by entry barriers. Buyers' and suppliers' incentives to take action depend on the value that is lost if either of the parties exercise market power and the transaction cost they face in doing so. The larger is the value dissipation from strategic actions, the greater are the incentives of those who are affected to enter into transactions that nullify these losses.

Introduction

Competitive strategy, in the market power perspective, is about how firms build and sustain privileged market positions [21;27]. This involve investments in defensive acts of building entry barriers to positioning the firm against market forces as well as in offensive acts such as pricing strategies, signaling and control of information to keep their rivals off balance [30;27;14;15;19;. If successful, firms acquire a privileged market position and appropriate long term rents.

In this paper we point out that a broad conception of property rights and transaction costs allows us to derive more precise conclusions from the market power perspective on competitive strategy. In particular, we examine the way in which property rights and transaction costs influence the effectiveness of entry barriers as means of positioning against market forces in an industry.

The notion of property rights is indeed present in the market power perspective on strategy but treatments of property rights issues is mainly limited to the use of intellectual property rights as a means of creating entry barrier. However, the notion of property rights extends well beyond intellectual property rights. Property rights allow firms to use and derive income from the resources they posses.

Thus, property rights are important to firm's successful implementation of any competitive market strategy. When firms implement competitive strategies that aim at building entry and mobility barriers they do in fact exercise their exclusive use rights to resources with the purpose of excluding potential entrants from the income streams that these resources generate. For example, firms that invest in large scale production not only exclude other firms from utilizing their capacity, they also seek to exclude entrants from capturing any of the income streams that are normally labeled "monopoly profits".

In the market power perspective the entry deterring potential of entry barriers depend on whether or not the residual demand in the industry allows for sufficient profits to cover an entrant's sunk cost of entry and marginal cost of production. From a property rights perspective this is a much too narrow focus as the analysis neglects the incentives that buyers and suppliers to the industry have to take action against the potential damage caused by entry barriers.

If an incumbent is successful in monopolizing an industry the traditional analysis predicts that it reduce production in order to raise prices. From the perspective of buyers and suppliers such actions can be interpreted as an attempt to capture some of the income that their resources can generate. The traditional analysis stops here assuming that buyers and suppliers do nothing to protect their property rights to income. Implicitly it is assumed that the transaction costs that buyers and suppliers face are too large for them to take any action to protect property rights to income streams. We develop the argument that incumbents' successful building of entry barriers is constrained by transaction costs. For example, if transaction costs are sufficiently low, suppliers and buyers can enter into contracts that reduce the cost to potential entrants of entering the industry.

Transaction costs perspectives have been applied in current thinking on competitive strategy. However, the analysis of transaction costs is biased towards vertical relations and factor markets (and relies strongly on Williamsonian transaction cost economics [34]). Transaction costs are generally ascribed importance because they influence the costs at which resources can be acquired and organized for strategic purposes [6,]. The transaction costs associated with identifying potential suppliers, bargaining with them, and drafting and monitoring contracts influence a firm's set of feasible strategic actions because such costs affect the combinations of resources and services that form the bases of strategies.

Property rights ideas are also not entirely novel in strategy research. The Property rights ideas has been applied to firms' boundary choices [29;20], value creation [12], and value appropriation [17]. Our focus is different. First, we focus on how transaction costs influence strategy choices in product markets. Second, we develop this focus from property rights economics rather than transaction cost economics. In particular we focus on how property rights and the transaction costs associated with the protection of property rights influence the feasibility of protecting market positions through the creation of entry barriers.

The Property Rights Model

Proponents of the economics of property rights argue that the theory of property rights has a very broad scope. In fact, it is simply an extension and generalization of neoclassical economics [1;11;13]. The extension and generalization come about by systematically addressing property rights and transaction costs issues in the context of maximizing behaviors and a tendency for markets to clear [11].

In the property rights perspective, transactions constitute the fundamental unit for analyzing creation of value. Transactions are conceived very broadly as involving the exchange of property rights, rather than the exchange of services of physical goods *per se* [7]. The strong focus on transactions makes it easy to apply to EPR ideas to the market power perspective as it defines the value that is

created in an industry as the difference between the reservation price of the sellers (defined by cost of producing items such as goods and services) and the reservation price that buyers are willing to pay for the items.

Property rights are a resource owners' *de facto* rights to exercise choices over resources such as goods and services ("use rights") and derive income from these choices ("income rights") [1]. The Property rights perspective recognizes that such rights exist even in the absence of the state, legal system, courts, etc., in fact, even under wholly anarchical conditions [31]. Physical force and/or strong social norms ensure *de facto* control over the use of and the income from a resource. Although property rights can exist in a legal vacuum, in actuality they often have legal counterparts, and the value of property rights is influenced by legal sanctioning and enforcement [3].

Property rights understood as *de facto* control have direct links to the value appropriation aspects of competitive strategy as a firm's value appropriation in transactions depends on its ability to create strong control over income rights to the value that is created. In an analysis of value appropriation an important distinction is that between specific and residual income rights. Specific income rights are those rights that transacting parties have explicitly delineated and over which they have a high level of control through mechanism that makes these rights enforceable. For example, a firm has specific income rights to the goods it produces when it enters a fully enforceable contract with a customer that specifies the price to be paid in exchange for the good. Residual income rights are those income rights that are not delineated or not fully enforceable. Thus, firms that sell their goods on spot markets at prices determined through individual negotiations have only residual income rights to the items they sell. Residual income rights represent the value than can be appropriated in the exchange net of the contractual partners' specific contractual commitments.

The distinction between specific and residual income rights makes is apparent that rivalry among incumbent firms in an industry revolves around the residual income rights to the value that is created in that industry. Firms who engage in price wars or other attempts of increasing market shares engage in capture of residual income. However, firms that are subject capture attempts from rivals may protect residual income by investing in establishing a *de facto* control of property rights to income. For example, a firm may create *de facto* control over rights to an income stream by virtue of investing in the creation of high entry and exit barriers and by employing effective offensive tactics against incumbent firms.

When firms seek to protect their residual income rights from the capture attempt by rivals they often also reduce the amount of value that can be captured in transactions by buyers or suppliers. This creates incentives for buyers and suppliers to protect their residual income rights in transactions. In fact, the EPR explicitly emphasize that all parties to transactions have incentives to create de facto control over residual income [2]. Thus, potential entrants, buyers and suppliers all view the value that they can create in transactions net of their future contractual obligations as residual income that must be protected. The implication to strategy is that the outcome of rivalry and therefore the amount of value that can be appropriated by any firm in the industry depend on the interaction between the protective mechanisms employed by all parties to the transactions in question.

The parties' incentives to create de facto control over residual income rights depend on the transaction costs they encounter in establishing protection mechanism relative to the value that they expect to appropriate. However, the amount of value that can be appropriated depends on how much value is actually created. It is well known from the traditional neo-classic well fare economics that perfect competition is a setting in which maximum value is created. As industry concentration ratio goes up it becomes more and more likely that incumbents manage to coordinate on an equilibrium with limited production compared to the perfect competitive setting. The reduction in production and

subsequent transactions represent a lost in terms of value creation (dead weight welfare loss) which incumbents are willing to suffer in order to appropriate a higher share of residual income in all remaining transactions. However, buyers and suppliers also suffer a loss from a reduction in production that goes beyond the loss they suffer from higher prices on the remaining transactions. In the traditional analysis buyers and suppliers are assumed to accept the dead weight welfare loss but as will be apparent in the following the dead weigh welfare loss may in fact in cease buyers' and suppliers' incentives to actively protect their residual income rights. The extent to which they do so depend on the transaction cost they face. In order to analyze the equilibrium that may arise from the capture and protection activities of all affected parties to the transactions we make use of the Coase theorem of zero transactions cost setting as a bench mark.

The Coase Theorem as a Bench Mark for the analysis of Entry Barriers

The property rights perspective was developed with the aim of understanding how transaction costs influence the creation of value in society. Transaction costs are the resources spent on delineating, protecting and capturing property rights to resources in use and in exchange [11;3]. Transaction costs influence how precisely property rights are delineated and how effectively they are enforced [7]. This, in turn, influences value creation and appropriation.

The assumption of zero transaction costs is very far reaching as it implies that any property right associated with a resources can costlessly be identified, delineated, enforced and traded[i]. Moreover all individuals have full information so that per implication legal enforcement is costless. Although these are clearly unrealistic assumptions they provide us with a benchmark on which to compare the value that is dissipated when transaction costs are introduced.

Value dissipation can take place. Dissipation of value takes many forms of which one is the introduction in the economy of externalities. In what has become known as the "Coase theorem," no Pareto-relevant externalities can exist when transaction costs are zero, [5]. This implies that all resource in an economy will be used in their best alternative uses such that the creation of value is maximized just as it is assumed in the perfect competition model.

The implication of the Coase theorem to entry barriers is that, when transaction costs are zero, value creation is not affected by market structure. One potential outcome will be that all buyers inter alia form an agreement to enter into contracts and have the firm produce the value maximizing amount. For example, buyers pay the monopolist a "bribe" that is equivalent to what it would have gained from exercising monopoly power. Buyers inter alia then share the value that is created from the increase in production. Both the firm and its customers will be better off than with the well fare loss from output restrictions.

While any monopoly protected by entry barriers (blocked entry) will contract to produce the value maximizing output but it may not necessary appropriate the entire value that is created in the industry. In fact, in a zero transaction cost setting, Furubotn [13] points out that market structure is indeterminate, so that, for example, the atomistic producers of the perfect competition model may form one big coalition but so may atomistic buyers. Thus, a monopoly protected by entry barriers will find itself in a bilateral bargaining setting[ii].

While the Coase theorem tells us that created value is unaffected of market structure when transaction costs are zero it does not imply that the amount of value that any firm can appropriate is also independent of market structure. For example, it is well know that in a bargaining settings where transaction costs are zero the outcome of bilateral bargaining results in a sharing of the residual income rights to created value (the Nash bargaining solution) that is affected by the parties outside options.

Thus, customers that have outside options have reservation prices that reflect the value of these options. In a similar manner, a firm's outside options influence its reservation prices and raises the lowest bid it is willing to accept from customers. Through the process of forming coalitions and contracting all residual income rights will be delineated and transformed into specific income rights and contenders with the highest valued outside options will appropriate the larger share of the created value. In the zero transaction cost setting entry barriers play no role in firms attempts at appropriation created value but exit barriers may very well do.

In sum, an important implication of the zero transaction cost assumption for competitive strategy is that there are no value reducing externalities due to firms' exercise of monopoly or bargaining power. Buyers and suppliers as well as the monopolist have incentives to maximize the creation of value through exchange. Their incentives to do so depend on the value that is lost if either of the parties exercise market power. The larger is the value dissipation from strategic actions, the greater are the incentives of those who are affected to enter into transactions that nullify these losses.

A Property Rights Perspective on Entry Barriers

In much of the positioning framework it is implicitly assumed that firms owns resources that allows them to hold a preferred position in the market from which they can exploit market power. In fact much of what is mentioned in the positioning frameworks on natural entry barriers starts from the assumption that firms fully (and costless) enforceable property rights to resources to certain resources that allow them to create entry and exit barriers [21;22;27;9]. The analysis then centers on how property rights from these resources create a means of protecting the income rights to the strategic resources that underlie the preferable position by protecting the industry incumbents from the pecuniary externalities that arise with increased rivalry.

The most often mentioned natural entry barriers stem from economies of scale, control of essential resources and marketing advantage. In the market power perspective the strength of the natural entry barriers are classified depending on whether they result in blocked entry where no entrant has incentives to enter the industry, accommodated entry where entrants has incentives to enter because entry barriers are ineffective, and deterred entry where incumbents can deter entry by complementing the natural barriers through the use of strategic entry barriers. In order to determine the strength of an entry barrier an analysis of the residual demand is conducted. If the residual demand does not allow a competing firm to produce at a level that cover its average total costs entry is blocked. The incumbent monopolist may use its market power to restrict production and raise prices.

An analysis from a property rights perspective seek to examine how these entry barriers are affected by the presence of transaction cost. For example economies of scale would not necessary result in single firm ownership over the production capacity. Firms could costless contract over the access to and the maintenance of the equipment necessary to realize economies of scale. Thus, economies of scale do not dictate monopoly ownership but single firm ownership is entirely possible. A similar analysis can be carried out with respect to the ownership of favorable resources. When it comes to the barriers that arise from marketing advantages, firms' property rights to brands have often been mentioned as key to entry barriers. Brands often are associated with large sunk cost investments in advertising. From a property rights perspective, the value to customers of such investments stem to a large extent from their ability to reduce transaction cost. For example, Demsetz [10] argue that in condemning practices such as advertising as attempts to create barriers traditional industrial organization economists often fail to account for the information costs with which advertising economizes;

While the existence of natural entry barriers hinges on transaction cost so does the use of market power by firms that feels protected by these barriers. In the section above it was indicated that when transaction cost are low any attempt by the monopolist to exercise monopoly power and capture property rights to buyers, or suppliers residual rights to income would be countered by affected buyers or suppliers. For example, buyers and suppliers facing a monopoly-owner of large scale equipment offer the monopolist favorable contracts to put unused capacity to productive use.

In order for the monopolist firm to exercise the kind of market power that is expected in a traditional analysis of economies of scale and blocked entry, transaction cost of contracting for access to, and maintenance of the equipment must raises to a level that eliminate the benefit to buyers and suppliers of entering such contracts. In a setting, where the buyers and suppliers are price takes, the required level of transactions cost as a minimum equals the value lost due to the dead weight welfare loss to buyers and suppliers. In settings where buyers and suppliers have bargaining power and created value is split equally between the monopoly and buyers and suppliers the level is determined by the dead weight welfare losses from the monopolist output restrictions aimed at increasing its bargaining power as well as the losses to buyers and suppliers from the increased bargaining power of the monopolist.

The positioning framework of Porter [21;23] emphasize the use of strategic entry barriers as supplementary to the natural entry barriers and most research over the last two decades has focused on "strategic" entry barriers that are purposely built to reduce entry [24;25;30;14;1]. A general implication of this research is that sunk cost investments are necessary to sustain entry barriers in equilibrium [4; 28]; the paradigmatic case being excess capacity which simultaneously represents sunk costs and signals a credible threat [27]. In the absence of sunk costs, markets are perfectly contestable.

However, the presence of sunk cost may not be a sufficient condition for protecting market power against entry. Note again that the set of victims to entry-deterring strategies includes both potential entrants and buyers. If transaction costs are sufficiently low victims can form a coalition to establish entrants in the market. This possibility has been recognized in industrial organization economics [26; 16]. In this work, entrants have the possibility of offering long-term contracts to customers before entering an industry (the length of the contract being equal to the economic life of the sunk investment). This makes the industry contestable, as the contracts protect entrants from post-entry competition. Because under these conditions entrants can recover their sunk costs they will enter the industry. In other words, markets can be contestable even with sunk costs. What is not explicitly discussed in the relevant literature, however, is that this conclusion depends on transaction costs being sufficiently low to allow for those contracts that can "offset" the incumbent's attempt at protecting his market power. Thus, the incumbent's cost advantages from sunk cost investments must be sufficiently large that they-off sett the net gains to victims from taking actions against the monopolist appropriation of created value. How much larger the cost advantage need to be depend on the transaction costs that victims face in their attempts at creating outside options. We can sum up the analysis of the relationship between transaction cost, entry barriers and market power as follows: *The level at which entry barriers are effective depends on the size of the welfare loss to those who are adversely effected by the entry barrier as well as the potential gains of improving the bargaining position of to those who are adversely effected by the exercise of market power.*

Conclusion and Managerial Implications:

Much research has centered on the use of entry barriers as a protection mechanism in industries. Entry barriers are perceived of as directed toward potential entrants and aimed at hindering these in making it economic attractive for these to establish productive capacity in the industry. The analysis in this paper suggests that the presence of transaction costs is a necessary condition for successful use of

entry barriers as means to market power. The above building market power is circumscribed by the costs of delineating and protecting property rights by means of contracting, and that it is key to identify the complete set of victims to the building of market power. Note that this further suggests that competitive industry forces [21;23] are *interdependent*, because the different players that have a stake in industry profits can (depending on transaction costs) form coalitions (e.g., buyers can collude with firms).

The analysis indicates that a simple analysis of the residual demand and the cost conditions of the entrant relative to the incumbent is not sufficient to establish the existence of blocked entry or to access the effectiveness of strategic entry barriers. The analysis must include the transaction costs that affected parties encounter in attempts at protecting what they perceive of as their residual rights to income. Such transaction costs are not necessary exogenous. Incumbents can often to raise cost to costumers of entering into contracts with potential entrants. For example, incumbent may bundle transactions in ways that makes it difficult for customers to compare offerings and therefore to find relevant outside offers. They may upgrade products or supply complementary services on an ongoing basis to make contracting costly. Finally, incumbents may reduce dead-weight welfare losses by entering into price-discrimination practices:

References

Alchian, Armen A. 1965. "Some Economics of Property Rights," in idem. 1977. ***Economics Analysis of Property Rights***. Indianapolis: Liberty Press.

Barzel, Yoram. 1994. "The Capture of Wealth by Monopolists and the Protection of Property Rights," ***International Review of Law and Economics*** 14: 393-409.

Barzel, Yoram. 1997. ***Economic Analysis of Property Rights,*** 2nd ed., Cambridge: Cambridge University Press.

Baumol, William J., John C. Panzar, & Robert D. Willig. 1982. ***Contestable Markets and the Theory of Industry Structure***. New York: Harcourt Brace Jovanovich.

Buchanan, James M. & Craig Stubblebine. 1962. "Externality," ***Economica*** 29: 371-384.

Chi, Tailan. 1994. "Trading in Strategic Resources: Necessary Conditions, Transaction Cost Problems, and Choice of Governance Structures," ***Strategic Management Journal*** 15: 271-290.

Coase, Ronald H. 1960. "The Problem of Social Cost," in idem. 1988. ***The Firm, the Market and the Law***. Chicago: University of Chicago Press.

Coase, Ronald H. 1988. ***The Firm, the Market and the Law***. Chicago: University of Chicago Press.

Conner, Tom. 1999. "Customer-oriented and Market-led: a Matter of Balance," ***Strategic Management Journal*** 20: 1157-1163.

Demsetz, Harold. 1982. "Barriers to Entry," *American Economic Review* 72: 47-57.

Eggertson, Thrainn. 1990. *Economic Behavior and Institutions.* Cambridge: Cambridge University Press.

Foss, Kirsten & Nicolai J. Foss. 2005. "Value and Transaction Costs: How the Economics of Property Rights Furthers the Resource-based View," ***Strategic Management Journal*** 26: 541-553.

Furubotn, Eirik G. 1991. "General Equilibrium Models, Transaction Costs and the Concept of Efficient Allocation in a Capitalist Economy," ***Journal of Institutional and Theoretical Economics*** 147: 662-686.

Ghemawat, Pankaj. 1991. ***Commitment***. New York: Free Press.

Ghemawat, Pankaj. 1997. ***Games Businesses Play.*** Cambridge, MA: MIT Press.

Innes, R. & R.J. Sexton. 1994. "Strategic Buyers and Exclusionary Contracts," ***American Economic Review*** 84: 566-584.

Kim, Jongwook & Joseph T. Mahoney. 2005. "Property Rights Theory, Transaction Costs Theory, and Agency Theory: An Organizational Economics Approach to Strategic Management," ***Managerial and Decision Economics*** 26: 223-242.

Lerner A. 1934. "The Concept of Monopoly and The Measure of Monopoly Power" **Review of Economic Studies** 1 June:157-175.

MacDonald, Glenn & Michael D. Ryall. 2004. "How do Value Creation and Competition Determine Whether a Firm Appropriates Value?" ***Management Science*** 50: 1319-1333.

Oxley, Joanne. 1999. "Institutional Environment and the Mechanisms of Governance: The Impact of Intellectual Property Protection on the Structure of Inter-firm Alliances," ***Journal of Economic Behavior and Organization*** 38: 283- 309.

Porter, Michael E. 1980. ***Competitive Strategy***. New York: Free Press.

Porter, Michael E. 1981. "The Contributions of Industrial Organization to Strategic Management," ***Academy of Management*** *Review* 6: 609-620.

Porter, Michael E. 2008. "The Five Competitive Forces that Shape Strategy," ***Harvard Business Review*** (January): 78-93.

Salop, Steven. 1979. "Strategic Entry Deterrence," ***American Economic Review*** 69: 335-338.

Salop, Steven & David Scheffman. 1983. "Raising Rivals' Costs," ***American Economic Review, Papers and Proceedings*** 73: 267-271.

Sexton, R.J. & T.A. Sexton. 1987. "Cooperatives as Entrants," ***RAND Journal of Economics*** 18: 581-595.

Shapiro, Carl. 1989. "The Theory of Business Strategy," ***RAND Journal of Economics*** 20: 125-137.

Sutton, John. 1991. ***Sunk Cost and Market Structure.*** Cambridge: MIT Press.

Teece, David J. 1986. "Profiting From Technological Innovation," in Michael L. Tushman and William L. Moore, ed. ***Readings in the Management of Innovation***. Cambridge, Mass.: Ballinger Publishing Company.

Tirole, Jean. 1988. ***The Theory of Industrial Organization.*** Cambridge: MIT Press.

Umbeck, John. 1981. "Might Makes Rights: A Theory of the Formation and Initial Distribution of Property Rights," ***Economic Inquiry*** 19: 38-59.

Usher, Dan. 1998. "The Coase Theorem is Tautological, Incoherent, or Wrong," ***Economics Letters*** 61: 3-11.

Williamson, Oliver E. 1985. ***The Economic Institutions of Capitalism.*** New York: The Free Press.

Williamson, Oliver. 1996. ***The Mechanisms of Governance***. Oxford: Oxford University Press.

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[i] This is a strong version of the Coase theorem (as in Coase [1988] and Barzel, 1997). Debate persists on the precise interpretation of the Coase theorem (e.g., Usher, 1998).

[ii] The creation of a bilateral bargaining setting is not always sufficient to ensure that maximum value is created as implied by the double marginalization problem (Lener, 1934) but when ransaction costs are zero bilateral monopolies will act as a vertically integrated firm.