

Additional property rights applications

In previous chapters, the property rights approach was useful in explaining various aspects of such specific phenomena as gasoline price controls and slavery and in developing a general approach to, among other things, non-market allocation, the maximizing role of restrictions on private property rights, and, in the context of farm tenancy, the choice among various contract forms. The property rights framework can be applied to various other problems. I shall consider several additional areas to which property rights notions can be applied: people's ability to protect themselves against losses to monopoly, the relationship between property rights and theft, property rights to innovations, and property rights to price information.

PROTECTION AGAINST LOSSES TO MONOPOLY

Monopolies are said to result in resource misallocation taking two forms. The first, better-known kind arises because monopolies produce "too little," charging prices that exceed marginal costs. The second kind of misallocation arises in the process of the creation of monopolies. Would-be monopolists spend resources in order to attain monopoly positions and such expenditures are dissipating. The magnitude of these capture costs is comparable to that of the expected monopoly profits. Since monopolists' gains exceed their contributions, they seem to have the right to harm other people. Yet such rights are not exercised indiscriminately, and it is of interest to determine the circumstances under which such power is used.

In general, a property that can be captured must lie, at least in part, in the public domain. Moreover, what lies in the public domain must have been relinquished by whoever previously owned it. In the case at hand, if someone is able to capture a monopoly position, or, more accurately, if someone is able to capture, at a resource cost, the rights to the monopoly gain, then the monopoly position itself must have been lying in the public domain;

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and in order for these rights to have entered the public domain, people must have relinquished their rights in the first place. I will delineate conditions under which people would allow this to happen for the case in which monopoly is attained by predatory pricing. In predatory pricing, an initially competitive industry is taken over by a predator who monopolizes it by temporarily pricing the target commodity at less than its costs, thereby forcing the competitive producers either to leave the industry or to sell their facilities to the predator. This method illustrates well the general principle behind opportunities for capturing monopoly gains.¹

Prior to predatory action, consumers were able to purchase the target commodity from many sellers at a competitive price; this ability is threatened by the predator. Since property rights are defined here as individuals' ability to gain from the consumption and exchange of goods, it seems proper to inquire what gives consumers the ability to obtain a good at the proper to inquire what gives consumers the ability to obtain a good at the competitive price. Antimonopoly laws aside, consumers surely do not have a legal right to the competitive price. Consumers, however, can acquire the rights (in the economic sense of the term) by the simple expedient of signing long-term competitively priced contracts for the commodity. They might choose to take such action if they fear monopolization by a predator. Long-term contracts will also benefit the competitive sellers: It is difficult to ruin sellers who have signed such contracts, because they do not have to sell all their output at the predatory price; and these competitive sellers command a high acquisition price from the predator. As long as the extra costs of arranging long-term contracts over and above those of spot exchanges are less than the monopoly gain, threatened sellers and consumers will gain by establishing rights to supply and to be supplied respectively at the competitive price.² When the cost of protection, whether by long-term contracts or any other means, is less than the expected monopoly loss, the would-be monopolist stands to lose from the attempted monopolization. In this sense, the would-be predator does not have the right to such a gain. Assuming that in the absence of defensive action the predatory practice is a real threat to competitive buyers and sellers, it is expected that the less costly it is to arrange long-term contracts in an industry, the less likely it is that the industry will be subject to monopolization.

In summary, consumers' and competitive sellers' ability to exchange at predatory practices.

¹ I take no account of the controversy surrounding the logic of, and the evidence for, predatory practices.

² The successful predator will gain more (in present terms) from the ultimate monopoly pricing than she or he will lose from below-cost pricing during the predatory period or from buying out competitors at terms attractive to them. Conversely, consumers and preyed-on firms will be the combined net losers from such predation, and it seems highly probable that consumers' losses from the monopoly price will exceed their gains from the initial lower price.

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competitive prices depends on their own efforts to enforce the appropriate arrangements. When enforcement costs are high, however, consumers' and sellers' rights to be served at the competitive price are likely to be relinquished, and a predator may then capture the right to a monopoly position.

THE RELATIONSHIP BETWEEN PROPERTY RIGHTS AND THEFT

The existence of theft makes the distinction between economic and legal rights clear; it also highlights the notion that economic rights are never absolute. Thieves lack legal rights over what they steal; nevertheless, they are able to consume it and to exclude others from it, to derive income from it, and to alienate it. Each of these capabilities is an attribute of ownership. The lack of legal rights may reduce the value of these capabilities, but it does not negate them.

The fact that thieves have rights over stolen property implies that the current owners of property that might possibly be stolen do not have full rights over "their" property. Owners cannot be certain of the future use of such properties. The rights they do have depend, in part, on the protection effort made by the state. These rights also depend on the measures owners take to protect themselves from theft; the more they spend, the more secure their rights are expected to become. These efforts are not expected to deter all theft; for instance, fences around orchards are not made to be totally insurmountable. Here, too, then, individuals choose to leave some rights in the public domain. When the probability that thieves will steal one's apples from backyard trees is positive, then one has only partial ownership over the apples.

Private protection methods are as varied as are commodities themselves. Owners of apple orchards may employ guards to reduce theft; they may place trees farther from their property boundaries than they would in the absence of theft; and they may grow less valuable apples that are less appealing to thieves. Indeed, in the absence of theft, owners might be growing entirely different crops on their land.

The notion that theft is a manifestation of the general case of imperfect delineation of rights can be illustrated further by reconsidering movie theaters. Of the attributes theater owners relinquish to the public domain, two relate to the difference in value among seats. The first relinquished attribute is the difference in value between the better and the worse seats within a price class of seats. People can capture the difference in value by arriving early and occupying the better seats. To the extent that policing is not perfect, a second attribute that is relinquished in part is the difference in value across price classes. Buyers of low-price tickets

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can capture the difference to the extent that they are not prevented from occupying higher-price seats. The state takes part in the enforcement effort only in the latter case, since jumping seats constitutes a legal infringement, whereas selecting a certain seat within a price class obviously does not. The economic logic of the two types of capture, however, is the same.

PROPERTY RIGHTS TO INNOVATIONS

The importance of property rights considerations to innovations has been widely recognized by economists; nevertheless, some major rights issues remain unresolved. One such issue concerns the rights innovators can expect to have over their innovations. When an innovation is developed by a uniquely talented individual, it seems plausible that such an individual will have the field to herself or himself and be able to obtain the rights to the innovations. On the other hand, if many individuals are able to develop the same innovation at similar costs, it may appear that none has a right to it and that in their competition for the gain from the innovation its economic value will be dissipated; nevertheless, in this case too rights may be well defined.

A useful measure of the net present value of an innovation is the difference between total consumers' valuation and total innovators' costs. Each of the potential patterns of activity leading to a particular innovation will generate its own net present value. The highest value will be generated by the innovation activity that satisfies two conditions: that it be free of duplication and that it be undertaken at the time that yields the highest consumers' valuation net of innovating costs. One market force that tends to bring about the realization of these conditions is competition among innovators in recruiting customers for their particular innovations before expending capital on the actual innovation.³ In order to attract potential customers away from competing innovators, not only will innovators tend to cede to customers all the gains from the innovation, but the winning innovator will also be the one who performs the innovation activity closest to the time that maximizes its net present value; only then can the bid for customers dominate that of competitors. When the cost of recruiting customers, whether directly or indirectly, is low, customers have, in practice, the rights to the gain from the innovation. Here, as in the case of predatory practices, the easier is advance contracting, the better are rights delineated.

Innovators who possess unique talents do not need to cede to custom-

³Yu (1981) discusses extensively methods used for such recruiting. Demsetz (1968) was the first to consider advance contracting for selling commodities whose production is subject to declining costs.

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ers all the potential gains the innovations generate. Such innovators may encounter another problem, however. Every customer may try to obtain a bargain for herself or himself by offering the lowest royalty payment. Since the innovators' marginal cost of serving extra consumers is zero, they may be willing to give ground rather than lose customers. Individual incentive for bargaining under these conditions implies that the difference between the maximum consumers' valuation and the marginal cost lies in the public domain. The potential loss from such bargaining can, however, be lowered if the parties can be restrained not to bargain. Therefore, if the option of selling the use of the innovation to different consumers at different prices can be taken away, either privately or by the legal prohibition of price discrimination, the innovator's rights over the innovation will be partially restored. Maximizing sellers will equate their constrained marginal revenue to their (zero) marginal cost and will price accordingly. The superimposed uniformity of prices – the royalty rates here – delineates rights, and their determination is free of direct capture costs. The arrangement is not entirely free of cost, however, because when a single price is prescribed the welfare triangle that could have been avoided under price discrimination is relinquished to the public domain.

PROPERTY RIGHTS TO PRICE INFORMATION

Economists seldom consider that to determine which prices will clear the market is a resource-consuming activity. Were such prices easy to determine, no serious errors in setting prices would occur, yet significant pricing errors are widespread. Some concerns, for example, are poorly attended, whereas for others tickets can be obtained only from scalpers; some artists sell out at their gallery openings, and others see an entire show go by without selling a thing; as a final example, some new stock offerings are instantly snatched up, and others prove to be duds. Such examples suggest that setting prices correctly is costly. Providing price estimates is costly and must generate a reward; since the estimates are subject to error, speculators may capture value. Resources will be spent, then, both on the capture of price information and on the prevention of such capture.

It is to be expected that prices will be set by individuals who specialize in this activity, but the direct sale of price estimates is problematic. Were the producers of commodities to purchase price estimates for them, they would also require a guarantee of the quality of the service they were buying. Some of these commodity producers, however, could take advantage of the fact of the guarantee by lowering product quality and shifting part of the guarantee burden to the pricing specialist. This difficulty may be avoided if the producer of the commodity also sets the price, which

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may explain why the two activities are often performed within the same organization.

Some commodities and services are not as susceptible to the problem of guarantee abuse as others, and for these the producer of the price estimate may guarantee her or his service, thereby becoming the residual claimant to variability in the value of the service. An important example of the provision of price services by independent specialists may be seen in syndicates of investment bankers, which advise business firms about the price at which to sell new stock. At the heart of the transaction between a syndicate and an issuer of stock is the implicit price guarantee. Essentially, a syndicate buys the entire stock flotation at the agreed-upon price and offers it to the public at a price not exceeding a predetermined ceiling. A syndicate that errs by overestimating the market-clearing price will be the one to bear the effect of its error. The syndicate, then, maintains a property right to its price estimate.

Pricing errors may have an additional effect on behavior. The ultimate buyers of a new stock may either rely on the recommendation of the syndicate or devise their own (or use their advisers') estimates of the market price of a stock and act accordingly. The latter action constitutes a duplication of effort, since the information is a public good that has already been produced by the syndicate. The demand for a stock is higher, the lower the costs associated with acquiring it; the demand is also higher if demanders believe that, on average, over many stock offerings, their suppliers offer them bargains. They cannot expect, however, that every new stock will be a bargain. Since some stocks are expected to be duds and others are expected to be bargains, buying only the latter and avoiding the former would be highly profitable. Information on new offerings that allows a speculator to avoid some of the duds while concentrating on the bargains should enable her or him to earn a positive return. Success by such a speculator, however, will lower the return to uninformed buyers; they will be forced to buy relatively more duds, since a relatively large fraction of the bargains will already have been taken by the speculator. The demand for stocks by buyers who do not acquire information on individual issues but who are aware of the average return on new stocks will be lower when they must compete with speculators, and lower stock prices will result. In order to protect their rights from being captured by speculators and to prevent an adverse shift in the demand facing them, syndicates must deter speculators from acquiring information. This may explain the restrictions on the number of shares of a new issue individuals or organizations are allowed to purchase. If a would-be speculator can use her or his information to buy only small blocks of shares, she or he will seldom find the information worth collecting. Thus the restriction seems to protect the rights of syndicates to their costly price information.

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People can effect rights delineation, and as part of their maximization effort people can delineate rights to whatever degree they desire. In this sense, rights are always well delineated. Because commodities are not uniform and are costly to measure, however, perfect delineation is prohibitively costly, and so rights are never perfectly delineated.

Those properties that people have chosen not to delineate are in the public domain. Such properties include much of the world's oceans; they also include the cool air in air-conditioned shopping malls, which is not charged for on the margin. Properties in the public domain can be augmented or diminished. As the values of commodities and of commodity attributes change, and as the costs of delineation and of protection change, people's decisions regarding what to leave in, what to relinquish to, and what to reclaim from the public domain will change correspondingly.

The public domain is ubiquitous; innumerable commodity attributes are placed in it. Any service not fully charged for on the margin is at least partly relinquished to the public domain. Owners could charge for such services, but the extra returns often do not justify the extra costs. For instance, concert-hall owners relinquish into the public domain the differential in valuation among equally priced seats. When the value of concert-hall seats falls, which happens when, for example, a famed opera star leaves the hall and a local choir begins using it, seats are expected to be priced in less detail. The differences in value among seats that were formerly differentially priced are relinquished into the public domain. Patrons are expected to claim that differential through the expenditure of resources. Resource owners attempt to maximize the net values of their resources: They attempt to organize their action so that, *ceteris paribus*, losses to the public domain are minimized.

Because rights to commodities are costly to delineate, some of the valued attributes of these transactions are subject to capture. In order to gain from exchange, people must spend resources on transferring rights

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to commodities. Contracts are expected to be structured so as to minimize the costs of exchange of given transactions. In forming their contracts, transactors have a choice of units by which to meter their transactions; for instance, labor can be exchanged by the hour or by the piece. The use of each of these units relinquishes different subsets of attributes to the public domain: the per-hour effort when labor is sold by the hour; the care, or quality of the output, when labor is sold by the piece.

In addition to having a choice of units, contractors may also impose restrictions on the way they conduct their exchanges in order to reduce the amount they spend to capture from each other. Refrigerator producers, for example, often make the sale of their merchandise subject to a warranty while requiring buyers to use their refrigerators only non-commercially. The warranty service is a free attribute to buyers in that they are not as heavily penalized for carelessness as they would be if they had to pay for repairs themselves. The restriction serves to reduce such carelessness. The more valued transactions are, the more comprehensive the restrictions are expected to be.

Since exchanged commodities are not uniform and are not fully measured, the value of the exchange is subject to variability. A contract allocates the variability in a transaction among the transactors. As transactors alter the units by which they effect exchange and as they alter the associated restrictions, they also divide the variability in outcome among themselves differently. That allocation of variability that maximizes the contractors' wealth is the one wherein the ability of a contractor to affect the value of the mean outcome of the transaction is positively related to the share of variability she or he will assume. It is expected, for instance, that refrigerator manufacturers will assume variability in income by guaranteeing most comprehensively those aspects of their refrigerators' performance most affected by their production procedures and least likely to be affected by consumers' actions. We observed that the guarantee on refrigerators' motors remains in force for several years, whereas refrigerators' paint is guaranteed for only a short period.

All sales except some of those governed by caveat emptor require organization. In sales subject to caveat emptor, buyers need assurance that they will not walk away with worthless merchandise. If buyers check directly, the degree of organization may be trivial.¹ Non-caveat emptor sales, that is, sales in which the transactors have imposed constraints on each other, require real organization in order to police and to monitor the constraints. The nature of, and the costs associated with, such organizations vary with the pricing method used. A change in conditions, such as a change in the valuation of the transacted commodity, is expected to

¹Not trivial, however, is the resource cost of such exchanges.

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change the method by which the commodity is sold and, with it, the organizational structure governing its exchange. Regarding which party will post the price at which exchange will be conducted, this theory yields the implication that the party who can better predict price will be the one posting prices. The seller may post a price and then agree to deal at that price, or the buyer may make the commitment. Whoever posts a price subjects herself or himself to exploitation; her or his exchange partners may engage in excessive price prediction, discover prediction errors, and take advantage of the willingness to deal at a fixed price. The implication is that the person who can more readily predict the price will be the one assuming the consequences of posting it. Thus, as the size of the buyer vis-à-vis the seller increases, the more likely are buyers (whose unit cost of prediction has declined) to post prices at which they agree to purchase what sellers wish to sell.

Because all but the lowest-value transactions are subject to constraint and require organization, only a small fraction of transactions are in the market as this term is usually understood. The accompanying off-asked question of which transactions will take place in the market and which will remain within the firm is not likely to elicit a useful answer, however. Firm transactions are not uniform, and some of them are more in the firm than others. A more fruitful question concerns the determination of the form of organization that will govern different kinds of transactions and of the forces that will bring change to these organizations.

The complexity of commodities and activities makes ownership patterns complex as well. The most efficient owner of a particular commodity attribute is not necessarily the most efficient owner of the commodity's other attributes. It may be advantageous, then, to split the ownership of a commodity among several individuals. Because the commodity is not itself physically split, its owners may find it easy to consume some of each other's unpriced attributes if they are not properly constrained. In the just-mentioned restriction on the commercial use of refrigerators, the owner of the attribute "guarantee service" restricts the behavior of the owners of some of the refrigerator's other attributes.

Organizations that exist to police and to monitor constraints are themselves complex. Many factors affect the variability in income of an organization such as the business firm: The price of each commodity it buys or sells can fluctuate, and each specimen of the commodities it deals in may differ from others; in addition, its income may depend on whether or not such phenomena as fires, earthquakes, and foreign confiscations occur. Each of these instances of income variability may be borne by a different party. A firm may purchase a raw material on the spot market or may operate under a long-term fixed-price contract for it. Assuming no breach of contract, in the former case the buying firm bears the effect of fluctua-

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tions in the price of the commodity; in the latter case it is insured against such fluctuations. Such considerations apply to all the firm's sources of variability. It is expected here, too, that the party that is better able to affect the mean outcome will tend to assume the associated variability. For instance, it is expected that a raw-material supplier who has some power to set its price is more likely to sign fixed-price long-term contracts than is one not possessing such power.

Similar considerations apply to labor services. When workers can affect outcome value more easily than the demander of the labor services can, the labor suppliers are more likely to operate as independent contractors selling output rather than labor. At the other extreme, the demanders of labor services will assume variability in outcome by paying a fixed long-term wage. It is expected, then, that as workers' market wage rises, they will gravitate toward self-employment (Barzel, 1987).

When two parties agree to a formula for dividing future income variability, one will emerge as the winner and one as the loser. Because the loser could gain by reneging on the contract, each party demands assurances from the other that the contract will not be breached. A necessary though not sufficient condition for such assurances is that a party be able to meet her or his obligations. Fixed-wage suppliers of labor can readily guarantee performance even when the market wage exceeds the contract wage, because they own their own labor services. The employer of such workers must be able to ensure wage payment when the market wage falls below the contract wage. Equity capital specializes in providing such assurance. More generally, it seems that equity capital is assembled (and augmented) in order to guarantee all the contracts signed by the firm. These contracts may, in turn, be viewed as constituting the firm; and in this sense shareholders are the owners of the firm (and the firm is a "nexus of contracts").

CONCLUDING REMARKS

I have attempted to demonstrate how the property rights transaction cost model can generate a better understanding of the allocation of resources and of the interaction of this allocation with economic organization. The literature that assumes that the costs of transacting are zero and that all property rights are perfectly well delineated is incapable of dealing with a vast array of actual observed practices. Particularly glaring is the inability of such an approach to explain why exchange parties would ever impose restrictions on each other. The property rights approach is capable of addressing such issues; I have offered some answers.

Many approaches to the analysis of economic behavior do not explicitly assume that transaction costs are zero, but neither do they emphasize

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the property rights angle. It is my impression that economists who neglect property rights considerations tend to make implicit assumptions that are often not well taken and that produce hard-to-swallow results. It is quite common to find cases where within single models some transaction costs are implicitly assumed to be zero (for instance, it is routinely assumed that monopolists know precisely what their demand is) while others are assumed to be prohibitively expensive (for instance, it is routinely assumed that price discrimination by monopolists is too costly).² The approach that insists on asking who owns every particular attribute of a commodity and what "owners" can actually do with "their" commodity seems to come closer to the root of transaction costs and is, therefore, less prone to make untenable assumptions.

Finally, consider the application of the property rights approach to the distribution of the gains from trade. Many goods are valued less by their current owners than they are by other individuals. Who owns these potential gains from trade? In the competitive, zero transaction costs model, the distribution of the gains is costlessly determined. The costless information (or the uniformity of commodities) necessary for such competition is, however, seldom encountered in reality. Opportunities for people to gain at the expense of others seem rampant. Whereas individuals are always ready to expend resources to increase their share of the pie, they will also seek methods and organizations that better delineate rights to it and will thus divide the pie without shrinking it too much.

A sizable part of this book analyzes such behavior. It is fitting to finish by considering one unlikely place where the time and effort of haggling over the distribution of the gains from trade are effectively avoided: a Middle Eastern bazaar. In Cairo's "principal livestock market, [where] camels take center stage . . . the camel market's own King Solomon [is] Muhammad Abd al-Aziz. . . . Sales are conducted one-on-one — one buyer, one seller and one camel at a time. . . . With an acutely discriminating sense of camel flesh . . . Muhammad . . . sets a fair price. . . . His authority is usually sufficient to settle any difference." Transaction costs are near zero in this particular market. Nothing, however, comes free. Here, the cost in question is "a small margin for [Muhammad's] commission."³

²Another example occurs in asymmetry-of-information models, where one set of individuals is, as a rule, implicitly assumed to be costlessly informed while for others the information cost is assumed to be prohibitive.
Werner (1987).

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