

EQUITY, OPPORTUNISM, AND THE DESIGN
OF CONTRACTUAL RELATIONS*

Working Paper #525

Scott E. Masten
University of Michigan

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University of Michigan
School of Business Administration
Ann Arbor Michigan 48109

*Prepared for the Fifth International Conference on the New Institutional
Economics, Wallerfangen/Saar, W. Germany, June 24-26, 1987.

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The primary focus of the New Institutional Economics has been on evaluating the choice among alternative economic institutions. As Oliver Williamson recently described it, "implementing transaction cost economics mainly involves a *comparative institutional assessment of discrete institutional alternatives*" (Williamson, 1985, pp. 41-2, emphasis added). Thus, the New Institutionalism pits markets versus hierarchies, regulation versus franchise bidding, and long-term contracts versus simple exchange.

The application of transaction-cost reasoning to these questions has provided numerous insights. In addition to its theoretical appeal, a considerable body of empirical work has emerged supporting the relationship between the decision to integrate and factors such as the degree of asset specificity and the complexity of the transaction.¹ Indeed, the success of this approach in analyzing the theory of the firm has been such that it must now be considered the predominant theory of vertical integration.

But the systematic analysis of transactional frictions developed to examine questions of institutional choice has been less extensively applied to questions of institutional design.² How, for example, do transaction costs affect the internal organization of the firm or the details of contractual relationships? Do opportunism and bounded rationality play an similarly pivotal role in determining the structure of corporate charters or in the selection of provisions for long-term contracts?

In this paper I wish to explore in a preliminary way the implications of transaction-cost reasoning for the analysis of institutional design

questions, particularly, the design of contractual relations. I begin in the first section by considering how transaction-cost reasoning differs from the orthodox approach to contracting problems developed by agency theorists and then discuss in section 2 the variety of ways in which opportunism manifests itself in contractual relations. Sections 3 and 4 examine the notion of equilibrating hazards and how the distribution of rents affects the propensity to engage in rent-seeking and, hence, the design of contractual relationships.

1. Aligning Incentives v. Attenuating Frictions

That transaction-cost economics first developed in the context of institutional choice problems is, at least in retrospect, not surprising. Choosing among institutions requires conscious attention to the peculiar limitations of the relevant alternatives which, in turn, leads inevitably to consideration of the nature and incidence of the frictions that prevent transactors from reaching cooperative outcomes. In addition to--and, indeed, as an integral part of--the decision of whether to integrate or rely on market exchange, however, transactors also must consider how to structure the details of the governance mode they adopt. Thus, depending on the institution chosen, transactors face decisions regarding the terms of contracts and the internal composition of the corporation. But the insights developed to analyze the choice between internal and market exchange have not been extended, at least until recently, to the analyze the details of those arrangements.

To say that transaction-cost reasoning has not been widely applied to questions of institutional design is not to say that such issues have been ignored, however. On the contrary, the structure of contractual relationships has been the focus of an extensive theoretical literature on contract incentives.³ But aside from a common emphasis on efficiency, the "incentive" and "transaction-cost" branches of analysis take distinct approaches to problems of economic organization.⁴ Whereas the incentive branch seeks mechanisms designed to promote efficient behavior by noncooperative actors in various environments, transaction-cost economics focuses on the frictions that prevent cooperation from being achieved in the first place. The differences between these approaches are sometimes subtle and not necessarily incompatible, but often have different implications nonetheless.

To see these differences, consider the nature of the moral hazard problems that undermine efficiency in many agency models. Generally, the problem in devising contractual arrangements is viewed as one of aligning incentives to discourage shirking by one or both parties to the exchange. If courts cannot observe either actions or contingencies, then complete contingent claims contracting is impossible, opening the potential for suboptimal performance. Typically, the "shirker" undertakes a level of activity that is either less (effort or quality) or greater (perks consumption) than that which maximizes joint surplus.

Several aspects of the typical moral hazard problem are worth noting. First, the types of behavior that agents can engage in are fairly limited. As a rule, an agent is able to shirk in only a single dimension of what might be called his primary activities, i.e., activities which directly affect the

total surplus. Second, moral hazard is largely passive behavior on the part of the agent in response to price signals in the contract. The agent simply responds to incentives created by the contract. Finally, although moral hazard can be two-sided in the sense that contract incentives may permit either party to a transaction to shirk, efforts by one party to counter shirking by the other are rarely modeled. Thus, increased monitoring might be a logical response to shirking. But while the incentive to monitor is sometimes acknowledged, the all-or-nothing nature of information in moral hazard problems does not permit an explicit role for this activity.⁵

The focus of the transaction-cost branch of analysis, in contrast, acknowledges that incentives are important but focuses on the nature and incidence of transactional frictions. Parties to an exchange recognize that maximization of joint surplus involves cooperation but are frustrated by their opportunistic inclinations and mutual distrust. The costs incurred in active attempts to redistribute existing surpluses prevent potential gains from being realized. Since transaction costs drive a wedge between potential and actual outcomes, the way to maximize joint surplus, according to this approach, is to design institutional arrangements to minimize the frictions inhibiting cooperative exchange.

While opportunism and moral hazard are similar in that both assume that actors look first to their own self-interest, opportunism is more ingenious, active, and likely to provoke strategic responses by other parties than the type of noncooperative behavior assumed in agency models. Transactors are characterized by their cleverness, to the point of deviousness, in circumventing rules, discovering loopholes, or otherwise exploiting strategic advantages. Using contracts to try to induce cooperative behavior from an

uncooperative actor is like trying to pick up mercury; every provision stipulated or contingency appended just creates another source of contention open to various interpretations and is thus subject of manipulation in court.

Moral hazard reinterpreted as strategic efforts to appropriate gains from trade by exploiting the circumstantial advantages created by information asymmetries is clearly a form of opportunism. But opportunism is more than just moral hazard clothed in pejorative language. Some manifestations of opportunism cannot be characterized as moral hazard. It is difficult, for example, to interpret bargaining efforts as a form of shirking. Bargaining and other forms of pure rent seeking do not presume existing agreements but include efforts to elicit agreements with favorable terms. Moral hazard constitutes a response to the terms set out in a contract, rent seeking tries to alter those terms.

Opportunism, moreover, is not limited to activities that directly benefit the agent but also admits the possibility of expending resources in activities undertaken solely to impose costs on a trading partner in hope of eliciting concessions. Haggling, strikes and litigation are generally costly to both sides and benefit the party that initiated them only if they result in a more favorable transfer to that party. Of course, such behavior is likely to provoke responses in kind, either in retaliation or defense of the status quo.

1.a. The theory of efficient breach.

The difference between aligning incentives and attenuating frictions can be illustrated in the context of the problem of determining efficient damages

for breach of contract. At the time parties enter a contract for future exchange, there is usually some uncertainty about the opportunity costs to each of the parties of performing the stipulated transaction. It is thus possible that at the date at which the exchange was scheduled to take place, one or the other of the parties will, given the terms agreed to in the contract, regret having entered the agreement and wish to breach the contract. Whether or not it is efficient for the transaction to proceed, however, depends on the realized value of performance to each party. Thus, if the value of the seller's assets in an alternative application were to exceed their value in their intended use in supplying the intended buyer, nonperformance of the contract would in fact be efficient. In some cases, however, one or the other party may wish to breach the agreement although efficiency dictates performance.

Economists typically view this as an incentive problem, creating appropriately scaled damages to encourage each party to breach only when it is efficient.⁶ A legal rule requiring specific performance, it is argued, would prevent breaches where nonperformance is desired and cause the parties to trade too often relative to the optimum. Requiring the breaching party to pay expectation damages or "lost profits," however, would induce him to breach only when doing so would leave him better off even after compensating the other party and hence would be efficient.

In an excellent application of Coasian logic, Ian McNeil has exposed what he calls the "fallacy of the theory of efficient breach." Simply stated, the flaw in the logic underlying the economic analysis of efficient breach is that a buyer and seller are free to negotiate a mutually advantageous adjustment--regardless of the legal rule--whenever nonperformance is the

desired result. Thus, under a specific performance rule, for instance, if exchange with a third party is a Pareto superior outcome, that result can be achieved by the seller negotiating a release from his contractual obligation to original buyer.⁷ If the new trade is in fact efficient, then the seller could induce the buyer to release him from his obligation by offering the buyer some share of the additional surplus generated by the new opportunity.

Presented in this way it becomes apparent that one of the assumptions underlying the theory of efficient breach is that negotiated adjustments are costly; otherwise no legal rule would have an advantage. But while an assumption of costly bargaining seems reasonable, another implicit but less tenable assumption is that the costs generated in such negotiations necessarily exceed the costs of assigning fault and assessing damages in a breach of contract case. While the theory of efficient breach assumes that the determination and imposition of damages is costless, casual empiricism suggest the contrary. The resources involved in the latter include the time and effort of the litigants, lawyers, judges and jurors. Once it has been determined that a breach has in fact taken place and blame assessed (often not simple tasks in themselves), the appropriate damage award must also be determined. Even in a relatively straightforward case such as one involving the breach of a long-term contract for the delivery of ice cream, the litigants must "prove" both the quantity of ice cream that would have been purchased and the costs the seller would have incurred under the remainder of contract had it been fulfilled (see *Allover Distributors v. Kroger Co.*, 1975). With large amounts at stake and considerable uncertainty about true values, the incentive to incur resources attempting to sway a judge and jury is great. In addition, an inaccurate award remains a possibility, leaving

the potential for additional losses from either inefficient breach or the need for further negotiations.

What this illustration serves to demonstrate is that the theory of efficient breach implicitly relies on assumptions about the relative costs of governing trade through negotiation and litigation. Transaction-cost analyses differ from the conventional incentive approach to such problems by making such frictions explicit.⁸

1.b. Transaction costs and contract design.

In practice, the incentive alignment approach to contract design problems is so pervasive that even ostensibly transaction-cost oriented analyses sometimes fail to maintain a healthy regard for the implications of opportunism. My paper with Keith Crocker (1985) discussing the role of take-or-pay provisions in long-term contracts is an example of this. We argue along transaction cost lines, first, that the use of long-term contracts is motivated by the desire to avoid repetitive bargaining, second, that contracting costs prohibit the use of complete contingent claims contracts and, third, that private orderings such as stipulated damage provisions or take-or-pay provisions may reduce the need to resort to costly court intervention. At this point, however, the analysis shifts to a decidedly incentive orientation. In fact, the size of take-or-pay provisions are discussed in precisely the efficient breach terms described above.

The interaction of incentive and expropriation hazards are also evident in Oliver Williamson's hostage model (1983; 1985). The analysis begins by emphasizing the desire to protect against expropriation hazards when

transaction-specific assets support exchange. You as a producer may be reluctant to commit such assets for fear that once in place I will attempt to expropriate their value above what you could get for them in their next best alternative use. One way I may reassure you, it is suggested, is if I agree to post a hostage equal in value to the nonsalvagable portion of the specialized investments.

Once again the value of the hostage that promotes efficient exchange is exactly the same as the expectation damage discussed in the preceding section. If I attempt to expropriate the value of your assets, you retain the hostage. My incentive to perform is efficient because the value of the hostage is equal to your lost profits. Hence, I will only find it in my interest to breach if I can compensate you and still be better off myself. This is an incentive argument. The hostage promotes efficient adjustments given the price at which we have agreed to trade.

If the terms of trade were unsecured or subject to manipulation, however, then the distribution of rents would still be open to contention: You know that I will agree to the exchange as long as the value I place on your performance plus the value I place on the hostage is less than the cash you demand. I know, in turn, that you would ultimately accept a payment as low as the sum of the salvage value of your assets plus the value you place on the hostage. The size of the rents at stake (the difference between our reservation values) is exactly the same as if no hostage had been posted. The object of our opportunistic inclinations, therefore, is unaltered. Posting hostages in the form of additional transaction-specific assets could even make matters worse by increasing the size of the quasi-rents at stake ex post. What makes this analysis transactional is the attention given to these

expropriation hazards and how they affect the structure of contractual relationships. A comprehensive theory of contract design requires that the nature and incidence of these hazards be considered.

2. Opportunism and Contracting

The role of opportunism in motivating the use of long-term contracts is now fairly familiar. When assets are nonspecialized, exchange is regulated by the ability of parties to turn to alternative partners should one seek to gain at the expense of another. Often, however, the realization of cost economies or design benefits requires investment in transaction-specific assets such as special dies or the expertise to produce or use them. Once the die is cast and physical or human capital has been specially designed or located for a particular use or user, only imperfect market alternatives exist and both the buyer and seller are effectively locked into a bilateral monopoly relationship--within the bounds set by those imperfect alternatives. In that event, there arises a sum, termed appropriable quasi-rents by Klein, Crawford and Alchian (1978), equal to the difference between the value of the asset in its primary and secondary uses, the distribution of which may become a matter of contention between the parties to the exchange.

The assumption that the amount of resources devoted to wasteful "rent-seeking" activities increase with the size of the rents at stake is appealing.⁹ One need only contrast the amount of time one would be willing to spend haggling over the price of produce at the local market with the resources dissipated in rent-seeking over the \$11 billion at stake in the contest between Texaco and Penzoil. The relationship between rents and rent-

seeking is also reflected in what Robert Elickson refers to as "Sampson's Law: *the quantity and quality of factual and legal research pertinent to a claim increases with the amount at stake.*" Direct evidence that asset-specificity increases the incentives of parties to commit to long-term contracts has also recently been found by Paul Joskow (1986) and Keith Crocker and myself (1985). The results support the hypothesis that contracts serve to secure the terms of trade *ex ante* and thereby prevent costly repetitive haggling over the distribution of rents once transaction-specific investments are in place.

The existence of a contract, however, does not eliminate rents nor the desire to appropriate them; it merely alters the strategies transactors may employ. Thus, not only the length but the design of contracts may be influenced by the desire to attenuate opportunistic inclinations. In practice, the variety of actions a contractor may take to effect a redistribution of rents within the context of the contract is influenced by the law and details of the contract itself but is otherwise limited only by the imagination of the transactors. Because contracts penalize unilateral refusals to deal or changes in the terms of trade, opportunism within a contractual relationship is less likely to involve flagrant holdups and more likely to take more subtle, covert forms--what Victor Goldberg (1985a) refers to as "post-agreement jockeying." Such efforts can be divided into two principal types: (i) attempts to evade performance obligations and effect a *de facto* readjustment of the distribution of quasi-rents within the terms of the agreement, and (ii) efforts designed to force a renegotiation and thus a *de jure* adjustment in the distribution of the gains from trade. Both have

the objective of redistributing gains from trade and both involve the waste of resources.

The first type of behavior is simply a response to price signals within the contract and is essentially a moral hazard problem. Given that contracts are inevitably incomplete, some activity affecting the payoffs to both parties is likely to be inadequately priced, leading one or the other transactor to choose an inefficient level of this activity. Generally, chiselling on an agreement by cutting corners or debasing quality in some undetectable fashion or in dimensions that have been left unspecified or poorly defined is consistent with this type of behavior. The essential element is that the offending party, in seeking to maximize private gains, acts not to impose costs on the other party but to save resources for himself. Ideally, the transgressor would like such behavior to go undetected by both the courts and his trading partner. The objective is not to change the terms of the contract but to take advantage of existing terms or lapses in specification or enforceability.

The second type of behavior is a purer form of rent-seeking. The difference from the preceding type is that parties engage in such behavior precisely to force a renegotiation of the terms of trade, to make the status quo so disagreeable that your partner finds it less costly to accede to a renegotiation than to persist with the current terms of trade. Victor Goldberg's discussion of post-agreement jockeying indicates some of the strategies by which this might be accomplished and the costs they impose:

If after the firms enter into a long-term agreement the contract price fails to track changing market conditions, the loser will be reluctant to continue performance. It could breach and suffer the legal and reputational consequences, but other less severe, alternatives to willing compliance exist. A buyer could, for example, insist upon strict compliance with quality standards. The aggrieved party could read the contract literally--"working to rules" as in labor disputes or in centrally planned economies. . . . The costs can arise directly from the effort to renegotiate or indirectly through strategic bargaining. That is, the loser might threaten to engage in acts which impose costs upon the other party but do not constitute a legal breach. (1985a, p. 532).

As this quote suggests, simply fulfilling the terms of the contract can sometimes be an effective strategy for bringing about a renegotiation. Incremental or even large adjustments may be needed to accommodate changing circumstances during the course of a long-term relationship. One party can refuse to permit such adjustments--possibly imposing substantial costs on the other--unless modifications are accompanied by a new, more favorable distribution of rents. Not adjusting to changing circumstances is costly but ostensibly within the terms of the contract. Both foregone gains and the direct costs of haggling reduce the value of the transaction (cf. Williamson, 1985, p. 178).

Another strategy that may be employed is what Williamson calls "contrived cancellation." This may involve exploiting ambiguous terms, suing for trivial deviations, or making false claims of dissatisfaction. It may also include efforts to induce or at least make it appear that the other party has breached the contract. The question of breach is often not as clear cut as one might expect. Particularly in a complex transaction, each party may hope

to convince the court (or even believe) that it was the other that originally failed to honor the contract, thus entitling him to damages or excusing him from continued performance. Clarkson, Miller and Murriss argue that the opportunity to induce breach is especially likely to arise "where the producer's performance depends at least in part upon the purchaser's cooperation and assistance. For example, a party may intentionally withhold useful information for a critical period of time, yet still comply with the contract" (1978, p. 371). Of course, it is important to do this in ways that do not appear to a court to obviously violate your obligations under the contract. At times, however, undermining another's performance may only require acts "as innocent as following the precise rules and regulations of the purchasing enterprise for supplying information to the producer" (ibid, p. 372). Besides the direct and indirect costs of the purchaser's actions, "When the incentive for breach inducement is present, a further cost could be incurred since the producer might devote time and resources to detect and prevent possible breach-inducing activities. This may entail additional personnel to acquire information about the purchaser or to monitor activities of the purchaser" (ibid, p. 370). If the matter gets into court, litigation costs can also be added to that list. Goetz and Scott refer generally to "attempts to escape performance obligations, together with the other party's efforts to counteract them" as evasion costs (1983, p. 977-8; see, generally, Goetz and Scott, 1983, pp. 976-84).

Even where the terms of the agreement are clear and modifications unnecessary, a party dissatisfied with the ex post distribution of rents may still be able to induce a renegotiation through behavior that is largely extraneous to contract itself. Commercial contracts, for example, are

generally immune to cancellation on the basis of the personal deportment of the contracting parties. Although indolence, disrespect and profanity might normally be constrained by the desire for future dealings, a party intent on undermining a transaction is not constrained under a contract to behave in an agreeable manner.¹⁰ An atmosphere of pleasantness and harmony is something that most people value even in business transactions, however, and disruptions of that atmosphere may also serve strategic purposes.

Thus, despite the existence of a contract, parties may still be able to effect a redistribution of rents either overtly or covertly. Anything less than full cooperation can impose costs on both sides. At times, rent-seeking can degenerate to a full-scale war of attrition.

3. Equilibrating Hazards

How do expropriation hazards influence the design of contractual relations? Although transaction cost theories usually emphasize the magnitude of quasi-rents at stake, one might expect the distribution of those rents also to affect the incidence of opportunism. If so, the parties will wish to structure the contract to minimize the costs associated with such behavior. To explore this a little further, consider the following illustration. A buyer and seller, both risk neutral, recognize a potentially mutually advantageous trade and agree to commit assets today in support of that transaction. To keep the problem simple, suppose that the transaction involves delivery of an indivisible commodity in the future and that the parties' ex ante decision is limited to choosing the price, y_c , at which they will exchange. Let

ν = the uncertain net value of the commodity to the buyer
(gross of payments to the seller); and

s = the uncertain alternative value of the seller's assets
if used in their next best alternative applications;

The potential surplus generated by this transaction depends on the probability distribution of ν and s , say $F(\nu, s)$, and equals

$$E(\pi_B + \pi_S) = \int_{\nu \geq s} \nu \, dF(\nu, s) + \int_{\nu < s} s \, dF(\nu, s)$$

less the cost of the assets invested in support of the exchange. Written in terms of quasi-rents, $Q = \nu - s$, this becomes

$$E(\pi_B + \pi_S) = \int_{\nu, s} (\max\{Q, 0\} + s) dF(\nu, s) .$$

The governance problem is to choose and design institutions that preserve the largest portion of that potential surplus. Let us suppose that prospective haggling over quasi-rents motivate the parties to secure the exchange price contractually. The parties recognize, of course, that contractual guarantees are imperfect and anticipate the types of strategic behavior described in the previous section. In particular, each recognizes that the other may become dissatisfied with the resulting distribution and may attempt to force a renegotiation. Suppose that party i can initiate a renegotiation at a cost to himself of r_i^i , imposing costs on his partner j of r_i^j . Assuming these costs are incurred regardless of the outcome of the

negotiation, each transactor would engage in post-agreement jockeying if the expected gain in his share of the quasi-rents after a renegotiation exceeded his private cost of initiating the renegotiation. If we let γ_c be the share allocated to the seller under the contract and γ the share that the seller could educe in a renegotiation, then the seller would initiate a renegotiation if

$$[\gamma Q - \gamma_c Q] > r_S^S$$

and the buyer if

$$[(1-\gamma)Q - (1-\gamma_c)Q] > r_B^B$$

Defining a payment $y = \gamma v + (1-\gamma)s = \gamma Q + s$, we can rewrite these conditions in terms of prices as

$$y > y_c + r_S^S,$$

and

$$y < y_c - r_B^B.$$

Thus, renegotiation would occur whenever the price the parties anticipated would result from renegotiation deviated from the contract price by the private costs of initiating a renegotiation. This is depicted diagrammatically in figure 1. [FIGURE 1 ABOUT HERE]

Since it is only the incidence of the bargaining costs that diminishes the gains from trade in this problem,¹¹ the problem reduces to that of minimizing

the expectation of these costs. Note that for a given γ , y is a function of the realizations of v and s , so that we can define a distribution G over y that maps v and s contingent on γ into $G(y|\gamma)$. Higher realizations of v or s and higher γ imply higher y 's.

$$\min_{y_c} \int_{y_c + r_S^S}^{\infty} [r_S^S + r_S^B] dG(y|\gamma) + \int_{-\infty}^{y_c - r_B^B} [r_B^B + r_B^S] dG(y|\gamma)$$

The solution to this problem is simply

$$[r_S^S + r_S^B]g(y_c + r_S^S|\gamma) = [r_B^B + r_B^S]g(y_c - r_B^B|\gamma) .$$

This result illustrates what Williamson refers to as "equilibrating hazards" (see, e.g., 1985, p. 34). It suggests that one objective in structuring transactions is to choose terms that equate on the margin the expected costs of opportunistic behavior, or in the context of contractual relationships, of attempts to initiate renegotiations. This is accomplished, in effect, by balancing the incentives to engage in post agreement jockeying. In the case where both the costs of renegotiation and the distribution of y are symmetric, the model implies choosing a contract price equal to the expected renegotiation price. Figure 2 superimposes $g(y|\gamma)$ on the diagram in figure 1 for this special case. [FIGURE 2 ABOUT HERE]

As the figure illustrates, the choice of price in the contract depends on costs of renegotiation and the distribution of y .¹² The latter, in turn, depends on the distributions of v and s ($F(v,s)$) and on the outcome of renegotiations, γ . In the symmetric case, the parties choose y_c to equate the probability of either party initiating a renegotiation, represented by the area in the tails of the distribution. Where the parties have roughly equal bargaining power, equilibrating hazards implies that y_c should be chosen to divide the expected ex post gains from trade "equitably." The basic result can be thought of in terms of promoting harmonious relations; equitable ex post distributions of the gains from trade discourage active attempts to promote discord in exchange.

4. Equity in Contractual Relations

If hazard equilibration can be taken as a general principle of contract design, a number of contractual phenomena assume new meaning. Hazard equilibration helps to explain, for example, the role of gross inequity provisions in long-term contracts. A majority of the long-term coal contracts studied by Paul Joskow contain such provisions. Consider his discussion of these terms (1985, p. 73):

While the contracts intend both parties to bear some price/cost risk, it is not the intent of the contract to impose inequitable losses on the mining company or (in fewer cases) allow it to earn inequitable profits as a result of "surprises." These contracts contain a fairly vague provision that allows one or both parties to reopen the contract by asserting that its continuance constitutes a gross inequity.

While risk allocation could conceivably account for such terms, mining would not appear to be an area that would attract risk averse investors. Otherwise, incentive arguments have little to say about the ex post distribution of rents. Inequitable distributions provide a tempting target, however, and may invite efforts to effect a redistribution. Explicit provision for renegotiation may seek to avoid some of the costs associated with foot-dragging, delays, quality debasement and the potential for litigation as one party seeks to overthrow the status quo of the contract.

Force majeure provisions present similar issues. Incentive alignment considerations would argue that, if circumstances beyond the control of the parties make performance of the contract costly or "impossible," correct incentives for nonperformance would be provided if the "breaching" party were required to compensate the other for lost profits. Thus, if I were not able to perform because lightning struck my factory and burned it to the ground, I could be excused performance by paying you what you would have earned on our transaction. Under *force majeure* provisions, my obligation to you would be discharged without compensation. Thus, you would share part of the loss from this event. Requiring compensation even in these circumstances would provide me with the incentive to mitigate your losses, perhaps by searching out alternative performance, perhaps by renting temporary factory space to complete at least a portion of our deal. *Force majeure* and the common law doctrines of impossibility and impracticability may be an implicit recognition that eliciting my cooperation in mitigating your losses when the weight of the losses is already on me may be more costly than the deviation from perfect performance incentives implied by an incentive alignment analysis. The motivation to seek a redistribution of the losses in the

courts is reduced if the expected outcome of the litigation is similar to the distribution occasioned by the event.

In another application, Victor Goldberg discusses the desire to avoid post agreement jockeying as an additional reason for adopting price adjustment provisions in long-term contracts (see Goldberg, 1982 and 1985a): "If the probability of wasteful behavior increases as the divergence between contract price and the opportunity cost of the aggrieved party widens, price adjustment rules which narrow the gap become increasingly attractive (1985a, pp. 532-3). Here, incentive alignment and hazard equilibration have distinct implications. A buyer would be induced to choose the optimal quantity of output if price were set equal to the seller's marginal cost. Price escalators chosen for incentive reasons would therefore attempt to track the seller's opportunity costs. Hazard equilibration would, in contrast, imply price adjustments that maintain a more equitable distribution of rents. Prices would therefore respond to changes in both the seller's and buyer's valuations.¹³

These two motives need not be incompatible, however. Both incentive and distributional objectives can be met with a two part price in which the per unit price is adjusted according to changes in marginal costs and the "demand charge" or lump-sum portion is adjusted to balance expropriation hazards. Whereas incentive arguments have nothing to say about the ex post distribution of rents, transaction-cost considerations imply a role for ex post transfers. Evidence of this role would be the application of price adjustment provisions to demand charges or in fixed quantity contracts where quantity incentives are not an issue.

Hazard equilibration has also been applied to explain how requiring reciprocal investments in transaction-specific investments can reduce rather than aggravate transactional frictions. As Williamson notes, "Paradoxically, greater aggregate hazard exposure can be mutually preferred to less if, as a consequence, hazard equilibration is thereby realized" (Williamson, 1985, p. 96). Similar considerations appear in Benjamin Klein's discussion of franchise arrangements: "This explains why the franchisor does not increase the initial franchise fee to an arbitrarily high level and correspondingly decrease its direct policing expenditures and the probability of detecting franchisee cheating and save the real resource cost of direct policing, the profit from and hence the incentive for reverse franchisor cheating would become too great for the arrangement to be stable" (1980, p. 360).

Finally, some legal systems have been noted for their emphasis on harmony and sharing of gains and losses rather than on incentives. As Williamson relates (1985, p. 123): "Japanese courts ... are more interested than an American court in restoring harmony (Gibney, 1982, p. 109)." Mongolian law also apparently relies on sharing surpluses and harms (see Levmore, 1987, p. 63). And although the American legal system seems generally more inclined toward orthodox incentive considerations, there are exceptions. As already noted, impossibility and impracticality doctrines are, for example, difficult to explain on purely incentive grounds. The idea that legal systems that award all or nothing promote litigation and disharmony, moreover, may be consistent with the incidence and cost of litigation in the U.S.

4. Conclusion

The significance of the Coase theorem is often misinterpreted. As usually stated, if there are no transaction costs, then legal rules do not matter. Evidence that legal rules and institutions do in fact matter is too often used to prove the irrelevance of Coase's insight.

But the contribution of Coase is more readily revealed in the theorem's contrapositive form: if institutions matter, it is because of transaction costs. Thus, institutional questions can only ultimately be answered with reference to transaction costs. Since transaction costs in effect drive a wedge between actual and potential outcomes, our attention is naturally directed toward the nature of those costs and the ability of agents to make strategic use of them. Despite criticism of the term (see, e.g., Goldberg, 1985b), a transaction-cost *orientation* is essential to analyses of institutional choice questions. The purpose of this paper was to explore whether that orientation also has a bearing on institutional design questions. Efforts to analyze these questions to date indicate that hazard equilibration is likely to become an important aspect of that analysis.

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Footnotes

1. See, e.g., Monteverde and Teece, 1982; Anderson and Schmittlein, 1984; and Masten, 1984.
2. It could be argued that all institutional choice problems are institutional design problems. Thus, the firm being a nexus or coalition of contracts, the decision to integrate is really a decision to design contractual relationships in a particular way. Although this is probably the predominant view of the firm today, it conflicts with the notion that transaction-cost economics is concerned with the "comparison of discrete alternatives." On this issue, see my recent paper, "The Institutional Basis for the Firm" in which I argue that broader legal and political institutions provide a constructive basis for distinguishing among internal and market organization.
3. See Hart and Holmstrom, 1985, for an overview of this literature.
4. Oliver Williamson distinguishes between the incentive alignment and transaction-cost branches of economics in his recent book. See Williamson, 1985, pp. 26-9.
5. There are exceptions to the latter (see, e.g., Radner, 1981). But even where monitoring is given an explicit role, active efforts of agents to hide or confound information in response are not entertained.
6. See, for example, Barton, 1972; and Shavell, 1980.
7. Another alternative is that the buyer could resell the product to the third party, but this just says that the value to the buyer is the same as the opportunity cost to the seller so that trade remains efficient.
8. For just such an analysis, see Goldberg, 1985c.
9. A sufficient condition for this to be true is that the "bargaining technology" faced by the transactors be convex (see Masten, 1986).
10. Note that this is different from employment transactions in which an employee is generally recognized to have a duty of good conduct and to maintain friendly relations with his employer. This is one source of distinction between employment and commercial transactions that may influence the choice of organizational arrangements. See Masten, 1987.
11. Potential losses from not reaching an agreement may be subsumed in the r_i^j 's. If it is inefficient to trade, then the parties can be thought of as negotiating a side payment for release from the contract.
12. Note that if either bargaining or litigation were costless, the price, its timing (whether it is paid upfront or at the time of performance), and whether or not it is contingent on the performance of the parties are all indeterminate from an efficiency standpoint. If bargaining were costless, the parties would always negotiate a price between v and s and trade whenever v

exceeds s . All that matters is that each party expects nonnegative profits from the relationship. Similarly, the pricing details of the contract would also be irrelevant as long as the courts could be relied on to apply sound legal principles in a low cost fashion. Thus, if the payment were set contingent upon performance, the seller would get y upon delivery and $s - \delta_S$ if he failed to deliver. The courts would set $\delta_S = v - y_C$ and the seller would breach only if $s - \delta_S > y_C$ or if $s > v$, which is efficient. Alternatively, the buyer refusing delivery would be assessed $\delta_B = y_C - s$ for failure to perform and would breach only if $v - y_C < -\delta$, or again if $v < s$. Were the parties, instead, to agree to make payments upfront, the seller would get nothing ex post if he performed but $s - \delta$ if he failed to deliver. Damages would then be set at v (-0) for the seller and the buyer would be entitled to a rebate of s if he refused delivery, again establishing efficient performance incentives. Again, the price is indeterminate beyond requiring that both parties enter the transaction voluntarily.

13. Keith Crocker and I plan to test these hypotheses using our natural gas data which contains a large variety of pricing provisions.

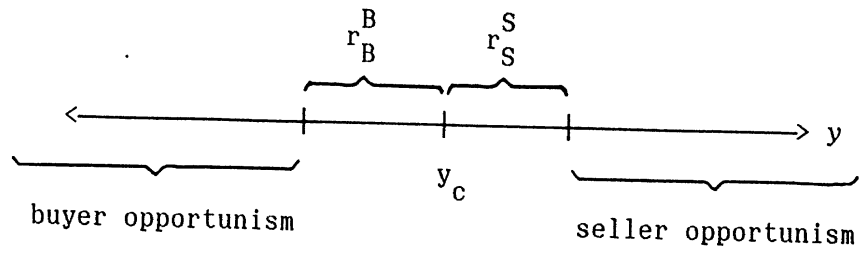


Figure 1

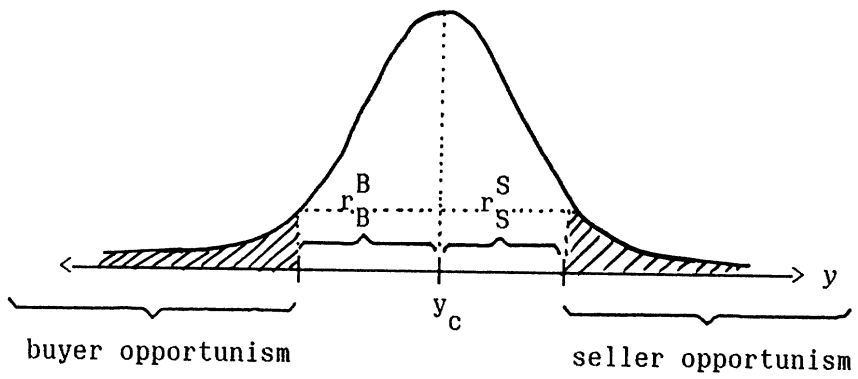


Figure 2