Avoiding Regulatory Constraints: Contracting Safeguards and the Role of Informal Agreements

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1. INTRODUCTION

For all their differences, the two leading economic theories of regulation share a preoccupation with the issue of monopoly. According to the populist or public interest view, government restrictions function to bring monopoly pricing under control. The Chicago school, though, regards industries as seeking and enforcing regulations in order to promote their own cartel purposes. This preoccupation with monopoly has given us an era of "all or nothing" policy prescriptions. Depending on which of the leading theories he or she subscribes to, the policy analyst turns out to be invariably for or invariably against regulation. The formula may be easy to remember, but the results are often disappointing.

Fortunately, the emerging new institutional economics (Williamson, 1975; 1976; 1979; 1983; Goldberg; Klein et al.; Palay, 1984) provides an alternative approach to the study of regulation. Its policy prescription is "use it when it works" and it provides a theoretical framework for determining when that might be. The framework begins with an examination of the explicit or implicit contract needed to implement some objective. But rather than concentrate solely on contract terms, the new theory also turns its attention to the institutional arrangement—that is, the governance structure

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—in which the agreement is negotiated, monitored, adapted, and enforced. According to the new institutionalists, parties *choose* governance structures so as to minimize the cost of effectuating a transaction. This implies that different transactions require different institutional arrangements. Markets, firms, the common law, and regulations become alternative forms of governance. The new institutionalists would argue that the characteristics of the specific transaction determine which structure is actually used.

Policymakers traditionally have designed regulatory schemes on the implicit assumption that the contracting within an industry is of the classical type—that is, exchanges of discrete promises between parties who have no other relationships. If, however, many transactions are actually far more complex than the classical model of contracts supposes, the regulations are apt to provide an inappropriate governance structure. This can inhibit efficient contracting, thereby encouraging parties to look for ways to get around the rules. Three methods are usually discussed: the parties can mount a campaign to have the legislature alter the regulatory scheme, use litigation to gain the appropriate changes, or take their case either directly to a commission or to the field staff of the administrative agency.

My purpose here is to discuss a fourth method of "altering" regulations: the use, by rail-freight carriers and shippers, of informal,[1] legally unenforceable contracts.[2] At the time of this study the Interstate Commerce Commis-

1. That is, agreements reached outside officially sanctioned channels.

2. In gathering the data I was concerned primarily with developing a microanalytic understanding of the rail-freight transaction. To this end I used a modified case study method. The information was then summarized and cross-classified. I used the information to develop the tabulations and tables employed throughout the article.

I conducted field interviews between October and December 1979 with rail carriers and their shippers. Unfortunately, seven of these had to be discarded because they were incomplete, the parties proved to be less than cooperative, or because only one side of the transaction could be investigested. The marketing and sales departments of three railroads provided the data on the rail carriers. While only three railroads were involved in the study, each of them consciously divided their sales and marketing divisions into semi-autonomous commodity or rail car groups. That is, aluminum, steel, scrap, paper products, automobiles, and chemicals were generally handled by separate market managers located within semi-independent profit centers. Shippers who dealt with more than one marketing department of a given railroad often complained of the lack of coordination this system seemed to foster.

Shippers were chosen because they were willing to talk to me and because of their geographic proximity to Washington, D.C. Shippers were then matched to carriers. That is, the rail users were chosen because their shipping needs necessitated that they use one of the interviewed railroads. Although geographic proximity was not as important a consideration, limited interviewing resources precluded my seeing shippers located west of the Mississippi River, and most were situated in the northeastern United States. The willingness of the companies to provide access to highly confidential material, as well as to their corporate traffic department without having to use the public affairs office, played an important role in the selection process.

Detailed descriptions of fifty-one transactions were generated by the interviews. These can be broken into the following commodity groups (the numbers in parentheses represent the number of transactions described from the perspective of the shipper and the carrier, respectively): finished automobiles (2 shipper, 6 carrier); automobile parts (2 shipper, 7 carrier); aluminum (5 shipper, 3 carrier); paper (2 shipper, 5 carrier); steel (4 shipper, 6 carrier); scrap (3 ship-

sion (ICC) thoroughly regulated the contracting between these parties. Nevertheless, informal agreements were used extensively throughout the industry. Many of the contracting parties, but not all, used informal contracting to effectively restructure the regulatory framework. Those who did not used it merely to complete the formal tariffs. One of my objectives is to explain why only some of the parties used it to alter the regulations. The data tend to confirm a transaction-cost explanation for this observation. In other words, whether informal contracts were used to restructure regulatory constraints was related systematically to the characteristics of the transaction.

Section 2 provides an overview of the regulatory scheme that existed at the time of this study. Section 3 defines the contracting problem that railroads and shippers faced under that regulatory scheme. Section 4 discusses the use of informal contracting to solve the problem. In Section 5 I offer a transaction-cost explanation of why only some of the transactions used informal contracting to get around the regulatory constraints. A brief conclusion is found in the final section.

2. THE REGULATORY CONSTRAINT

The Interstate Commerce Act placed limits on the range and scope of permissible contracting. The act required the parties to move all traffic pursuant to a formal rate tariff. To do otherwise was expressly prohibited (49 U.S.C. 10761–10762, 1978). Through the tariff the railroad offered to carry a particular commodity or class of commodities from origin to destination at a designated price. However, the official tariff did not commit the shipper to actually use the rail service. The formal agreement covered price but not the commitment of volume. Only the tendering of the commodity to the railroad imposed a legal obligation on the shipper. Thus the carrier's obligations were long-term, while the shipper's obligations resembled those associated with spot market transactions.

In general carriers could not charge shippers different prices for identical services. Clearly this did not eliminate all elements of differential pricing. The ICC usually rationalized differentials that could be attributed to cost savings. For instance, the commission permitted such volume incentive rates as "multiple car," "carload minimum," "multiple-unit train," and "train-load," because they found a cost savings associated with them.[3] But the commission did not unequivocally approve annual volume, minimum tonnage or percentage of output pricing schemes. The ICC held these rates

per, 2 carrier); and chemicals (1 shipper, 3 carrier). The number of commodity groups covered was kept purposely small. This permitted me to develop some limited expertise in the transportation of these particular goods and facilitated comparisons across transactions.

3. See, e.g., *National Gas Pipeline of America*, v. *N.Y.C.R. Co.* 323 I.C.C. 75 (1964); *Grain by Rent-A-Train, IFA Territory to Gulf Ports*, 335 I.C.C. 111 (1969); *Coal to New York Harbor Area*, 311 I.C.C. 355 (1960); *Coal from Ky., Va. and W.Va. to Virginia*, 308 I.C.C. 99 (1959).

either to discriminate against small shippers (Locklin: 42) or to constitute an unfair and destructive practice (*Great Lakes Ship Owners Assn.* v. *Chicago & N.W. Ry.*, 341 I.C.C. 272, 1972). Thus at the time of this study, except where cost savings were immediately evident or where competition from other modes dictated, a shipper could not commit a percentage of its output or some volume per time period to a particular carrier. Similarly the commission did not allow railroads to offer favorable prices for any such commitments.[4]

When combined with the railroad's common carrier obligations, the antidiscrimination and antirebate provisions of the act also placed restrictions on service terms. Every rate tariff implied uniform service standards.[5] The ICA obligated carriers to assess additional charges if it agreed to exceed the standards—otherwise the railroad would be guilty of providing the beneficiary with an "unfair advantage." The commission left unclear whether the parties could file a formal tariff that provided for higher specified service standards at an additional cost to the shipper. However, the antirebate provisions of the act probably prohibited carriers from paying damages for failing to meet the standards. In any case, none of the parties interviewed attempted to write a tariff specifying special service standards.

The regulations also required the railroad, in general, to supply the standardized and general service equipment necessary for the services it held itself available to perform (*Switching at St. Louis and East St. Louis*, 120 I.C.C. 216, 1926).[6] It is clear that railroads had the obligation to provide

4. In May 1978 the ICC announced the reversal of its policy regarding railroad contract rates, stating that "there is nothing inherently unlawful in railroads and shippers voluntarily entering into long-term commitments for the transportation of a specified volume of freight at agreed rates" (Railroad Contract Rates, Proposed Change in Policy, 43 Fed. Reg. 22148, May 23, 1978). Public comments were solicited and, on November 9, 1978, the change in policy was formally announced. (Railroad Contract Rates, Change in Policy, Ex Parte order #328 [not printed] served Nov. 9, 1978; also printed in decision at 361 I.C.C. 205, 1979).

Beyond extolling the potential benefits to be realized by contracting carriers and shippers, the change of policy statement provided little guidance to the parties. It is not surprising that, in the first eighteen months following its adoption, only a handful of contracts were filed. The commission did draw one very clear distinction, however, and that was between minimum volume and percentage-of-output contracts. The former were to be presumptively legal while the latter required accompanying evidence of cost economy and the absence of anticompetitive impact.

5. The act required the carrier to deliver commodities to the correct consignee, in a timely manner and in the same physical condition as originally tendered. The railroad would be guilty of discrimination if it agreed to provide these standards for some shippers but not for others. For instance, parties were prohibited from negotiating agreements for the delivery of a car on a particular day (*Chicago & Alton R.R. Co.* v. *Kirby*, 225 U.S. 155, 1912). See also *Davis* v. *Cornwell*, 264 U.S. 560 (1924), to make delivery within a specified time period, *In the Matter of Bills of Lading* 52 I.C.C. 671 (1919), to expedite a particular movement, *id.*, or even to delay service enroute for the benefit of the shipper (*Lumber, Free Time Allowance at Hold Points*, 310 I.C.C. 521, 1960).

6. Regarding the provision of equipment, the Interstate Commerce Act required that each railroad "furnish safe and adequate car service and . . . establish, observe, and enforce just and reasonable rules, regulations and practices with respect to car service" (49 U.S.C. 11121, 1978).

standardized and general service cars, and only slightly less obvious that this duty extended to specialized equipment.[7] During times of car shortages it was a violation of the antidiscrimination/antirebate provisions of the ICA (Elkins Act, 49 U.S.C. 11903, 11915). go give a shipper a higher priority for existing rail cars (*United States* v. *Koenig Coal*, 270 U.S. 512, 1926). Regardless of the railroad's duty to *supply* equipment, the interviewees believed the commission only had the power to compel *investment* in standardized equipment.[8] The interviewees thought the obligation did not extend to specialized equipment.

Finally, the restrictions on the terms of contracting constrained rates to a zone of reasonableness bounded by a maximum and minimum acceptable price. This is not to say that the commission set prices. Rather, parties were free to negotiate rates within a relatively broad range. However, the commission tended to intervene if the parties agreed to prices outside of the zone.

3. THE CONTRACTING PROBLEM

3.1. The Transaction: Assumed Simplicity

The Interstate Commerce Act implicitly assumed that the typical rail-freight transaction resembled a discrete exchange and involved relatively standardized capital. While repetition was expected, the act did not anticipate that contracting parties would develop specialized relationships. What is more, the regulations presumed that interactions would have a clearly defined beginning and a finite future. Shipper J, a medium-to-large processor of scrap metals, presents a good example of the discrete transaction envisioned by the ICA. J sold scrap to steel mills located within one hundred miles of its yards. While its options for shipping scrap were limited to rail, it could use any one of three carriers. Shipper J originated anywhere from ten to eighty carloads of scrap per month. Almost all of the outbound scrap traveled in general service gondolas[9]—unequipped, 180,000-pound capacity rail cars

Car service was defined as "the use, control, supply, movement, distribution, exchange, interchange, and return of locomotives, cars, other vehicles, and special types of equipmrnt used in the transportation of property by a rail carrier" (49 U.S.C. 10102, 1978).

7. See, e.g., *In the Matter of Private Cars*, 50 I.C.C. 652, 690 (1918); *In the Matter of Charges for Transportation of Fruit*, 11 I.C.C. 129 (1905); *Baker* v. *Boston Maine R.R. Co.*, 65 Atl. 386 (N.H. 1906).

8. The Commission stated in *In the Matter of Private Cars:* "The general duty of carriers at Common law, and under the Act, is to furnish such cars and other facilities as are reasonably necessary to enable them to fulfill their public obligation. It has been held that in the absence of discrimination the power to enforce the duty does not reside with the Commission (50 I.C.C. 652, 671, 1918).

9. These are open-topped cars, less than 61 feet long inside, with three-to five-foot sides and solid wood or steel bottoms. Unloading required either overhead magnets, cranes, or rotary dumping facilities.

that could be used in numerous other ways, including the carriage of iron and steel products, lumber, gravel, sand, machinery, and other bulk commodities.

3.2. THE TRANSACTION: COMPLEX REALITY

The assumptions of the classical contracting model did not always fit actual rail-freight transactions. Many were far more complex than the movement of shipper J's scrap iron. These exchanges were more involved because they entailed investments in idiosyncratic capital—physical and human capital with little scrap value outside the initial transaction. This meant that though the parties might have competitive alternatives at the outset, once initial agreements were reached the specialized requirements of the transaction limited the availability of substitute sources of purchase or supply. Further complexity came from the recurrent nature of the transactions. The business interaction often was constant and continuous. Strong relational bonds developed between the parties, and there was no clear demarcation between successive transactions.

For example, shipper A is a major shipper of automobiles. Its finished vehicles are produced at only a few locations. To reach final markets it had to ship large numbers of automobiles over long distances. At the time of the study, for instance, it moved from ten to fifteen thousand carloads of finished automobiles from one particular assembly plant to various destinations throughout the eastern and central United States. The traffic was constant and involved thirty-five to fifty carloads of vehicles per day. The automobiles were delivered to off-loading ramps located within easy access of final markets. From there the shipments were broken into smaller movements for delivery by truck to the dealerships.

To transport its finished vehicles from the assembly plant, shipper A was generally constrained to contract with rail carrier X.[10] Even though X was the exclusive carrier servicing A's point of origin, it was not the only railroad arriving at one destination,[11] and it had no access to another destination. On some routes it had to transfer the cars to another carrier.

Very expensive bilevel and trilevel rail cars were developed to handle the size, weight, and design characteristics of finished automobiles.[12] Autoracks, as they were called, were multilevel parking ramps fastened atop oversized flatcars. Depending upon automobile size, the autoracks carried

10. First, rail access was limited to carriers with local routes. Second, the plants were constructed with rail service in mind and for distances over 300 miles trucks were impractical. Third, the lead time necessary for another carrier to construct autoracks was substantial.

11. Either X can deliver the autos or the rail cars can be transferred to carrier Y who then makes the delivery.

12. Attempts have been made in the past to move automobiles in boxcars. The inability to stack the vehicles makes this a relatively uneconomic option.

fifteen to eighteen finished automobiles. At the time of this study they cost $40,000 to $70,000 and generally were owned by the carrier. The railroad could either purchase or rent the oversized flatcars used to carry the autorack. For the move from assembly point to destinatiion, carrier X employed open trilevel racks fastened atop rented flatcars.

Besides being expensive to procure, the autoracks were specific to the shipper's finished vehicles. The configuration of the decks and tie-downs made it costly to transfer the cars either between manufacturers or across automobile models. The carrier's only use for the autoracks was on the shipper's routes.[13] Once built, their worth in their next best use was roughly equivalent to their scrap metal value. In addition, some autoracks were higher than standard eastern bridge and tunnel clearances. To alleviate the obvious difficulties, the carrier had to raise its clearances. The railroad also had to undertake other investments, such as the construction of off-loading ramps, solely for the benefit of the finished automobile movements.

Shipper A used carrier X as a conveyor belt to move finished automobiles to the next step in its production and marketing process. To shipper X, service reliability was important because of both its relation to the satisfactiion of ultimate consumers and the substantial inventory costs of storing the finished automobiles at the assembly plant.

3.3. The Problem

The Interstate Commerce Art imposed a variety of contracting problems on parties to complex transactions like that between auto shipper A and carrier

13. The only viable alternative is for the railroad to rent or sell the right of way or the equipment to another carrier. Contracts of this nature historically have been particularly difficult to arrange and secure. Amtrak's experience in negotiating similar agreements is one excellent example.

At its inception with the passage of the Rail Passenger Service Act Amtrak was required to provide a national system of intercity rail service. To accomplish this, Amtrak was given the power "to acquire or contract for the use of, physical facilities, equipment, and devices necessary to rail passenger operations" (45 U.S.C. 545, 1970). In practice this meant that Amtrak would have to contract with the existing railroads for the purchase or lease of engines, cars, track rights, and other facilities.

As reported by Aden Adams, the negotiations were extremely difficult and complex. Initial difficulties focused on track access, the level of track utilization, and access to jointly owned tracks. In particular, valuation and pricing problems were extremely complex. Tracks had both natural monopoly and public good characteristics. Incumbent carriers were likely to demand compensation that was, in terms of marginal cost pricing rules, inefficient. Potential successors, though, were apt to offer terms that—while possibly efficient—would often be noncompensatory. Costly haggling was the result.

Problems also arose in defining who was to pay for upgrading and maintaining the tracks to unit train standards. Any such investment was likely to permit not only the heavier dedicated trains to move along the route but was also likely to allow normal movements to be transported at faster speeds (with a resulting decrease in transit time and increase in equipment utilization), at a marginal cost of virtually zero. How any user charge for this advantage was to be assessed also posed problems. (See also Williamson, 1976.)

X. First, the contract form required by the ICA made it difficult for the parties to secure expectations. The tariff only appeared to resemble a long-term, incomplete contract. In actuality it was merely an offer of carriage. An enforceable contract existed only if cargo was actually tendered. Technically this was accomplished on a spot basis, making the agreement envisioned by the ICA little more than a spot contract. The agreements were short-term and involved little expection of recurrence. There was a clear demarcation between successive exchanges. While this format might have proved adequate for standardized transactions, it did little to secure expectations about future contracting. With little prospect for future interaction, the parties lacked the incentive to develop the long-term continuing relationships needed to support transactions involving idiosyncratic investments.

The limitations on volume commitments posed a second set of problems. For example, in expectation of carrying shipper A's automobiles, carrier X made substantial investments in the autoracks and other construction described above. If A did not ship the vehicles promised, X's investment would be at risk. But even though the railroad had an understanding with shipper A specifying the rate for finished automobile movements, there was no formal agreement requiring the shipper to actually use the service, because the shipper was precluded by the ICA from making annual volume or similar types of commitments. In addition the shipper maintained complete control over the routing of its commodities. It was under no requirement to use the carrier's more profitable routes. In fact, the railroad was always fearful that A would "short-haul" it.[14]

The third problem was that the parties perceived the ICA as preventing them from contracting over service standards or negotiating incentives for on-time performance. For example, automobile shipper A wanted to maintain a large and consistent outbound flow of finished vehicles. To accomplish this it needed a consistent supply of rail cars. It was not concerned with the actual number of autoracks supplied but with the carloads of automobiles moved each month. For a given number of automobiles, the number of rail cars required for the move depended on "turnaround time"—the speed with which the autoracks could be moved from origin to destination and back. But even though shipper was particularly concerned with the consistency of the turnaround time, the ICA made it illegal to provide incentives for on-time performance.

Finally, the zone-of-reasonableness constraints on rates placed obvious restrictions on prices. As will be seen, this was of particular concern to parties unable to arrange effective contracting safeguards.[15]

14. The shipper is entitled to choose the route that its commodity will follow. Where interchanges are necessary, the shipper can decide exactly how far each of the railroads will move the goods. If an interchange is forced before a carrier reaches its breakeven point, a "short-haul" occurs.

15. See below, section 4.

Each of these problems contributed to making the tariff an inadequate contracting format for transactions that entailed relatively idiosyncratic investments in physical and human capital. Carriers did not want to make transaction-specific investments without shippers' assurance that they would actually use the service. Shippers could not make those commitments using the contracting format provided by the ICA. Similarly, shippers would not be enthusiastic about committing a large volume to a particular carrier without knowing that the railroad had the equipment and expertise to move it and to move it on time.

4. THE SOLUTION

4.1. Some Theory, but Some Hitches

Williamson (1983) has suggested that parties to transactions requiring idiosyncratic investments have two alternatives.[16] First, one party can offer the other protection by paying a premium above the marginal cost of the service. The resulting price deviates from efficient pricing principles but includes an insurance premium of sorts. Second, the parties can attempt to devise nonprice safeguards to protect the investment. Several possible types of safeguards are available. The parties can realign incentives by incorporating penalties and rewards into the agreement. Alternatively, specialized governance structures—private orderings—can be used. Finally, they can devise methods of signaling the credibility of their commitments. with respect to the last, as in medieval times, the contracting parties can post "hostages" to guarantee their promises. In this context a hostage is an investment in specialized assets. So rather than lose an executive vice president if either party fails to meet its contractual obligations, the firm suffers a reduction in wealth because the value of the asset is greatly reduced.

It might be to the mutual advantage of the parties to rail-freight transactions to use any of these three contracting safeguards. The shipper would gain access to a superior technology and lower prices, while the carrier would receive the security that it required to make the investment in the specialized assets (Williamson, 1983). But the ICA made both the contracting safeguard and the price premium strategies hard to follow. As indicated in the previous section, the antirebate sections of the act and the com-

16. Williamson (1983: 526) identifies four types of transaction-specific investments. Three had been recognized in previous discussions: "site specificity—as where successive stations are located in a cheek-by-jowl relation to each other so as to economize on inventory and transportation expenses; physical asset specificity—such as specialized dies that are required to produce a component; and human asset specificity that arises in a learning-by-doing fashion." To these he adds a fourth: dedicated assets—"those that are put in place contingent upon particular supply agreements and, should such contracts be prematurely terminated, would result in significant excess capacity."

mon carrier obligation made it difficult to devise either incentives or penalties to induce desired behavior. Private orderings and hostage exchanges were limited for similar reasons, as well as because of restrictions on substantive contract terms and the prohibition on the use of collateral agreements.

If the parties are unable to devise safeguards, the Williamson theory suggests that they will rely heavily on price premiums to induce the necessary investment.[17] However, the restrictions on the substance of agreements also placed severe constraints on price flexibility. For one, the act expressly prohibited price premiums. Any relevant party could challenge a rate, and deviations from the status quo were bound to trigger protests from an interested third party. Problems at the renegotiation stage were particularly acute. Similarly, it was difficult to alter an existing contractual relation from one based on price premiums to one based on safeguards. The minimum price requirements made it hard to formally offer contractual safeguards in return for a price *decrease*. The commission required railroads to show an efficiency justification before bringing prices down below certain levels, and I know of no instance where a case before the commission used or discussed transactional efficiency of the type I am examining.

4.2. The Solution: Informal Contracting

To circumvent the problems caused by the ICA, the parties to rail-freight transactions used informal, legally unenforceable agreements. These provided some price flexibility and, more important, helped to arrange, implement, and monitor contractual safeguards. The informal agreements were "handshake" understandings between the shipper's transportation division and the railroad's marketing or sales department. They usually dealt with some combination of three subjects: (1) the commitment of volume; (2) the promise of equipment; and (3) the guarantee of specified service standards. The informal contracts were collateral to the formal official tariff and effectively restructured the regulatory relation. In short, they worked to make the governance structure more compatible with the actual rail-freight transactions.

Typically the informal agreements were oral, though subsequent written confirmation of essential terms was not unusual. They often were as simple as a mere specification of the price per carload, the volume to be committed per time period, the number of rail cars to be supplied by each of the

17. The available evidence indicates that this might have been at least partially true. Numerous studies have indicated an efficiency loss from rail freight pricing policies (Boyer; Friedlander; Harbeson; Moore). One interpretation of these findings might be that the contracting requirements of the act made hostage exchanges or other contracting safeguards difficult to implement. Prices above marginal cost might then be required to induce investment in the transaction-specific assets.

contributing carriers, and any special characteristics of the movement (e.g., the number of switches necessary or the per diem rate). Occasionally the entire understanding was reduced to writing. But in general the informal agreements were quite short ("just a few pages," according to one interviewee). For the most part, documentation was limited to a letter of understanding or memorandum to the files. None of the informal contracts described to me even approximated a detailed contingent claims contract, though several interviewees suggested that such agreements were used on rare occasions.

Each firm tended to administer their contracts differently, though similarities did exist. The individual or group that negotiated a contract, whether it was oral or written, usually recorded and administered it. While in many instances internal memos for the files were used, these only incompletely described and recorded the agreement. Consequently there was a high premium on personnel with long memories, sound hearts, and a penchant for looking both ways before crossing the street. Administrative problems could arise if the person in charge of a particular arrangement left the company. First, there was the difficult task of transferring the information contained in an informal contract to the new person. The original memo, if one even existed, was usually incomplete, and therefore someone had to fill in the details. Shippers' transportation people considered "filling in the holes in the files" to be a time-consuming and unpleasant task—so much so that one of the transportation managers joked that his company had considered requiring half the transportation department to locate itself across town, just in case a natural disaster destroyed one of the buildings. Second, changes in management or personnel almost always left unanswered questions concerning the existence and content of informal agreements. This produced an opportunity for one's trading partners to attempt to make unilateral adjustments in a contract. If, for example, the railroad's representative simply convinced the shipper's new manager that his understanding of an agreement was incorrect, the carrier could effectively alter the existing arrangement without seriously compromising the contractual relation. As one traffic manager put it, "I'd worked in this office for ten years before becoming manager, but the day I took over people started calling to ask about deals that I'd never even heard about. Some of them even tried to convince me that understandings that I'd worked out were different than I remembered them."

The contracting parties devised the informal agreements either during or after the tariff negotiations.[18] Where they reached the agreement in con-

18. It is important to emphasize the element of negotiation that was involved. The common misperception is that the rates were "set" by the ICC. In fact, the ICC was generally only charged with approving or disapproving a protested rate. As a rule, the ICC did not establish the price of service, though under certain circumstances it did prescribe the price that it was predisposed to find nondiscriminatory or reasonable. In the more general context, the ICC also

junction with the tariff discussions, one party often made a price concession. Two types of price concessions need to be distinguished. The first type simply adjusted the value of the contract. The informal contract involved no other contractual safeguards. The parties used the tariff to make the price change, but they provided the inducement for the adjustment with the informal terms. For example, a railroad might lower its price per unit of volume in exchange for a shipper's informal, but "firm," commitment to move a minimum annual volume. The commission would not have permitted the parties to use formal agreements of this nature.[19]

Similarly, if a shipper was unwilling or unable to provide contracting safeguards, informal agreements might be a means of implementing a price increase. Because the ICC was generally unsuccessful in requiring the carriers to purchase new idiosyncratic equipment, a shipper might provide the investment incentive by offering to pay the railroad a price premium. In return the shipper would receive the carrier's informal pledge to procure and assign a specified amount of equipment or to meet increased service standards.

The second type of price concessions witnessed were those made in conjunction with other contractual safeguards.[20] In these cases the shipper agreed to make a *credible* commitment of volume in exchange for a guarantee of equipment and a *downward* adjustment of price. One interpretation of this observation is that the parties simply were readjusting the contract price to reflect the fact that the existence of a contractual safeguard made a preexisting premium no longer necessary. The contract between auto parts shipper B and carrier Z reflected this type of understanding. Like shipper A discussed above, B is a major producer of automobiles and automobile parts. Parts consist of everything from batteries, spark plugs, and lightbulbs to engines, sheet metal stampings, axles, and frames. B's production process was such that it generally procured the necessary parts from locations throughout the United States and shipped them to various assembly plants. The carrier acted as an interstate conveyor belt for the shipper's assembly line. This required both large transportation capacity and consistent service. For instance, the assembly plant at one destination received between 8,500 and 10,000 carloads of parts annually. To meet the shipper's transportation

had the power to set pricing guideliness, the violation of which would create a rebuttable presumption of unreasonableness if the rate were protested.

19. See, e.g., *Great Lakes Ship Owners Assn.* v. *Chicago & N.W. Ry.*, 341 I.C.C. 272 (1972); *Contract Rates on Rugs and Carpeting from Amsterdam, N.Y., to Chicago*, 313 I.C.C. 247 (1961), aff'd sub nom, *New York Central Railroad Co.* v. *U.S.*, 194 F. Supp. 947 (1961); *Guaranteed Rates from Sault St. Marie, Ontario, to Chicago, Ill.*, 315 I.C.C. 311 (1961). (Also see Locklin: 42.)

20. There were also seven instances where the carrier was willing to invest in transaction-specific assets only if the shipper was prepared both to make a credible commitment of volume and to accept a price increase. That is, both a contractual safeguard and a price premium were required.

needs, both parties had to make specialized investments in rail cars, parts racks, plant layout, and coordination and communications networks.

Carrier Z for its part was concerned about price, though of course price was irrelevant if shipper B did not actually ship the promised components. Just prior to the interview the carrier had realized that if it would lower its rate on a particular movement of auto parts it might be able to capture volume traveling by truck. The railroad believed that the lower price was justified by the increased volume, which would reduce unit costs and better utilize fixed capital. What is more, the additional volume would justify and protect the investment in specialized service and equipment. Carrier Z was reluctant, however, to publish the lower rate without receiving a credible commitment of volume from shipper B. Z was concerned that once it published the lower rate, railroad T—interested in the potential large volume, but presently not involved in the movement—might follow suit.[21] Shipper B might then choose to divide the traffic between the two carriers, leaving Z in a worse financial situation than it would have been in hauling the smaller volume at a higher rate. Carrier Z lowered the price on the move only after shipper B's vice president for transportation personally assured that the new traffic was forthcoming. After many years of dealing with the vice president, Z felt confident in his promise (Palay, 1981: 117; Palay, 1984: 277–78).

In contrast to the contracts negotiated simultaneously with the formal tariff, there also were contracts that treated the price term as given—or ignored it altogether—and concentrated solely on arriving at informal agreements. Typically, a formal, nominal price had been negotiated at some previous juncture, quite often on an industry-wide basis. Subsequent negotiations and deals, then, turned solely on the possible tradeoffs of volume, equipment, and service commitments.[22]

Informal contracting allowed parties to adapt the existing governance structure (the ICA) to the requirements of complex rail-freight transactions. At one level informal contracting simply altered the form of the agreements. Because a carrier's obligations were relatively long-term, while a shipper's were merely of a spot market type, the railroads perceived themselves as particularly susceptible to opportunistic behavior.[23] Informal contracting alleviated some of the problem by restructuring the contract so that both par-

21. Why T did not offer the low rate in the first place so as to "break into the market" is somewhat of a mystery. Possibly it felt that it might then be pressured by shipper B to offer the same rate on routes that it already held captive. Alternatively it might have been afraid of Z's retaliating on other routes.

22. Of course even though price was not discussed the value of the contract was altered.

23. Opportunistic behavior refers to the proclivity of individuals to exploit the advantages to be attained from (1) the making of false or empty—that is, self-disbelieved—threats and promises concerning future conduct, or (2) the selective or distorted disclosure of information. It expands the rational egoist characterization of economic actors to encompass varying degrees of strategic, myopic, and guileful behavior (Williamson, 1975).

ties' obligation would be of the same scope and duration. The informal agreements converted the contractual relation to one which was either short-term recurrent or long-term incomplete. This helped to establish an ongoing relation and permitted the parties to take advantage of adaptive sequential decisionmaking (Williamson, 1976). The revised format contributed to more secure expectation about the furture.

At a second level informal agreements provided either the contracting incentives or the safeguards needed to encourage investment in specialized assets. On the one hand, the informal contracts provided a vehicle for adjusting contract prices or values even where the ICA prohibited such practices. On the other hand, and of more interest here, the parties used informal agreements as a mechanism for arranging and specifying the terms of contractual safeguards. I witnessed two types of safeguards. The first type entailed an exchange of hostages. In these cases both shipper and carrier made investments in idiosyncratic assets that could be "destroyed" if either party failed to perform its part of the agreement. The carrier's hostages were easy to identify. They included specialized rail cars and transaction-specific investments in track and clearances. The shipper's hostages might be a little less obvious to the casual observer. In some instances shippers located or designed plants to effectively preclude the use of alternative modes of transportation. In addition, some shippers made investments in their own idiosyncratic rail equipment. Chemical shippers, for example, owned most of their own rail cars. Even more interesting were the investments of automobile parts shipper R. Of those parts that went by rail, most traveled to their destination in specially equipped boxcars.[24] While the equipment would not be a total loss if the automobile industry stopped using it, the cars were more specialized than were required for general service. These rail cars could cost anywhere from 50 to 125 percent more than the standard 50-foot boxcar. Before it would make the necessary investment in special-purpose boxcars, the carrier needed an assurance that the equipment would be used. Shipper R, as well as most auto parts shippers, provided the guarantee by investing in the specialized racks needed to load and secure the parts inside the boxcars. The racks acted as a hostage because they were only good for moving automobile parts in boxcars and were vehicle make-and model-specific. Depending upon the parts being shipped, the racks could cost up to $15,000 per boxcar. A change in the design of an automobile component or a decision to ship by truck could render a rack worthless.

24. Though these boxcars appeared from the outside to look like any other boxcar, the equipment usually was constructed specifically for the automobile industry. Depending upon the parts being moved, the cars often had cushioned underframes, double doors, and significantly higher loading weight than a standard boxcar. They also tended to have "smooth" interiors and did not have the tie-downs and other equipment necessary for general service traffic. The average standard boxcar cost between $36,000 and $40,000 at the time of this study. In contrast, automobile parts were moved in cars that ranged from $60,000 to $85,000.

Investments in transaction-specific human capital also functioned as hostages. In some instances these investments were related to the development of communications and coordination networks or the training of personnel. In other cases, substantial investments in reputation effects provided the hostages. At first glance reputation might not seem to be much of a hostage. But remember, both shippers' and carriers' reputations worked in much the same way as a bond. A reputation for keeping one's word was essential for inducing the necessary investments. The credibility of a shipper's promise to move a particular volume provided part of the incentive for a carrier's investment in specialized rail cars. Because the formal tariffs made no provision for a long-term volume commitment from a shipper, the agreement secured a carrier's expectations about the future. In addition, railroads would be reluctant to incur investments on behalf of shippers who did not hesitate to switch carriers. Similarly, a carrier needed a reputation for delivering the equipment it promised, if it hoped to persuade a shipper to use the carrier's profitable routes and not divert traffic to trucks or other rail lines. How effective reputation was as a hostage depended upon how important it was to have a reputation for making credible commitments in order to safeguard the transaction.

The second method that parties to complex transactions used to safeguard their transactions involved the development of private orderings. That is, the parties themselves devised a set of norms and rules for handling the enforcement, adjustment, monitoring, exchange of information, and termination of the contract. As I have reported elsewhere (Palay, 1984) the contractual relation supporting a complex transaction tends to be premised on a realized mutuality of interest, a predisposition to making necessary adjustments, the use of negotiation to adapt the contract, the development of rules and procedures for handling disputes, the facilitation of monitoring functions, and the exchange of information for both long-term and structural planning.

4.3. An Example of an Informal Contract

It is instructive to examine the informal contracting used by finished automobile shipper A and carrier X to implement the transaction discussed above.[25] Shipper A required significant investment in transaction-specific human and physical assets, but carrier X needed various contractual safeguards before it would make the investments. Informal agreements, collateral to the formal terms of carriage, provided the necessary assurances.

The actual negotiations took place between the carrier's commercial section and the shipper's corporate traffic department. The process began when the shipper supplied the carrier, the originating railroad, with a projection of

25. See section 3 above.

the number of automobiles it intended to ship over the next year. The forecast provided the carrier with the anticipated monthly volume to each destination, the desired routes, the shipper's estimate of the transit time necessary to make the round trip from assembly plant to destination, and a projection of the number of rail cars the carrier must provide.[26]

The carrier would then evaluate the forecasts to determine the accuracy of the equipment and turnaround time estimates. The railroad, which believed its profits increased as the ratio of volume to rail cars rose, thought that the shipper often overestimated the round-trip time and, therefore, the equipment requirements. The carrier countered by overestimating turnaround speed, thereby reducing the estimated number of required rail cars.

Carrier X did not want to procure equipment and then underutilize it. It only got paid for automobiles actually shipped, and rail car per diem rates did not fully compensate the carrier for autoracks that remained idle at the shipper's plant or traveled only partially full. If the carrier raised its rates to compensate, it risked losing its competitive advantage over motor transport. The shipper might then have an incentive, even on its longer hauls, to shift present or future vehicles away from rail.

The carrier also was concerned that other conditions—for instance, slumping auto sales, an auto-industry strike, or a significant design change—might render its equipment useless. An amortization agreement, collateral to the terms of the contract, was used to offset some of the concern. The understanding provided that shipper A would compensate carrier X from the unamortized portion of an autorack that was rendered useless. However, the amortization agreement only partially protected the carrier. First, neither party was completely convinced that the agreement was legally enforceable.[27] Second, the circumstances under which the auto company would pay off were limited to shipper-initiated design and model changes. This meant, for instance, that if at the beginning of a model year, A anticipated transporting 10,000 vehicles per month but due to poor sales or a strike a lower number were actually shipped, X would not be protected by the amortization agreement.

The movement was not entirely local to carrier X's routes (i.e., it was necessary to involve at least one other carrier in the movement). Therefore X, as the origin carrier, also was responsible for contacting the other railroads and

26. The shipper preferred to move the most automobiles with the fewest rail cars possible. But as the variability in the carrier's turnaround time increased, the shipper was willing to accept more equipment to maintain consistent service. For a given level of volume, the shipper believed that the carrier's marginal costs tended to increase as the number of rail cars required to move the vehicles rose. The shipper further alleged, though, that its inventory costs associated with holding finished vehicles at its assembly plants rose faster than the increase in price it would face as the carrier added additional equipment to a move. Therefore, the shipper was more likely to underestimate the turnaround time, thereby requiring the carrier to procure additional rail cars.

27. Under the ICA, collateral agreements outside the official tariff have always been thought to be illegal and unenforceable.

assembling a pool of rail cars. As a general rule, each railroad provided rail cars in proportion to its share of the move's total revenue.

The final agreement reached by the carrier and the shipper indicated that the carrier would establish a pool of no fewer than N trilevel racks to move finished vehicles from assembly plant to twenty-five specified destinations over a variety of different routes. The figure N was reached after some negotiating and was based implicitly on an agreed-to average round-trip time of fourteen days (or one and one-half trips per twenty-two-day production month) for each autorack. The shipper, in return, agreed to move no fewer than V automobiles along routes profitable for the carrier. The formal tariff established the price per carload of finished vehicles moving from the particular assembly plant to various final destinations. With the addition of the informal terms, the overall contract became a long-term incomplete aggreement which was completed yearly on a recurrent basis.

5. THE RELATIONSHIP TO TRANSACTION CHARACTERISTICS

Only 43 of the 51 transactions surveyed used informal contracting to restructure the regulatory relation. In 8 instances informal promises were simply used on a spot basis to complete the tariff. For example, scrap iron from shipper D's yard was moved in open-top gondolas. As with all the movements discussed, the contract remained incomplete until reciprocal commitments of scrap and equipment were made. Typically D committed scrap to a particular carrier on a single-trip, day-to-day basis. In turn, the shipper received gondola cars only if they were available. It did not attempt to negotiate long-term commitments of scrap with any particular railroad, and the carrier did not make extended commitments of cars. Spot contracts appear to have been used because of the short-term nature of the relationship between scrap dealers and steel mills. The mills rarely purchased scrap more than two months in advance, and usually only monthly. The shipper, therefore, felt that it would be imprudent to contract with the carrier over anything other than this same period. In a like vein, three railroads serviced the shipper's facilities. A carrier who committed to deliver a gondola to the scrap yard without a specific routing request and order would risk losing control of the car to another carrier. D simply might have used the rail equipment to ship to a steel mill not on the carrier's line.

In some of the 8 instances parties pursued changes in regulations directly before the commission, in the courts, and though lobbying. This raises the obvious question: why might some parties have used informal contracts as a mechanism for regulatory adjustment while others did not? Transaction cost theory suggests that at least part of the answer can found in the characteristics of the underlying exchange.[28]

28. A totally satisfactory answer is only possible through a careful comparison of the various means of accomplishing the desired adjustments. Unfortunately I do not have the data to make

It is instructive to cross-classify the use of informal contracts with the type of capital supporting the transaction. As can be seen from table 1, each of the transactions that entailed idiosyncratic capital used informal contracting, not only to complete their transactions, but to effectively avoid the regulatory constraints as well. However, of the 8 transactions that did not use informal contracting to restructure the regulatory arrangements, all were supported by standardized capital. This is consistent with the hypothesis that where the transaction is compatible with the contracting envisioned by the ICA, the parties are less likely to expand the bounds of permissible contracting. It is interesting to note that of the 13 standard transactions that did use informal contracting, 5 entailed a negotiated increase in price. While parties to standardized transactions used informal contracts to circumvent regulatory constraints, they did not always use them to structure contractual safeguards.[29]

If the entire explanation for not using informal contracts to restructure regulatory constraints was due to asset specificity, all observations would be in cells (1,1) and (2,2) of table 1. This is obviously not the case. Frequency of

Table 1. The Use of Informal Contracts and Asset Specificity

	Informal contract used to restructure regulatory constraints	Informal contract not used to restructure regulatory constraints	Row total
Standardized investment	8	13	21
Idiosyncratic investment	0	30	30
Column total	8	43	51

the necessary comparison. Instead, I will attempt the more limited task of discussing some of the virtues of informal contracting as a means of circumventing regulatory constraints. In this way I hope to suggest the framework for some future, more complete comparative institutional analysis.

29. The 5 transactions represented just over 70 percent of all the upward adjustment witnessed. Of course, the sample is too small to be statistically significant, but it does raise two interesting issues for further research. First, this could be further evidence that parties to standardized transactions are less likely to use hostage exchanges or other contracting safeguards to support their transactions. The upward pressure on price might represent the payment of a premium in lieu of other contracting safeguards.

Second, to the extent that parties to standardized transactions do need to entice investment, one might conclude that they are more likely to use pricing incentives than are parties to idiosyncratic exchanges. In the 5 cases, no hostages were traded nor were other specialized governance structures employed. The carrier simply was required to make an investment in physical or human capital in order to receive the price increase it desired. At this juncture any such con-

Table 2. Frequency of Exchange and Asset Specificity

	Low expectation of recurrence	High expectation of recurrence	Row total
Standardized investment	8	13	21
Idiosyncratic investment	0	30	30
Column total	8	43	51

exchange is a second dimension of transaction characteristics. Cross-classifying this issue with the use of informal contracts also sheds light on why some parties might use this type of agreement while others might not. While each of the 51 transactions was recurrent, 8 involved relatively low expectations of future interaction.[30] As table 2 indicates, all 8 entailed the use

Table 3. Frequency of Exchange and Contracting Safeguards Where Standardized Capital Is Involved

	Standardized capital			
	Informal contracts used to restructure regulatory constraints		Informal contract not used to restructure regulatory constraints	Row total
	Hostage exchange	Price increase		
Low expectation of recurrence	2	1	5	8
High expectation of recurrence	6	4	3	13
Column total	8	5	8	21

clusion really requires careful analysis of the price that preceded the new one. It is not impossible that price had somehow dropped below a reasonable rate and that the parties were simply making a much needed adjustment. But the fact that the carrier was required to make investments in physical or human capital in order to receive the price increase cuts in the other direction.

30. Note that these are not necessarily the same 8 transactions identifed in cell (1,1) of table 1.

of standardized capital. Despite a past history of exchange, those parties were not confident enough that the relation would continue.

Table 3 is even more revealing. It indicates that of the 8 transactions that did not use informal contracts to circumvent the regulatory restraints, 5 entailed low expectations for a continuing relation. Though the 3 remaining transactions with similar expectations did use informal contracts to avoid the impact of the regulations, 1 of these entailed a price premium. Thus where expectation for continuation is low, the exchange of hostages and the use of other contracting safeguards is similarly reduced. One possible interpretation of tables 2 and 3 is that frequency is a proxy for trading economies that are of a bilateral, obligational kind. These might develop between parties engaged in recurrent trade and might reflect not physical but human capital specialization. This is admittedly speculative but certainly worthy of additional research.

6. CONCLUSION

I have argued that informal contracting was an important method of effectively altering the regulatory scheme of the Interstate Commerce Act. But informal contracting is not the only method by which regulations can be restructured. In fact some of the parties chose to use the commission, the courts, or the legislature to change the rules.[31] There are several reasons why this might be true. First, none of the strategies is costless. Informal contracting, even factoring in the costs of governance, might simply be cheaper than other methods of changing regulations. Second, informal contracting is transaction- or firm-specific. The parties could take advantage of it to "fine-tune" the regulation. They need do nothing more than the bare minimum to change a regulation they are unhappy with. There is no need to reach a compromise with potential legislative coalition partners. Third, informal contracting is more timely than other strategies. Regulation, litigation, or lobbying involves substantial lags. Informal contracting provides the parties a means of making adjustments in relatively short order. Fourth, it provides a convenient mechanism for discriminating between shippers. Finally, informal contracting has the added virtue of preserving the fundamental structure of an existing regulatory cartel, and any accompanying monopoly profits, while effectively permitting the parties to cheat on their cartel partners. The parties can avoid the constraints of the cartel with respect to some transactions but remain in it with regard to others. This allows them to take advantage of its benefits in other transactions. Of course, they do have to be willing to "turn a blind eye" to the like behavior of their partners. This reduces the the overall effectiveness of the cartel but need not destroy it.

31. Some of the parties must have pursued multiple strategies, as is evidenced by the fact that the Interstate Commerce Act was substantially revised in 1978.

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