Contractual Holdup and Legal Intervention

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ABSTRACT

This article develops the point that incentive and risk-bearing problems associated with contractual holdup may justify legal intervention. Contractual holdup is considered both for fresh contracts and for modifications of contracts. One type of legal intervention is flat voiding of contracts. Such intervention tends to be advantageous when holdup situations are engineered. Another type of intervention is price-conditioned voiding of contracts—voiding only if the price is excessive. This policy tends to be advantageous when contracts are socially desirable (bad weather puts a ship in jeopardy and it needs rescue). Price-conditioned voiding prevents the imposition of holdup prices but still allows contracts (to tow ships in distress) to be made. Both types of legal intervention in contracts and their modifications are employed by courts to counter problems of pronounced holdup. In addition, various price control regulations appear partly to serve the same objective.

1. INTRODUCTION

The object of this article is to develop the point that the problems associated with contractual holdup may justify legal intervention in theory and to relate this conclusion to legal intervention in practice, in the form of the voiding of certain contracts and the cabining of price.

The term "contractual holdup" is employed here in a standard way; it refers to situations in which a party to a new or existing contract accedes to a very disadvantageous demand, owing to the party's being

in a circumstance of substantial need.[1] Stock examples of contractual holdup concern property owners who experience pressing liquidity problems or who are even physically threatened (almost a literal holdup), businesses with immediate requirements for specific goods or services, parties to contracts who face the prospect of breach at critical junctures, individuals whose cars break down and desire tows, and ships in distress.

The difficulties that contractual holdup engenders are ones of incentives and risk bearing and are reviewed in Section 2. As is generally appreciated, the possibility of holdup leads to a range of undesirable incentives: wasteful efforts to engage in holdup (arranging a threat of violence, using a needlessly expensive construction method with which others are unfamiliar in order to make a midstream threat of breach), inefficient precautions to avoid holdup (purchasing a reserve engine for a ship even though rescue would be likely), and dulled investment motives (reducing advertising of a television show because the show's profits may be extorted by the cast in renegotiations). Holdup prices may also represent a significant risk (suppose that a tugboat could obtain an agreement for half the value of a vessel for towing it to safe harbor).

How the law can alleviate the undesirable consequences of contractual holdup is addressed in Section 3. One approach is for the law simply to void contracts or their modifications since that will remove the prospect of profit from holdup. This policy may be desirable when the events that permit holdup to occur are engineered in some fashion (use of an unjustifiably expensive construction method), for these events would not have been instigated if they would not have resulted in enforceable contracts.

When, however, situations of need are not engineered (bad weather puts a ship in jeopardy, market forces cause construction costs to increase), flat voiding of agreements is undesirable, because in such situations contracts for aid or modifications (to tow a ship, to continue with construction) are often, if not typically, socially beneficial. In these circumstances, the policy of controlling the contract price is preferable, as that policy can reduce the problems of holdup but still allow contracts to be made.

Both types of legal intervention in contracts and their modifications— voiding without regard to price and control of price—are observed in

1. The word "holdup" is often mentioned by legal commentators on contract, for example, by Corbin (1963, 1A, p. 105), in his treatise on contracts. It may first have been used in the economics literature on contracts by Goldberg (1976, p. 439).

fact, as is described in Section 4. Discussed there are certain doctrines of contract law (duress, bad faith, and unconscionability), admiralty law, and various price control regulations (concerning towing of cars, taxi rates, postemergency pricing, and the historical just-price rule of *laesio enormis*).

The analysis of holdup is related to the economic theory of contracting in Section 5, where it is suggested that preventing holdup should be regarded as a general rationale for state intervention in fresh contracts. Also addressed is the contrast between legal intervention in contract modifications as examined here and in the economic contracting literature, in which it is assumed that courts do not intervene in modifications and in which holdup is instead ameliorated by the parties, through contractually specified mechanisms governing renegotiation.

The main contribution of the present article to the law and economics literature on holdup (see Aivazian, Trebilcock, and Penny 1984; Ayres and Madison 1999; Bar-Gill and Ben-Shahar 2004, 2005; Graham and Peirce 1989; Johnston 1993; Muris 1981; Posner 1977; Trebilcock 1993; and notes 11, 14, and 23) is that this article distinguishes between contracts that should not be made at any price and contracts that should be made but only at moderate prices. For the former, flat voiding is desirable to deter contracting altogether. For the latter, voiding is desirable only if price is excessive, in order to constrain price without discouraging contracting.[2]

2. CONTRACTUAL HOLDUP AND THE PROBLEMS IT CREATES

It will be useful to begin by listing a number of examples of holdup.

1. In *Baker v. Morton* (79 U.S. 150 [1870]), Baker was induced to sign over his land to another person for free because of threats made by an organization known as the Omaha Claim Club, which was operating in the then territory of Nebraska. The tactics of the club included taking a landowner who refused to sell his property to the Missouri River and, with a rope tied around his neck, repeatedly dunking him until he complied.

2. A construction company made a contract to build a factory and used a method that was more expensive than needed for the job and

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2. However, Craswell (1995), which criticizes noneconomic theories of holdup and enforcement of contracts, insightfully observes that a price-conditioned voiding policy may lead to the making of contracts at fair rather than high prices.

with which other construction companies did not have experience. Halfway through the job, the company threatened breach unless the contract price was raised substantially, and the buyer agreed.[3]

3. On the afternoon of December 31, a fairly large restaurant in a small town found that its electricity had failed because of a wiring problem. Without electricity, the restaurant would be unable to operate that evening, normally its most profitable of the year. The single electrician in town demanded and received payment of $2,000 for the 1-hour repair job, for which his normal rate would have been $80.

4. In *Beckwith v. Frisbie* (32 Vt. 559 [1859]), Beckwith hired Frisbie, a canal boat owner, to transport oats to New York. Frisbie refused to release the oats unless he was paid more than initially agreed. Beckwith complied with Frisbie's demand in order to be able to sell his oats, at a time when the market price of oats was falling.

5. In *Magnolia Petroleum Co. v. National Oil Transport Co.* (286 F. 40 [5th Cir. 1923]), a towboat came upon a barge in a helpless and endangered position. The towboat master obtained an agreement to be paid $15,000 for a tow of about 1 day, under weather conditions that were not dangerous and when normal daily towage rates ranged from $500 to $600.

6. In *Alaska Packers' Association v. Delmonico* (117 F. 99 [9th Cir. 1902]), the crew of a fishing vessel demanded and obtained a contract modification under which their wages were doubled, from $50 to $100 for the summer. The fishermen had threatened to quit otherwise, and it is said that it would have been impossible for them to be replaced because they were in a remote location in Alaska and the fishing season was short.[4]

7. James Gandolfini, star of the television series, *The Sopranos*, threatened to stop filming unless his contract with HBO was renegotiated for more than the $400,000 per episode that he had been receiving. HBO agreed to an increase, purportedly bringing Gandolfini's per episode payment to over $800,000 (see CNN.com 2003; Haberman 2003).

At the outset, I should comment on how it is that holdup occurs, that is, on what gives the threatening party, whom I will often call a contractor, bargaining power over the other party, whom I will often

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3. This is a hypothetical example, as will be some others.

4. Although this paragraph summarizes the facts of the case as seen by the court and as regarded by most commentators, a recent article, Threedy (2000), offers another interpretation.

call a victim.[5] This is a relatively straightforward matter in regard to a fresh contract in a case like that of the electrician or in a case of rescue like *Magnolia Petroleum*. In such cases, there is a great need that cannot readily be met by a party other than the contractor, who can choose not to transact. In a situation like *Baker v. Morton*, however, the threat is to commit a crime, so how is it that the threat may have credibility? In this case, committing a crime might well not have exposed the Omaha Claim Club to real penalty on account of its power in the Nebraska territory,[6] and in other cases in which the threat is a crime or a tort, one often finds a reason for believing that law enforcement would not have been likely.[7] In cases in which modifications of contracts are at issue, a party threatening breach would, if breach were committed, have to pay damages to the victim. Hence, one might ask why, for example, in *Alaska Packers* or *The Sopranos* cases, the victim agreed to a change in the contract terms. One answer may concern inability of the threatening party to pay damages; it is doubtful that the crew of the fishing boat had much in assets,[8] and one also wonders whether Gandolfini possessed holdings nearly sufficient to pay HBO for its losses from a breach, perhaps $100 million (see Haberman 2003). Other possible explanations are that damages would be undercompensatory and that the parties threatening breach would make counterclaims.[9]

Let me now discuss briefly the types of problem that contractual holdup can create against the background of a simple model.[10] Victims may find themselves in situations of need, that is, circumstances in which they will suffer a loss unless given aid by a contractor. Various actions

5. This terminology will be employed even though a victim might not find him- or herself in a situation of need or, if he or she does, might not meet with a contractor or, if he or she does meet with a contractor, might not be held up.

6. The opinion states, "The club made laws and promulgated decrees to suit its purposes, and enforced their observance with revolvers, guns, bayonets, ropes, and other appliances. . . . The sheriff of the county, . . . , mayor of the city, and register and receiver of the land office, all held high positions in the club" (79 U.S. 150).

7. For example, in *Barton v. Armstrong* (3 A.L.R. 355 [Privy Council 1973]), Armstrong threatened to kill a business associate unless he signed an agreement Armstrong wanted. Armstrong's statements were veiled, sometimes made anonymously in telephone calls, such that Barton could reasonably believe that Armstrong might think he could get away with murder.

8. The opinion states that "it is quite probable . . . that they [the crew] may have been unable to respond in damages" (117 F. 102).

9. In *The Sopranos* matter, Gandolfini asserted that HBO had violated an element of California labor law (Keller 2003).

10. This model concerns fresh contracts, and a formal version of it is set out in the Appendix; a similar model would apply to contract modification.

of the parties may affect the probability of situations of need, the conditional probability that a victim in a situation of need will come into contact with a contractor, the cost to the contractor of giving aid, and the loss that the victim would suffer in the absence of aid. The cost of aid is presumed to be less than the loss a victim in a situation of need would suffer, so that a victim and a contractor will have a reason to contract. At most, one contractor will be available to furnish aid to a victim—bilateral monopoly is assumed—and bargaining will result in the contractor obtaining a positive fraction of the surplus from a contract. For concreteness, the contractor's fraction of the surplus is assumed to be substantial, so I will refer to the contract price as a holdup price. The social objective is the minimization of social costs: the costs of any efforts made prior to the occurrence of situations of need, the costs of furnishing aid in situations of need, losses sustained in situations of need, and risk-bearing costs where parties are risk averse.

One problem with holdup is that it can lead contractors to invest effort to engineer situations of need. Clearly, any such effort is socially undesirable because it is costly in itself and can only increase subsequent social costs. But the promise of contractor profit from the charging of holdup prices may lead contractors to make efforts to create situations of need. This is exemplified by *Baker v. Morton*, since the Omaha Claim Club invested energy in dragging Baker to the Missouri River to demonstrate the reality of its threat and in other ways devoted resources to its extractive activities. The phenomenon is also illustrated (probably in an empirically more relevant way) by example 2, where the construction company used an expensive method only because it would allow the company to hold up the victim, as other construction companies were unfamiliar with the method.

A second problem with holdup is that it can lead victims to expend excessive effort to reduce the likelihood of holdup or its consequences. The degree to which victims will exert effort will depend on their desire to avoid paying holdup prices, for these prices are the private cost to them of holdup. To the extent that prices exceed the actual costs of aid, victims will be led to spend too much from a social perspective protecting themselves against holdup. Demonstrating this possibility of wasteful expenditure would be Baker hiring armed guards to thwart the Omaha Claim Club or the barge in *Magnolia Petroleum* outfitting itself with a spare engine.

A third problem with holdup is that it can dilute victims' incentives to invest in their enterprises. For instance, we might find that Baker

would not improve his property in Nebraska, say, by putting up a barn, if the value of the barn would be extracted from him by the Omaha Claim Club, or that the ship owner in *Alaska Packers* would decide not to install greater storage capacity for fish if the owner felt that that would only accentuate the demands of the crew were it to threaten breach.

A fourth issue relating to holdup is of a different character: contractors' incentives to search for victims in situations of need, and to make related investments, will be closer to the socially desirable level the higher the prices they obtain. For a tugboat's incentives to engage in search or to purchase equipment to lower the cost of towing to be optimal, the tugboat would need to receive the full surplus from giving aid, not just a fraction of it. Hence, high holdup prices have a socially beneficial aspect rather than a detrimental one.

A fifth consideration, however, is that holdup prices impose a form of risk on risk-averse victims. Such risk-bearing losses are important in a case like that of *Baker v. Morton*, since Baker was forced to give up his property for nothing, and perhaps would also be important in a case like *Magnolia Petroleum* if the barge had been owned by a single individual.

From the foregoing, one can see that holdup creates several types of incentive problems and a possible problem of risk bearing but also has a possible desirable incentive effect on contractor search and investment.

3. LEGAL INTERVENTION TO REMEDY CONTRACTUAL HOLDUP PROBLEMS: IN THEORY

Having reviewed the problems generated by contractual holdup, let me now examine how legal intervention can in principle alleviate these problems.[11]

Consider first situations in which holdup is engineered by contractors, such as in *Baker v. Morton*, the construction company in example 2, and *Beckwith v. Frisbie*. Because any effort devoted to creating situations of need is a social waste, it would be best to eliminate the incentive to

11. The general point that legal intervention can remedy the incentive problems due to holdup is to my knowledge first developed in perceptive articles by Muris (1981) and Aivazian, Trebilcock, and Penny (1984), focusing on contract modifications (as opposed to fresh contracts). They do not analyze the main issue taken up here: legal intervention in the form of flat voiding of contracts versus legal intervention based on price.

engage in such effort. That can be accomplished if the court voids contracts in which positive effort was devoted to creating situations of need. An effort to organize a threat to drown a person like Baker will not be made if any resulting contract for sale of property would not be enforced, a company will not employ uncalled-for construction methods if a modification it obtains as a consequence would not be enforced, and a transporter like Frisbie would not hold oats hostage if this could not allow it to obtain an enforceable increase in price.[12]

Now consider contexts in which holdup situations are not created by contractors and in which it is ordinarily desirable for contracts to be made when contractors encounter victims in need. Here, as explained in Section 2, high prices create incentive problems for victims and impose risk on them but also may generate beneficial incentives for contractors.

Thus, as a general matter there will be an optimal price, impounding some of the contractual surplus, that will best resolve the problems of holdup on one hand and the potential contractor incentive benefit of a high price on the other. The magnitude of the optimal price will depend on the context. Consider the provision of contractor incentives, which would raise the optimal price. This would presumably be a significant factor in regard to maritime rescue by professional salvors, especially if conducted in dangerous conditions, since these rescuers need a financial motive to search and to invest in their vessels and equipment. But it is not obvious that, for instance, electricians need such incentives, for if a person needs an electrician, the person can usually just contact the electrician.[13] Risk aversion might be relevant in regard to a rescue price equal to half a fishing vessel's value, where the vessel is the chief asset owned by a fisherman, but risk aversion would not be relevant in regard to a $2,000 price paid by a hotel that is part of a large, national chain.

Legal intervention to prevent price from exceeding the optimal price would in principle be desirable, because the holdup price could exceed

12. This observation, that individuals will not engineer situations in which they can engage in contractual holdup if their contracts would be voided, has been mentioned before, for example, in Bar-Gill and Ben-Shahar (2005, sec. 1E), Craswell (1995, pp. 215–18), and Shavell (2004, p. 335).

13. An electrician might, however, need an incentive to monitor phone calls on weekends or after hours, and ships in distress could, if they had working communications and were not in imminent peril, solicit bids for help (as happened in *The Elfrida*, as will be noted below). Thus, the comparison between the electrician and the salvor is not necessarily as clear as is suggested in the text.

the optimal price (I set aside for now difficulties of implementation).[14] Intervention could be undertaken by the courts in resolving contract disputes in two ways. Courts could directly control price by replacing an excessive contract price with the optimal price. Alternatively, courts could void any contract if the price exceeded the optimal price, thereby inducing parties not to name an excessive price (once they learned that the policy was in place).

Legal intervention could also be of an ex ante nature, effected through price regulation. This form of intervention will tend to be inferior to intervention by courts if it does not depend on the contractual environment in individual cases.[15]

The information of the state will, of course, be imperfect, which means that practically optimal legal intervention will have to reflect the social cost of mistake. A major cost of mistake in setting prices is chilling desirable new contracts. If the price ceiling turns out to be less than the cost of furnishing aid, then a contract will not be made, even though the resulting harm to the victim could greatly exceed the cost of aid. For example, if the price allowed for rescuing a ship were less than the actual cost to the salvor (suppose there was a risk to the salvor, owing to high seas), the salvor would not perform the rescue and the ship might be lost.

Similarly, mistakes in overseeing the terms of modifications of contracts may result in undesirable breach. If the price increase permitted by courts for a firm seeking to renegotiate a contract in the face of higher

14. The point just discussed, that when holdup is not engineered, legal intervention that controls price can alleviate the incentive and risk-bearing problems due to holdup, is, as has been stated, the main contribution of this article. Graham and Peirce (1989) and Johnston (1993) also consider judicial control of price, but in their analysis, price control has a different role from that here. Their models do not focus on holdup-related ex ante incentives or risk bearing but rather on asymmetric information; price control in their models reduces the problem of inefficient failure to modify contracts and of litigation. Bar-Gill and Ben-Shahar (2004) comment on the possibility that courts could control price in their basic analysis, but price control has no holdup-connected advantage there, for it is optimal in their basic model for all modifications to be enforced, regardless of the magnitude of the price, because neither ex ante incentive effects nor risk are considered. (They briefly consider incentive and risk-bearing problems in an extension of their basic model but not the control of price to alleviate these problems.)

15. Most examples of price regulation that will be noted in Section 4 depend only on price, not on the contractual situation. However, an example is mentioned of a tow truck rate regulation that applies only in emergency circumstances, so this regulation does operate in a way that depends on the contractual environment. Even so, this regulation does not function so as to reflect the array of characteristics of the contractual context that courts would be likely to consider.

costs is not sufficient, the firm might breach, even though continuing with its performance would be better.

To guard against such costly mistakes resulting in failure to make desirable contracts or in undesirable breach of existing contracts, optimal policy should feature generosity in price setting and limits on whether there will be legal intervention.

4. LEGAL INTERVENTION TO REMEDY CONTRACTUAL HOLDUP PROBLEMS: IN PRACTICE

What decisions were reached by courts in the cases mentioned in Section 2? In *Baker v. Morton*, the contract for sale of land was canceled. In *Beckwith v. Frisbie*, the price increase agreed to by Beckwith for release of his oats was not enforced. In *Magnolia Petroleum v. National Oil Transport Co.*, the $15,000 price was adjusted to $1,700, which, note, exceeded the $500–600 normal daily towing rate. In *Alaska Packers*, the court refused to enforce the agreed modification. In the hypothetical example 2 involving the construction company, my suspicion is that the contract modification would not be enforced, and in example 3, concerning the electrician and the restaurant, my belief is that the price would be adjusted, probably to an amount of at most several hundred dollars, for reasons to be discussed.

As these legal cases illustrate, courts sometimes do, or sometimes likely would, intervene in contracts, either to void them or effectively to control the price. Let me now summarize how this comes about under the law.

4.1. Contract Law: Duress, Good Faith, Unanticipated Circumstances, and Unconscionability

Courts may intervene in contracts and their modifications on grounds of duress (see Calamari and Perillo 1998, pp. 308–21; Farnsworth 1999, 264–73; *Restatement [Second] of Contracts,* secs. 174–76; Uniform Commercial Code [U.C.C.], sec. 2-209; White and Summers 2000, pp. 57–60).[16] According to the principles of duress, a contract or a modi-

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16. See also the important articles on duress of Dawson (1947) and Hale (1943) and, for extensive descriptions of cases, the still-relevant articles of Dalzell (1942a, 1942b). It may be noted that duress and related doctrines were applied differently in the past: intervention in fresh contracts was less frequent, and intervention in modifications was more frequent (indeed, modifications were unlikely to be enforced whenever the seller received

fication may be voided if it is made as the result of an improper threat and if the threat left the victim with little alternative (*Restatement [Second] of Contracts*, sec. 175[1]).[17] Improper threats include threats of crimes and torts and threats to act in lawful ways that, however, would violate the general contractual duty of good faith and fair dealing.[18] Breach of the duty of good faith and fair dealing is given particular emphasis in the context of contract modification (Farnsworth 1999, pp. 267–68, 282–83; *Restatement [Second] of Contracts*, secs. 89[a], 176; U.C.C., sec. 2-209; White and Summers 2000, pp. 57–60). The victim's not having much alternative appears to mean that he or she would suffer substantial disutility if the threat were carried out (*Restatement [Second] of Contracts*, sec. 175, comments b and c).

An important factor bearing on the enforceability of contract modifications is whether the circumstances that gave rise to a change in a contract were unanticipated and provided an economic warrant for the alteration. If these conditions are not satisfied, the modification is frequently voided (Calamari and Perillo 1998, p. 185; Farnsworth 1999, pp. 281–82; *Restatement [Second] of Contracts*, sec. 89[a]; U.C.C., sec. 2-209; White and Summers 2000, pp. 57–60).

An additional legal concept affecting judicial intervention in contracts and their modifications is unconscionability (Calamari and Perillo 1998, pp. 365–76; Farnsworth 1999, pp. 303–16; *Restatement [Second] of Contracts*, sec. 89[a]; U.C.C., sec. 2-302; White and Summers 2000, ch. 4). Unconscionability can refer to procedural factors under which a contract was made—notably, to whether a party was in a circumstance of need or was uninformed—or to the substance of a contract—to the deviation of the price or other terms from what seems fair in the light of market conditions. Contracts or modifications deemed to be unconscionable are generally voided.

a higher price for doing what was already his or her contractual duty). See, for example, Farnsworth (1999, pp. 265, 276–83).

17. The meaning of voiding the contract depends on whether property has been conveyed or a service has been provided. If the former, the contract can be undone; for example, land conveyed by a buyer to a seller can be returned to the seller and the money paid returned to the buyer. If a service has been provided, such as towing a vessel, the contract cannot be literally undone; instead, the price paid can be adjusted with the buyer paying the seller a "fair" price determined by the court. See the discussion in the text below; see also Farnsworth (1999, pp. 272–73).

18. *Restatement [Second] of Contracts*, sec. 176, spells out categories of improper threats. On the general duty to act in good faith, see Calamari and Perillo (1998, pp. 457–61); Farnsworth (1999, pp. 504–9); *Restatement [Second] of Contracts,* sec. 205; and U.C.C., sec. 1-203.

Let me now review certain aspects of the operation of these elements of contract law, especially as they relate to contract price and the possible chilling of contracts.

For certain types of improper threats, the voiding of contracts or of modifications generally does not depend on whether the price was considered unfair or deviant. This is true when the threat is to commit a crime, as in *Baker v. Morton*, or a tort, as in *Beckwith* (in which the threat was to hold hostage another's property) (*Restatement [Second] of Contracts,* sec. 176[1][a]). Another category of threats tending to result in voiding independent of price is threats violating the duty of good faith and fair dealing (*Restatement [Second] of Contracts,* secs. 175, 176[1][d]). The modification case given in example 2 could be considered to involve such misbehavior, since the company chose an unusual method of construction in order to be able to extract a price increase from the contract buyer. *Alaska Packers* could also be viewed as violating the duty of good faith, assuming that the crew took advantage of the vulnerability of the Alaska Packers Association when no replacement crew could be found and when the crew had no reason for seeking an increase. A further example of bad faith in a modification is *Capps v. Georgia Pacific* (253 Or. 248, 453 P.2d 935 [1969]), in which Capps, a real estate broker, was forced to agree to radically reduce the commission owed him when Georgia Pacific threatened not to pay, knowing that Capps needed funds immediately to avert a mortgage foreclosure on his home.

That agreements resulting from the types of threat just mentioned may be voided regardless of price is consistent with the analysis in Section 3. It was stressed there that voiding removes the socially wasteful incentive to engineer situations of need (and does not present a danger of chilling desirable contracts since those situations will not arise if there is voiding). The categories of threat under discussion are essentially engineered or are socially undesirable even if not engineered.

For other types of improper threats, those that are not crimes or torts or that do not display bad faith, the voiding of contracts or modifications may depend on whether the price was seen as unfair.[19] The contract in example 3 involving the electrician might well be voided on grounds of unfairness of the price, as the price was $2,000 rather than the usual

19. *Restatement [Second] of Contracts*, sec. 176(2), states that a necessary condition for certain threats to be considered improper is that the "resulting exchange is not on fair terms." See also sec. 176 and comments a and e. In addition, sec. 89(a) states that a modification is binding if it is "fair and equitable."

$80. *Magnolia Petroleum* and many other maritime rescue cases also provide illustrations (as will be discussed shortly). Another typical example is *Rodziewicz v. Waffco Heavy Duty Towing* (763 N.E. 2d 491, 493 [Ind. Ct. Ap. 2002]), in which the court stated that a contract for $4,070 for towing a truck that had broken down on the highway, and for which the normal charge would be about $275, would not be enforceable. A modification example would be a case in which a builder seeks a modification because his or her costs unexpectedly rise by $10,000, making the contract a losing proposition for him or her, but because of the great need of the buyer for timely completion, the builder is able to obtain a disproportionate modification increase in price of $100,000.[20] Although in these examples courts did, or might be predicted to, explicitly mention the unfairness of price as a reason for voiding, an exorbitant price can exert influence as well by enhancing the willingness of a court to find bad faith or some other reason for voiding.

Cases in which modifications tend to be enforced are, as noted above, those in which the price was not seen as unreasonable and in which the circumstances that gave rise to a change in a contract affected the party threatening breach, were unanticipated, and provided an economic basis for the change. For instance, in *Watkins v. Carrig* (91 N.H. 459, 21 A.2d 591 [1941]), the Watkins firm contracted with Carrig to excavate his cellar for a stated price, but Watkins unexpectedly encountered rock, making his task harder to undertake than was foreseen. Carrig agreed to a price increase that was not found unreasonable in the situation, and the modification was enforced. In *Goebel v. Linn* (47 Mich. 489, 11 N.W. 284 [1882]), brewers agreed to pay more for ice than had been originally agreed, $3.50 rather than $2.00, when the ice crop failed owing to an unexpectedly mild winter and no other suppliers of ice had ice available. Here the price increase was said not to be too much under the circumstances, and the modification was enforced. In *Schwartzreich v. Bauman-Basch* (231 N.Y. 196, 131 N.E. 887 [1921]), a designer who had contracted to work for a wage of $90 a week received another offer for $115 a week. He obtained a modification in which his wage was raised to $100, which was enforced, presumably in part because of the

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20. An essentially similar example is implicitly furnished by *Goebel v. Linn* (47 Mich. 489, 11 N.W. 284 [1882]), in which the circumstances of a supplier of ice became more difficult. In this case, the modification was enforced, a primary reason being that the price increase for ice was found reasonable (see especially 47 Mich. 494); if the price increase had been higher, presumably the decision would have been not to enforce the modification.

reasonableness of the wage increase in the circumstances.[21] In *The Sopranos* matter, my suspicion is that the increase in payment obtained by Gandolfini from HBO would be upheld if it was not grossly different from what he could obtain from outside offers (and apparently it was not) or at least that Gandolfini would have a greater chance of having his modification upheld than if he had obtained a much higher increase.[22]

That the enforcement versus the voiding of the contracts and modifications in the types of cases under discussion depends on the price comports with Section 3. For in the contexts at issue, it appears to be desirable that fresh contracts be made and that contractual relationships be continued, yet not at unreasonable price levels that would create substantial problems of holdup. In particular, it is desirable that electricians provide services to restaurants so that they can operate on New Year's Eve, that tow trucks provide emergency help to truck drivers like Rodziewicz, that contractors like Carrig continue their work on basements for individuals like Watkins, and that ice companies deliver ice to prevent brewers like Linn from losing their stock of beer. These socially good things will happen, with prices or modified prices being kept in check, under properly applied price-conditioned voiding. In contrast, recall that there is no need for price-constrained voiding in cases like *Beckwith* and *Capps*, for in such cases flat voiding does not chill desirable contracting.

A number of observations about the law just summarized and its economic interpretation are worth adding. First, intervention by courts on the basis of price does not seem to occur unless the price deviates substantially from the estimated market price. This is based on an impression gained from reading cases (for instance, in *Rodziewicz* the $4,070 price for a tow instead of the normal $275 charge was found excessive, but in *Goebel v. Linn* the $3.50 price for ice instead of the previously agreed $2.00 was not) and also on the inference that, were courts willing to intervene whenever price deviations are modest, the volume of litigation about unfair prices would probably be vast rather

21. An example of a contrary decision is *Davis & Company v. Morgan* (117 Ga. 504 [1903]), where an employer increased the contract wage in response to an employee's receiving a higher offer from another employer, but the court refused to enforce the modification in the wage. Today, however, it seems that enforcement would be more likely.

22. That the $800,000–$1,000,000 per episode that Gandolfini sought might have approximated his alternative market opportunity is suggested by this statement: "Gandolfini currently pulls in $400,000 per episode and is said to want the big-time money paid to other prime-time stars. (Ray Romano earns $800,000 per episode for *Everybody Loves Raymond* and Kelsey Grammer bags $1.6 million an episode on *Frasier*.)" (Keller 2003).

than limited in scope, as it is. If this view that courts' intervention is conservative in character is correct, it would fit with the point of Section 3 that a cautious judicial policy may be beneficial, given the costs of intervention and the danger of discouraging desirable contracts.

Second, the latter danger, of chilling desirable contracts, is an issue to which courts and commentators sometimes give explicit recognition. For example, in *Goebel v. Linn* (47 Mich. 493), the court stated that it would be strange if the existing contract "could stand in the way of a new . . . contract which should provide for a price that would enable both parties to save their interests." Farnsworth expresses the same point in discussing modification of a construction contract (Farnsworth 1999, pp. 280–81).

Often, however, courts and commentators do not discuss the possibility that the policy of judicial intervention would prevent desirable contracting. A typical example is *Kelsey-Hayes v. Galtaco* (749 F. Supp. 794 [E.D. Mich. 1990]), in which Galtaco, a supplier of castings to Kelsey-Hayes, threatened to close down its losing foundry operations unless it received price increases of 60 percent. Kelsey-Hayes agreed to this demand because it greatly needed the castings in order to provide brake assemblies to Ford, which would otherwise probably have had to halt production of a vehicle line. Although the court engaged in a detailed analysis of the case, it made no mention of the effect that its decision not to enforce the modification might have on the likelihood of breach in similar situations in the future. Yet it seems that the court's decision might cause a breach in a subsequent case, because a future Galtaco would know that it could not obtain an enforceable 60 percent price increase. At the same time, the court apparently believed that a breach in the instant case would have been socially undesirable, because it would have caused Ford to halt production of its vehicle line. The lacuna in the court's reasoning—its failure to account for the possibility of causing undesirable breaches in the future—is often encountered and suggests that the danger of judicial mistake is not small.

An additional observation is that courts do not generally intervene in contracts on the basis of price alone but rather intervene owing only to a joint consideration of price and other circumstances, and notably, the victim's degree of need, which is to say, whether he or she was in a situation of duress. The economic interpretation of this observation is informational, that the price alone does not ordinarily tell courts enough to allow them to make judgments about the appropriateness of a contract. When, however, courts know that not only was the price seemingly

high but also the victim was in a situation of duress, the courts have in this fact additional evidence giving them reason to think that the apparently high price was indeed excessive: the element of the victim's need obviously gives the threatener the bargaining power to extract a high price.[23]

To illustrate, if a court knows that a tug charged a vessel that was in distress $2,000 for a short tow when the normal price would be $500, the court will reasonably infer that the high price was obtained because the vessel did not have the opportunity to search the market for tug services but rather had to deal on the spot with a single tug. Suppose, in contrast, that a court knows that a tug charged a vessel the same price of $2,000 but that the vessel was not in distress. In this case, the court may infer that because the vessel presumably did have the time to search the market for tug services (perhaps using radio), the charging of a $2,000 price probably has an explanation involving factors bearing on cost (perhaps the cargo in the vessel was fragile, so the tow had to be done carefully, using special equipment).

Another matter of interest is whether, when courts void a contract, they substitute a price they consider fair and, if so, how the new price is determined. In cases in which the contract that is voided was a new contract and a service was performed, such as the towing of a vehicle as in *Rodziewicz*, the party who supplied the service is normally compensated for it at what is estimated by the court to be the market rate. This compensation for the service provided often occurs through application of a restitutionary remedy. If, however, the new contract that is voided was for conveyance of existing property, the transaction can be undone (the property can be returned to the seller, and the money paid can be returned to the buyer), so there is no need for the court to

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23. It is instructive to contrast the general point now being made, that it is rational for courts to consider the victim's situation of duress, to Bar-Gill and Ben-Shahar (2004), who stress that "courts should not examine whether the buyer was coerced" (p. 417) and that modifications should be enforced "even if blatantly coercive" (p. 392) whenever the threat to commit breach is credible. The reason for their interesting (and radical) recommendation is that they generally compare the policy of enforcing a modification at the agreed price with the policy of flat voiding of the modification, not with the policy of price-conditioned voiding. Given the choice that they posit faces the courts, their conclusion is correct, because flat voiding would lead to breach, to the mutual detriment of the parties, presuming the threat to breach was credible. But if courts can pursue a policy of price-conditioned voiding, courts can lower the price without causing breach. Hence, the situation of the victim of the threat becomes relevant for, as explained here, the victim's circumstances allows courts to infer when the price was likely to have been high in comparison with that needed to avoid breach.

determine a substitute price.[24] If what was voided was a modification, the usual price that governs is the original contract price, so, again, the court need not, and generally does not, determine a substitute price. Hence, except in the first category of cases (fresh contracts involving services), courts do not need to control price by providing a substitute price. Rather, courts can control price by voiding conditioned on price, since then the parties know that if the price is too deviant, their contract or modification will not be enforced.

4.2. Admiralty Law: Salvage Contracts

In cases involving contracts for salvage, admiralty law principles guide courts (see generally Brice 2003, ch. 5; Gilmore and Black 1975, secs. 8–15; Norris 2003, ch. 12). Under these principles, contracts made when vessels are in great danger are subject to scrutiny, and if prices are excessive, they are reduced to a fair level. *Magnolia Petroleum* is illustrative because the barge that was towed was in great danger and the $15,000 contract price was a large multiple of the fair price. To determine the fair price in that case, the court noted that the seas were not dangerous, so it used as its benchmark the normal towing rate of $500 to $600 a day and generously awarded $1,700. In *Post v. Jones* (60 U.S. 150, 19 How. 150 [1856]), a whaling vessel, the *Richmond*, went aground and was rescued at little cost by other whalers. The whale oil aboard her was transferred to these vessels, but the price they paid was low, and the court did not enforce the price. In *The Elfrida* (172 U.S. 186, 19 S. Ct. 146 [1898]), a ship went aground but was not subject to an imminent risk. The *Elfrida* considered several bids from salvors for her refloating before accepting one for $22,000, to be paid only on success; the value of the ship was about 4 times this amount. The court enforced the contract at the agreed price, emphasizing that the contract was made with deliberation, when the *Elfrida* was not in immediate peril, and that the salvor's compensation was not assured because refloating her might not have been easy.

These cases help to illustrate not only the general point that the contract price may be replaced with a fair price when a vessel or her contents is at immediate risk—as in *Magnolia Petroleum* and *Post v. Jones*—but also the converse point that when a vessel is not in jeopardy,

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24. Nevertheless, in order to decide whether to allow voiding of the contract, the court may want to compare the original contract price to the market price, which means that the court must determine (if only implicitly) the market price.

the courts are less likely to intervene—as they did not in *The Elfrida*. The cases also exemplify the principles used to determine the fair price. According to these principles, the fair price is supposed to reflect the time, expenses, and risks faced by the rescuing vessel, whether that vessel was a professional salvor (in which case courts tend to be more liberal), and the value and the risk faced by the vessel in distress.[25]

The economic interpretation of what has just been reviewed in the light of our analysis of holdup is as follows.[26] First, it makes obvious sense that the law should draw the distinction that it does between cases in which vessels are in immediate peril and those in which they are not, as holdup is more likely to be a problem when the peril is imminent. In the circumstances of *Magnolia Petroleum* and *Post v. Jones*, the vessels in distress did not have the ability to obtain bids for rescue and faced large expected losses, so were in classic bilateral monopoly situations. In *The Elfrida*, in contrast, the danger was not immediate, and the ship was able to solicit different bids for refloating.

Second, the elements of the calculation of the fair price are economically rational in that they are likely to produce prices that would be sufficient to encourage contracting yet prevent holdup prices. In particular, the time, expenses, and risk faced by the rescuing vessel need to be taken into account to generate a price acceptable to that vessel for contracting. The attention given by admiralty law to the value of the vessel in jeopardy also reflects economic logic because of the beneficial incentives that are engendered if payments to rescuers depend on the value of the vessel and on success in rescue.[27] The relevance of whether the rescuing vessel was a professional salvor makes sense, because it is of particular importance that professional salvors obtain sufficiently high prices (exceeding the marginal cost of rescue) to encourage them to remain in business and to invest adequately in salvage equipment.[28] In addition, it may well be that the generosity of the courts in calculating a fair price, such as in *Magnolia Petroleum*, is motivated in part by a

25. See, for example, Norris (2003, ch. 12, secs. 164, 170), on the general factors determining a fair price, and ch. 6, sec. 81, on the liberal compensation of professional salvors.

26. The general thrust of what follows is similar to that in Landes and Posner (1978, pp. 101–4); see also Buckley (1990, pp. 46–47) and Trebilcock (1993, pp. 87–90).

27. Awards for salvage and contracts for salvage are almost universally made only if the salvage effort was successful—on a "no cure, no pay" basis. See, for example, Gilmore and Black (1975, p. 535) and Norris (2003, ch. 7).

28. This is also seen as the purpose of liberality in awards to professional salvors by courts; see Norris (2003, ch. 6, sec. 81).

desire to avoid chilling desirable contracts owing to their having only imperfect information about the minimum price necessary to induce contracting.

4.3. Legislation Controlling Price

Statutes regulating price may have a limiting effect on holdup, as a number of examples illustrate.[29]

Many localities have imposed ceilings on prices that can be charged for towing disabled vehicles.[30] This price regulation obviously restricts the possibilities for holdup, and that is seen as one of its purposes. For instance, in reviewing tow truck regulations, a New York court stated that "an accident is . . . no place for bargaining as to rates of charge. Clearly, the motoring public is at a disadvantage in such circumstances and it is then that the unscrupulous take unfair advantage." At the same time, this court did not endorse price regulation for towing in non-emergency situations or for vehicle repair or storage, contexts in which holdup is presumably not much of a problem (*Richard's Serv. Station v. Huntington*, 361 N.Y.S.2d 497 [1974]), modified on other grounds, 367 N.Y.S.2d 296 [2d Dep't 1974]).

Another example of maximum price regulation is that which requires hotels not to charge more than their posted undiscounted room rates (see, for example, Cal. Civ. Code, sec. 1863 [2004]; Fla. Stat., sec. 509.201 [2004]; N.Y. C.L.S. Gen. Bus., sec. 206 [2004]; Tex. Occ. Code, sec. 2155.001 [2004]). This regulation might prevent hotels from engaging in classic holdup, for instance, raising their rates excessively on the spot for a person who comes in at a late hour and appears to strongly need a room (although hotels are free to set their undiscounted rates).

An additional example, of significant historical importance as a form of maximum price regulation in Europe throughout the Middle Ages, concerns the principle of *laesio enormis*, which holds that if a price in

29. Numerous other examples could be supplied. One that I omit is utility price regulation, which Goldberg (1976) explains can be viewed as protecting consumers and suppliers against holdup by each other.

30. See, for instance, New York City, N.Y. Admin. Code, sec. 20-509, which states that "charges for the towing of vehicles shall not exceed fifty dollars for the first mile or fraction thereof and four dollars for each additional mile or fraction thereof," or Phila., Pa., City Code, sec. 9-605(6)(a), which states, "The maximum fee a tower may charge for towing a disabled vehicle is forty (40) dollars, and two (2) dollars per mile during normal work hours of 6:00 a.m. to 7:00 p.m. and fifty (50) dollars and two (2) dollars per mile for evenings, weekends and holidays." I owe the example of the towing of disabled vehicles to Daniel Kelly, who wrote an excellent student paper about it.

a contract or exchange exceeded 150 percent of the "just price," the agreed price would be voided and the just price substituted (see Baldwin 1959; Dawson 1937, pp. 365–70; de Roover 1958; Gilchrist 1969, pp. 58–62).[31] The just price was taken to be essentially the general market-determined price.[32] Hence, the principle of *laesio enormis* functioned to prevent holdup, and this was intended. Scholars of just price state that an opinion of the times was that sellers should not be able to take advantage of a buyer's special need.[33]

It seems then that preventing holdup has been a rationale of many regulations that place upper limits on price. However, it should be noted that such regulations presumably have another function as well, namely, preventing those who are ignorant of the market price from being charged too high a price.

Two more examples of price regulation will be mentioned, which are different from the preceding because they effectively set prices rather than only limit prices and have problematic consequences as a result. The first concerns taxi rates. Because these are usually mandated,[34] taxi drivers do not have the discretion to engage in holdup, such as of a person who urgently needs to be taken to a hospital or of a person whom a driver threatens to drop off in an unsavory neighborhood. Although it is socially beneficial that taxi drivers be prevented from holding up customers, the regulation of taxi rates is undesirable because

31. The principle of *laesio enormis* originally protected only sellers of land from receiving less than half its market value but was generalized over the course of time; see especially Baldwin (1959).

32. The view that the just price was instead the fair price, primarily reflecting embedded labor, was refuted in Baldwin (1959), which has generally been accepted by scholars as authoritative; de Roover (1958) is in the same vein.

33. For example, Baldwin (1959, p. 33) notes that "Sellers . . . qualified for . . . protections . . . when they could demonstrate unusual distress in their situations." De Roover (1958, p. 426) described the views of an influential fifteenth-century commentator, San Bernardino of Siena, in this way: "[N]o one is allowed . . . to take advantage of a buyer's . . . special need." Gilchrist (1969, p. 61), writes, "The unjust price took advantage of some 'weakness' or necessity on the part of the buyer or seller."

34. These may be found on the Web sites of many cities. For example, for Boston, see Transportation Department, Taxis (http://www.ci.boston.ma.us/transporation/cabs.asp); for Chicago, see http://egov.cityofchicago.org, and navigate to "Liveries and Taxis"; for New York City, see New York City Taxi and Limousine Commission, Passenger Information: Rate of Fare (http://www.nyc.gov/html/tlc/html/passenger/taxicab_rate.shtml). The only variation in rates seems to be according to the time of day. For instance, in New York City rates involve a $1.00 surcharge Monday through Friday from 4:00 P.M. to 8:00 P.M. and an evening surcharge of $.50 after 8:00 P.M.

it interferes with the classic allocative function of market prices.[35] It would seem preferable, for instance, to allow taxi rates to rise when bad weather or convention business increases the overall demand for taxis, which tends to lead to shortages of taxis at the controlled rates. If flexibility in taxi rates could be effected without giving too much discretion to raise rates to individual drivers, rates could vary with market conditions, but holdup of particular individuals could still be curtailed.

The other example is of statutes that prevent prices from increasing in the aftermath of emergencies. Florida, for instance, passed legislation following Hurricane Andrew prohibiting the charging of "excessive" prices during a declared state of emergency, and other states have enacted similar rules (Fla. Stat., sec. 501.160 [2003]; see also Ark. Code, sec. 4-88-303 [2003]; Conn. Gen. Stat., sec. 42-230 [2003]; N.J. Stat., sec. 56: 8-109 [2004]).[36] The Florida law stipulates that prices not deviate substantially from the average price in the month immediately prior to a declared emergency.[37] This law was applied after Florida was struck by hurricanes over the summer of 2004 to stem what was described as gouging by sellers of many products and services, for instance, gasoline, generators, pumps, chain saws, and hotel rooms.[38] The emergency price control regulation prevents holdup of single individuals owing to their particular circumstances, such as in the case of a motorist who runs out of gas as he or she pulls up to a gas station or a person who urgently needs a pump to prevent flooding that would destroy valuable property. But the regulation suffers from the problem that it compromises the general allocative and production-related social advantages of allowing price to respond to changes in overall demand and supply conditions. If, following a Florida hurricane (causing an increase in demand for and a reduction in supply of many goods and services), the price of gasoline

35. The regulation of taxi rates is also undesirable because it interferes with the supply-related function of market prices. I am here, however, assuming that the quantity of taxis is regulated and discussing allowing taxi rates to vary to clear the market given the quantity of taxis.

36. Emergency price regulations are also sometimes adopted in wartime. During World War II, the United States enacted the Emergency Price Control Act of 1942, about which much of what will be said here would apply.

37. The deviation that would result in a sanction is not defined numerically under the Florida legislation, but it is in some other states. For example, in Arkansas, a deviation would be sanctioned if it exceeded by 10 percent the average price in the previous month.

38. For example, the *New York Times*, reported prices of $3.00 per gallon of gasoline instead of the prior price of $1.78, $2,000 for a generator instead of $250, and $109 for a room at a motel instead of $39.99 (Treaster 2004, p. A1). The story also mentioned a man with a chain saw who offered to clear an oak tree from a woman's roof for $10,500.

rises from $1.78 per gallon to a new market level of $3.00 per gallon, the allocation of gasoline will be improved because only those individuals who place a relatively high value on gasoline will purchase it (such as hospital workers). When gasoline prices are controlled, however, gasoline stocks will be exhausted (as happened at many gas stations; see Brown 2004), so individuals who were not lucky enough to have purchased it cannot do so, no matter how much they would value it. Regarding supply effects, one might imagine that, if gasoline prices had been permitted to rise in Florida, more gasoline would have been trucked in from Georgia and so forth. These textbook effects of emergency price controls seem to have been overlooked by the authors of the regulation. A motivation for the regulation appears to be to help the mass of individuals avoid having to pay higher prices after an emergency.[39] This motivation is different from, and should not be conflated with, the objective of preventing holdup of single individuals whose demand for a good or a service is much greater than that of the mass of individuals.

5. RELATIONSHIP TO THE ECONOMIC THEORY OF CONTRACTING

5.1. Prevention of Holdup as a Justification for Legal Intervention in Fresh Contracts

There are two standard reasons for legal intervention in contracts: asymmetric information and externalities. To these broad rationales for intervention, prevention of holdup should seemingly be added, for as has been emphasized above, staunching holdup justifies intervention in principle, and intervention for this reason certainly occurs in practice. Moreover, holdup is a problem that is independent of asymmetric information and externalities. (The problem faced by a ship in distress need not involve any informational asymmetry between the ship and her rescuer nor any externality.)

Limiting holdup as a ground for legal intervention may be viewed as a consequence of parties' inability to contract at an earlier time. If, for example, ships that might need rescue were to contract at the beginning of the year with professional salvors who might give aid, it would be in their mutual interest to stipulate reasonable prices for aid (or to ar-

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39. If it were thought that the implicit insurance benefit of holding down prices outweighed the losses due to interference with the allocative and productive effects of permitting a price rise, the regulation might be defended; this seems to me a weak rationale for the regulation.

range prepayment) in order to eliminate the costs and the risk that would otherwise be induced by the anticipation of holdup. Such contracting is usually impractical, however, because there are so many parties who would have to be involved in the ex ante contracts.

This point is illustrated in a converse way by an example in which parties are able to contract before holdup might occur and where they do thereby prevent subsequent holdup. Members of the American Automobile Association (AAA) avoid holdup when they need towing service because the AAA contracts with tow truck companies across the country to provide tows to its members.[40] In effect, via the medium of the AAA, drivers and tow truck companies contract ex ante to avoid the holdup problem. (Thus, in the case of tow truck service, we can see ex ante contracting as well as contract law and maximum price regulation at work to control the holdup problem.)

5.2. Prevention of Holdup as a Justification for Legal Intervention in Modifications of Contracts

It has of course been a major theme above that prevention of holdup justifies legal intervention in contract modifications, and it is evident that such intervention is an important aspect of contract law.

The economic contracting literature[41] generally makes conflicting assumptions. First, it is usually supposed in the literature that courts do not intervene in contract modifications because they do not have information that would allow them to do so. Whatever modifications the parties make, the courts are assumed to enforce.

Second, and related, the holdup problem that might occur during modification is assumed to be addressed by the parties themselves

40. If an American Automobile Association (AAA) member needs roadside assistance, he or she must call one of the 13,000 garages under contract with the AAA (see http://www.aaa.com). The service provider from such a garage will then attempt to remedy the problem (for instance, by changing a flat tire) without a fee (except that up to $50 may be charged for lockout and key-related difficulties). If the car is still not functional, a free tow to the service provider's garage or the nearest AAA garage is provided at no cost. The AAA member may also elect to have the car towed to a different destination, in which case, in New England, the member will not be charged for the first 3 miles and will only be charged a fixed rate of $3 per mile after the third mile (the number of free miles and the rate applied thereafter may vary according to the region of the country).

41. For general treatments, see Bolton and Dewatripont (2005, chs. 11 and 12) and Hart (1995), and see the model of contracts introduced in Hart and Moore (1988). See also, for example, Aghion, Dewatripont, and Rey (1994), Che and Hausch (1999), Chung (1991), Edlin and Reichelstein (1996), Nöldeke and Schmidt (1995), Schwartz and Watson (2004), and Tirole (1999).

through their choice, made at the initial contracting stage, of a mechanism that would govern renegotiation. The use of such contractually specified mechanisms does not, however, appear to be very important in reality.[42] At least I have not encountered many references to contractual provisions that would guide or constrain modification in the cases that I have read or in legal commentary. If this preliminary observation about the relative infrequency of the use of modification-mediating mechanisms is borne out by empirical investigation, it will call for explanation.

A speculation about the answer is that, on one hand, it is expensive for parties to designate effective mechanisms in their contracts because of the variability of circumstances that might call for renegotiation. On the other, courts can obtain substantial information after the realization of events, so they may do tolerably well in controlling holdup. Explicit consideration of these factors in future theoretical models of contracts may be warranted.

APPENDIX

I consider here the issue of holdup when new contracts are made, using the model described informally above. (For simplicity, I do not consider holdup when contracts are modified.) Assume that victims and contractors might meet when victims are in situations of need and, for convenience, that they are risk neutral. If a victim in a situation of need meets a contractor, the latter can furnish aid and save the victim from suffering harm at a cost less than the harm; otherwise the victim will suffer harm. Let

p = the probability that a victim finds him- or herself in a situation of need,

q = the probability that a contractor meets with, and thus may contract with, a victim, given that he or she is in a situation of need,

c = the cost to a contractor of giving aid to a victim in a situation of need, thereby preventing harm, and

h = the harm sustained by a victim in a situation of need if he or she is not given aid.

The probabilities p and q may be functions of the effort levels of victims and

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42. One of the few examples of such mechanisms of which I am aware is a clause that parties sometimes employ in construction contracts stating that if, because of an unanticipated circumstance, the parties want to make a change and cannot agree on a new price, the price adjustment should equal the cost difference due to the change plus an allowance for reasonable profit. This example is described in Bajari and Tadelis (2001, p. 391), which refers to American Institute of Architects document A201. Not surprisingly, it seems designed to prevent holdup.

contractors, as will be discussed below. The cost c is assumed to be less than h, and c is assumed to be the same for all contractors and h the same for all victims.

The social objective is to minimize total expected social costs, the costs of effort (to be described), of aid, and of harm suffered.

If a contractor and victim in a situation of need meet, it is assumed that their information is symmetric and that they make a contract in which the contractor obtains a positive fraction of the surplus. Let λ be the fraction of the surplus from a contract obtained by the contractor. Since the surplus from a contract is $(h - c)$, the contract price will be $c + \lambda(h - c)$. Let me now consider the two versions of the model discussed above.

A1. Contractors Engineer Situations of Need

Here assume that contractors can raise the likelihood of situations of need and that victims can reduce it. Specifically, let

x = the effort level of a victim and

y = the effort level of a contractor,

and suppose that $p = p(x, y)$, where $p_x < 0$ and $p_{xx} > 0$ when p is positive, where $p_y > 0$ and $p_{yy} < 0$ when $p < 1$, and where $p(x, 0) = 0$. Assume also that x and y are chosen before situations of need might arise.

The first-best level of social costs S is obtained by minimizing

$$S(x, y) = x + y + p(x, y)[qc + (1 - q)h] \tag{A1}$$

over x and y, since it is optimal for aid to be given whenever a contractor meets a victim. This expression is minimized at $x^* = 0$ and $y^* = 0$, in which case $S(0, 0) = 0$, for $p = 0$ when $y = 0$. (Here and below, the asterisk designates first-best levels of variables.)

The Nash equilibrium behavior of parties in the absence of legal intervention is described as follows. A victim chooses x to minimize

$$x + p(x, y)\{q[c + \lambda(h - c)] + (1 - q)h\}, \tag{A2}$$

so, if x is positive, it satisfies

$$1 = -p_x(x, y)\{q[c + \lambda(h - c)] + (1 - q)h\}. \tag{A3}$$

A contractor chooses y to maximize

$$p(x, y)[q\lambda(h - c)] - y, \tag{A4}$$

so, if y is positive, it satisfies

$$1 = p_y(x, y)[q\lambda(h - c)]. \tag{A5}$$

Assume for simplicity that the equilibrium, denoted $[x(\lambda), y(\lambda)]$ is uniquely determined by λ. In general, not only is $y(\lambda)$ positive for values of λ that are

sufficiently high, but because of that, $x(\lambda)$ is also positive, which makes S positive rather than zero.

With regard to legal intervention in contracts, we want to verify that if the state flatly voids contracts, the first-best outcome will result; that is, contractors will not exert effort to engineer situations of need and victims will not exert effort to reduce the chance of such situations. This conclusion is evident, since if contracts are voided, contractors cannot make a profit and so will choose $y = 0$. Hence, $p = 0$, which implies (see equation [A2]) that $x = 0$.

Note that the state needs no information to implement the voiding policy that results in the optimal outcome. This is because a situation of need can arise only if contractor effort y is positive. If, however, the model is changed, and it is assumed that $p(x, 0) > 0$, situations of need can arise even if $y = 0$. Then the policy that results in the optimal outcome would be to void contracts whenever y is positive; this would require the state to observe y.

A2. Contractors Search for Victims in Situations of Need

Suppose now that contractor effort raises the probability that they will locate victims in situations of need and that victim effort again reduces the probability of situations of need.[43] Thus, assume that $q = q(y)$, where $q'(y) > 0$ and $q''(y) < 0$ when $q < 1$ and that $p = p(x)$, where $p'(x) < 0$ and $p''(x) > 0$ when p is positive.

The first-best level of social costs is obtained by minimizing

$$S(x, y) = x + y + p(x)\{q(y)c + [1 - q(y)]h\} \tag{A6}$$

over x and y. Assuming that they are positive, the optimal values x^* and y^* satisfy

$$1 = -p'(x)\{q(y)c + [1 - q(y)]h\} \tag{A7}$$

and

$$1 = p(x)[q'(y)(h - c)]. \tag{A8}$$

Regarding the equilibrium behavior of parties, a victim selects x to minimize

$$x + p(x)\{q(y)[c + \lambda(h - c)] + [1 - q(y)]h\}, \tag{A9}$$

so, if x is positive, it satisfies

$$1 = -p'(x)\{q(y)[c + \lambda(h - c)] + [1 - q(y)]h\} = 0. \tag{A10}$$

Comparing this to equation (A7), one can see that since the bracketed term includes $q(y)\lambda(h - c)$, x is socially excessive given y, and the more so the greater is λ. A contractor chooses y to maximize

$$p(x)[q(y)\lambda(h - c)] - y, \tag{A11}$$

43. This model is a version of that in Landes and Posner (1978).

so, if y is positive, it satisfies

$$1 = p(x[q'y)\lambda(h - c)]. \tag{A12}$$

Comparing this with equation (A8), it is apparent that when $\lambda < 1$, y is socially inadequate given x and the more so the lower is λ. Again, denote the equilibrium values of x and y by $x(\lambda)$ and $y(\lambda)$.

Now consider legal intervention in contracts. Let z be the regulated contract price, where $h \geq z \geq c$ (for $z > h$ or $z < c$ cannot be optimal, as then contracts for aid would not be made). Given z, victims choose x to minimize

$$x + p(x)\{q(y)z + [1 - q(y)]h\} \tag{A13}$$

and contractors choose y to maximize

$$p(x)q(y)(z - c) - y. \tag{A14}$$

These two problems implicitly determine x and y as functions of z, so social costs can be written as

$$S(z) = x(z) + y(z) + p(x(z))[q(y(z))c + (1 - q(y(z)))h], \tag{A15}$$

where z^* is the optimal price, minimizing equation (A15) (we assume uniquely, for simplicity). Note that z^* leads only to a second-best optimum.[44]

Now, in the absence of legal intervention, the contract price will be $z(\lambda) = c + \lambda(h - c)$, which might or might not exceed z^*.

Hence, if the state sets the contract price at z^*, then the second-best optimum will be achieved regardless of the unconstrained price $z(\lambda)$. Also, when $z(\lambda) \geq z^*$, if the state employs a contract price ceiling, the second-best optimum will be achieved, whereas if contracts are enforced at the unconstrained price $z(\lambda)$, the outcome will be inferior. As noted in the text, the price ceiling policy can be implemented in two equivalent ways: by altering $z(\lambda)$ to z^* or by voiding any contract in which the price z exceeds z^*. (Moreover, if the state were to void all contracts, the second-best optimum obviously would not be achieved.)

The determination of z^* requires the state to minimize equation (A15), which requires the state to know c and h and the functions $p(x)$ and $q(y)$. It would be straightforward to introduce into the model uncertainty on the part of the state about the contractual environment, by considering distributions of c and h and of parameters identifying the functions $p(x)$ and $q(y)$.

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44. This is clear, since for equation (A7) to be satisfied, z must equal c, whereas for equation (A8) to be satisfied, z must equal h.

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