Rationalizing Drennan: On Irrevocable Offers, Bid Shopping and Binding Range

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Rationalizing *Drennan*: On Irrevocable Offers, Bid Shopping and Binding Range

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Courts may determine that an offer is irrevocable due to the offeree’s reasonable reliance on it. For instance, the landmark case of *Drennan v. Star Paving Co.* (1958) held a subcontractor’s price offer to be irrevocable once it had been relied upon by the general contractor in computing his overall bid. However, a rule of implied irrevocability raises two main difficulties. First, it seems unfair to force the offeror to commit, but not the offeree. Second, from an ex ante perspective, the implied irrevocability rule seems to deter parties from submitting low-priced, unqualified offers. These concerns have led several scholars to argue for modification of the rule. This paper rationalizes the implied irrevocability rule by demonstrating that the above concerns are unfounded. We demonstrate that whereas some restrictions on the offeree’s freedom to conduct bid shopping ex post (i.e., after the uncertainties are resolved) are essential in order to allow him to receive viable price offers ex ante, these restrictions need not be absolute nor legally enforced. Partial restrictions, in the form of a self-enforced Binding Range, may well suffice. The plausible existence of a self-enforced Binding Range ensures that offerors have incentives to submit irrevocable bids because they can expect to earn a profit by submitting the best offer. This paper characterizes the optimal size of the Binding Range, and explores what legal provisions should be applied when the self-enforced Binding Range is sub-optimal.

1. INTRODUCTION

Submitting an irrevocable offer is a double-edged sword: while it may well increase the offeror’s share of the contractual pie by inducing the offeree to rely on it, submitting such a bid also forces the offeror to bear the risk of unfavorable developments during the irrevocability time period (e.g., an increase in the costs of performance). Thus the following question arises: can the offeror secure for herself sufficient compensation for bearing the risk that

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results from submitting an irrevocable offer? This inquiry is essential in order to evaluate the fairness and sustainability of a (presumably efficient) default rule that implies, under certain conditions, irrevocability of offers. This article examines the factors that determine the scope of the offeror's interest in submitting an impliedly irrevocable offer and compares alternative legal provisions that can encourage efficient submission of irrevocable offers.

Courts may determine that an offer is irrevocable based on the offeree's reasonable reliance. As stated in the Restatement (Second) of Contracts §87(2) (1979), “[a]n offer which the offeror should reasonably expect to induce action or forbearance of a substantial character on the part of the offeree before acceptance and which does induce such action or forbearance is binding as an option contract to the extent necessary to avoid injustice” (the implied irrevocability rule). For instance, following the California Supreme Court landmark case of Drennan v. Star Paving Co., a subcontractor's price offer is determined to be irrevocable once it had been relied upon by the general contractor in computing his overall bid (the Drennan rule). As discussed extensively in the literature (Bishop, 1985; Cozzillio 1990; Craswell, 1996; Katz, 1996; Konefsky, 1997; Mather, 2000; Kostritsky, 2000; Schneider, 2000; Teeven, 2002; Ben-Shahar, 2004), the implied irrevocability rule has compelling rationales. One rationale is that of ensuring efficient risk allocation. For instance, the subcontractor is typically in a better position than the general contractor to mitigate the risk of miscalculating her costs of performance. The irrevocability rule also aims to solve the concern of opportunistic behavior by the offeror once the offeree has relied upon her bid, the expectation of which might induce suboptimal reliance.

Despite its benefits, the rule of implied irrevocability seems to raise two main difficulties. First, it may seem unfair to force the offeror to commit, but not the offeree. For instance, whereas the Drennan rule commits the subcontractor to her offer, the general contractor is free to conduct bid shopping once awarded the overall bid. Several scholars have thus advocated, based on fairness considerations, the imposition of a conditional commitment on the general contractor to accept the best price offer submitted by a subcontractor at the preliminary stage, if awarded the overall bid (Lederman, 1964; Lambert, 1970;

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1 For a review of the application of this rule see, e.g., Feinman, 1984; Murphy, 1985; Gergen, 1990; Kostritsky, 2000; Mather, 2000; Sweet, 2000:552.
3 It should be noted, however, that according to the Drennan rule an attempt by the general contractor to obtain a better deal may compromise his option and subject him to the subcontractor's revocation of the offer: Drennan v. Star Paving Co., 51 Cal.2d at 412, 333 P.2d at 760. See also note 18.
Cozzillo, 1990; Kostritsky, 1993, 2000; Schneider, 2000). Others have suggested abolishing the implied irrevocability rule by requiring an actual agreement—and not just reliance—for the formation of an option (Schriber, 1968; Fried, 1987; Gibson, 1988; Charny, 1990; Sweet 2000:554-555).

Second, from an ex ante perspective, the implied irrevocability rule seems to deter parties from submitting low-priced, unqualified offers. Submitting an irrevocable offer requires the offeror to bear the risk that the costs of performance will exceed the price she has offered. If the uncertainty regarding these costs is resolved before the offer expires, the offeror’s costs of bearing this risk are sunk at the stage of contract formation, and the offeror is thus susceptible to a holdup by the offeree. Specifically, if the costs of performance exceed the price offer, the offeror will be obliged to perform while still bearing the loss; whereas if the costs are lower than this price, the offeree will renegotiate or contract with another party for a lower price. As a result, arguably, offerors will either contract around the implied irrevocability rule by explicitly maintaining that their offer is revocable, or submit inflated price offers to (inefficiently) reduce the risk of under-pricing the offers. The underlying ex ante concern is thus that the offeror does not have sufficient incentives to submit an offer which is both irrevocable and “efficiently” priced.

Consequently, it seems that both efficiency and fairness require the application of either contractual or doctrinal provisions that will provide incentives to submit irrevocable offers, such as implying an early conditional contract, or providing for option fees or break-up fees. The puzzle remains, however, that in practice,

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4 See also *Home Electric Co. v. Hall Home Electric Co. of Lenoir*, 86 N.C. App. 540, at 545, 358 S.E.2d 539, at 542 (1987) (“Allowing a cause of action based on promissory estoppel in construction bidding…creates the potential for injustice. It forces the subcontractor to be bound if the general contractor uses his bid, even though the general contractor is not obligated to award the job to that subcontractor. The general contractor is still free to shop around between the time he receives the subcontractor’s bid and the time he needs the goods or services, to see if he can obtain them at a lower price. Using the doctrine in this context is also inequitable in that it allows the general contractor to sue the subcontractor if the subcontractor is unable to perform after the contractor has used his bid, but before he has formally accepted the subcontractor’s offer. The subcontractor, however, is powerless and has no grounds on which to sue the contractor if the contractor refuses to use the subcontractor for the actual work.”)

5 Therefore, the supposition that in merely submitting an offer the offeror suffers no detriment is inaccurate as far as irrevocable bids are concerned. Courts have not always been sensitive enough to this point. See, e.g., *Holman Erection Co. v. Orrville E. Maden & Sons, Inc.*, 330 N.W.2d 693, 698 (Minn. 1983) (Noting that in merely submitting his bid, “the subcontractor does not rely on the general and suffers no detriment. …The time and expense involved in preparing the bid is…part of the overhead of doing business. The same bid is submitted to [many] general[s]. Thus, whether or not any particular general wins the contract is of little or no concern to the subcontractor.”)
offerors often do submit low-priced offers that are impliedly irrevocable, even when such contractual or doctrinal provisions are not employed. For instance, subcontractors regularly submit (either explicitly or impliedly) irrevocable—and yet not inflated—price offers (e.g., Weintraub, 1992: 26-30), notwithstanding the forthcoming jubilee for the one-sided Drennan rule.

We endeavor to rationalize the survival of the implied irrevocability rule, by putting forward a plausible explanation for this puzzle. We show that whereas some restrictions on the offeree’s freedom to conduct bid shopping ex post (i.e., after the uncertainties are resolved) are essential in order to allow him to receive viable price offers ex ante, these restrictions need not be absolute. Partial restrictions may well suffice to ensure efficient price bidding.

Moreover, we argue that the offeree’s ability to conduct bid shopping is likely to be partially limited, due to self-enforced, non-legal constraints. For instance, an offeree must typically incur search and transaction costs for bid shopping; in the case of a general contractor, conducting bid shopping after the overall contract is awarded may require the auctioneer’s approval for replacing a subcontractor; bid shopping may harm the offeree’s reputation; and so forth. Such constraints form a Binding Range—a set of market prices in which the offeree is practically (even if not legally) bound to use the original offer upon which he relied (the best preliminary offer), even though its price exceeds the market price when forming the contract. When the market price is within the Binding Range, the offeror who submitted the best preliminary offer extracts a profit. The competition between potential offerors over the ability to extract the profit, generated due to the Binding Range, motivates them to submit impliedly irrevocable and yet not inflated price offers.

The greater the Binding Range, the lower the offer’s price level will be, and the closer it will be to the expected value of the costs of performance. The size of the Binding Range thus determines the scope of risk that the offeror is willing to accept, shielding the offeree against the possibility that the actual price of contracting will exceed its expected value (as known at the stage of bidding). For our purposes, a Binding Range is sufficient if it induces an offer that provides the offeree with full effective risk protection. We show that the minimum size of the Binding Range that is sufficient is relatively small.

In those circumstances in which the self-enforced Binding Range is sufficient, offerors have adequate incentives to submit irrevocable offers, and neither efficiency nor fairness considerations can justify the employment of the above-mentioned contractual or doctrinal provisions. This insight can explain the practice of subcontractors submitting irrevocable and yet not inflated price offers, even without receiving option fees or a (formal) commitment to employ them.
We also discuss what legal provisions should be employed when the size of the self-enforced Binding Range is sub-optimal. We demonstrate that a default rule that fully binds the offeree is inefficient. Break-up fees clauses are undesirable as well, since they are more likely to induce an excessive level of Binding Range. Preferred mechanisms for bridging the possible gap between the existing Binding Range and the optimal one are either restricting the offeree’s freedom to contract with an alternative party for a price that is higher than some threshold (while maintaining the freedom to accept offers that are lower than this threshold without compensating the offeror); or allowing the offeror a discharge in cases of a substantial increase in the costs of performance.

Our discussion unfolds as follows. In section 2, we use a simple model to characterize the relationship between the size of the Binding Range, the price offer, and the level of coverage against risk that the offeror provides to the offeree. Section 3 discusses possible reasons behind the formation of a self-enforced Binding Range. The discussion in Section 4 turns to the legally-enforced Binding Range, and evaluates alternative legal mechanisms that may supplement an insufficient self-enforced Binding Range. Section 5 sums up and concludes.

2. THE BINDING RANGE COMPENSATION MECHANISM

2.1. THE QUESTIONS WE SEEK TO ANSWER

The implied irrevocability rule raises three policy issues: first, when is it socially desirable to create a legally binding commitment? In the context of Drennan, is it efficient that the subcontractor will be legally committed to the price offer that she made once the general contractor has relied upon it in submitting an overall bid? Second, is it socially desirable to infer such a commitment from the submission of an unqualified price offer or should the price offer be irrevocable only if the parties form an explicit option contract? Third, assuming that it is socially desirable to create an impliedly irrevocable commitment, under what conditions is such a rule both fair and sustainable, such that offerors are not expected to systematically attempt to circumvent it (either directly by contracting around it or indirectly by submitting inflated price offers)?

The present paper seeks to address only the third policy issue, the fairness and sustainability of the implied irrevocability rule. This focus is based on several reasons. As indicated above, the third issue seems to be the one that troubles most commentators who criticize the implied irrevocability rule and the Drennan precedent. In addition, the first two issues are basically specific cases of more general questions already considerably discussed in the literature. The first issue is
a variant of the question, ‘why do people make legally binding commitments?’ While the second relates to the well-known problem of ‘how to set the default rules for contracting?’

In order to focus on the third issue, we make the following assumptions about the other two: first, we assume that it is efficient to commit the offeror to her price offer. Presumably, such a commitment is required in order to induce the offeror to mitigate certain risks for which she is the cheapest cost avoider. The irrevocability of the offer also eliminates the risk that the offeror will hold up the offeree once the latter has relied upon the price offer. For instance, in the context of the Drennan rule, the subcontractor can be assumed to be in a better position to prevent (or to mitigate) the risk of miscalculations in the price offer and of increased costs of performance (e.g., by keeping sufficient stocks). Further, the commitment will limit the sheer ex post opportunism on the part of the subcontractor. Presumably, a subcontractor who is free to renege on her price offer might not efficiently mitigate these risks, and may try to take advantage of the general contractor’s vulnerable position ex post. Furthermore, the effects of such inefficiencies may render the auction procedures as a whole deficient (e.g., an incompetent general contractor may win the auction by incorporating an under-priced subcontractor’s offer).

Second, we assume that the socially desirable default rule is that of implied irrevocability. Requiring offerors who wish to submit irrevocable offers to form an explicit option contract seems more costly than requiring offerors who do not want to commit to contract around it. In the Drennan context this assumption is viable both in light of our assumption that the subcontractor is better situated to mitigate the risks associated with her offer, and due to the formal requirement of consideration, which makes contracting for unilateral liability much more costly than contracting against it.

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6 An additional possible rationale for forming an irrevocable price offer is that in the relevant market offerors are less risk averse than offerees. (e.g., Polinsky, 2003:57-69). However, as a general matter, there is no good reason to assume that subcontractors are less risk averse than general contractors, and we thus do not base our assumption about the desirability of irrevocable price offers on this rationale.

7 Such inefficient allocation of the project will result not only in a private loss to the general contractor (who would be required to perform the project at a loss), but also in a social loss (due to the allocation of the project to an inefficient general contractor). If the general contractor is allowed to withdraw from the auction, these losses may not materialize, but then the auctioneer will have to incur the costs of running a new, and possibly delayed, auction.

8 See also the discussion on option fees in Section 4.2.
Given these assumptions, we now move to model the *Drennan* case in order to establish the argument that the implied irrevocability rule is both fair and sustainable.

### 2.2 The Model

Assume that a general contractor who operates in a competitive market submits a bid in an auction for a certain project (e.g., constructing a new school for the local authority). If awarded the contract, the general contractor will have to employ a subcontractor who specializes in certain aspects of the project (e.g., paving the school yard). Potential subcontractors who can perform this part of the project operate in a competitive market as well. For simplicity, assume that both the general contractor and the subcontractor are risk neutral. Before submitting his bid for the overall contract, the general contractor invites several subcontractors to submit preliminary price offers for a designated part of the project. One crucial motivation for this invitation to submit offers (but not necessarily the only motivation) is the general contractor’s interest in acquiring information about the costs of performing the subcontractor’s part of the project.

At *stage 1* the subcontractors submit preliminary price offers, $P$. The general contractor chooses the lowest reasonable price offer, $p^*$, and relies upon it in computing his overall bid for the project. We refer to the subcontractor who submitted this offer as the winning subcontractor. At this stage each subcontractor’s cost of performance, $c$, is a random variable with mean $e$. We assume that the cost functions of all subcontractors are positively but not fully correlated. According to this assumption, all subcontractors are subject to the same market risks (such as a change in the cost of supplies), but each subcontractor’s actual costs of performance, given a set of market conditions, may differ.

At *stage 2*, the auctioneer chooses the general contractor who will perform the project. In addition, at this stage the uncertainties regarding the winning subcontractor’s costs of performance, $c^*$, as well as the set of the costs of all other subcontractors, $C$ (and thus the general contractor’s reservation value) are resolved. We assume, for simplicity’s sake, that information is common knowledge at this stage.

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9 The *Drennan* rule applies only if the offer was reasonable (see note 14), and we thus assume that the general contractor does not rely on unreasonably low price offers.

10 In reality, some uncertainty as to the cost of performance may not be resolved. However, risks created by uncertainties that are resolved only after the formation of the contract are incorporated into all price offers, both revocable and irrevocable. We focus on risks that are unique to the
At stage 3, the general contractor who has won the auction contracts with one of the subcontractors. Before doing so the general contractor may ask other subcontractors for new price offers. We denote the lowest price offer at stage 3 as $\tilde{p}$ (market price). The winning subcontractor will match $\tilde{p}$ if her actual costs are lower than this price.\(^12\)

**Diagram 1**

<table>
<thead>
<tr>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subcontractors submit price offers; the general contractor relies on the best price offer $p^*$.</td>
<td>Uncertainties regarding the auction’s winner and the costs of performance are resolved.</td>
<td>A contract is formed, for the price offer $p^*$ or for a lower price $\tilde{p}$.</td>
</tr>
</tbody>
</table>

Clearly, if at stage 3 the general contractor and the winning subcontractor are not restricted by their activities in stage 1, the subcontractors’ price offers at stage 1 are mainly of informative value to the general contractor.\(^13\) However, the general contractor presumably has an interest in receiving an irrevocable price offer at stage 1, to create a cap on the highest possible cost of contracting with the subcontractor. Such a cap insures the general contractor against the risk that the cost of the subcontractor’s portion of the project will exceed the figure he relied upon, and it shelters him from holdup attempts by subcontractors at stage 3. As explained in section 2.1, we assume that it is socially desirable to require the best preliminary offer to be irrevocable because it gives the cheapest cost avoider—the subcontractor—adequate incentives to reduce risks.

\(^{11}\) In reality, it is more probable that the general contractor does not have full knowledge about the subcontractors’ cost of performance, but only some insight as to the way market risks have materialized. We discuss this issue in Section 3.1.

\(^{12}\) We assume that if $\tilde{p} > p^*$, the general contractor and the winning subcontractor will form a contract for $p^*$, even if the latter’s actual costs of performance are lower than $p^*$.

\(^{13}\) Stage 1 price offers may have some binding force if a subcontractor who attempts to renegotiate her offer suffers some reputation damage (as argued by Charny, 1990:449, based on Schultz, 1952, and Note, 1967). Yet, this binding force is weak, since it will hold the subcontractor only if the difference between her price offer and her actual costs of performance is relatively small, but it will not provide the general contractor coverage against a substantial price increase.
Given the *Drennan* rule, assume that the winning subcontractor is precluded from reneging on her promise. Thus, at stage 3 the general contractor will either contract with the winning subcontractor based on the price offer \( p^* \) or pay less by contracting for some lower price, \( \tilde{p} \) (either with the winning subcontractor or with an alternative one). Given the application of doctrines that discharge the offeror (e.g., impracticability), \(^{14}\) the general contractor and the winning subcontractor are discharged if the winning subcontractor’s costs of performance exceed some threshold level, \( \overline{c} \).

The expected price offer, \( p^* \), is determined by the scope of restrictions on the general contractor’s ability to conduct bid shopping at stage 3, when \( \tilde{p} < p^* \). We start by analyzing the game assuming that the general contractor is not restricted in any way at stage 3 (section 2.3); we then evaluate the effects of a rule that commits the general contractor to use the best preliminary offer at the price \( p^* \) if he is awarded the overall project (section 2.4); finally, we examine the effect of a Binding Range, which partially restricts the general contractor’s ability to contract for a lower price \( \tilde{p} \) at stage 3 (section 2.5).

### 2.3. No Restrictions on Bid Shopping

If the general contractor can conduct unlimited (and costless) bid shopping at stage 3, he will execute the option to contract with the subcontractor for \( p^* \) whenever this price does not exceed the market price, \( p^* \). By contrast, when \( \tilde{p} < p^* \), the general contractor will be able to hold up the subcontractor to agree to contract for \( \tilde{p} \) (or else, to contract with another subcontractor for \( \tilde{p} \)). Consequently, submitting any irrevocable offer \( p^* \) which is lower than \( \overline{c} \), has its costs, but does not contribute to the subcontractor’s prospects of receiving a profitable contract. Thus, the expected value of such price offer is negative.

**Example 1:** Assume that several identical subcontractors compete on a contract with a general contractor. Each subcontractor’s costs of performance are discretely distributed as follows: $7,500 in 80%; $5,000 in 10%; and $10,000 in 10%. Assume, for simplicity, that the subcontractors’ actual costs of performance are also identical. \(^{15}\) The

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\(^{14}\) According to the Restatement (Second) of Contracts §37 (1979), “the power of acceptance under an option contract is...terminated [if] the requirements are met for the discharge of a contractual duty.” In addition, some courts have refused to apply promissory estoppel when the subcontractor’s bid was so glaringly low as to put the general contractor on notice that a mistake had been made. In such cases, courts view the general contractor’s reliance on the bid as unreasonable (Murphy, 1985; Bishop, 1985).

\(^{15}\) Relaxing this assumption complicates the analysis but does not alter its basic insight.
expected value of the costs of performance is $7,500. However, the subcontractor’s expected value of submitting an irrevocable price offer of $7,500 is negative. The general contractor will not be willing to pay this price if the costs of performance are $5,000, but will insist on this price when the costs are $10,000. The expected value of the costs of performance is thus $7,500 \times \begin{pmatrix} 0.8 \\ 0.9 \end{pmatrix} + $10,000 \times \begin{pmatrix} 0.1 \\ 0.9 \end{pmatrix} = $7,778. However, at stage 3 the general contractor will be willing to pay this price ($7,778) only if the cost of performance is $10,000 (but not when it is $7,500). Thus, a price offer of $7,778 is also detrimental to the subcontractor, and the only Nash equilibrium price offer in this case is $10,000.

In conclusion, under the Drennan rule, and assuming no restrictions on the general contractor’s choice, the subcontractor’s price offer will be $p^* = e$. As a result, the mechanism of irrevocable price offers fails to provide the general contractor with any meaningful benefit and also distorts the informative value of price offers.

2.4. BID SHOPPING IS PROHIBITIVE

Assume that the general contractor is obliged to contract with the subcontractor if he wins the auction. In legal terms, the parties form a conditional agreement at stage 1, for a price of $p^*$. Since the parties are risk neutral, the price offer $p^*$ will be (almost) equal to the expected value of the cost of performance, $e$. \footnote{Since we allow for the possibility of discharge, the price offer $p^*$ will actually be somewhat lower than the expected value of the costs of performance.}

**Example 2:** Details remain identical to Example 1, except that the winning subcontractor can oblige the general contractor to employ her. In this case, each subcontractor knows that as long as her offer is higher than $7,500, she will extract a profit from winning the stage 1 competition. The competition between the subcontractors will result in $p^* = $7,500.

In this case each party bears one fraction of the risk—the subcontractor bears the risk that the costs of performance will be higher than the expected value, whereas the general contractor bears the risk that the costs will be lower than this value. In other words, the subcontractor provides full protection to the general contractor against the risk of any increase in the costs of performing the work.
the subcontractor’s part in the project, and in return the general contractor waives any hope to benefit from reduction in these costs.

2.5. PARTIAL RESTRICTION ON BID SHOPPING

The previous subsections analyzed the two extreme cases, in which either the general contractor is free from any restrictions at stage 3 or is committed to contract with the winning subcontractor for $p^*$. We now move to explore an intermediate case, in which the general contractor is bound—through either legal or self-enforced mechanisms—to use the subcontractor if, and only if, the gap between the price offer $p^*$ and the market price $\bar{p}$ does not exceed some threshold. Denote this Binding Range as $x$, such that at stage 3 there are three possibilities:

1. If $\bar{p} > e$ → No contract (the offeror is discharged);
2. If $\bar{p} + x \geq p^*$ → Contract based on the price offer, $p^*$ (Binding Range);
3. If $\bar{p} + x < p^*$ → Contract based on the market price, $\bar{p}$.

The winning subcontractor extracts a profit from submitting the lowest preliminary price whenever: (1) her actual costs of performance are lower than her preliminary price offer ($p^*$); and (2) the market price ($\bar{p}$) is within the Binding Range. This expected profit induces the price offer $p^*$ to be set at a lower level than $e$. The greater the Binding Range $x$, the closer the price offer will be to the expected value of the costs of performance, $e$.

Example 3: As in Example 1, the costs of performance are $7,500 in 80\%$; $5,000 in 10\%$; and $10,000 in 10\%$. Assume that the Binding Range is $300 (i.e., the general contractor is bound to employ the winning subcontractor as long as $p^* - \bar{p} \leq 300$). As shown in Example 1, a price offer of $7,778 will just compensate the subcontractor for bearing the risk that the actual cost will be $10,000. Given that $x = 300$, the subcontractor can expect to be able to collect this price even when the market price is $7,500.

More generally, assuming perfect competition in the subcontractors market, the price offer will be equal to $7,778 whenever $278 \geq x > 2,500$. If the Binding Range exceeds this span ($x \geq 2,500$), the general contractor is bound even when the market price is $5,000, and the price offer will thus be equal to the expected value of the costs of performance, $7,500 (as in Example 2). If the Binding Range is narrower ($x < 278$), the general
contractor is not bound even when the market price is $7,500, and the price offer will be equal to the highest possible value of the costs of performance, $10,000 (as in Example 1).

Graph 1 demonstrates the correlation between the size of the Binding Range ($\lambda$) and the winning price offer ($p^*$) for a case in which the costs of performance are normally distributed and all subcontractors’ expected and actual costs of performance are identical.

**GRAPH 1**

The area marked as Premium represents the expected compensation that the Binding Range provides to the winning subcontractor; whereas the area marked as Risk represents the expected costs of coverage that the winning subcontractor provides to the general contractor by submitting the irrevocable price offer. Assuming competition in the subcontractors market, the price offer $p^*$ is set such that the expected value of the subcontractor’s opportunity to provide her services for $p^*$ when the actual costs of performance are within the Binding Range (the Premium) equals the expected value of the subcontractor’s burden of providing her services for $p^*$ when the actual costs of performance exceed this price (the Risk).
As indicated above, Graph 1 is based on several simplifying assumptions. It portrays a case in which expected and actual costs of performance of all subcontractors are identical. In the more general case, in which the costs of production of all subcontractors are positively but not fully correlated, the above description should be modified. In addition, it is assumed that whenever the actual costs of performance are within the Binding Range, the subcontractor fully extracts the surplus in the bargaining vis-à-vis the general contractor. In practice, the bargaining outcome may be affected by numerous factors, such as the costs that the subcontractor will incur if she has to contract with an alternative general contractor. While the modifications that result from relaxing these assumptions complicate the exposition of the model, they do not change its basic insight. All that is required is that the subcontractor will be able to extract some profit when the actual costs of performance are within the Binding Range, yielding a correlation between the size of the Binding Range and the projected level of the irrevocable price offer.

The Binding Range \( x \) determines, through the price offer \( p^* \) that it induces, the scope of coverage that the subcontractor provides to the general contractor. The subcontractor’s irrevocable price offer provides the general contractor coverage against (at least part) of the risk that the actual costs of performance will be higher than their expected value \( e \), since in the range of prices that exceed \( p^* - x \), the general contractor pays an assured price of \( p^* \). If \( p^* - x > e \), the general contractor bears the risk for the range of prices between \( e \) and \( p^* - x \).

\[ \text{17 In such a case three additional effects should be accounted for: (1) When the actual costs of the winning subcontractor exceed } p^*, \text{ the subcontractor bears a loss only if the market price exceeds } p^* - x; \text{ as a result, the “Risk” is lower than the one described in Graph 1; (2) When the actual costs of the winning subcontractor are lower than } p^*, \text{ the subcontractor extracts a profit only if the market price exceeds } p^* - x; \text{ as a result, the “Premium” is also lower than the one described in Graph 1; (3) When the actual costs of the winning subcontractor are lower than } p^* - x, \text{ the subcontractor extracts an additional profit if the market price is between } p^* - x \text{ and } p^* \text{ (i.e., within the Binding Range). This effect results in an increase of the Premium in comparison to the one depicted in Graph 1. These effects do not necessarily cancel each other out. For instance, if the costs of production of all subcontractors are positively correlated, as we assume, the negative influence of effect (2) on the Premium exceeds the negative influence of effect (1) on the Risk. Yet, if we assume a relatively competitive and diverse market, the divergence between effects (1) and (2) is marginal, since the lower the positive correlation between the subcontractors’ cost functions, the less substantial the divergence between these two effects is. In addition, in such a case, effect (3) becomes less significant, since the probability that effect (3) occurs is negatively correlated with the size of the subcontractors market (while the probability of the occurrence of effects (1) and (2) is positively correlated with the size of the subcontractors market).} \]
We define a Binding Range as sufficient if it induces a price offer that provides the general contractor with full coverage against the risk that the costs will be higher than their expected value, i.e., a Binding Range is sufficient if $P^*-x \leq e$. Given the assumption that the subcontractor is the cheapest cost avoider for the risk that the costs of performance will exceed their expected value, a sufficient Binding Range induces an efficient risk allocation.

An insufficient Binding Range (as in the case depicted in Graph 1) provides the subcontractor a premium that does not compensate her for fully bearing the risk. In such a case the rule of irrevocability induces an inflated price offer, in the sense that the price $p^*$ exceeds the expected value of the costs of performance by more than the risk premium that is required to compensate the subcontractor for bearing the risk. As a result the irrevocable price offer allocates, sub-optimally, only part of the risk to the winning subcontractor. In contrast, when the Binding Range is sufficient (as in the case shown in Graph 2), such that $P^*-x \leq e$, the irrevocable price offer provides the general contractor full coverage against the risk that the costs will be higher than their expected value, and the price offer will not be inflated.

**GRAPH 2**

The minimum level of sufficient Binding Range (denoted as $x_m$) is such that $x_m = p^*(x_m) - e$. The sufficiency of a given Binding Range is determined by
several factors. First, the lower the standard deviation of the distribution of the winning subcontractor’s costs of performance, the lower will be the risk that the winning subcontractor bears, and thus the lower the price that is required to compensate the subcontractor for bearing this risk. Second, the more lenient the application of doctrines that discharge the offeror (i.e., the lower \( \bar{c} \) is), the higher the likelihood will be that the Binding Range is sufficient. Lastly, the sufficiency of the Binding Range is also determined by the expected value of the costs of performance, \( e \). An increase in this value (i.e., the larger the absolute volume of the subcontractor’s part in the project) may increase both the standard deviation of the costs of performance and the size of the Binding Range. If the latter effect exceeds the former one, the higher the expected value of the costs of performance, the more likely it is that the Binding Range will be sufficient.

The minimum level of sufficient Binding Range is relatively small. For instance, as shown in the Appendix, if the costs of performance are normally distributed, and all the subcontractors’ expected and actual costs of performance are identical, and the discharge threshold is set at the probability level of 0.1%, the Binding Range is sufficient if it exceeds approximately two-thirds of one standard deviation.

Finally, the size of the Binding Range also determines the channel through which the subcontractor extracts the risk premium. When \( P^* - x > e \) (insufficient Binding Range, as in the case shown in Graph 1), the subcontractor is compensated for the (partial) coverage she provides in the form of a risk premium that is included in the price. When the range is equal to the minimum level of sufficient Binding Range, such that \( p^* - x = e \), the subcontractor provides the general contractor full coverage against the risk, and is compensated only through a risk premium that is included in the price. If the Binding Range exceeds this level, such that \( p^* - x < e < p^* \) (as in the case shown in Graph 2), only part of the compensation is in the form of risk premium that is added to the expected value of the costs of production. In this case, at least part of the general contractor’s payment for the insurance he receives is made by waiving opportunities to benefit from favorable developments in the subcontractors market. In the extreme case in which \( p^* = e \), the reliance on the irrevocable price offer results in a de facto formation of a conditional contract (as in the case discussed in section 2.4), and the subcontractor is compensated only through the opportunity to benefit in the event of price reductions in the subcontractors’ market.
3. SELF-ENFORCED BINDING RANGE

The preceding discussion established that although some restrictions on the offeree’s freedom to conduct bid shopping ex post (i.e., after uncertainties are resolved) are essential in order to allow him to receive viable price offers ex ante, these restrictions need not take the form of an absolute limitation on the offeree’s freedom to conduct bid shopping. Partial restrictions, which are reflected in a Binding Range, may suffice.

The Binding Range can be legally enforced through the imposition of a legal obligation on the offeree toward the offeror, to the effect that bid shopping by the former would be restricted. We explore different possibilities for creating a legally-enforced Binding Range in section 4 below. However, a Binding Range can also be self-enforced—i.e., it can exist due to factors and mechanisms that make bid shopping costly to the offeree, without making him legally liable toward the offeror. Identifying the size of the self-enforced Binding Range is essential in evaluating the offeror’s incentive to submit an irrevocable price offer and thus in assessing the desirability of applying a legally-enforced Binding Range. In the following section we enumerate possible factors and mechanisms that form a self-enforced Binding Range.

3.1. TRANSACTION COSTS AND SEARCH COSTS

Transaction costs and search costs can play an important role in determining Binding Range. Recall that a key justification for the implied irrevocability rule is the concern that the offeror will be able to hold up the offeree once the latter has relied upon the offer. However, the offeree is susceptible to a hold-up of this kind only if contracting with an alternative party is costly. It seems plausible to assume that such bid shopping is costly not only when it is the offeror who attempts to hold up the offeree, but also when the shoe is on the other foot.

Presumably, seeking a new offer is costly and requires the offeree to invest additional time and effort. For instance, a general contractor that selects subcontractors through procurement procedures would be required to conduct a new auction, and to bear its additional costs. Such a burden can be especially heavy if subcontractors can pass on their precontractual reliance costs to the general contractor (French and McCormick, 1984; Grosskopf and Medina, 2007A). Thus, the offeree will choose to employ the offeror whenever the expected price reduction is lower than the costs of conducting the additional search.

The role of transaction costs and search costs in forming a self-enforced Binding Range resembles that of exit costs, job-lock and costly re-contracting in the enforcement of incomplete contracts, which has been studied in the
literature (Putterman and Skillman, 1992; MacLeod, 1993; Madrian, 1994; Schwartz
and Watson, 2000; Adnett et al., 2004). In these models, exit costs sustain self-
enforced revenue sharing cooperatives. The imposition of either firing, exit, or
re-contracting costs can bind together employers and employees in longer-
lasting employment relationships, which allow both agents to amortize their
training investments. Similarly, in the current context, transaction costs and
search costs bind the offeree and the offeror together within a range of prices,
and thus enable the latter to extract a premium.

The magnitude of the Binding Range that is created due to transaction costs
and search costs may be quite modest if we adhere to the assumption that the
offeree has perfect information. Specifically, a repeat-player offeree can be
expected to incur relatively low transaction costs and thus to face a relatively
narrow Binding Range. However, the magnitude of the Binding Range can be
substantial when partial information is assumed. For instance, if the offeree is
only partially informed about price changes in the offeror’s market, a modest
transaction cost can generate a substantial Binding Range. For example, if the
offeree perceives at stage 3 that there is a 20% chance that he can get a better
deal today than the best offer at stage 1 (e.g., because of a recent reduction in
oil prices), a risk-neutral offeree will opt for renegotiation only if the
prospective benefits are greater than 5 times the transaction costs. Thus,
transaction costs of $200 create a Binding Range of $1,000. The more
sophisticated and diversified the offeror’s market, the harder it is for outsiders
to accurately observe price changes, and the more significant the Binding
Range will be. This result corresponds with our assumption about the efficient
allocation of risk, because in sophisticated and diversified markets the ability of
offerors to reduce risks that are associated with their offers is considerably
superior to that of offerees.

An additional source of transaction costs that form a self-enforced Binding
Range is the legal doctrine that any attempt by the offeree to obtain a better
deal at stage 3 compromises his option and subjects him to the offeror’s power
to revoke her offer. An additional source of transaction costs that form a self-enforced Binding
Range is the legal doctrine that any attempt by the offeree to obtain a better
deal at stage 3 compromises his option and subjects him to the offeror’s power
to revoke her offer. Consequently, in cases in which the offeree faces
uncertainty about the actual costs of performance, he faces a risk that the

18 See, e.g., Drennan v. Star Paving Co., 51 Cal.2d at 412, 333 P.2d at 760; Preload Technology, Inc. v.
A.B. & J. Construction Co., 696 F.2d 1080 (5th Cir. 1983); Sipco Services Marine, Inc. v. Wyatt Field
Services Co., 857 S.W.2d 602 (Tex. Ct. App. 1993); Cozzillio, 1990; Schneider, 2000. Note that
according to the Restatement (Second) of Contracts §37 (1979), “the power of acceptance under
an option contract is not terminated by rejection or counter offer….” However, legally, an
irrevocable price offer is not considered to be an option contract, and the courts do not apply
this rule in cases of unbargained-for price offers (Cozzillio, 1990).
search attempt will end up in a higher—rather than lower—price. The expected value of this risk of price increase adds up to the transaction costs and search costs that form the Binding Range.

Finally, in the context of the Drennan rule, a purposely intricate procedure of approval by the auctioneer for any change in the identity of the subcontractors after the contract is awarded may augment the general contractor’s transaction costs and thus also increases the Binding Range. The auctioneer may have an interest in imposing such high transaction costs on bid shopping, in order to extend an otherwise insufficient Binding Range. Assuming that both the general contractor and the subcontractor operate in competitive markets, any systematic profit that is achieved from restructuring their interactions will be passed on to the auctioneer. This is a possible rationale for the common provision that the general contractor can use only subcontractors that are approved by the auctioneer.¹⁹

3.2. REPUTATION

The Binding Range can also be formed due to the negative effects of bid shopping on the offeree’s reputation. A possible mechanism in this respect resembles the one identified in the context of enforcement of incomplete contracts. A transactor can induce the other party to perform by paying a price sufficiently above production costs as long as that party performed (in a sufficient number of previous encounters). A non-performing firm thus loses a discounted stream of rents on future sales, which is greater than the wealth increase from non-performance (Klein and Leffler, 1981).

In the current context, a repeating offeree has an interest to motivate potential offerors to submit irrevocable price offers. To achieve this result, the offeree should credibly commit to a Binding Range that will provide potential offerors with a premium that covers the expected value of the risk they bear. Assuming that potential offerors are fully informed (and have sufficient recall), a possible equilibrium in such a scenario is one in which the offeree is committed to a Binding Range which is sufficient, and offerors submit irrevocable price offers only if the offeree did not deviate in (a sufficient number of) previous rounds. A deviation will trigger the offerors to avoid

¹⁹ Many states have enacted “listing laws,” which oblige general contractors to record their subcontractors on bids for public construction projects and limit their ability to substitute subcontractors ex post. For example, the California filing law allows the public authority to fine an infringing general contractor in “an amount of not more than 10 percent of the amount of the subcontract involved” (Subletting and Subcontracting Fair Practices Act, Cal. Pub. Cont. Code § 4100 (2006)). See Sweet, 2000:555-556; Schneider, 2000:205-210.
submitting an irrevocable price offer without receiving compensations ex ante (option fees). When ex ante option fees mechanism is inefficient (see section 4.2), each party may be better off following the above strategies.

3.3. Tacit Collusion

A third possible mechanism that may provide the subcontractor with sufficient premium for bearing the risk is tacit collusion in the offerors market. If all offerors repeatedly interact, an equilibrium that reflects tacit collusion can be formed. In such an equilibrium, the offerors avoid bargaining with an offeree for a price within a certain Binding Range, and threaten to deviate from this Binding Range strategy in response to a similar deviation by one of the offerors.

Such equilibrium is stable if the gains that each offeror derives from continued cooperation outweigh the gains from undercutting in order to grab more deals. Stated differently, if each offeror’s long-term loss from a price war outweighs her short-term gain from gaining the contract, and assuming that repeating players can observe deviations, tacit collusion becomes sustainable. This equilibrium is not unique, but it is a probable one, at least in contestable markets (Grosskopf and Medina, 2007A).

The stability of tacit collusion may be enhanced through the emergence of business norms of behavior. For instance, a subcontractor’s willingness to contract for a price within the Binding Range undermines the ability of a subcontractor who submits a price offer to gain a sufficient premium for bearing the risk of an increase in the costs of performance. Therefore, such practice can be (informally) classified as unfair and as an abuse of the latter subcontractor’s “sunk” investment in submitting the price offer.20 The

20 The prevailing perception in the construction market is that bid shopping (a search for lower bids by the general contractor) and bid peddling (offers to cut prices by a subcontractor) are indecent and unfair. See, e.g., Cal. Pub. Cont. Code § 4101 (2006), which provides that “the Legislature finds that the practices of bid shopping and bid peddling in connection with the construction, alteration, and repair of public improvements often result in poor quality of material and workmanship to the detriment of the public, deprive the public of the full benefits of fair competition among prime contractors and subcontractors, and lead to insolvencies, loss of wages to employees, and other evils.” See also Scueller (1960:498-506), who reports that “Bid shopping and bid peddling has long been frowned upon and marked as an ‘unethical practice’ by some organizations of interested traders;” Sweet, 2000:552-553. In 1995, the Associated General Contractors of America, the American Subcontractors Association and the Associated Specialty Contractors issued a joint statement, stating that “Bid shopping or bid peddling are abhorrent business practices that threaten the integrity of the competitive bidding system that serves the construction industry and the economy so well.” (http://www.aicnet.org/na/aspen_feb.asp).
informal sanctions that might be imposed in response to a breach of this norm decrease the profits from bargaining for a price within the Binding Range.

4. LEGAL IMPLICATIONS

The preceding discussion set forth two main arguments: (1) A relatively small Binding Range provides the offeror a premium that is sufficient to compensate her for providing full coverage against the risk that the costs of performance will exceed their expected value (section 2); and (2) This Binding Range can be self-enforced (section 3). In this section we examine several legal implications of these arguments.

An underlying assumption of the discussion that follows is that whenever the self-enforced Binding Range is sufficient, any form of contractual or doctrinal legal provisions that aim at rewarding offerors (i.e., any form of a legally-enforced Binding Range) is unwarranted.\(^{21}\) The normative question that we address is what kind of legally-enforced mechanism should be used in order to supplement an insufficient self-enforced Binding Range.

We provide a justification for the implied irrevocability rule’s lack of symmetry and thus criticize the suggestion to replace the one-sided implied irrevocability rule with a reciprocal implied conditional contract rule (section 4.1). We then consider two other legal provisions—direct payment for submitting an irrevocable offer (option fees) and recovery of expenses if the negotiation fails (break-up fees)—and point out their shortcomings (section 4.2). Finally, we discuss measures that directly address the gap between the self-enforced Binding Range and the minimum level of sufficient Binding Range by extending the former or narrowing the latter, and argue for their superiority over the other alternatives (section 4.3).

4.1. JUSTIFYING THE IMPLIED IRREVOCABILITY RULE’S LACK OF SYMMETRY

According to the implied irrevocability rule, an offer is irrevocable if four requirements are met: the offeror has made an affirmative promise; the offeree’s reliance on the promise was reasonably foreseeable; the reliance is justifiable; and substantial loss will result from the reliance if the promise is not enforced. As indicated above, the critics of this rule rarely challenge its

\(^{21}\) We will not attempt to fully justify this assumption here. However, two tentative arguments that tend to support it are quite straightforward: Legally-enforced mechanisms usually require more expensive enforcement procedures than self-enforced mechanisms; and self-enforced mechanisms are usually harder to manipulate than legally-enforced ones.
economic rationale, but focus on the one-sided nature of the rule—the fact that it binds only the winning offeror, but not the offeree. For instance, in Pavel Enters v. A.S. Johnson Co., the Court noted that “despite the popularity of the Drennan reasoning, the case has subsequently come under some criticism [due to] the lack of symmetry of detrimental reliance in the bid process, in that subcontractors are bound to the general [contractor], but the general is not bound to the subcontractors. The result is that the general is free to bid shop, bid chop, and to encourage bid peddling, to the detriment of the subcontractors.”

The critique of this aspect of the implied irrevocability rule is based on three grounds. First, from a doctrinal perspective, it is arguably incompatible with basic principles of contract law, since it is based on reliance rather than on a bargained-for option (e.g., Sweet, 2000:554). Second, from the perspective of fairness, scholars argue that it may produce undesirable distributive results. For instance, in the context of the construction industry, the Drennan rule was criticized for improving the general contractors’ already superior bargaining position vis-à-vis subcontractors (Lederman, 1964; Cozzillio, 1990; Katz, 1996; Koskriksky, 2000; Schneider, 2000). Lastly, from an efficiency standpoint, it was suggested that the rule creates a hold-up problem that may prevent offerors from providing meaningful irrevocable offers (Schueller, 1960:500; Lambert, 1970; Sweet, 2000:553). The present framework is not suitable for analyzing the doctrinal challenge to the implied irrevocability rule. Bishop (1985), Cozzillio (1990), Gergen (1990) and Teeven (2002) offer a defense of the rule on this ground. We address here the two other aspects of the debate over the implied irrevocability rule—fairness and efficiency.

Considerations of fairness do not justify modifying the implied irrevocability rule. The offeror is either compensated for her actual costs (i.e., the coverage she provides) through the Binding Range, or simply inflates her offer in order not to provide free coverage. The practice of subcontractors submitting irrevocable, yet not inflated price offers, even without receiving option fees or (formal) commitment to employ them, may indicate the formation of a

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22 An exception is Charny (1990), who argues that it is not clear a priori that strict liability for bidders (rather than negligence) is the best rule, or that it would not be efficient to put some duty of verification on the recipient of the bid.

sufficient self-enforced Binding Range. This reality upholds Judge Traynor’s reasoning in the *Drennan* case that the defendant subcontractor “had a stake in [the] plaintiff’s reliance on its bid.”

Similarly, the *Drennan* rule does not seem to work in favor of general contractors in their dealings with auctioneers. When the Binding Range is insufficient, the general contractor can be expected to receive better price offers after winning the auction, through bid shopping. However, if it is common knowledge that the winning general contractor can save costs by bid shopping at stage 3, this information would be integrated into the general contractors’ bids and would not increase their share in the contractual surplus vis-à-vis auctioneers. Only if one assumes that the *Drennan* rule introduces information asymmetry, which systematically works in favor of general contractors in their dealings with the auctioneer, the *Drennan* rule may have distributional effects of this sort.

Efficiency considerations too do not justify imposing an early conditional contract. When the self-enforced Binding Range is sufficient, an offeror is motivated to submit an irrevocable, non-inflated price offer, since the Binding Range enables her to extract a premium for bearing the risk. Moreover, the efficiency-based argument in favor of enforcing two-sided commitment does not hold even in cases of an insufficient self-enforced Binding Range. In such cases, it is essential to increase the offerors’ rewards in order to encourage efficient submission of irrevocable offers. However, implying an early conditional contract is clearly not the only method to achieve this goal.

As explained in section 2.5, when the Binding Range is equal to its minimum sufficient level, the offeror’s reward for bearing the risk is in the form of a risk premium that is included in the preliminary price offer. Beyond this point, the more extensive the Binding Range, a greater portion of the reward will be in the form of entitling the offeror who submitted the best preliminary offer to benefit from favorable later developments. In the extreme case of an early conditional contract, the offeror is compensated only through the opportunity to benefit from favorable later developments. The efficiency-based argument for implying an early conditional contract can thus be formulated as a claim that the latter form of reward (the right to favorable opportunities) is strictly superior to the former one (a risk premium). This claim is unfounded, at least given the assumption that the potential offerors’ costs of performance are positively, but not perfectly, correlated (some risks affect all, but the extent of the effect varies; some risks are idiosyncratic). We offer two main reasons.

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24 51 Cal.2d at 415, 333 P.2d at 760.
One reason is allocative inefficiencies. Assuming possible variance between
the competing offerors, the offeror that submitted the best preliminary offer ex
ante (at stage 1) may not be the most efficient contracting party ex post (at
stage 3). The more extensive the Binding Range is, the more difficult it is to
switch offerors, and thus allocative inefficiencies are more likely.

A second source of inefficiency concerns the effect of the allocation of
opportunities to benefit from favorable later developments on the parties’
incentives. Imposing an early conditional contract might deter alternative
potential offerors from investing resources in minimizing their costs of
performance, due to the expected costs of replacing an offeror. In contrast,
when the offeree is only partially committed to employ a specific offeror, the
competition between the potential offerors may well motivate them to
optimally invest in measures aimed at reducing their costs of performance. The
timing of contracting also affects the incentives to invest resources in the
search for an alternative, cost-effective offeror. Assuming that the offeree is in
a better position to locate such an alternative offeror, postponing the stage of
contract formation motivates the offeree to invest in such searching activities.

Therefore, we suggest that it cannot be established that, at least as a general
matter, setting the Binding Range at its maximum size—by implying an early
conditional contract—is efficient. It seems more probable that the optimal size
of the Binding Range is equal (or is close) to the minimum level of the
sufficient Binding Range. Such a range ensures that while the offeree is fully
covered against the risk of high costs, he is open to receive significantly
superior offers, since this range does not bind him whenever the actual costs of
performance are lower than their mean.

4.2. OPTION FEES AND BREAK-UP FEES

Option fees are seemingly a preferable legal mechanism to supplement an
insufficient self-enforced Binding Range. Indeed, scholars have criticized the
implied irrevocability rule by arguing that if the parties are interested in an
irrevocable price offer, they can simply form an explicit option contract. It was
thus argued that “it is particularly perverse for courts to endorse promissory
estoppel theories for written offers that readily could have been formulated as
option contracts” (Charny, 1990:449). However, in many cases, an ex ante option
fees scheme is inefficient, since it requires the parties to draft an explicit option
contract. In certain contexts, such a scheme is prohibitively costly, such as in the
typical case of a construction project, in which the general contractor-
subcontractor bipolar exchange is embedded in a multipolar and multilevel system.

An alternative scheme to option fees are break-up (or termination) fees,
which compel the offeree to compensate the offeror for her reliance costs
Termination fees are a powerful legally-enforced mechanism to supplement an insufficient Binding Range. In fact, we argue against their employment because they are frequently too powerful and thus more likely to induce an excessive level of compensation. We point at two concerns. First, termination fees increase the Binding Range (since the offeree cannot benefit from accepting an alternative offer that is lower than the first offer by less than the termination fees) beyond the self-enforced Binding Range that is formed by other factors (e.g., search costs and transaction costs). Second, break-up fees lower the minimum level of sufficient Binding Range, since they provide direct payment for submitting an irrevocable offer.

Consequently, whereas termination fees are expected to induce a better price offer to the offeree, they do not necessarily increase the offeree's expected value of the deal. The efficiency of a given termination fee clause cannot be ascertained without first examining the self-enforced Binding Range that exists in the given case and then examining the dual effects of the termination fees themselves. In fact, we suspect that the more probable scenario is that the cumulative effects of termination fees and the self-enforced Binding Range would actually result in an excessive level of Binding Range (i.e., a range well over the minimum sufficient Binding Range) and would thus lead to a sub-optimal outcome.

4.3. LEGALLY-ENFORCED BINDING RANGE

In light of the above discussion, schemes that directly address the potential gap between the self-enforced Binding Range and the minimum level of sufficient Binding Range seem superior. One possibility is to create a legal obligation (either explicitly, through appropriate contractual provisions, or implicitly, through doctrines such as the duty to negotiate in good faith) that restrict the offeree’s freedom to contract with an alternative party for a price that is higher than some threshold (say, for a price that is lower than the original offer by less than 10%). Such mechanisms preserve the offeree’s freedom to accept offers...
that are lower than this threshold, without compensating the offeror. This restriction forms a Binding Range, but this range is not added to the self-enforced Binding Range. It operates as a minimum limit on the size of the Binding Range. The restriction will be effective only if it exceeds the self-enforced Binding Range. Setting the threshold price at a level that resembles the minimum level of sufficient Binding Range will result in the optimal outcome. Our analysis thus suggests that the duty to negotiate in good faith need not be too demanding to achieve the optimal outcome.

A second possibility is to allow the offeror, either through an explicit agreement or through interpretation of the implied irrevocability rule, the option of a discharge in cases of a substantial increase in the costs of performance (e.g., by extending the definition of impracticability, or by classifying the offeree’s reliance on such offers as unreasonable). Such an arrangement reduces the minimum level of the sufficient Binding Range. For instance, in the case of normal distribution, setting the discharge threshold at the 10% level decreases the size of the minimum level of the sufficient Binding Range to approximately one-half of the distribution’s standard deviation (see Appendix). It may thus bridge the gap between the self-enforced Binding Range and the optimal one. Yet we would advocate instituting such a limitation on the implied irrevocability rule only if the insufficiency of the self-enforced Binding Range under present conditions is evident.

5. CONCLUDING REMARKS

Our main arguments can be summarized as follows: the existence of a self-enforced Binding Range ensures that offerors have incentives to submit irrevocable offers, based on their expectation to extract a profit from submitting the best preliminary offer. Therefore, the evaluation of possible contractual and doctrinal provisions that are aimed at motivating potential offerors to submit irrevocable offers (e.g., implying an early conditional contract, applying option fees or termination fees schemes, or restricting the offeree’s freedom to conduct bid-shopping after relying upon a certain irrevocable offer) must account for the economics of a self-enforced Binding Range. In circumstances in which the self-enforced Binding Range is sufficient, offerors have an adequate incentive to submit irrevocable offers, and neither efficiency nor fairness considerations can justify the employment of the above legally-enforced mechanisms. In circumstances that may have a potentially insufficient Binding Range, the preferable solution is the application of legally-enforced mechanisms that supplement the self-enforced Binding Range, by bridging the gap between it and the minimum level of sufficient Binding Range.
Our present contribution can also be read more broadly, as an illustration of our challenge to the prevailing view among law and economics scholars with respect to pre-contractual reliance (PCR). According to the prevailing view, a party’s incentives to invest in PCR will be deficient because of the so-called holdup problem (e.g., Kronman, 1978; Kostitsky, 2000, 1993; Craswell, 1996; Katz, 1996; Johnston, 1999; Bebchuk and Ben-Shahar, 2001; Ben-Shahar, 2004; Schwartz and Scott, 2007). This prediction is based on the characterization of PCR as a sunk cost, which creates a positive externality and draws heavily on insights that were developed in the context of post-contractual relation-specific investment in incomplete contracts (e.g., Williamson, 1979, 1975; Grossman and Hart, 1986; Hart, 1989; Hart and Moore, 1990). In an accompanying article we challenge the plausibility of the prediction of under-investment in PCR (Grosskopf and Medina, 2007A). We argue there that a negotiating party is motivated to invest in PCR, not only through her expectation of extracting the benefits that the investment yields (Added-Value Motivation), but also through the effect of the investment on her position vis-à-vis her competitors (Competition-Based Motivation). We demonstrate that under plausible assumptions, when a negotiating party operates in a relatively competitive market, Competition-Based Motivation is frequently sufficient to induce optimal PCR, even without contractual or doctrinal provisions.

The implied irrevocability rule should be understood as compelling offerors to bear some PCR—it requires them to provide coverage against the risk that the actual costs of performance will exceed the price offer whenever they submit unqualified offers. An offeror cannot expect to reap the full benefit of her investment, since at the final stage of the negotiation (stage 3) the investment is sunk. Nevertheless, offerors do have an incentive to submit irrevocable offers, since they collect a reward at stage 3 for submitting the best price-offer at stage 1. The reward is the prospect of receiving the contract at an above-cost price whenever the market price is within the Binding Range. The size of this reward is set by the characteristics of the relevant market, but not by the actual value that the offeror generates by submitting the best offer (i.e., the added value that the PCR creates). It is the prospect of winning this reward that is positively correlated with the pricing of the offer (i.e., the proposed investment in PCR). Offerors’ motivation to compete over the reward explains why they are willing to invest in PCR (i.e., submitting low-priced irrevocable offers), even if others (the offeree or third parties, e.g., the auctioneer) capture part or even all of the benefit generated by this investment.

For applications of this theory to disclosure duties and break-up fees see Grosskopf and Medina, 2007B.
From a normative perspective, the implied irrevocability rule seems to blur the boundary between the negotiation stage and the contractual stage (e.g., Ben-Shahar, 2004). Our argument suggests that this boundary can be re-established. In the pre-contractual period, competition between offerors over the reward created by contracting motivates them to invest in PCR, to the benefit of the offeree (or third parties). However, the duplication of investments by offerors is wasteful. By contrast, forming the contract is aimed at limiting the expenditures on performance to only one contractor, who receives in return the legal entitlement to part of the contractual surplus. Yet, in the post-contractual period, lack of competition may create insufficient motivation for the contractor to invest in the relationship. Thus, the optimal time of contracting is determined based on the comparison between a competition-based scheme and one based on entitlement. The essence of contracting is to substitute the loss of Competition-Based Motivation, due to the obligation to employ a specific contractor, with a mixture of legal remedies and social sanctions. By contrast, in the pre-contractual phase the role of the law is to facilitate the forces of competition. In the current context, legally-enforced mechanisms that facilitate the forces of competition are required only as far as the self-enforced Binding Range is insufficient.

APPENDIX

Here we analyze the minimum level of sufficient Binding Range under the assumption that the subcontractors’ costs of performance are normally distributed with mean $\mu$ and standard deviation $\sigma$. Assume, for simplicity, that the competing subcontractors’ actual costs of performance are identical.\(^{28}\) Denote the cumulative distribution function $\Phi(\bullet)$. For a given Binding Range, $x$, the subcontractor’s Premium is $\Phi(P^*) \Phi(P^* - x)$; whereas the expected risk that the subcontractor bears is $\Phi(\bar{r}) - \Phi(P^*)$. Assuming that the subcontractors’ market is fully competitive, such that there are no above-normal profits in that market, the size of the compensation that the winning price offer, $P^*$ provides is equal to the costs of providing the insurance, such that

$$\Phi(P^*) \Phi(P^* - x) = \Phi(\bar{r}) - \Phi(P^*)$$

\(^{28}\) See note 17 above.
Assume that the discharge threshold \( \Phi(\tau) \) is set at the probability level of 0.1% (i.e., \( \tau \) is set such that the chance that \( p > \tau \) is less then 1:1,000). Thus, \( p^* \) is set such that

\[
\Phi(P^* - \chi) = 2\Phi(P^*) - 0.999
\]

Based on (2), Table 1 describes the expected price offer \( p^* \) as a function of the Binding Range \( \chi \), in terms of the mean of the distribution, \( \epsilon \), and its standard deviation, \( \sigma \), for several levels of the Binding Range.

<table>
<thead>
<tr>
<th>Binding Range (( \chi ))</th>
<th>Price Offer (( p^* ))</th>
<th>The coverage that the subcontractor provides (( p^* - \chi ))</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1( \sigma )</td>
<td>( \epsilon + 2.94\sigma )</td>
<td>( \epsilon + 2.84\sigma )</td>
</tr>
<tr>
<td>0.3( \sigma )</td>
<td>( \epsilon + 1.99\sigma )</td>
<td>( \epsilon + 1.69\sigma )</td>
</tr>
<tr>
<td>0.5( \sigma )</td>
<td>( \epsilon + 1.06\sigma )</td>
<td>( \epsilon + 0.56\sigma )</td>
</tr>
<tr>
<td>0.6729( \sigma )</td>
<td>( \epsilon + 0.6729\sigma )</td>
<td>( \epsilon )</td>
</tr>
<tr>
<td>0.8( \sigma )</td>
<td>( \epsilon + 0.49\sigma )</td>
<td>( \epsilon - 0.31\sigma )</td>
</tr>
<tr>
<td>1( \sigma )</td>
<td>( \epsilon + 0.31\sigma )</td>
<td>( \epsilon - 0.68\sigma )</td>
</tr>
<tr>
<td>1.5( \sigma )</td>
<td>( \epsilon + 0.10\sigma )</td>
<td>( \epsilon - 1.39\sigma )</td>
</tr>
<tr>
<td>2( \sigma )</td>
<td>( \epsilon + 0.0293\sigma )</td>
<td>( \epsilon - 1.97\sigma )</td>
</tr>
<tr>
<td>3( \sigma )</td>
<td>( \epsilon + 0.0004\sigma )</td>
<td>( \epsilon - 2.99\sigma )</td>
</tr>
</tbody>
</table>

Thus, for the case of normal distribution, the Binding Range is sufficient if its level exceeds approximately two-thirds of one standard deviation. More generally, from the definition of the minimum level of sufficient Binding Range (\( x_{ms} \)) and (1) we can derive that for \( x_{ms} \):

\[
\Phi(P^*(x_{ms})) - \Phi(\epsilon) = \Phi(\bar{\tau}) - \Phi(P^*(x_{ms}))
\]

Since \( \Phi(\epsilon) = 0.5 \), we arrive at:

\[
\Phi(P^*(x_{ms})) = 0.5\Phi(\bar{\tau}) + 0.25
\]

Equation (4) determines the size of the minimum level of sufficient Binding Range for a given discharge threshold (\( \Phi(\bar{\tau}) \)). For instance, if the discharge threshold is defined as an increase in the price that has at least 5% chance of
occurrence, the size of the minimum level of sufficient Binding Range is 0.597σ; in the case of 10% it is only 0.524σ; and if the subcontractor is discharged in probability 25%, the size is 0.318σ.

References


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