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**Multi-Stage Contracting in Complex
Transactions**

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Introduction

Commercial agreements are often entered into in stages. One reason is that uncertainty and transaction costs make it infeasible for the parties to settle on core issues of their contract, such as the type of project and the price, yet a preliminary agreement is desirable to encourage relationship-specific investments that help resolve this uncertainty or otherwise increase the value of the exchange. A more complete agreement is entered into after the uncertainty is resolved to a further degree. A second reason is that some agreements are simply too complex or time-consuming to be completed in a single stage. Multiple issues, for example, need to be settled in two or more stages to allow for the involvement of experts, particularly lawyers. In this second category of cases, the purpose of agreement in the first stage is to address complexity and set a distinct stage for expert agents, rather than to protect specific investments under an incomplete contract.

Legal scholars have paid the most attention to the first category, the “reliance” cases described above.¹ Joint ventures to develop innovative products or construction contracts are two examples. In the first stage of bargaining, there may be a large amount of uncertainty over the scope and profitability of the contemplated venture, and one or both of the parties can spend resources to better assess the important features. When it is infeasible for the parties to contemplate and provide for all possible variations of the project that would be desired in different states of the world, they may leave important terms open, such as the certain features of the project, the price, and the quantity. These are completed when the more efficient course of action becomes clear.² When pre-contractual reliance can create value but the parties face the problems of verifiability and hold-up, at least as a partial solution, contracts scholarship justifies a default contract provision that compensates for verifiable portion of the reliance investments.³

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¹ See, e.g., E. Allan Farnsworth, *Precontractual Liability and Preliminary Agreements: Fair Dealing and Failed Negotiations* 87 Colum. L. Rev. 217 (1987); Avery Katz, *When Should an Offer Stick? The Economics of Promissory Estoppel in Preliminary Negotiations*, 105 Yale L. J. 1249 (1996); Richard Craswell, *Offer, Acceptance, and Efficient Reliance*, 48 Stan. L. Rev. 481 (1996); Jason Johnston, *Communication and Courtship: Cheap Talk Economics and the Law of Contract Formation*, 85 Va. L. Rev. 385 (1999); Lucian Bebchuk and Omri Ben-Shahar, *Precontractual Reliance*, 30 J. L. Stud. 423 (2001); and Schwartz and Scott, *Precontractual Liability and Preliminary Agreements*, 120 Harv. L. Rev. 661 (2007).

² A related type of contract is one that is completed other than by agreement, either by conveying the discretion to fill in the gaps to one of the contracting parties or to a third party, such as an architect (in a building project) or a judge. When the contract grants discretion to a party to fill the gap (or determine some terms of the relationship), the party with the discretion is under the obligation to exercise that discretion in “good faith.” See *infra* Part III.

³ See *supra* note 1. The presence of uncertainty and non-verifiability per se, however, does not justify that the parties should initially enter into a non-binding preliminary agreement. The incomplete contracts literature has

This paper concerns a second category of multi-stage contracting that is driven by the complexity of the joint undertaking and the difficulty in negotiations, rather than by concerns about uncertainty as to the core elements of a deal. Such staging is very common in complex business transactions. Negotiations can be difficult when a large number of issues must be resolved at once. As Howard Raiffa framed it, there is a tradeoff between maximizing the gains from trade by allowing log-rolling across a large number of issues, and the cognitive load of dealing with all at the same time.⁴ Even when the parties are certain of contractual surplus and no reliance (relationship-specific) investment is necessary, complexity of the deal may be a reason for agreeing to a subset of issues initially and turning to the remaining issues later. In many cases, the deferred issues are turned over to experts, such as architects, engineers, accountants, and, in particular, lawyers. While the motivation may be either the cognitive load or the need for experts, we will call this second category as being multi-stage contracting motivated by *complexity*.

Given their distinct objectives, the preliminary agreements in complexity cases would include different types of contract provisions than those in reliance cases. In many large commercial transactions, for example, the parties begin bargaining through their business agents (investment bankers or in-house employees) and first reach agreement to term sheets or memoranda of agreements that address specifically the core business terms. The parties then turn the deal over to their lawyers to work out other terms such as representations and warranties,

taught us that, even in the presence of uncertainty and ex post non-verifiability, so long as there is no ex post renegotiation inefficiency (for instance because the parties are symmetrically informed ex post) or direct investment externality, by initially executing an enforceable agreement and renegotiating it afterwards when the uncertainty is resolved, the parties may be able to achieve both ex ante reliance and ex post transactional efficiency. See G. Noldeke and K. Schmidt, Option Contracts and Renegotiation: A Solution to the Holdup Problem, 26 RAND Journal of Economics 163 (1995); A. Edlin and S. Reichelstein, Holdups, Standard Breach Remedies, and Optimal Investment, 86 American Economic Review 478 (1996); and Y.K. Che and D. Hausch, Cooperative Investments and the Value of Contracting, 89 American Economic Review 125 (1999). Che and Hausch (1999) has taught us that, in the presence of sufficiently strong direct investment externality (e.g., where the seller's investment directly affects the buyer's value), no contract may be most efficient. This may be similar to entering into a non-binding, preliminary agreement. To our knowledge, no one has yet explored the implications of ex post renegotiation inefficiency on the advantage of entering into a non-binding preliminary (as opposed to a binding) agreement.

⁴ Howard Raiffa, *Negotiation Analysis: The Science and Art of Collaborative Decision Making* (2002). While our focus is on commercial contracts, such as M&A, corporate financing, or venture capital agreements, multi-stage contracting is also quite prevalent in consumer contracting context. Often called "rolling contracts," when a consumer purchases a product, she initially agrees to the basic terms, such as the type of product and its price, only to see the remaining terms, such as forum selection and limitation on damages clauses, later when the product is delivered. It will be too time-consuming for the consumer and the seller to discuss all the legal terms before the transaction is executed. As Judge Easterbrook observed, "practical considerations support allowing vendors to enclose the full legal terms with their products. Cashiers cannot be expected to read legal documents to consumers before ringing up sales. If the staff at the other end of the phone for direct-sales operations...had to read the four-page statement of terms before taking the buyer's credit card number, the droning voice would anesthetize rather than enlighten many potential buyers. Other would hang up in a rage over the waste of their time." *Hill v. Gateway 2000, Inc.* 105 F.3d 1147 (7th Cir. 1997). An important difference between commercial and consumer contract settings is that the commercial parties are much more sophisticated and it is more reasonable to assume that they read and understand all the terms of the deal. While consumers can form expectations about the non-price terms, reading and understanding the terms will be more costly for them.

covenants, closing conditions, termination rights, dispute resolution, indemnification, and so on.⁵ They do so not to wait for uncertainty resolution or to encourage reliance in between stages, but rather to split complex negotiations and also to involve expert agents. Although the parties may believe they have reached an agreement in principle and even make public statements to that effect, the preliminary agreement might state expressly that the contract is subject to the negotiation or execution of a definitive agreement that provides the additional terms to the satisfaction of the parties' legal counsel. Furthermore, while the negotiations in the later stages can be quite contentious and can often affect the structure of the deal, parties often do not (or rarely) revisit the initially agreed upon terms, sometimes even willing to jeopardize the entire deal.⁶

Commercial parties often leave unclear the degree to which the preliminary agreement creates binding commitments, so that the courts are called upon to fill this gap if later rounds of negotiation break down.⁷ Perhaps parties leave this gap because of the difficulty in determining the benefit of commitment in complexity-driven preliminary agreements. As mentioned earlier, courts often award reliance damages to protect specific investments that the parties contemplate in the preliminary agreement, that help them define their joint venture or increase the value of the venture when it is so defined.⁸ This doctrine is inapt in cases of complexity-driven, multi-

⁵ While this sequence of negotiation, i.e., price first and then the non-price terms later, is common, it is not always the case. The most important set of exceptions comprise of cases where a corporation offers sell securities, either a stock or a bond, to the public. The offering firm, with its investment bankers and lawyers, will decide on all the substantive terms first, for instance the indenture in the case of a bond offering or the charter and the bylaws in the case of a stock offering, reserving pricing (valuation) as the last step.

⁶ In the area of mergers and acquisitions, there are some famous examples that demonstrate how far the parties are willing to risk the entire deal rather than revisit the initially agreed upon pricing and deal structure. See, e.g., *Empro Manufacturing Co., Inc. v. Ball-Co Manufacturing, Inc.*, 870 F.2d 423 (7th Cir. 1989); *IBP, Inc. v. Tyson Foods, Inc.*, 789 A.2d 14 (Del. Ch. 2001); *United Rentals, Inc. v. Ram Holdings, Inc.*, 937 A.2d 810 (Del. Ch. 2007); and *Hexion Specialty Chemicals, Inc. v. Huntsman Corp.*, 965 A.2d 715 (Del. Ch. 2008).

⁷ See, e.g., *Arnold Palmer Golf Co. v. Fuqua Industries, Inc.* 541 F.2d 584 (6th Cir. 1978) (holding that the parties' intent is a question of fact that should not have been resolved by summary judgment for the defendant); *Empro Manufacturing Co., Inc. v. Ball-Co Manufacturing, Inc.*, 870 F.2d 423 (7th Cir. 1989) (holding that the court should examine the document for intent, so as not to invite costly trials of fact). *Empro* involved a sale of business assets and the letter of intent provided that the promissory note of the buyer be secured by equipment and inventory of the business. In the subsequent negotiations of the definitive agreement, the seller demanded also a security interest in land. The deal fell through when they could not agree on the additional security interest and the seller began negotiating with a third party. See also *Texaco, Inc. v. Pennzoil Co.*, 729 S.W.2d 768 (Tex. App. 1987) (holding that through the memorandum of understanding Getty Oil and Pennzoil have entered into a binding agreement and Texaco "knowingly and intentionally interfered" with the agreement even though the memorandum was subject to a definitive agreement); *Teachers Ins. & Annuity Ass'n of Am. V. Tribune Co.*, 670 F.Supp. 491 (S.D.N.Y. 1987) (preliminary loan agreement sufficient to require parties to negotiate in good faith even though the parties have not agreed upon whether to allow "offset accounting" which was allegedly important for the borrower); and *Turner Broadcasting System, Inc. v. McDavid*, 693 S.E.2d 873 (Ga. Ct. App. 2010) (holding that the letter of intent and verbal statements such as "we have a deal" are sufficient to establish that there was a binding agreement even though the letter is conditioned upon executing a definitive agreement).

⁸ According to Professor Farnsworth, courts recently have been more willing to impose precontractual liability based on a preliminary agreement. To impose liability, courts have used four distinct legal theories: (1) unjust enrichment resulting from the negotiations; (2) a misrepresentation made during the negotiations; (3) a specific promise made during the negotiations; and (4) an agreement to negotiate in good faith. See Farnsworth, *supra* note 1, at 229—39 and 263—69. With respect to the last theory, duty to negotiate in good faith, the courts are more likely to impose that duty when parties have reached agreement on a significant number of issues. *Id.* at 263—69. See also Scott and Schwartz, *supra* note 1, at 691—702 (empirically demonstrating how many courts are willing to follow the duty

stage negotiations, however, because reliance is limited simply to bargaining costs, such as legal fees. Yet, the courts may nevertheless require the parties to negotiate in good faith issues that are left open in the preliminary agreement. There is a distinct plausible argument in these cases that the enforceability of the first-stage agreement is necessary to deal with complexity. Recall that the premise in these cases is that the parties cannot negotiate all terms of their deal at once, perhaps because they need different agents for different sets of terms. If the agents in the second stage can reopen the terms from the first stage, this would frustrate the goals of the multiple stages. Whether by legal or extralegal (e.g. reputational) sanctions, it follows that the parties would want to impede the reopening the terms of the initial agreement to successfully deal with the issues of complexity.

While intuitively appealing, however, this argument is overly simplistic. In particular, it neglects on the one hand, the effect of the parties' ability to anticipate outcomes in later stages and, on the other hand, the potential for hold-up and ex post opportunism that can arise in some types of multiple staged bargaining, even without explicit reliance investments. To demonstrate, we begin our analysis in Part I by presenting an indifference proposition in the context of a sale agreement, under which the terms of a contract are the same whether the contract is negotiated in one or two stages and irrespective of the sequence of negotiations. As with other indifference propositions in law and economics, several assumptions are key to our analysis: (1) the parameters of the transaction (e.g., the optimal terms) stay constant, (2) the allocation of bargaining power and the parties retain their respective freedom to walk away from negotiations at any stage, (3) there are no agency conflicts with expert agents, and (4) the parties can anticipate future outcomes. Under these assumptions, we show that the parties' ability to anticipate future stages keeps an efficient check on the future exercise of hold-up power.

This result holds even in cases where the parties are asymmetrically informed of the other's outside reservation value. With asymmetric information, however, the parties may fail to execute a mutually beneficial agreement in the second stage, particularly when the party with superior bargaining power attempts to extract more rent from the counter party. Though the model is fairly simple, it offers a descriptive account of the real-world contracting practice. In particular, when the terms of the transaction are "indifferent" to the staging or sequencing of the negotiations, the proposition can explain why commercial entities often do not (or rarely) revisit the initially agreed upon terms, even at the risk of jeopardizing the entire deal.

After presenting the indifference result, we then relax the assumptions informally in Part II to better reflect real-world conditions. In particular, casual empiricism suggests that parties very rarely amend or back out of term sheets because of log-jams in negotiations between their lawyers. If they do, they face some combination of a possibility of contract damages liability or reputational (or relational) sanctions. So, we make varying assumptions as to the aggregate cost of withdrawing (legal and non-legal sanctions) and trace their effect on outcomes in multi-stage negotiations. We suggest that when a party is subject to cost for walking from the table, inefficiencies may result due to the hold-up or opportunism, unless the other party has made a commitment of some sort. We then relax the assumption that parties can anticipate the outcomes of later stages in early-stage bargaining and also that the parties can effectively control the

to bargain in good faith holding in *Teachers Insurance & Annuity Ass'n of America v. Tribune Co.*, 670 F.Supp. 491 (S.D.N.Y. 1987)).

problems of agency. We note that the same complexity that motivates the multiple stages and reliance on expert agents may also distort the parties' expectations and create difficulty in successfully dealing with the problems of agency.

Finally, in Part III, we speculate as to how our analysis might inform the courts' default rule in enforcing preliminary agreements in complexity-driven staged negotiations. First, in cases conforming most closely to the indifference assumptions, the courts would promote efficient bargaining by upholding the parties' freedom to terminate the negotiations. At the same time, the analysis in Part II suggests that the court's intervention to find a commitment in an earlier stage can improve the contracting outcome when one or more of the assumptions to the indifference proposition do not hold. To take one example, when the threat of reputational sanctions impedes one party from walking away from the negotiations, the court can improve efficiency by finding a commitment by the other party in the preliminary agreement. Where the parties' industry has developed "market" terms, these can play a key role in defining the commitment and setting the legal and non-legal standards for good faith bargaining.

I. The Indifference Proposition of Multi-Stage Contracting

Consider the following simple model of contracting in multiple stages to accommodate complexity rather than uncertainty and incompleteness. Suppose a buyer and a seller can transact over a good (g) and bargain over its price and quality: (p, q, g) . While we use the "widget" analogy, a good can be a product, service, or an asset. It might alternatively represent an investment relationship, for instance, between an entrepreneur and a venture capital investor or a bank. The term g contains the identity and a basic description of the widget. The quality of the widget, the non-price term q , stipulates other attributes of the widget and affects the size of the surplus. Finally, the price term p determines how the total surplus, determined by g and q , is split between the parties. If we are thinking of the good as a product, for instance, when g identifies the product to be sold, q can represent, for instance, an express warranty that the seller attaches to the product. Similarly, for an asset sale or a financing agreement, g can identify the assets to be sold or the project to be undertaken, while q can include representations and warranties, covenants, closing conditions, and post-closing matters.

The buyer values quality q at $v(q)$ and the cost to seller is $c(q)$. We will make the usual assumptions that (1) $v'(q) > 0$, $c'(q) > 0$, $c''(q) > 0$, and $v''(q) < 0$; and (2) $v'(0) \gg 0$ and $c'(0) \approx 0$, so that there exists an optimal q^* that maximizes $v(q) - c(q)$. That is, at $q = q^*$, $v'(q^*) - c'(q^*) = 0$ and $v''(q^*) - c''(q^*) < 0$. For instance, as the warranty gets more extensive, the buyer's willingness to pay for the product gets higher but so will the seller's cost of providing the warranty. Initial increment of warranty is worth more to the buyer and costs less to the seller and there is an optimal level of warranty that maximizes the joint surplus. The buyer's and the seller's outside reservation values are r_b and r_s , respectively, and both are equal to or bigger than zero. The reservation values represent the minimum profit each party must earn to stay in the relationship. We will initially assume that the reservation values are known to both parties but will relax this assumption. Finally, the potential surplus from the transaction is large enough to cover combined reservation values: $v(q^*) - c(q^*) > r_b + r_s$.⁹

⁹ This setup has two important implications. First, by assumption, the outside reservation values do not affect the optimal set of non-price terms, i.e., quality of the widget (q^*). They should only affect how the surplus should be

A. Single-Period Contracting under Symmetric Information

When both the buyer and the seller are informed of the relevant parameters of the transaction and are able to determine both p and q simultaneously, they will set the non-price term at the optimal level and let the price term to determine the split of the maximal surplus, representing respective party's bargaining power. This result is fairly standard.¹⁰ Suppose there are no issues of complexity so that the parties can bargain over all the terms (p, q, g) of the transaction. Suppose also that the buyer gets to make a take-it-or-leave-it offer, that consists of both p and q , to the seller and the seller gets to either accept or reject. The buyer will offer (p, q, g) such that $q = q^*$ and $p = c(q^*) + r_s$ and the seller will accept the offer. Buyer maximizes the surplus from the transaction and extracts all the surplus, using her complete bargaining power, by setting price to allow the seller to just earn her reservation value. The buyer cannot do any better than this. If she were to offer any other combination of p and q , she will only decrease her own profit. Even when the seller has more bargaining power, they will still choose the optimal non-price terms and let the price term determine the share of the surplus. For instance, when the seller gets to make a take-it-or-leave-it offer to the buyer, the seller will offer $(p = v(q^*) - r_b, q = q^*)$ and extract the entire surplus of the transaction.

B. Two-Stage Contracting under Symmetric Information

Suppose now that it is infeasible for the parties to negotiate all three variables at once and they defer q to the second stage, where it will be negotiated by, for instance, their legal experts. Such multi-stage negotiation can create a potential for a hold-up. However, when the parties can

split between the parties. If the optimal quality of the widget depends on either the buyer's or the seller's "type" and the type information is private, there could be further complications, depending on who has the bargaining power. For instance, suppose the optimal quality depends on the buyer's type and the buyer's type is private information. When the buyer gets to make an offer (a signaling model), the following analysis will carry through since, in that setting, the seller makes no profit (larger than her outside reservation value) in equilibrium. Hence, even though the buyer's type is revealed after the first period price offer, the second period quality offer ends up being consistent with the price offer. When the seller makes an offer (a screening model), on the other hand, because the buyer makes an "informational rent" in a single-period game, imposing two-stage bargaining structure will make that informational rent disappear which, in turn, can create a further distortion in quality. This problem is akin to discovering new information between stages and changing the transactional parameters. We discuss this problem informally in part II.A.

A second implication is that the parties are always aware that the surplus from the transaction, albeit small, is strictly positive. See part I.C. for uncertain outside reservation value. If they do not know whether the surplus is positive, for instance due to uncertain outside reservation values, it may be more advantageous for the parties to negotiate on the price term and the non-price terms later. This may be because deciding on the set of optimal non-price terms (q^*) does not readily reveal whether the transactional surplus is positive. On the other hand, to the extent that the parties can anticipate what the non-price terms will be in the later stages of negotiation, agreeing on price can have a stronger indication that the surplus is positive. That is, when they agree on q^* , it does not tell them whether $v(q^*) - c(q^*)$ is positive or negative. If they agree to transact with p , to the extent that they jointly anticipate q' , they know that $v(q') - p \geq r_b$ and $p - c(q') \geq r_s$.

¹⁰ This result, which can be termed as "bargaining power irrelevance proposition," has been conventional in the law and economics literature. Like any "irrelevance" proposition, such as the Coase theorem, it relies on a set of strong assumptions. See Albert Choi and George Triantis, The Effect of Bargaining Power on Contract Design, 98 Va. L. Rev. 1665 (2012) for a more extended analysis of the bargaining power irrelevance proposition and how it can be relaxed.

anticipate the potential hold-up problem in the second stage and preserve the power to walk away from the deal, they will still choose the optimal non-price terms, regardless of who has the superior bargaining leverage.

To illustrate, suppose we allow the buyer to dictate both the price and non-price terms but now in two stages: $t \in \{1, 2\}$. The buyer first offers p to the seller in stage 1. If the seller “accepts,” the buyer subsequently offers q in stage 2. If the seller also accepts q , a contract is formed. If the seller rejects any of the offers, in any stage, there is no contract. That is, even if the seller have accepted the initial price offer from the buyer, the seller can still reject the buyer’s second-stage, quality offer and walk away from the deal. Accepting the buyer’s first-stage, price offer does not bind the seller in any way. So, while the buyer has the power to dictate the terms of the transaction, the seller preserves the complete power to walk away from the deal in both stages.

To solve this game, we start from the second stage ($t = 2$) and move backward. Imagine that the buyer and the seller have agreed to some p in the first period. In the second stage, with the price term set, since the higher q generates more profit for the buyer, the buyer will push up the non-price term as much as she can. Conditional on p , in the second stage, the buyer will offer q such that $p = c(q) + r_s$, so that the seller just breaks even. This is the optimal strategy, conditional on p , for the buyer. The buyer will earn $v(q) - p$ and the seller will earn r_s . Note that an increase in p will lead to a bigger q : if the parties have agreed upon a higher price in the first period, the buyer will demand a more generous non-price term in the second period. Technically, the buyer’s optimal second-period strategy produces q as a function of p and r_s . From $p = c(q) + r_s$ we get $q = c^{-1}(p - r_s)$. When we differentiate the expression with respect to p , we get $q'(p) = c^{-1'}(p - r_s) > 0$.

Moving back to the first stage ($t = 1$), the parties expect that, in the second stage, given any p that results from the first period, the buyer will make a non-price (q) offer that satisfies $p = c(q) + r_s$ and the seller will accept. With the buyer’s (expected) profit of $v(q) - p$, if we were to substitute p with the expression $c(q) + r_s$, it makes the buyer’s two-period problem tantamount to choosing q that maximizes $\pi_b(p, q) = v(q) - p = v(q) - c(q) - r_s$. The expression makes it clear that the buyer would maximize her profit by choosing q^* . Translating this to offers, the buyer’s optimal strategy is to offer $p = c(q^*) + r_s$ in the first period and $q = q^*$ in the second period. The seller will accept both offers.¹¹

The analysis when the seller has all the bargaining power is analogous. When the seller gets to make take-it-or-leave-it offer in both periods, she will offer $p = v(q^*) - r_b$ in the first period, followed by $q = q^*$ in the second period. Now, all the surplus of the transaction will

¹¹ More accurately, in terms of p , the buyer’s first-period problem is to choose p that maximizes $v(q) - p = v(q(p)) - p$. When we differentiate this with respect to p and set equal to zero, we get $v'(q(p)) \times q'(p) = 1$. To get the expression for $q'(p)$, we differentiate $p = c(q(p)) + r_s$ with respect to p , which produces $1 = c'(q(p)) \times q'(p)$ or $q'(p) = 1/c'(q(p))$. With this expression, the first order condition becomes $v'(q(p)) \times \left(\frac{1}{c'(q(p))}\right) = 1$, which is equivalent to $v'(q(p)) = c'(q(p))$. To satisfy this equality, we must have $q(p) = q^*$ and this implies that $p = c(q^*) + r_s$. The buyer’s optimal strategy, therefore, is to offer $p = c(q^*) + r_s$ in the first period and $q = q^*$ in the second period.

accrue to the seller but the seller will still choose the optimal non-price terms. When the bargaining power is more evenly split, the analysis becomes a little more involved but the result, on non-price terms, will be the same. In either single or two-stage bargaining, the parties may arrive at the Nash bargaining solution (p, q) that maximizes $(v(q) - p - r_b) \times (p - c(q) - r_s)$ subject to $v(q) - p \geq r_b$ and $p - c(q) \geq r_s$.¹²

Finally, even if we were to reverse the sequence of bargaining, the same result will obtain. Suppose the buyer were to make a non-price offer in the first stage followed by the price offer in the second. The optimal strategy for the buyer would be to offer $q = q^*$ in the first stage followed by $p = c(q^*) + r_s$ in the second. In some sense, this is a more “natural” sequence of bargaining, where the parties get to determine the size of the surplus first and then negotiate over its split. Regardless of who has superior bargaining leverage, the parties will decide on the optimal non-price terms first and then exercise their bargaining power over its split in the second period. In sum, under the conditions laid out above, the multi-stage bargaining, under symmetric information, always produces the optimal non-price terms.

The indifference result follows from the assumption that the contracting parties fully anticipate the outcome of later negotiations and can make adjustments in the earlier periods to solve the issues of commitment. Take the case where the buyer had all the bargaining power. The buyer knows that, unless properly checked, she will demand as high a non-price term (q) as possible when the second period arrives. From the perspective of the initial period, and in the long-run, the buyer knows that demanding too high a non-price term from the seller (e.g., $q > q^*$) will be inefficient even for her own bottom line. The way to constrain her second period behavior is by agreeing to pay a price, in the first period, that de facto caps the non-price term she can offer in the second period at q^* . By agreeing to pay $p = c(q^*) + r_s$ in the first period, she effectively constrains the second period quality at $q \in [0, q^*]$: she has privately solved the commitment problem.

The indifference result provides an explanation over why sophisticated commercial parties in the real world very rarely revisit the initially agreed upon terms: if they can anticipate the results of the future negotiations, they can effectively take that into account in the earlier stages so as to eliminate any problems of ex post opportunism and hold-up. As long as such anticipations are met, they do not need to go back and reopen the package of initial terms. The next section demonstrates this result even when the seller’s outside reservation value is private information, although in these cases some preliminary agreements are rescinded. We show how negotiations over non-price terms can lead to deal failure, particularly when the party with superior bargaining position attempts to exercise that power to minimize the counter party’s rent.

C. Two-Stage Contracting under Asymmetric Information over Outside Reservation Value

¹² Conditional on p that the parties have agreed upon in the first stage, the parties, in the second stage, will choose q that maximizes $(v(q) - p - r_b) \times (p - c(q) - r_s)$ subject to $v(q) - p \geq r_b$ and $p - c(q) \geq r_s$. Note that, conditional on satisfying both parties’ outside reservation values, a higher p implies that q has to be higher to maximize $(v(q) - p - r_b) \times (p - c(q) - r_s)$. This, in turn, will map out all the non-price terms as a function of the price term, i.e., $q(p)$ where $q'(p) \geq 0$. Moving to the first stage, the parties will choose p that maximizes $(v(q(p)) - p - r_b) \times (p - c(q(p)) - r_s)$.

When the buyer and the seller are symmetrically informed of all the relevant parameters of the transaction, including the other party's outside reservation value, whether they negotiate in a single or multiple rounds did not matter for efficiency. One important assumption for the irrelevance result is that the parties retained the freedom to walk away from the deal in the latter periods: an agreement reached in the previous period did not bind the parties. Because the party with the superior bargaining power had to satisfy the other's outside reservation value, this kept the non-price terms from being inefficiently one-sided.

In this section, we drop the assumption that the parties are symmetrically informed. Given the important role that the outside reservation value plays in achieving efficiency, it seems most natural to introduce asymmetric information on that parameter. To keep the example as simple as possible, we assume that while the seller knows her outside reservation value, the buyer does not know the seller's. More specifically, let's assume that the buyer's outside reservation value is zero ($r_b = 0$) and this is common knowledge. The seller's reservation value, on the other hand, can take on two values $r_s \in \{0, r > 0\}$ where $prob(r_s = 0) = \alpha \in (0,1)$. In other words, the seller has a "low" outside reservation value ($r_s = 0$) with probability $\alpha > 0$ or "high" outside reservation value ($r_s = r > 0$) with probability $(1 - \alpha) > 0$. Let's also assume that the buyer retains all the bargaining power throughout the process, by being able to make take-it-or-leave-it offer to the seller in both stages.

Because the buyer does not know the seller's outside reservation value, the buyer will no longer be able to extract all the rent from the seller while setting the non-price terms at the efficient level. The buyer faces the classic efficiency versus rent extraction tradeoff. Given that q^* is the optimal non-price terms regardless of the seller's reservation value, the buyer can achieve the efficient outcome so long as the buyer leaves a sufficiently high (at least r) for the seller. If the buyer were to try to minimize the seller's rent, the buyer will have to sacrifice efficiency.

As we demonstrate below, the efficiency of the quality terms depends on the willingness of the buyer to sacrifice efficiency to extract more rent from the seller. This depends on the size of r and α . In case 1 below, either or both of r and α are relatively large, and the buyer is more willing to sacrifice efficiency in order to extract rent from the seller. In case 2, where either or both r and α are relatively small, the buyer is more willing to leave rent for the seller and focus on maximizing the contracting surplus. The following analysis also demonstrates that, under the initial assumptions of stable relative bargaining power, the staging of bargaining continues to be irrelevant, in the sense that whether the parties negotiate in one or two periods does not matter in terms of relative efficiency. One interesting twist is that, whereas in the symmetric information the buyer always had an incentive to demand higher quality from the seller in the second stage, with asymmetric information, the buyer's second stage incentive can go in both directions: under certain circumstances, she may prefer to demand lower quality in the second stage, in the hopes of executing more deals.

1. Case 1: $\alpha(v(q^*) - c(q^*)) > v(q^*) - c(q^*) - r$

In this case, the probability that the seller's outside reservation value is zero is sufficiently high (α is sufficiently high) and/or the seller's outsider reservation value r is sufficiently large, so that the buyer would be willing to sacrifice efficiency for the sake of minimizing the seller's rent. In equilibrium, buyer offers $p = c(q^*)$ in the first period, followed by q^* in the second period. Both types of seller accept the price offer in the first period but only the seller with zero reservation value ($r_s = 0$) accepts the second period non-price offer.¹³ In equilibrium, the buyer realizes an expected profit of $\alpha(v(q^*) - c(q^*))$. The seller's rent is eliminated but, with probability $(1 - \alpha)$, the parties fail to reach an agreement.

Before we start the analysis on the two-stage game, note first that if the buyer were to offer both price and quality in a single period, the buyer's optimal strategy is to offer $(p = c(q^*), q = q^*)$. By doing so, the buyer earns an expected profit of $\alpha(v(q^*) - c(q^*))$. If the buyer were to offer, instead, $(p = c(q^*) + r, q = q^*)$ and transact with probability 1, the buyer's expected profit will be $v(q^*) - c(q^*) - r$ which, by assumption, is strictly smaller than $\alpha(v(q^*) - c(q^*))$. Furthermore, if the two-stage bargaining sequence is reversed and the buyer were to offer non-price terms first, the optimal strategy for the buyer is to offer $q = q^*$ in the first period, followed by $p = c(q^*)$ in the second period. The indifference proposition holds.

Now, to see that the proposed solution (offering $p = c(q^*)$ in the first period, followed by q^* in the second period) is an equilibrium, first, conditional on $p = c(q^*)$, in the second period, it is in the buyer's interest to offer q^* . The proposed solution satisfies subgame perfection. Suppose the buyer were to deviate in the second period and offer $q' < q^*$ such that $c(q') + r = p^*$.¹⁴ By doing this, the buyer guarantees that the seller will always accept the offer and maximizes the probability of consummating the transaction. This is suboptimal for the buyer, however. Given that q^* maximizes $v(q) - c(q)$ and, by assumption, $\alpha(v(q^*) - c(q^*)) > v(q^*) - c(q^*) - r$, we must have $\alpha(v(q^*) - c(q^*)) > v(q^*) - c(q^*) - r > v(q') - c(q') - r$. That is, when $p = c(q^*)$, the buyer is better off transacting with the seller with α probability at optimal quality than lowering quality to ensure the seller will always accept the offer. Hence, conditional on $p = c(q^*)$, it is in the buyer's interest to offer q^* in the second period.

Now, moving back to the first period, it is also not in the buyer's interest to offer a price different from $p = c(q^*)$. Suppose, in the first period, the buyer offers p such that $p = c(q^*) + r$.¹⁵ Under this off-the-equilibrium path, the buyer has two (viable) choices in the second period: either offer q'' such that $c(q'') = p$ or offer q^* . With the former, the buyer will trade with the seller with probability α , whereas with the latter, the buyer will trade with the seller with probability one. Although, by assumption, $\alpha(v(q^*) - c(q^*)) > v(q^*) - c(q^*) - r$, it may be

¹³ We can also allow the high reservation value ($r_s = r$) seller to reject the first period price offer ($p = c(q^*)$). If she does so, only the seller with zero reservation value will remain in the second stage and it is still in the buyer's interest to offer $q = q^*$. While this is a "knife-edge" result (with no transactions cost, the high reservation value seller is indifferent between accepting or rejecting the initial price offer from the buyer), when the optimal quality term is uncertain ex ante, the results can be more dynamically robust.

¹⁴ If the buyer were to offer $q > q^*$, both types of seller will reject, rendering zero profit for the buyer.

¹⁵ It is easy to see that it is also not in the buyer's interest to offer either $p = c(q') + r$ or $p = c(q')$ where $q' \neq q^*$.

the case that $v(q^*) - c(q^*) - r > \alpha(v(q'') - c(q''))$, in which case it is in the buyer's second period interest to offer q^* rather than q'' .

Regardless, however, both options are strictly dominated by the proposed solution. Suppose, it is the case that $(q^*) - c(q^*) - r > \alpha(v(q'') - c(q''))$, so that the buyer always trades with the seller with optimal quality. Recall that, under that strategy, the buyer initially offers $p = c(q^*) + r$, followed by q^* . However, given the assumption that $\alpha(v(q^*) - c(q^*)) > v(q^*) - c(q^*) - r$, that strategy is dominated by the strategy of offering $p = c(q^*)$ followed by q^* . Even though the buyer trades with the seller with only probability α , it still produces a larger expected profit. Similarly, when $\alpha(v(q'') - c(q'')) > v(q^*) - c(q^*) - r$, the buyer cannot even commit to offering q^* in the second period and the buyer is clearly better off with $p = c(q^*)$ followed by q^* : $\alpha(v(q^*) - c(q^*)) > \alpha(v(q'') - c(q''))$.

When it is in the buyer's interest to eliminate the seller's rent rather than consummate all transactions, as in the case with symmetric information, the buyer can "commit" to offer optimal quality (q^*) in the second stage by offering, in the first stage, $p = c(q^*)$. In the second stage, offering any quality that is higher than the optimum ($q > q^*$) is easily ruled out since all seller types will reject that offer. It is also not in the buyer's interest to offer lower than optimal quality ($q < q^*$), in the hopes of executing more transactions, because the buyer will have to leave rent to the seller and it is in the buyer's interest to eliminate the rent rather than maximize the surplus.

When applied to the real-world commercial contracting, the results might have some descriptive force. Even though both parties initially agree upon the price term, the negotiations can still fall apart in the later stages when they cannot agree upon other terms of the transaction. In equilibrium, rather than revisiting the initial set of terms, the parties would be willing to let the transaction fall through. This may be consistent with many real-world examples where, after entering into a preliminary agreement that lays out the broad structure of the deal, parties fail to reach a deal when they cannot agree upon other terms, such as security interest and covenants. And, rather than revisiting the initially agreed upon terms, they would sometimes even abandon the entire deal.¹⁶ The model predicts that this will be an issue especially when the party with the superior bargaining power (the buyer in our example) attempts to exercise that power to eliminate the counter party's rent.

2. Case 2: $\alpha(v(q^*) - c(q^*)) < v(q^*) - c(q^*) - r$

Now the seller's outside reservation value r is sufficiently small or α is sufficiently small so that the buyer is more concerned with preserving the size of the pie rather than reducing the seller's rent. In this setting, the optimal strategy for the buyer is to offer $p = c(q^*) + r$ in the first period followed by $q = q^*$ in the second period. The buyer ensures that the seller will always accept the offer and realizes an expected profit of $v(q^*) - c(q^*) - r$. While the parties capture all potential surplus from the deal, when the seller's reservation value turns out to be zero, she realizes an additional rent of r .

¹⁶ See supra note 6 for real-world examples in mergers and acquisitions.

The efficiency outcome is independent of whether the parties negotiate in one or two stages or whether they negotiate the price or the non-price terms first. As in the previous case, if the buyer were to make an offer that consist of both price and quality in a single stage, the buyer's optimal strategy is to offer $(p = c(q^*) + r, q = q^*)$ and earn $v(q^*) - c(q^*) - r$. The alternative is to offer $(p = c(q^*), q = q^*)$ and this will only reduce the buyer's expected profit down to $\alpha(v(q^*) - c(q^*))$. Similarly, if the buyer were to offer non-price terms first, the optimal strategy for the buyer is to offer $q = q^*$ in the first period, followed by $p = c(q^*) + r$ in the second.

Now, let's check to see if the proposed solution is indeed optimal. Foremost, to see that the proposed solution satisfies subgame perfection, conditional on $p = c(q^*) + r$, suppose, instead, the buyer were to offer $q'' > q^*$ in the second period such that $c(q'') = p = c(q^*) + r$. With this deviation, although the buyer gets a higher quality, the probability of trade drops from 1 to α and the buyer realizes an expected profit of $\alpha(v(q'') - c(q''))$. However, given that q^* maximizes $v(q) - c(q)$ and that $\alpha(v(q^*) - c(q^*)) < v(q^*) - c(q^*) - r$, we get $v(q^*) - c(q^*) - r > \alpha(v(q^*) - c(q^*)) > \alpha(v(q'') - c(q''))$. Therefore, conditional on $p = c(q^*) + r$, it is in the buyer's interest to offer $q = q^*$ rather than $q'' \neq q^*$ in the second period. The proposed solution satisfied subgame perfection.

Moving back to the first period, the other (viable) strategy the buyer may want to deviate to is to offer $p = c(q^*)$. Following $p = c(q^*)$, the buyer, in the second period, may either offer $q = q^*$ or $q = q' < q^*$ where $c(q') + r = p$. If the buyer were to offer $q = q^*$ in the second period, the buyer's expected profit is $\alpha(v(q^*) - c(q^*))$. If the buyer were to offer $q = q' < q^*$, on the other hand, the buyer's expected profit is $v(q') - c(q') - r$. The assumption of $v(q^*) - c(q^*) - r > \alpha(v(q^*) - c(q^*))$ ensures that both options are strictly dominated. Therefore, the optimal strategy is to offer $p = c(q^*) + r$ in the first period followed by $q = q^*$ in the second.

In contrast to the previous case where the buyer had to worry about demanding too low a quality in the second period ($q < q^*$), in this case, the buyer's concerns are reversed: the buyer is deliberately leaving some rent (r) to the seller and the buyer wants to keep that "commitment" in the second period by not demanding too high a quality from the seller. In equilibrium, this "commitment" is enforced by the fact that when the buyer is setting the price in the first period, she chooses the price ($p = c(q^*) + r$) so that any upward deviation from the expected quality (of q^*) will not only result in a reduction in the probability of trade but also a decrease in the aggregate surplus. The buyer fully expects the potential temptation to deviate from expected quality and adjusts her price offer in accordance to commit to choose optimal quality in the second period. Not busting up the deal is more important for the buyer than getting an incremental advantage in the terms of the deal.¹⁷

II. Varying the Indifference Assumptions

¹⁷ If the buyer is hiring an expert agent (e.g., a lawyer) to negotiate on her behalf in the second stage, this can create an interesting agency problem where the buyer wants to deliberately instruct the agent not to drive a hard bargain against the seller. Whether the buyer can successfully control the agent's behavior is a difficult question. See *infra* Part II.C. for an informal analysis.

The analysis in Part I demonstrates that a party with bargaining power will not extract rent inefficiently in the second stage. This result depended on two important conditions: (1) the allocation of bargaining power is stable, meaning that who gets to make the offer and the outside reservation values stay constant and (2) the parameters of the transaction, that is, the optimal non-price term is not changing from the first to the second period due to, for instance, reliance investment or discovery or disclosure of new information. In this Part, we will begin to show why these conditions are important and how two-stage bargaining may lead to inefficient design when they are absent.

A. Stable Transactional Parameters

As noted in the Introduction, the existing academic literature on preliminary agreements focuses on cases in which uncertainty needs to be resolved between bargaining stages and one or both parties can make a reliance (relationship-specific) investment between stages. In these cases, the optimal terms of the deal are changing between the stages. In our indifference analysis, in contrast, the “transactional parameters” must stay constant so as not to affect the optimal terms. This includes not only the factors such as reliance investment but also factors such as arrival of new information, either from one of the parties or from some external source. This assumption is relatively more likely to hold in the category of complexity cases we are considering as opposed to the reliance cases. However, the negotiations are always subject to possible exogenous changes in the optimal terms, particularly when the stages are separated by significant period of time.

For instance, going back to the case with symmetric information, suppose, after the buyer has offered $p = c(q^*) + r_s$ and the seller has accepted the price offer, new information arrives so that the optimal terms of the deal changes from q^* to $q^{**} > q^*$ or $q^{***} < q^*$. When the parties cannot revisit the price terms of the deal, the buyer, with her complete bargaining power, will be either unable or unwilling to offer an efficient set of non-price terms. In the case when the efficient non-price term becomes $q^{**} > q^*$, even though the buyer would want to offer q^{**} , because $c(q^{**}) + r_s > p$, the initially agreed upon price terms ends up being too low for the buyer to impose flexibility. On the flip side, when the efficient quality term becomes $q^{***} < q^*$, even though there is enough slack in the initial price term, i.e., $c(q^{***}) + r_s < p$, offering q^{***} implies leaving more rent to the seller and the buyer would be unwilling to do so. In either case, initial agreements impose too much inflexibility in later negotiations, by taking away the power to log-roll across many different issues.¹⁸

If the contracting parties can somehow revisit the price term, they may be able to successfully deal with the challenges of new information arrival, at least from the ex post perspective. Of course, given the problems of complexity, they may need to start the negotiations all over again, starting afresh with the price term. On the other hand, if the source of new information is either from reliance investment or from revelation of private information previously held by one of the parties, even revisiting the price term ex post will be insufficient to create optimal long-term incentive. These results are well known in the literature.¹⁹ If, for instance, the seller has to make a reliance investment between the first and the second periods to

¹⁸ See supra note 4.

¹⁹ See supra notes 1 and 3 for the relevant literature.

change the optimal non-price term from q^* to q^{**} and increase the total transactional surplus, when the buyer can effectively hold-up the seller, by offering, in the second period either $p = c(q^*) + r_s$ or $p = c(q^{**}) + r_s$, depending on the optimal term, the seller does not get to recoup the investment cost and, rationally expecting this, the seller will have no incentive to make the reliance investment.

B. Stable Allocation of Bargaining Power and Freedom to Walk Away

Another important assumption for the indifference result is that the initial bargaining power allocation stays constant throughout the negotiation. Bargaining power, in our setup, consists of two elements: ability to make an offer (or a take-it-or-leave-it offer) and the outside reservation value. As one party has more power to make an offer, that party will have a better chance of dictating the terms in her favor. When the buyer has the power to make a take-it-or-leave-it offer, for instance, the buyer could control the terms of the transaction. At the same time, how the contractual surplus was split also depended on respective party's outside reservation value. The higher the reservation value, the higher the fraction of the surplus the party is able to capture. For instance, even when the buyer had the power to make a take-it-or-leave-it offer to the seller, the buyer still had to guarantee a return of $r_s \geq 0$ for the seller. As r_s rises, so will the seller's return from the transaction.

The irrelevance result relies on both types of bargaining power to stay constant throughout the negotiation. With respect to the first, for instance, if the buyer gets to make a take-it-or-leave-it offer in the first period, she should get to do so again in the second period. If, for some reason, the bargaining power allocation changes from the first to the second, the indifference result will no longer hold. Even ex ante symmetric allocation of bargaining power would be insufficient. For instance, suppose we use "toss-the-coin" type of bargaining power sharing, where the buyer gets to make a take-it-or-leave-it offer with probability $x \in (0,1)$ and the seller with probability $(1 - x)$. If the coin gets tossed at the beginning of period 1 and the allocation stays constant through both periods, the irrelevance result will hold. If the coin gets tossed at the beginning of each period (which is another valid way of splitting the bargaining power surplus), while the allocation is ex ante symmetric, when there is an ex post divergence, the indifference result will no longer hold.

Also important is the assumption that both parties can walk away from the deal at any stage of the negotiation, and at same cost. That is, the respective party can terminate the negotiation and realize her outside reservation value which stays constant. If, for some reason, the parties are bound to execute the deal after the first period (or faces disadvantage for not going through with the deal after the first period),²⁰ the indifference result will no longer hold. In that case, the party with the superior bargaining leverage in the second period will set the non-price

²⁰ Cost of not consummating a deal can come from many different sources, one of which is reputational. For instance, if a party unilaterally breaks off a negotiation without giving a reasonable justification, that party may suffer a reputational (or relational) loss in the market. To the extent that the imposition of such reputational sanction is less than perfect (because, for instance, third parties cannot perfectly observe why the deal fell through and who is behaving badly), even a party that breaks off the negotiation for legitimate reasons may suffer a loss. See Scott Baker and Albert Choi, *Crowding In: How Formal Sanctions Can Facilitate Informal Sanctions* (2013) (analyzing how combining both legal and reputational sanctions can achieve better deterrence when reputational sanctions are subject to error).

terms in her favor as much as she can, taking into account the other's disadvantage, and this will create a distortion, either in the form of inefficient non-price term or in the form of failed deals.

To see this problem more concretely, suppose, as before, the buyer has all the bargaining power (makes take-it-or-leave-it offers in both stages) and, once the seller has accepted the first stage offer, she has to incur the (additional) cost of $k \in [0, \infty)$ to walk away from the deal in the second stage. When the buyer makes a quality offer in the second stage, conditional on p , the seller will accept so long as $p - c(q)$ is larger than $r_s - k$, or equivalently, so long as $p - c(q) + k \geq r_s$. Conditional on p , the buyer, in the second stage, will make a q offer so that $p - c(q) + k = r_s$. In the first stage, with the buyer's (expected) profit of $v(q) - p$, if we were to substitute p with the expression $c(q) + r_s - k$, it makes the buyer's two-period problem tantamount to choosing q that maximizes $v(q) - p = v(q) - c(q) - r_s + k$. That is, the buyer maximizes her profit by offering $p = c(q^*) + r_s - k$ in the first period, followed by q^* in the second period. Although the optimal quality is preserved, the seller ends up realizing only $r_s - k$. When the seller, at the beginning of the first period, expects that she will end up only with $r_s - k$, she will reject the buyer's initial offer of $p = c(q^*) + r_s - k$. This will be true regardless of the buyer's initial price offer since the seller knows that, in the second period, the buyer will increase q so that she ends up earning only $r_s - k$. When the seller's worse second period bargaining posture is unexpected, while the seller would be willing to enter into the deal initially, the terms of the deal would be inefficient.

The two types of inefficiency are created by the confluence of (1) change in reservation values from the first to the second period; and (2) lack of commitment. Initially, we had assumed that the seller's reservation value stayed constant (at r_s) throughout the negotiation. Once the reservation value changes from the first to the second period, what may be acceptable in the second period may no longer be acceptable in the first period. When we combine that with the fact that the parties cannot commit to a non-price term in the first period, we get the result where the parties produce a bargaining outcome in the second period that ends up being either unacceptable or inefficient from the perspective of the first period.

The indifference result will be restored by eliminating either of the assumptions. Doing away with the first assumption has already been done. With respect to the commitment problem, suppose the buyer, in the first period, can commit (perhaps with the help from the law) to a maximum level of quality (\bar{q}) that she can demand in the second period. Then, in the first period, when the seller's reservation value is given by r_s , the minimum price the buyer can offer is $p = c(\bar{q}) + r_s$. Suppose, in the first period, the buyer offers $\bar{q} = q^*$ and $p = c(q^*) + r_s$. If the seller were to accept this offer, she knows that, in the second period, although her reservation value has fallen to $r_s - k$, the highest quality the buyer can demand is still at q^* , allowing her to make a long-run profit of r_s . The seller will accept the offer and the parties will trade with optimal quality.²¹ When the parties can eliminate the commitment power, they can achieve the efficient bargaining outcome.

C. Agency conflicts

²¹ Another possibility is for the buyer to initially commit to a return of r_s for the seller in the first period. This will again eliminate the inefficiency. This option may be more attractive when the quality term is not verifiable but the profits from the deal are.

In many cases, the principal engages different agents to negotiate in each of the stages. If the incentives of the agent deviate from those of the principal, this may lead to inefficiencies, particularly if the principal cannot observe or verify the agent's actions. Although dealing with the problems of agency will be sensitive to various other assumptions, such as how the agent's actions affect the negotiation and the deal, the scope of delegation, and the relevance of the agent's "expertise," we can still make some general statements about the agency conflicts.²² For example, if the first agent (for the buyer) is compensated based on the price that she negotiates, she will attempt to bargain for the lowest possible price, regardless of the effect on second stage bargaining. If the price is too low, it is more likely that the seller will walk away in the second stage or the remaining terms negotiated in the second period will be inefficient. If the principal cannot observe the cause of the deal falling through, she might not know to attribute this failure to the first agent's behavior.

Similarly, even if the initial set of terms is optimal, the agent employed in the second period may either attempt to push the non-price terms too harshly against the counter party so as to jeopardize the deal (an overly "aggressive" agent) or not far enough so as to leave too much rent to the other party (a "lazy" agent). If the principal knows (1) the optimal set of non-price terms (q^*) and (2) the agent's attributes, particularly the agent's outside reservation value, the principal may be able to successfully control the agent's behavior.²³ Without this necessary information, however, the principal will have to rely on the agent's expertise and may end up delegating too much (or too little) authority to the agent.

Take the two-period bargaining with asymmetric information case, where the seller's reservation value could take on two values $r_s \in \{0, r > 0\}$ and $\text{prob}(r_s = 0) = \alpha \in (0, 1)$. In our analysis of the strategies of a buyer with all the bargaining power, the buyer might want to either drive a "hard" negotiation and minimize the seller's rent even at the expense of potentially jeopardizing some deals (when $\alpha(v(q^*) - c(q^*)) > v(q^*) - c(q^*) - r$) or to engage in a "soft" negotiation and get the deal done rather than minimize the seller's rent (when $\alpha(v(q^*) - c(q^*)) < v(q^*) - c(q^*) - r$). When the buyer has to rely on an expert-agent in the second period, the buyer in the first case would prefer an aggressive agent that pushes up the non-price terms as much as she can whereas the buyer in the second case would not want the agent to drive such a hard bargain. When the agent's type and behavior are unobservable and the optimal solution is not certain, the mismatch between the case and the agent types can create a suboptimal outcome.

²² It is also not entirely clear whether or how dealing with the agency issue in a single-period versus multi-period settings would differ. For instance, suppose the principal herself negotiates a subset of terms while delegating the authority to negotiate to the agent on the remainder. Using the indifference proposition, if the principal fully anticipates the agent's behavior (based on a second-best optimal agency contract design), even if the agent's negotiation were to come after (or before) the principal's, one could imagine that this problem is no different from the problem the principal faces when both the principal and the agent deal with the counter party simultaneously.

²³ For instance, if the principal knows that the optimal non-price terms is q^* and the agent's outside reservation value is $r_a \geq 0$, the principal can "dictate" the agent to produce q^* and compensate the agent with $w = c(e^*) + r_a$, where $c(e^*)$ is the cost of agent's optimal effort, or even set up an incentive contract under which the agent receives $w = c(e^*) + r_a$ if and only if $q = q^*$.

For instance, when the buyer deliberately leaves some rent to the seller in the first stage ($\alpha(v(q^*) - c(q^*)) < v(q^*) - c(q^*) - r$) but an overly aggressive agent in the second stage ends up pushing the non-price terms too far in the buyer's favor (e.g., $q > q^*$), profitable transactions would be foregone. Conversely, even though the buyer would want the agent to minimize the seller's rent ($\alpha(v(q^*) - c(q^*)) < v(q^*) - c(q^*) - r$), a "lazy" agent in the second stage may end up giving up too much to the seller (e.g., $q < q^*$) and get too many deals done.²⁴

More generally, the principal may be dealing with bargaining problems on two fronts simultaneously, one with the counter-party in terms of negotiating the underlying deal and the other with her agents in terms of designing the agency contract. In such an environment, how the principal deals with her agent can have an implication on her negotiation strategy against the counter party, and vice versa.²⁵ For instance, it may even make sense for the principal to hire (or at least signal that she has hired) an overly aggressive agent so as to get a better negotiating leverage against the counter party, perhaps even at the expense of not minimizing the rent given to the agent. In short, in a more complicated, but realistic, setup that deals with both the problems of agency and counter-party bargaining, there is no guarantee that a multi-stage contracting will produce the same result as that of a single-stage contracting.

D. The parties' ability to anticipate future stages

The indifference proposition also rests on the assumption that the party with the bargaining power can anticipate the future stages of bargaining. Thus, she can set a price in the first stage that ensures the other parties' agreement to the value-maximizing quality in the second stage. However, the reason the parties choose a multi-stage bargaining for our purposes is that negotiations are complex and call for the specialized experts, such as lawyers. If that is the case,

²⁴ The agent's "attributes" can also come from the incentive contract used by the principal. For instance, if the agent gets compensated based on the number of deals done (or whether the deal closes or not), the agent will become more "soft" and not drive as hard a bargain. On the other hand, if the agent gets compensated based on the terms, the agent may become too aggressive to blow up some desirable deals. One simple way to model is to let the principal delegate the authority to the agent to make the non-price (q) offer and compensate the agent based on the non-price terms agreed to by the seller. Suppose (1) the maximum q the seller is willing to accept (\hat{q}) is unknown to both the buyer and the buyer's agent; (2) the buyer's agent gets to make a take-it-or-leave-it offer to the seller; and (3) the agent's expected compensation is given by $\theta(q) \times (\alpha + \beta q)$, where $\theta(q)$ stands for the probability that the seller accepts the agent's offer (i.e., the probability that the deal is consummated), q stands for the non-price term offer made by the agent and accepted by the seller, α stands for the fixed fee paid to the agent, and β is the incentive component. We can motivate the agent's "expertise" by assuming that the agent receives a signal (s) about the seller's reservation quality (\hat{q}) after the agent has been retained by the buyer. It is straightforward to see that as β gets higher, the agent becomes more aggressive with respect to q (i.e., the agent will make a higher q offer to the seller) but the buyer is more likely to experience a broken deal ($\theta'(q) < 0$). In designing the agency contract (α, β), when the buyer is more concerned about minimizing the seller's rent, optimal β gets higher and the agent becomes more aggressive, but as the buyer cares more about completed deal, optimal β gets lower and the agent becomes "softer" in his negotiation with the seller. For a similar analysis, see, e.g., Honbgin Cai and Walter Cont, Agency Problems and Commitment in Delegated Bargaining, 13 Journal of Economics and Management Strategy 703 (2004) (agent making investment to increase her discount factor in a common-knowledge bargaining game).

²⁵ This is similar to the challenges of a litigating party engaging a lawyer to conduct settlement negotiations. See, e.g., Albert Choi, Allocating Settlement Authority under a Contingent Fee Arrangement, 23 J. L. Stud. 585 (2003) (demonstrating how it may be better for the plaintiff to delegate settlement authority and leave rent to her lawyer to maximize her bargaining leverage against the defendant).

it raises some doubt as to whether the non-expert agents (or even the principals) in the first stage can anticipate the result of the expert determination in the second stage.

Anecdotal evidence suggests that the business negotiators in an M&A agreement bargain over the principal terms, such as price, under the assumption that the remainder of the terms will be “market”: in other words, the usual terms for that industry at that time. While they engage experts to bargain over those terms, they expect that significant departures from “market” will be rare. Notwithstanding the low probability of departure from the “market” non-price terms, expecting the “market” terms to prevail in the second period may be due to either some version of bounded rationality or because the parties expect new information to arrive between the stages that would change the optimal non-price terms. In either case, there is a risk that the set of terms they agree upon in the initial period will end up being inefficient. However, as suggested in Part III below, the availability of market terms may play a different and more benign role.

III. Multi-Stage Contracting and the Law of Preliminary Agreements

The conditions under which courts will enforce early-stage agreements such as letters of intent, memoranda of understanding and term sheets, remain ill-defined, as is the extent of liability. Section 27 of the Restatement (Second) of Contracts, for example, states that the parties can manifest an intent to be bound even if they also intend to prepare and adopt a subsequent written memorial.²⁶ Comment c to that section suggests that the factors determining whether there is a manifest intent to be bound include:

the extent to which express agreement has been reached on all the terms to be included, whether the contract is of a type usually put in writing, whether it needs a formal writing for its full expression, whether it has few or many details, whether the amount involved is large or small, whether it is a common or unusual contract, whether a standard form of contract is widely used in similar transactions, and whether either party takes any action in preparation for performance during the negotiations.

One implication of this comment is that, if a preliminary agreement contains all the basic terms of the deal, even though it may expressly state that it will be subject to a definitive agreement, the court is more likely to find an enforceable agreement. The Restatement comment suggests another significant factor: the more common the type of contract and the more standard the terms, the more likely the court is to find a commitment in the preliminary agreement. Finally, even if there is no intent to be bound by the preliminary agreement, the courts may impose a covenant of good faith and fair dealing in subsequent negotiations.²⁷ If, following a preliminary agreement,

²⁶ See *supra* note 7 for cases where a similar principle is applied by courts. The Uniform Commercial Code Article 2, Sales of Goods, takes an even more liberal attitude towards enforcing an agreement that even lacks the price term. The Code states that contracting parties “if they so intend can conclude a contract for sale even though the price is not settled.” UCC §2-305(1). If, however, contracting parties “intend not to be bound unless the price be fixed or agreed and it is not fixed or agreed there is no contract.” UCC §2-305(4). Hence, it is possible for a court to find that the parties have “intended” to enter into a binding agreement even though they have not yet settled on the price for the goods to be sold.

²⁷ The Uniform Commercial Code defines “good faith” as “honesty in fact and the observance of reasonable commercial standards of fair dealing.” UCC §§1-201(20) and 2-103(1)(b). See also Restatement (Second) of

one party presented a list of the remaining terms on a take-it-or-leave-it basis, that party might be held to have violated the covenant to bargain in good faith.²⁸

The analysis in Parts I and II offers a few suggestions that might clarify the law on preliminary agreements, as it affects complexity-driven staged negotiations. The first is that it provides support for a default rule upholding the parties' ability to break off the negotiations, particularly when the transactional parameters and the allocation of bargaining power are stable. The problem of multi-stage contracting is that it presents the party with the superior bargaining position to demand inefficiently one-sided terms in the later stages of the negotiation even in the absence of any reliance investment. As the indifference result has shown however, the efficiency concerns are minimized or eliminated if the weaker party preserves her power to walk away from the deal in the later stages and the contracting parties can anticipate the future outcomes in the early stage. This suggests that the courts should refrain from either enforcing preliminary agreements motivated by complexity or by imposing a duty to negotiate subsequently in good faith when the transactional parameters and the bargaining power are stable. Contrary to the Restatement Comment quoted above, this should be true irrespective of the level of detail in the preliminary agreement or the ease with which the agreement can be "completed" with default terms that the court can supply.

At the same time, as we discussed in part II, the indifference result relied on several important assumptions, including the assumption that the transactional parameters and the relative bargaining power to stay constant throughout the contract formation. In cases in which the circumstances deviate markedly from these assumptions, the courts may wish to depart from the no-enforcement default. When one party's bargaining posture gets weaker in the later stages of negotiation—due, for instance, to disclosure (or discovery) of information or reliance investment—lack of initial commitment and complete bargaining flexibility can produce an inefficient outcome for the contracting parties. Thus, when such assumptions do not hold, the court can improve efficiency by reducing bargaining flexibility or indirectly helping the parties solve the problems of commitment.

For instance, suppose, as we saw in Part II.B, the seller's bargaining position gets weaker in the second stage (by $k \in [0, \infty)$) and the buyer cannot commit to certain quality level in the

Contracts §205 cmt. a (citing UCC §2-103(1)(b) for the definition of "good faith"). Whether such a "good faith" obligation applies to a preliminary negotiation is an open question since the obligation is predicated on an enforceable agreement. For instance, if the parties were to initially enter into an enforceable agreement and subsequently attempt to modify that agreement, good faith (or similar "fair and equitable") obligation applies. See UCC §2-209 cmt. 2 (stating that modifications must satisfy the "good faith" test).

²⁸ While not declaring a preliminary agreement to be enforceable, the court, under this standard, is imposing an obligation to negotiate in good faith, even when the parties may not have expressly imposed such an obligation in the preliminary agreement. See, e.g., *Copeland v. Baskin Robbins*, 96 Cal. App. 4th 1251, 117 Cal.Reptr.2d 875 (Ct. App. 2002). In the case, *Copeland and Baskin Robbins* agreed to purchase and sell an ice-cream manufacturing plant. Baskin Robbins broke off the negotiations before they could agree upon other important terms of the deal, such as the flavors, quantity, and price of ice cream, with which Copeland will supply Baskin Robbins. The court ruled that the preliminary agreement (a letter sent by Baskin Robbins to Copeland), though not a full binding contract, can be interpreted as an agreement to negotiate and, if Copeland can show that Baskin Robbins has breached that agreement, Copeland is entitled to recover reliance damages (and not full expectation damages). See also *Teachers Ins. & Annuity Ass'n of Am. v. Tribune Co.*, 670 F.Supp. 491 (S.D.N.Y. 1987) (preliminary agreement requiring parties to negotiate in good faith).

initial stage. This may produce inefficient contract terms or may even prohibit the parties from realizing any contractual surplus, particularly when the seller anticipates her worsening bargaining posture and that she will be unable to realize even her outside reservation value. While negotiating over all the terms in the initial stage may be infeasible due to complexity, when the problems of changing bargaining position is an issue, the court can address the problems caused by changed bargaining parameters, by supplying default terms to restore some commitment power to the parties. These might be the prevailing “market” terms in the industry. In the example in Part II.B, supplying the “market” terms may be tantamount to setting up the maximum level of quality (\bar{q}) that the buyer can demand in the second period.

Trying to solve the hold-up problem using default (or “market”) set of terms requires the default terms to not deviate too much from the optimal terms.²⁹ If this is not the case, rather than trying to directly control the terms of the contract, the court can alternatively restrict the bargaining flexibility through the imposition of the duty to negotiate in good faith, especially on the party with the superior bargaining position. From our example, such a duty, for instance, can be interpreted as an obligation on the buyer not to deviate too much from the market terms (\bar{q}) or, if she were to do so, supply valid justifications for such deviation. Alternatively, the duty can be interpreted so as to restraining the buyer’s freedom from extracting too much rent from the seller, for instance, by obligating the buyer to guarantee the seller’s ex ante outside reservation value of r_s . This latter approach may be more attractive when the terms of the deal are more difficult to verify than the profits from the deal. One might think of the court’s role in supplying the “market” (default) terms as consistent with the concepts of “fair dealing” and “commercial reasonableness,” while demanding objective justifications for any deviation as being consistent with the concept of “good faith.”³⁰

Conclusion

[To be written]

²⁹ For instance, when courts enforce a preliminary agreement (that only contains a price term) based on $\bar{q} \neq q^*$ and the contracting parties anticipate this, unless they revisit the price term in the second stage, they may be unable to adopt q^* in the second stage. With the price term fixed, because $v'(q) > 0$ and $c'(q) > 0$, there is no Pareto improving solution to \bar{q} . From our example with symmetric information, in equilibrium, the buyer ends up offering p to the seller in the first stage, such that $p - c(\bar{q}) = r_s$ and the default non-price term ends up controlling the transaction: the default terms become “sticky.” Even with the “sticky” default terms, if the parties have the flexibility of restructuring the negotiation sequence, in the presence of inefficient defaults, they may decide to negotiate on the non-price terms first so as to maximize the transactional surplus.

³⁰ Under the UCC’s definition of “good faith,” using the “market” non-price terms and providing justifications for any deviation will be consistent with the “good faith” obligation. See *supra* note 23. In *Empire Gas Corp. v. American Bakeries Co.*, 840 F.2d 1333, 1340-1341 (7th Cir. 1988), a case dealing with the issue of whether the “good faith” obligation is breached when a buyer demands zero unit under a requirements contract, Judge Posner ruled that not providing any reason for demanding zero unit from the seller is an evidence of bad faith.