

## Ex Post (In) Efficient Negotiation and Breakdown of Trade<sup>†</sup>

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The last decade has seen a growth of new approaches in contract theory that go beyond the traditional models of complete and incomplete contracting to incorporate some of the most prominent psychological biases when modeling the behavior of contracting partners. Many of the traditional contracting models have been expanded to incorporate behavioral dimensions such as loss aversion, time inconsistency, or over-optimism, which allows researchers to more realistically explain the observed contracting behavior in the economy.<sup>1</sup>

The property rights and incomplete contracting literature has only very recently started to embrace these new extensions. One of the central building blocks of incomplete contracting theories is the assumption that parties to a contract will always engage in ex post efficient renegotiation in the case of (un)foreseen shocks (Hart and Moore 1988, 1990). As long as the valuation of the good is higher for the buyer than the seller, mutually beneficial trade should occur. However, the risk that contracting partners will extract surplus in renegotiations (hold up) leads to underinvestment ex ante, especially when investments are relationship-specific. While these models have been very influential, several recent theories have raised doubts about whether it is a reasonable assumption that ex post renegotiation will always reach efficient outcomes. Hart and Moore (2008) and Hart (2009) argue that contracts act as a reference point for the feelings of entitlement of contracting parties. They show that rigid contracts (fixed price) work well in normal times. However, when a

bad shock occurs and renegotiation becomes necessary, the side that has to move away from the anticipated best outcome will ex post feel aggrieved. The aggrieved party will engage in an action that hurts the other side, which is impossible to prevent contractually. As a result, rather than negotiating, parties might in some cases just not engage in trade. Herweg and Schmidt (2012) take a somewhat different approach and propose that buyers and sellers are loss-averse, and the contract serves as a reference point for the ex post outcomes. Since a party evaluates a worse-than-contracted term (e.g., a drop in price for the seller) as a loss, parties are reluctant to compromise and renegotiate contracts optimally due to loss aversion.

These frictions in (re)negotiation might affect the allocative efficiency of contracts, distort market clearing prices, and account for some part of the price rigidities that have been found in product markets. For example, Kahneman Knetsch, and Thaler (1986) conduct surveys and find that individuals consider it unfair for firms to exploit shifts in demand by raising prices.<sup>2</sup> This might in turn lead to price stickiness, especially on the upside, since sellers do not want to be seen as price gouging.

Despite the importance of examining how contracting parties renegotiate contracts in the face of shocks, the empirical evidence is limited. To test these theories and understand real contracting outcomes, we developed a new audit technology where we engage in actual transaction with contracting partners. This approach allows us to control dimensions of the deal and the contract that are usually unobservable, such as the specificity of the contract, the bargaining power of the parties, or even the characteristics of the people who are matched in a contracting situation. More importantly, we can randomize

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<sup>1</sup> See Koszegi (2014) for an excellent overview of these new theories.

<sup>2</sup> See also Banerjee and Duflo (2000); Blinder et al. (1998); Fehr and Schmidt (1999); and Rotemberg (2005) for a discussion on importance of implicit contracts between firms and their customers.

along these dimensions in order to provide robust tests.

This is an important innovation since the empirical evidence in this area has been hampered by the use of secondary data that does not lend itself easily to this analysis. One is concerned about endogenous matching of contract partners on unobservable dimensions and selection bias since only transactions that get completed are in the data.<sup>3</sup>

In a series of papers, Iyer and Schoar (2012 and 2014) document the two sides of the hold up problem: we first investigate to what extent transacting parties are willing to engage in hold up when given the opportunity. Second, we test how parties respond when faced with the threat of hold up. This second dimension allows us to see if businesses fear being held up by their customers. In both cases we find very interesting dynamics: Outright hold up appears to be relatively rare and seems usually mitigated by fear of reputation costs and social norms against such price gouging. However, while contracting parties do not engage in hold up, we also find that the reluctance to engage in renegotiation sometimes leads to inefficiencies. That is, due to the fear of being seen as holding up the buyer, the seller does not initiate a renegotiation (foregoes efficient renegotiation), leading to a breakdown of trade. Below, we briefly describe the experiments we run to examine renegotiation among contracting parties.

In the first experiment, Iyer and Schoar (2014), we use the setting of the tailoring industry in India to examine whether there is a breakdown of trade due to inefficiencies in renegotiation. Auditors act as customers and place an order for a garment to be tailored. A useful feature of the tailoring market is that once the order has been placed, most of the bargaining power is with the tailor, since they can hold on to the cloth. To induce the need for (re) negotiation, we have different treatments that vary in the type of urgency. The auditors either convey upfront that they have an urgent need for the garment to be stitched within one day (upfront urgency) or alternatively, the auditor initially places a normal order but then returns to the

store the same day to ask for expedited stitching within one day due to an unforeseen emergency (in-between urgency). Introducing urgency affects the tailors in two ways; first, the costs to meet the urgency are higher (both in the upfront and in-between urgency), as tailors have to rearrange their schedules or have their employees work overtime to fill the request. Second, in the treatment with in-between urgency, the bargaining power of the tailor is higher because she has the cloth for the order and could refuse to return it (claiming that it has already been cut).

We find that tailors in general do not initiate a renegotiation to extract surplus even though they have higher bargaining power in the in-between case. Tailors either agree to fulfill the order with no price increase or refuse the order altogether. However, interestingly, (in another set of treatments) when auditors initiate a renegotiation and offer a higher price in case the tailor refuses the urgent order, we find that tailors are willing to accept the urgent order. Thus, tailors refuse to meet the urgent order unless the auditor proposes a higher price. We find that results cannot be explained by capacity constraints (high-reservation value) of tailors or low-reservation value of the urgency for customers. In fact, when we partner with tailors to understand the behavior of actual customers, we find that customers in the marketplace who have an urgency do not offer additional money themselves. However, when the tailor demands additional money for the urgency, customers agree to pay but they complain about having to pay extra. Thus, even though they agree to pay the additional money for the urgent order, customers feel "aggrieved." The results suggest that tailors often do not ex post efficiently renegotiate and they would rather allow trade to break down than to be seen as taking advantage of their customers. This suggests that the tailors perceive the cost of aggrieving one's customers as very high.

In a second step, we investigate the other side of the contract relationship to examine whether sellers in an economy like India expect buyers to engage in hold up behavior. Or whether there are mitigating forces, such as reputation or social norms that support an equilibrium with low levels of hold up. To examine this question, Iyer and Schoar (2012) conduct a second experiment in the market for pens and stationary goods in Chennai. The main idea behind the experiment is to examine how contracts are structured in a

<sup>3</sup>There is also a growing experimental literature that studies contracting and bargaining in laboratory settings (see, for example, Fehr, Hart, and Zehnder 2009 and 2011; Hoppe and Schmitz 2011; Bartling and Schmidt 2014).

setting where enforcement of contracts is weak and the seller has to make relationship-specific investments.

We again used trained auditors who mimic average shoppers in the market to negotiate and execute real transactions for bulk pen purchases with wholesalers. But in contrast to the prior experiment, this time the seller is exposed to the risk of hold up from the customers, since the seller is asked to make upfront a relationship-specific investment. To exogenously vary the level of relationship-specific investments wholesalers are required to make, we randomly assign two different types of pens to be ordered. Half of the orders are for generic pens (“plain pens”), which are easy to resell in the market. The other half are orders for customized pens (“printed pens”) where the wholesaler is asked to print a specific logo on the pens. Printed pens require a greater relationship-specific investment from the wholesaler, since once the pens are procured and printed, their outside value is essentially zero. Therefore the wholesaler faces the risk that once the printing is done, the shopper might not pick up the goods (breach risk). A related risk is that the shopper might return but try to renegotiate a lower price *ex post* after the wholesaler has already printed the pens.

Interestingly, we find that wholesalers use simple contract provisions to mitigate these risks, in particular, upfront payments. However, the absolute *level* of the upfront payment that wholesalers demand for printed pens is relatively low. On average, the upfront payment only covers about 40 percent of the production costs, which exposes wholesalers to a large loss if the shopper tries to renegotiate the contract *ex post* or breaches it altogether. At the same time, wholesalers do not charge a higher price (i.e., a price premium) for the printed pen orders compared to the generic pens. The results suggest that upfront payments are used as a mechanism to screen customers who are likely to breach the contract. However, wholesalers are not concerned about renegotiation.

Finally, we also try to renegotiate the contract and demand a lower price once the printing is done. We find that wholesalers are willing to renegotiate at a significantly higher frequency for printed pens. However, in a substantial number of cases we find that wholesalers refuse to renegotiate and are willing to take a loss on the order of printed pens. This again suggests that

the average prevalence of renegotiation in the marketplace must be low; otherwise, the wholesalers will not be able to break even.

While both breach and hold up have negative consequences for the seller, customers seem more willing to engage in breach even when they are bound by social norms and reputation concerns not to renegotiate. What can explain this type of differential behavior? The difference seems to be that one constitutes a sin of omission rather than commission. We conjecture that reputation concerns and social norms are not as effective in preventing contract breach due to the lack of social context when a customer does not return. In contrast, deliberately holding up the counterparty is more easily observable as a strategic action and, as such, seems to be morally less acceptable (or socially more uncomfortable).

Overall, the results suggest that contracting parties in general are reluctant to engage in hold up. But the flip side of the result is that many efficient renegotiations of contracts also do not happen for the fear of being seen as extracting surplus. These results suggest that frictions in renegotiation can have real consequences for allocative efficiency of contracts. The results also highlight that while norms of fairness and reputation concerns could help sustain transactions in settings where contracts are primarily incomplete (for example, in countries with weak legal enforcement), these mechanisms could also lead to distortions due to reluctance by contracting parties to engage in efficient renegotiation due to reputation concerns.<sup>4</sup>

The results so far suggest that there can be *ex post* inefficient breakdown of trade. However, there are still many open questions. While the results suggest that there are *ex post* distortions, this equilibrium could be efficient from an *ex ante* perspective. For instance, if customers know that they will not be taken advantage of, it could ensure much bigger participation in the market *ex ante* even for people who are not familiar with the pricing or renegotiating standards. A lot more research has to be done to map out the full extent of how social norms, behavioral biases, and reputation concerns affect the behavior of contracting parties in real markets.

<sup>4</sup> See Guiso, Sapienza, and Zingales (2004, 2006) for the role of social capital in financial development.

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