A COMMITMENT MECHANISM TO ELIMINATE WILLFUL CONTRACT LITIGATION

Osnat Jacobi and Noam Sher [*]

This paper concerns companies that sell commodities and are in their initial stages of formation and growth. Such companies will often face severe difficulties due to the banking system's unwillingness to finance their activities before they are able to develop sufficient credit histories. When faced with a loss contract, such a company may prefer to breach and litigate simply in order to gain time before having to pay off its debt, thereby preventing *immediate* insolvency. We have designed a new financial tool to eliminate this incentive to willfully litigate. Under this mechanism, the seller undertakes an obligation to pay a bank the amount of the buyer's damages if the seller does not deliver the good on delivery day in accordance with the contract and law. The bank, in turn, undertakes to pay the buyer the amount of her damages if received by the bank. The effect of this mechanism is to shift the buyer's entitlement to the bank. This increases the seller's cost of willful litigation: if the seller chooses to breach he will prefer paying the buyer's damages to the bank in order to avoid any indication of default on the bank's records, since such an indication will affect his credit rating and access to financial markets in the future. In addition, the mechanism gives the seller an incentive to breach the contract if and only if the contract becomes ex-post inefficient. We also demonstrate ex-ante benefits from the mechanism: by eliminating the risk of willful litigation, established buyers may be willing to raise the contract price, thereby increasing the probability of newcomers' survival. The mechanism also enables the banking system to screen new companies according to their quality, and use their contracts as collateral. Ultimately, this can result in the newcomer achieving financial stability earlier.

INTRODUCTION

Every year, hundreds of thousands of small businesses try to enter the goods markets, facing severe financial hardships that make survival difficult, if not impossible. Liquidity constraints faced by newcomers can make litigation – designed solely to gain time (until the end of a lengthy litigation process) before having to pay off their debt – an attractive option. We denote such litigation as *willful litigation*. In this paper we discuss the sources of the credit crunch faced by young companies, and show how such companies benefit from willful litigation. We design a new financial tool that eliminates the incentive to willfully litigate and show that by adopting this tool, established buyers may be willing to raise the contract price, thereby increasing the probability of newcomer survival. We begin with an example that demonstrates how a new company can benefit from willful litigation.

     Sonomed Technology, Inc. (hereinafter: Sonomed), formed in 1983, a developer and manufacturer of ultrasound devices, entered into a distribution

agreement with Bausch & Lomb (hereinafter: B&L) in 1984.[1] According to the contract B&L paid Sonomed $500,000 as a prepaid royalty for the right to exclusive worldwide distribution of these products. The parties also agreed that if Sonomed fails to make timely delivery, B&L has the right to manufacture the product themselves.

Indeed, in 1987, Sonomed failed to supply B&L the quantities required, and it turns out that they also sold units to other end-users. When B&L notified them that, as per the contract, B&L will begin producing the products, Sonomed sued B&L for anticipatory breach. The court completely justified B&L's actions, and determined that there was no case for anticipatory breach. They required Sonomed to return the $500,000 prepaid royalty (plus a sum of $55,000 agreed upon special damages) plus prejudgment interest for failure to uphold the exclusivity clause.

At face value, the fact that this case was brought to court is perplexing. The facts are simple and the legal analysis seems to be straightforward. Given what happened, it seems that is would have been in Sonomed's best interest to simply return the royalty to B&L, thereby avoiding payment of the special damages and the interest payments, not to mention the legal costs. However, when considering Sonomed's predicament an alternative explanation presents itself. Recall that Sonomed was a very young company, a newcomer, still trying to establish itself in a highly competitive market. As such, the royalty payment of $500,000 was most likely instrumental in allowing the company to develop during its growth period, and returning the money so early in the company's life might have been fatal. If, indeed, this is the case, it is possible that the suit was a way to push off the payment until the end of court proceedings. And, indeed, the trial lasted five years, and Sonomed paid this sum in 1992 instead of in 1987 when the breach occurred.

Empirical studies have demonstrated that the large majority of contract litigation between companies involves small businesses,[2] among them newcomer companies that have been in business for less than seven years.[3] One explanation of this finding involves financial stability. An established company that finds itself in a loss contract will tend, nevertheless, to perform the contract in order to maintain its reputation. A young company, however, may find itself in a situation in which performance of a loss contract threatens its' very existence, partially because it may have limited access to credit. In such a case the firm may prefer breaching and hope that the court procedure

---

[1] See Bausch & Lomb, Inc. v. Sonomed Technology, Inc., 780 F. Supp. 943; 1992 U.S. Dist. LEXIS 215; 17 U.C.C. Rep. Serv. 2d (Callaghan) 430.

[2] A comprehensive survey, published in the 1990s, shows that the 2000 largest companies in the United States (measured using total assets and sales) are involved in only 21% of all contract litigation; the other 79% involve private individuals and small businesses. See Dunworth and Rogers (1996). For a definition of *a small business*, see *infra* note 7. For further discussion of small and large firms' involvement in litigation, see *infra* Section 1.2.

[3] Only half of new businesses survive more than seven years. See *infra* note 12 and the accompanying text. For the economic characteristics of newcomer companies, see *infra* Section 1.1.

will buy them sufficient time to establish themselves in the market, even if the result of the court procedure is known from the start. Note that such litigation imposes a negative externality on the buyer since, in essence, it involves an involuntary loan from the buyer to the seller for the entire span of the trial.

In this article, we suggest a new financial tool that the parties can choose to adopt into their sales contracts, which will guarantee that the promisor will not breach a contract simply in order to postpone financial outlays to a later period. Under this mechanism the seller undertakes an obligation to pay a bank (chosen by the parties) the amount of the buyer's damages if the seller does not deliver the good on the delivery day in accordance with the contract and the law. The bank, in turn, undertakes to pay the buyer the amount of the buyer's damages if and when received by the bank unless the seller notifies the bank that he plans on suing the buyer, in which case the bank will hold the funds until the court rules.

Notice first that the mechanism allows the seller two possibilities: to perform the contract or to breach. If he chooses to breach he must pay the bank the damages of the buyer. The effect of this mechanism is to move the buyer's entitlement to the bank. This increases the cost to the seller from litigation; instead of just alienating a single buyer with whom the seller may never again deal, the seller will be hurting his reputation vis-à-vis the banking system with whom the seller hopes to have a long-standing relationship.

The reason this mechanism is likely to work stems from the fact that credit information about individuals and firms is widely and freely shared between financial institutions in developed economies. As a result, moving the buyer's entitlement to the bank means that any newcomer firm that chooses to breach and does not pay the damages to the bank will harm its credit rating and may jeopardize its ability to borrow at attractive interest rates in the future.[4]

In this situation, small firms will likely choose not to go to court just in order to gain time, and in truly dire situations will prefer to declare bankruptcy and continue operating under reorganization rather than take the issue to the courts. With this, if the young company has a justified reason to litigate, it will notify the bank to hold the payment until the court rules on the issue.[5] Therefore, the seller's decision whether to breach will be efficient; since the payment to the bank is pre-determined by the parties, he will choose to breach if and only if the cost of performance of the contract is greater than the pre-determined damages.

Finally, the willingness of a newcomer-seller to contract under such a mechanism signals to the buyer that she has no intention to litigate willfully. Therefore, we denote this mechanism *a "commitment" mechanism*.[6]

---

[4] For further discussion of information sharing by the banking system and its effect on borrowers' reputation and ability to finance their business, see *infra* Section 2.4.

[5] For further discussion, see *infra* Section 2.2.

[6] *Commitment* means, in Schelling's well-known words (Schelling, 2006:1), "becoming committed, bound, or obligated to some course of action or inaction or to some constraint on

Returning for a moment to the B&L-Sonomed litigation, had Sonomed given a bank an obligation to pay it $500,000 if the exclusivity clause is breached, the issue would almost certainly never have reached the court. Rather, one of two eventualities would have occurred: if Sonomed's profit from selling through additional channels was greater than the $500,000 obligation it would have breached, and if not, not. If the $500,000 reflects the value of exclusivity to B&L, then the breach decision under the conditions stated above is efficient.

Note that, while we are involving the banking system in a contract between two companies, the bank itself is not really involved in the transaction; rather they simply act as a clearing house. Namely, the bank's obligation is to pay the buyer the amount of the buyer's damages only if received by the bank. Hence, this mechanism imposes no risk on the bank.

Notice how this mechanism differs from other known tools. In principle, the optimal way to prevent willful litigation is by using a tool that obligates the seller to pay the buyer's damages *immediately* if he chooses to breach. Existing financial tools such as letters of credit or bank guaranties will result in immediate collection of the buyer's damages from the seller's account, hence they also eliminate willful litigation. However, these tools impose high risk on the bank, and, therefore, banks charge high fees and impose collateral requirements that are impossible for a newcomer to meet. Using the proposed mechanism places no risk and few costs on the bank, and therefore there will be no need for collateral and the bank fees for such a service are expected to be affordable to all.

In the second part of this article we will demonstrate that this mechanism can have an interesting and important ex ante effect on the contract price. Any established firm contracting with a newcomer is aware of the possibility that the latter will run into difficulties and they will end up in litigation. This risk lowers the price the established firm is willing to pay for the goods. As a result of the mechanism this risk will be greatly mitigated, and the ex-ante contracting price could rise, which could result in the newcomer firm becoming established more quickly. By involving the banking system, the proposed commitment mechanism could also effectively screen newcomer promisors according to their specific risk and quality levels, thereby allowing promisees to avoid entering a transaction with promisors that face a high bankruptcy risk, and can incentivize the bank to finance promisors that face low bankruptcy risks. This can also make it simpler for high-quality promisors to enter the goods markets and integrate in them successfully. This issue will be developed below.

The rest of the article is organized as follows. Section 1 discusses the small business literature and the rationale for willful litigation and excessive

---

future action. It is relinquishing some options, eliminating some choices, surrendering some control over one's future behavior. And it is doing so deliberately, with a purpose. The purpose is to influence someone else's choice".

promisor breach of contract. In Section 2 we present the commitment mechanism and demonstrate how it achieves its two ex-post goals. In Section 3 we show how it achieves the three key ex-ante goals discussed above. Section 4 discusses whether to implement the proposed commitment mechanism by mandatory or voluntary means. We further compare the proposed commitment mechanism to possible alternative tools such as bank guarantees. Finally, in Section 5, we present our conclusions and recommendations.

1. A REVIEW OF THE LITERATURE, THE APPLICABLE LAW AND AN EXAMPLE

1.1 The Economics of Small Businesses

We consider *small businesses*[7] that sell commodities and specifically *newcomer companies* - firms in their initial stages of formation and growth.[8] Small businesses and particularly newcomers face severe financial problems of raising capital as we further present.

Small businesses account for 99% of all businesses and about half of the private-sector economy and, hence, their importance to economic growth is crucial. For example, the Economic Report of the President (2011:26-7)[9] states that supporting small businesses is important since they serve as "an essential building block to economic growth and prosperity, in part because entrepreneurs create a disproportionate share of net new jobs in the U.S. economy," and create a stronger environment for entrepreneurship.

Reports submitted to Congress and to the President on the availability of credit to small businesses show that smaller and younger firms' access to credit is poor. For instance, the Board of Governors of the Federal Reserve System

---

[7] The United States Small Business Administration (hereinafter: SBA), authorized by the Small Business Act [Public Law 85-536, as amended], regularly publish the definition for *A Small Business*. *A small business* is defined, vary from industry to industry, either in terms of the average number of employees over the past 12 months, or average annual receipts over the past three years. Inter alia, a small business should be a concern that is organized for profit, and is independently owned and operated. See SBA (a). For most manufacturing industries, with many exceptions, the criterion is 500 employees. See SBA (b); SBA (2012).

[8] Clearly, entrepreneurship exists in the field of intellectual property, as well as in the field of commodities. Overall, the reluctance of the banking system to give substantial credit and uncollateralized loans to new companies applies to the latters whether they sell goods or intellectual property. However, in recent decades we are witness to the development of venture capital funds specialized in financing start-ups in the high-tech industry. Therefore, the difficulties facing newcomer that sell commodities and discussed below, do not apply to them.

[9] The annual report is written by the Chair of the Council of Economic Advisers, established by Congress in the 1946 Employment Act (and amended by the 1978 Full Employment and Balanced Growth Act), signed by the President and submitted to Congress. Its goal is to provide an analytical overview of the nation's economic progress and serve as an important tool for presenting the administration's economic policies.

(2007) reports that "[t]he finding that smaller and younger firms have their loan applications denied more frequently is consistent with the conventional wisdom that these firms are riskier, have shorter credit histories or less collateral to pledge as security, and are more informationally opaque."[10]

As to newcomers, Petersen and Rajan (1994) argue that the banking system's reluctance to let them borrow even at high rates results from asymmetries in information between these firms and potential public investors. "Since the youngest firms in our sample do not have much of a track record, a potential lender is uncertain about the competence and trustworthiness of the management, as well as the kinds of investment opportunities that could arise. If lenders remain at arm's length, management can indulge in pet projects, shift risk toward the fixed claim creditors, or otherwise misuse the borrowed funds." Some scholars (for instance, Diamond, 1991) conclude that information asymmetries between the newcomers and banking system are the reason why the former can rarely borrow in public capital markets.[11]

Consequently, these companies rely mainly on private sources such as owner equity and loans from employees and family members, and less on loans from standard credit markets. As firms grow, they gain access to the debt market through the banking system and finance companies (Berger and Udell, 1988). According to SBA data, a third of new employer establishments fail within two years of inception, and 56% fail within four, at least partly due to limited access to credit (Knaup, 2005).[12]

Furthermore, limited access to banking credit causes interest rates applied to newcomers to be substantially higher than published rates. Therefore, even if the legal system awards prejudgment interest, it is likely that newcomers would gain from litigation allowing them to push off their debt until the end of legal proceedings.[13] We turn to develop this argument next.

1.2 Small Businesses' Involvement in Litigation

Empirical studies conducted over the past few decades have shown that small business in general are heavily involved in litigation in Contract Law (Dunworth and Rogers, 1996; Klemm Analysis Group, 2005). These studies show that most litigants are individuals or small businesses (firms that employ

---

[10] See also, SBA (2009).

[11] See also, Board of Governors of the Federal Reserve System (2007).

[12] Bartelsman et al. (2004) analyzed data from industrialized and developing countries regarding the process of market entry and exit, namely *creative destruction* and found that about 20% of newcomers in the entire US business sector fail within two years, about 40% within four, and less than 50% survive beyond the seventh year. For further discussion of newcomers' financial difficulties, see *infra* Section 3.3.1.

[13] Klemm Analysis Group (2005) conducted studied small business litigation on behalf of SBA and estimated that they were involved in 36 to 53 percent of filed civil cases.

fewer than 500 workers).[14] Large firms, on the other hand, tend to avoid court proceedings; rather, they prefer to settle out of court (see, for instance, Hurst, 1980-1981; Galanter, 1983).[15] This finding supports Stuart Macaulay's well-known finding that large businesses prefer not to bring their disputes into the courtroom in order to avoid being seen as petty and inflexible. Macaulay (1963) showed that the business culture is reputation based, and litigation harms their reputation and presents them in a negative light. Small businesses, however, are more inclined to turn to the lower courts in order to solve contractual disputes. Thus, a study (Dunworth and Rogers, 1996) of contract litigation in New York during the period 1971-1991 showed that Fortune 500 companies during that period (1905 firms) were involved in only 21% of all contract litigation, despite being the source of 65-80% of the country's GDP in any given year.[16]

When the prejudgment rate of interest differs from the market rate (as measured, say, by the prime rate), pushing off payment until the end of a lengthy trial period can yield a substantial profit to the eventual loser, roughly equal to the difference between the interest rates times the size of the award times the length of the trial. In his study, Nelson (1990) used this gap between interest rates to explain the significant increase in litigation during the 1970's. Thus, for example, while the prime rate rose from 6.75% in 1969 to 21.5% in 1978, the court awarded interest rate during this period fell from 7.5% to 6%! As Nelson (1990:442) states: "The most striking fact, however, is that, whereas debtors prior to 1970 almost always lost money if they postponed resolution of a dispute, debtors after 1970 always earned more interest on the market than the law required them to pay." When we combine this with the fact that court proceedings can often be very lengthy, postponement of payment via use of the court system can be quite profitable.[17]

Moreover, companies and individuals for which their subjective discount rates are higher than the market rate, this gain is even larger, as we explain below.

---

[14] For a definition of a *small business*, see *supra* note 7.

[15] Hurst (1980-1981: 421) noted that "available data showed no great number of suits in which an observer could identify uppermiddle-class individuals or business firms of substantial size on both sides of disputes, either in state or federal courts"; Galanter (1983:17-8,22) noted that "the larger the business firm and the more dependent its interests on long-term confident, harmonious relations with a network of others in the community - investors, credit sources, suppliers, customers, elected officials - the more likely it will shun the publicity that may attend lawsuits". Also see Blegvad (1990); Bernstein (1992).

[16] The GDP figure is for the period 2000-2011, and can be calculated using the data at http://money.cnn.com/magazines/fortune/fortune500/world-economies-interactive/.

[17] Data on United States Federal courts shows that the median period of time that passes between filing a suit and the start of a trial is 21.6 months, and the median length of the trial until the end of the dispute (including those cases that end in settlement) is an additional 8.7 months. This does not include appeals. See Klemm Analysis Group (2005:3).

1.3 Excessive Breach of Contract and Deviation from Contract Consent

1.3.1 The Rationale of Ex-Post Consequences of Renegotiation and Trial

As a rule, breach of a loss contract and litigation should not be a viable solution for a newcomer company that finds itself in financial difficulty. Litigation is expensive. Lawyers and expert witnesses must be paid, court costs can be substantial, and if the litigation is unjustified the breaching party will have to pay damages, including court-awarded interest.

As discussed above, Nelson (1990) showed that if there is a gap between the prejudgment interest rate and the market rate, the obligor can profit from postponing payment. Jacobi and Weiss (2013) show that even if such a gap does not exist, an incentive to litigate may still be present.

Accepted wisdom in contract theory (Shavell, 1980 and 1984) is that if the court can accurately measure the innocent party's damages from the breach, the promisor will not breach unless he will retain a profit even after paying the court-awarded damages and all attendant costs. Such breach is efficient since the gain to the breacher is greater than the innocent party's profit from performance. What Jacobi and Weiss demonstrated is that when firms face financial difficulties their subjective discount rates will be greater than the court-awarded interest rates. As a result, when the promisor finds himself faced with a loss contract and he must choose whether to breach, he will compare the immediate cost of performance with *the present value* of the payment of damages in court (rather than simply comparing the nominal payments). As a result, a promisor with a sufficiently high subjective discount rate will often be able to benefit from breaching even if the contract is efficient. Thus, since a newcomer company is likely to have limited access to low cost credit markets, and, consequently, a high subjective discount rate, litigation may serve the function of a buoy allowing them to stay afloat.

1.3.2 Ex-Post Consequences of Renegotiation and Trial: An Example

To demonstrate the incentive a young company can have to breach a contract in order to gain the value of time, assume a contract between a young firm (the seller) and an established firm (the buyer). The value to the buyer from performance of the contract is 1000, the contractual price is 900 and after the contracting, the buyer discovers that his cost is 950. This is a loss contract, but it is an efficient contract. Under the standard analysis the seller would not breach this contract since in court he would pay 1000 (a loss of 100) while performance costs only 950 (a loss of 50). Assume now that the seller's discount factor is 0.6.[18] When he must decide whether to breach, he chooses

---

[18] A discount factor is the number which a future cash flow must be multiplied by in order to obtain the value today. A discount factor is said to be subjective if it depends on personal factors that affect the value of time to the party under consideration, but do not necessarily

between an immediate payment of 950 and a deferred payment of 1000, which has a present value of only 600. Therefore, he will prefer breaching the efficient contract. Next, we must consider whether the established firm can profitably offer the newcomer a price that will prevent this excessive breach. To find the answer to this question, we must consider the established firm's discount factor also, and ask whether, in present value terms for both parties, the loss to the buyer outstrips the loss to the seller. As shown in Jacobi and Weiss, such a side payment may not be available if the established firm's discount factor is greater than the new firm's discount factor, which is likely to be the case. Say, for example, that the discount factor of the established firm is 1 (the court-awarded interest rate completely compensates the established firm for the delayed payoff) then in renegotiation the established firm will never agree to a settlement of less than 1000 (either in court or through performance). Therefore, the buyer will not be willing to pay the seller to prevent the excessive breach. Next we present our solution.

2. THE PROPOSED COMMITMENT MECHANISM AND ITS EX-POST IMPLICATIONS

2.1 Timeline

We assume that the costs of production are materialized in time T_1, and that the promisor has enough time to manufacture the good and deliver it by T_2, the contractual delivery date. The timeline the promisor and promisee are facing is presented in *Figure 1*:

---

affect other parties in the same manner. A discount rate reflects the reduction in value because of the passage of time, while a discount factor reflects what remains after the time has passed. Thus, if the annual discount rate of an individual is 10%, his annual discount factor is 0.909 (1/(1+0.1)).
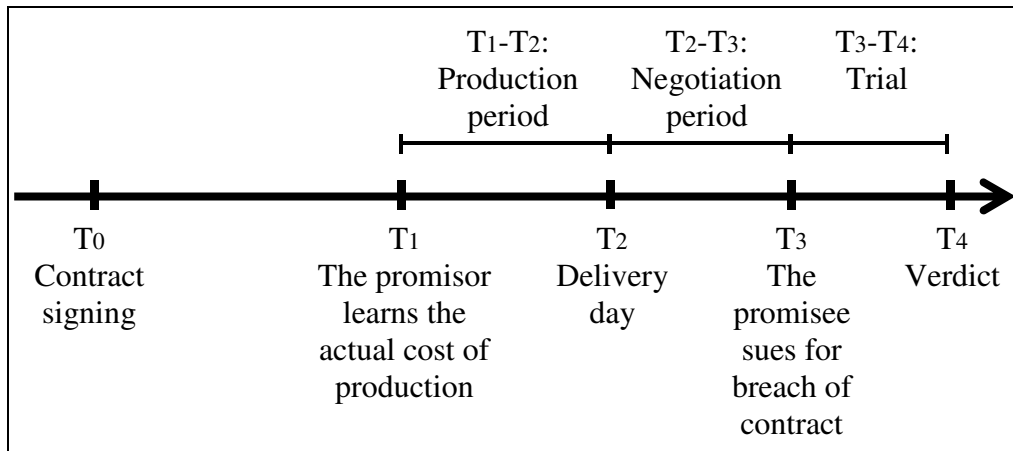
Figure 1: Timeline

The parties sign the contract in T_0, the value for the promise is known ahead of time but there is uncertainty regarding the seller's costs. These are distributed normally with an expected cost known to the parties. The costs are materialized in T_1, when the promisor learns the actual costs of performance. The promisor then decides whether to perform in T_2 or breach. If he chooses the latter, the promisee files for a breach of contract in T_3.

2.2 The Mechanism

The mechanism we suggest is as follows:

1. The seller undertakes an obligation to pay the bank the amount of the buyer's damages if the seller will not deliver the good on the delivery day in accordance with the contract and the law.

(a) The buyer's damages will be set as the difference between the market price at the contractual time of tender and the contract price or, if such a market price does not exist, as the buyer's lost profit due to the breach, equal to _____, plus any incidental or consequential damages of _____. The lost profit and incidental and consequential damages will be determined by the parties at the time of contracting.

(b) The parties may determine an earlier or later date for calculating the market price of the good.

2. The bank undertakes to pay the buyer the amount of the buyer's damages if and when received by the bank, unless the seller notifies the bank that he plans on suing the buyer, in which case the bank will hold the funds until the court rules.

The game proceeds as follows. When the seller learns its production cost (T_1) it decides whether to perform or breach (T_2). If it chooses the latter, it transfers the agreed upon damages to the bank. Unless the seller notifies the bank that it intends on litigating, the bank immediately transfers this fund to the buyer. If the seller notifies the bank that it intends to litigate, the bank will hold the funds until the court issues its verdict, and will transfer the funds according to the court ruling.[19] If the seller failed to deliver the goods and did not deposit the buyer's damages as prescribed, the bank will record the seller's failure to comply with its obligation. The parties may agree that the bank can give the buyer a copy of the bank's records.

We note, first, that the transaction does not impose any risk on the bank. As stated above, the banking system is wary of extending substantial credit and uncollateralized loans to new companies with unestablished credit histories. However, under the suggested mechanism the bank plays an almost passive role in that it transfers the damage payment from breach to the buyer *only if and when* it is received from the seller. Thus, as stated above, it simply acts as a clearing house. Therefore, we do not foresee any objection on the part of the banking system to taking part in such a mechanism.

The main advantage of the mechanism is that it completely eliminates the seller's incentive to litigate solely to gain time. As explained immediately below, there are instances in which the seller would prefer to efficiently breach the contract rather than perform it. In such instances, the effect of the mechanism will be for the seller to prefer to immediately pay the buyer's damages to the bank rather than litigate, thereby pushing off payment until court proceedings have been completed. This occurs because the buyer's entitlement has been transferred to the bank. Once the banking system becomes involved in the process, the cost of litigation to a newcomer seller rises. Instead of just alienating a single buyer with whom the seller may never deal again, the seller will be damaging his reputation in the banking system with which he hopes to have a long-standing relationship. As a result, he will damage his credit rating and ability to borrow at attractive interest rates.[20]

Furthermore, in truly dire situations, a newcomer seller will prefer to declare bankruptcy and continue operating under reorganization and creditor's settlement rather than take the issue to courts and jeopardizes his credit rating in the bank.

Notice that the mechanism allows the seller to either perform or breach. As a result of the way the mechanism is designed, the seller will choose to breach only when it is efficient to do so. If he chooses to breach he must pay the bank the buyer's damages. Since he will pay these damages to the bank immediately (and not after litigation) he will choose to breach if and only if his cost of performing outweighs the buyer's damages from breach. Thus, as

---

[19] For a discussion of justified causes for litigation by the seller, see *infra* Section 2.5.

[20] For further discussion of information sharing by the banking system and its effect on borrowers' reputation and ability to finance their business, see *infra* Section 2.4.

stipulated, his breach choice is efficient. Furthermore, in truly dire situations, a newcomer seller will prefer to declare bankruptcy and continue operating under reorganization and creditor's settlement rather than take the issue to courts and jeopardizes his credit rating in the bank.

There is an additional benefit from this mechanism above and beyond what can be achieved using the standard efficient breach condition. As discussed at length in the literature (Macneil, 1981:1039 and 1982:961), efficient breach decision depends crucially on the ability of the promisor to precisely calculate all of the damages that will be caused to the promise, including consequential damages that will largely result from the delay between the tender date according to the contract and the date on which the promisor will pay the damages after the court hands down its verdict. This could be both an extended and unknown period of time, and it is difficult to see how the promisor would be able to determine these damages in deciding whether to breach. In the proposed mechanism the payment sum is predetermined, and since the seller will have an incentive to pay-off his debt immediately, as explained above, damages will not accrue over time, and the problem is significantly simplified.

We must next ascertain how the parties will go about determining, in the contracting stage, the extent of the buyer's damages from breach. For this, we must differentiate between two cases: in the normal case there is a market for the good in question, and the buyer will be able to cover for the breach, and in the less common case the good is unique, so the buyer cannot obtain relief through the market (hereinafter: the bargaining case). In the former case, the mechanism determines that the buyer's damages will be set as the difference between the market price at the contractual time of tender and the contract price plus any incidental and consequential damages as determined by the parties at the time of contracting.[21] With respect to determination of the market price, Section 1(b) of the suggested mechanism allows the parties to choose a date other than the market price at the contractual time of tender. Note that the incidental and consequential damages stem largely from delays in performance, and can generally be easily evaluated by the parties, ex-ante.[22]

---

[21] Buyer's remedies for breach of contract are defined in the uniform commercial code (hereinafter: The UCC) §2-711-§2-716. The code enable several remedies (Section 2-711), inter alia, the buyer has the right to cover (Section 2-712) or to obtain damages for non-delivery (Section 2-713). Section 2-713 provides the market-price formula for damages measuring and Section 2-712 an adjusted formula for the case of buyer's cover. For a detailed analyzes of buyer's remedies for breach of contract, see Uniform Commercial Code (2013-2014:§2-711-§2-716); White and Summers (2010:272-340).

[22] Incidental and consequential damages are the subject of UCC §2-715. Section 2-715(1) lists many types of expenses that if reasonably incurred are included as "incidental damages" as follows: "expenses reasonably incurred in inspection, receipt, transportation and care and custody of goods rightfully rejected, any commercially reasonable charges, expenses or commissions in connection with effecting cover and any other reasonable expense incident to the delay or other breach". Section 2-715(2) provides that "consequential damages" resulting from the seller's breach include: "(a) any loss resulting from general or particular requirements

When the good in question is unique so that a good substitute is not easily attainable and, therefore, a price for an immediate substitute is not available, the mechanism allows the parties to determine the buyer's loss calculated using the lost-profit method, which takes into account the surplus value the buyer expected to attain from performance.[23]

It is reasonable to ask whether, in determining the lost profit, the buyer has a proper incentive for truth-telling. Put otherwise, does the buyer have an incentive to overstate the magnitude of his losses in the case of breach?

2.3 Truth-Telling

Schwartz (1990:375-6)[24] shows that in a competitive market and when parties bargain and are perfectly informed, promisees would not bargain for supracompensatory remedies and prefer to determine expectation damages in liquidated damages clauses. The reason for this preference is that the promisee's share of the contract gains is exogenously determined, and expectation damages lead only to an efficient breach of contracts, hence maximizing the parties' pie as well as the promisee's part.

Furthermore, Schwartz shows that even when parties bargain and are imperfectly informed promisees would not bargain for supracompensatory remedies and might even prefer undercompensatory remedies. If the promisee acts strategically and report higher value than its true value, then the outcome of the bargaining would be a higher contract price and a smaller profit for the promisee. However, if the promisee reports lower value than his true value, he might profit from his overstating, but this result holds if and only if the promisor has a relatively high bargaining power, meaning that he gains the lion share of the contractual pie. Therefore, only in this case, the promisee can profit from the contract's lower price more than he stands to lose from the lower damage payments. Thus, only in this situation, where most of the bargaining power is in the hand of the promisor, the promisee can profit and might report a value (V) lower than the true value. Since in our case it is plausible to assume that promisees have most of the bargaining power, promisees would not have an incentive to cheat.

---

and needs of which the seller at the time of contracting had reason to know and which could not reasonably be prevented by cover or otherwise". For a detailed analyzes of incidental and consequential damages, see Uniform Commercial Code (2013-2014:§2-715); White and Summers (2010: 308-13).

[23] Where the good is unique and there is no ascertainable market price for it, the court may accept contract's liquidated damages provisions, in conditions set out in Section 2-718(1) of UCC, which provides: "Damages for breach by either party may be liquidated in the agreement but only at an amount which is reasonable in the light of the anticipated or actual harm caused by the breach, the difficulties of proof of loss, and the inconvenience or nonfeasibility of otherwise obtaining an adequate remedy. …".

[24] Also see Bebchuk (1991:298-300).

We further show that the same basic argument applies here. In the bargaining case, by overstating the loss from breach, the buyer causes the seller to over-perform – perform the contract even when it is inefficient. In principle, this raises the expected cost of the contract to the seller, and consequently increases the price the buyer must pay at the contractual stage. It is straightforward to show that when the buyer receives the bulk of the surplus from the contract (as in our case where the seller is a newcomer), the gain in cases of breach is more than outweighed by the loss from the higher contractual price.

Returning to the numerical example above, $V=1000$ as before, but now assume that 90% of the time $C=800$ and 10% of the time $C=1050$. In addition, assume that given the players' identities, all of the bargaining power is in the buyer's hands, so the price would equal the expected cost to the seller. If the buyer reports the true value (1000), then the seller's expected cost equals $0.9 \times 800 + 0.1 \times 1000 = 820$ (note that if the cost is 1050, the seller breaches and pays the expectation value of 1000). The buyer, in this case, receives 1000 in all cases, so his profit equals his value from performance minus the contractual price: $1000 - 820 = 180$. Now consider what happens if the buyer claims that $V=1100$. In this case, the seller will always perform, and his expected cost and the contractual price will be: $0.9 \times 800 + 0.1 \times 1050 = 825$. The buyer's value from the contract is 1000 (since the contract is always performed), and his surplus will equal $1000 – 825 = 175$! Thus, his overstatement has in fact lowered his expected profit from the contract.

The same result holds if the promisee reports a value lower than her true value. Suppose the buyer reports $V=900$. Assume also that the seller cost varies as follows: 70% of the time $C=871.5$, 20% of the time $C=950$, and 10% of the time $C=1050$. Hence, in this example we have under-performance (since the seller chooses to breach when her cost of performance exceeds $V=900$, which now happens 30% of the time). In this case, the seller's expected cost and the contractual price will be: $0.7 \times 871.5 + 0.3 \times 900 = 880$. The buyer's expected value from the contract will be 970 ($0.7 \times 1000 + 0.3 \times 900$). As a result, the buyer's gain is only $970 – 880 = 90$! Compared to the situation when the buyer reports her true value and gains 180, it is easy to see that the buyer has an incentive to tell the truth.

2.4 The Bank's Role and the Reputation Effect

The rationale for involving the bank in this transaction is that it will increase the cost of willful litigation to the seller. This is achieved by virtue of the manner in which information is shared by different financial institutions, and the effect adverse information will have on the newcomer firm's reputation, as explained below.

We note that a newcomer is highly dependent on his reputation in the banking system with which he hopes to have a long-standing relationship. Small businesses usually borrow from one bank, making this dependency even

higher (Kallberg and Udell, 2003:456-7). Furthermore, loan officers of different banks informally transfer loan information between themselves, making it almost impossible for a small business to replace its lender in case of bad credit history (Brown and Zehnder, 2008:20).

In the last years, there is a huge growth in the *credit bureaus* industry – agencies that collect individuals' and businesses' loan information and sell it to their costumers – as well as in banks' systematic use of credit bureau reports in assessing loan applications (Brown and Zehnder, 2008:1). It has been empirically found that information sharing between lenders reduces lenders' selection costs by allowing them to more accurately predict loan defaults (Barron and Staten, 2003), and that it even disciplines borrowers to pay loans (Brown and Zehnder, 2007). Those finding demonstrate both the banks' incentive to buy credit bureau reports and the borrowers' incentive to persistently persuade their banks of their payment ability.

Do bank also provide loan information – particularly negative information – to credit bureaus, imposing high risks on his clients' reputation and future access to funding and related commercial transactions? In fact, they do, albeit in smaller rates where the competition over clients in credit markets is more intense (Brown and Zehnder, 2008:1). Therefore, it is expected that banks would regularly cooperate with the credit bureau industry and provide information about a newcomer's failure to pay expectation damages to the bank in a case of non-delivery. The case of a bank that has a large enough incentive to hold information about a newcomer's default is expected to be very rare. This incentive might exist only given intense competition over clients, and a promising newcomer that another bank may find appealing as a client. Furthermore, collusion between the bank and the newcomer is not expected, even where such incentive exists, since the buyer may oversight and report to the credit bureau industry the bank's non-cooperative behavior. Therefore, the bank would not be willing to jeopardize its reputation and will choose to cooperate.

In an exceptional case, where the bank has a strong enough incentive to take that risk, it means, for this newcomer, financial constraints are no longer an obstacle to survival and he can plausibly receive funding without the proposed mechanism. Furthermore, if the buyer still fears bank collusion with the newcomer in a specific case, a simple solution is available: she can require that the obligation would be transferred to her bank.

In the United States, the market for business loan information,[25] including small business credit reporting, is dominated by Dun & Bradstreet Corporation (D&B) that collect information, inter alia, on payment history of loans, found to be the most important factor in lenders' decisions, on bankruptcy proceeding filings, and on lawsuits and UCC filings. As mentioned

---

[25] In the United States there is also a consumer reporting industry (separate from the business credit information industry), dominated by the "Big Three" bureaus: Equifax, Experian and Trans Union. See Miller (2003:25).

above, small businesses usually borrow from one bank, making the creditor's task of checking the small business payments to his bank relatively simple (Kallberg and Udell, 2003:456-7). This information sharing system makes the loan information and other information collected by banks and credit bureaus crucial for businesses' survival. The proposed commitment mechanism designed to link the newcomer's purchase contract decisions to the bank with which he hopes to have a long-standing relationship and that can monitor his activities, and most importantly, to the market's information sharing system. This linkage to the information sharing system dramatically increases the newcomer's costs of willful litigation and of refusing the payment he undertakes to pay to the bank according to the proposed commitment mechanism. For the newcomer, those high costs are plausibly much higher than any expected gains from one-time willful litigation, making the commitment credible at negligible costs.

2.5 Contractual Issues

In a sales contract there are situations in which the seller has a justifiable cause to file a suit. For instance, in an impracticability of performance situation, a circumstance arises for which the seller has not taken the risk upon himself, and is therefore able be excused from the contract. As another example, Section 2-609 of UCC allows the seller to not deliver the goods if the buyer does not pay for them.

The proposed mechanism aims to prevent willful litigation, but not to undermine the seller's right to litigate when justified. Therefore, it allows the seller to notify the bank that he plans on litigating, and in such a case, the bank will hold the money transferred by the seller until after the court verdict.

3. THE PROPOSED MECHANISM'S EX-ANTE IMPLICATIONS

So far, we have seen the impact of the commitment mechanism ex-post. We have seen that the mechanism induces the seller not to breach the contract simply in order to gain the value of time from litigating. Next, we show that doing away with the risk of willful litigation can affect the willingness of established companies to contract with newcomer sellers by enlarging the contract pie and the parties' profits, consequently resulting in the newcomers becoming financially stable more quickly.

3.1 Illustrating the Effect of Time: Ex-Ante Consequences of Renegotiation and Trial

3.1.1 The Competitive Case

We have emphasized newcomers' difficulties to establish their business. The banks' unwillingness to finance their activities hampers their market entry and survival.[26] Remember also that newcomers have to overcome other entry barriers, such as high advertising costs required to overcome consumer loyalty to well-established firms, licensing costs, and anti-competitive practices by industry giants.

In this section, we demonstrate that willful litigation, whose motivation is described above,[27] might exacerbate the small business's financial difficulties even more. If a newcomer promisor tries to market his product to a potential promisee, the latter may be expected to estimate that compared to a well-established promisor, the newcomer is likely not to deliver or try to extort value by willful litigation.[28] We may also assume that just like the banks, the promisee views the newcomer promisor is relatively more likely to become bankrupt.[29] Furthermore, it is plausible to assume, that potential promisees almost never have the ability to distinguish among newcomer promisors in terms of specific risks.

If the newcomer promisor's probability of bankruptcy and his probability of renegotiation and trial due to the effect of time or other strategic reasons (willful litigation) are relatively high, this would have a negative effect on his transactions, make it seem much riskier. The potential promisee would consequently reject newcomer proposals, or demand an adjusted contract price, a discount that reflects the higher risks. If the contract is signed along these lines, the thinner margins for the newcomer make his market entry or survival even more difficult.

To illustrate, in the abovementioned example the promisee cannot take his V-$P = 100$ expectation for granted,[30] and has to adjust it to the possibility of renegotiation and trial. Let us assume that the parties estimate the probability of willful litigation at q_1=0.1 with an average loss $L = (1$-$b)(V$-$P) = 0.7(V$-$P)$, and the probability of promisor bankruptcy before delivery day at

---

[26] See *supra* Section 1.1. For further discussion of the main reasons for the banking system's unwillingness to finance newcomers' business, see *infra* Section 3.3.1.

[27] See *supra* Section 1.3.1.

[28] For empirical data regarding newcomers' high probability of failure within seven years, see *supra* note 12 and accompanying text.

[29] For empirical data regarding newcomers' high rate of involvement in civil litigation, see *supra* note 13 and accompanying text.

[30] Notably, after trial the court is expected to rule for the promisee D=Pt-P which will enable him to buy the good in the market and gain the expected value from the contract with a profit π=V-P=100.

q_2=0.1 with an average loss $L = (1-b)(V-P) = 0.7(V-P)$. In this case, the promisee is expected to require one of the following in advance.

The first possibility, even given a relatively competitive market, is an adjusted lower contract price that will gain the promisee the same profits as from a contract with a well-established promisor. This price is $P = 1000 - 116 = 884$, since it guarantees the promisee's expected alternative profit, $E(\pi) = (0.8×116) + (0.2×0.3×116) = 100$.

The general formula for determining the contract price (P) that guarantees the promisee's expected alternative profit is:

$$E(\pi) = V-P^* = (1- q_1- q_2)(V-P) + q_1b(V-P) + q_2b(V-P),$$

where $V-P^*$ is the expected alternative profit measured by the expectation damages the promisee can obtain if he signs a contract with a well-established promisor at the market price (P^* is the market price known to the parties); q_1 is the parties' estimation of the probability of willful litigation; q_2 is the parties' estimation of the probability of promisor bankruptcy before delivery day; and b is the portion of expected alternative profit ($V-P^*$) the promisor pays as a result of willful litigation or bankruptcy ($1-b$ is the portion of the damages the promisor gains from willful litigation or bankruptcy).

Hence, $P = V - \dfrac{V-P^*}{Z}$, where $Z = 1 - (1-b)(q_1+ q_2)$.

The intuition behind the equilibrium price formula is that a discount in the contract price is needed to convince the promisee to enter into a contract with a risky newcomer. The discount is higher the higher the probabilities of willful litigation (q_1) and bankruptcy (q_2) and the portion of expectation damages the promisee cannot expect to obtain following willful litigation or bankruptcy ($1-b$).

The second possibility is for the promisor to convince the promisee that the probabilities of willful litigation and bankruptcy are low or even zero, which enable the promise to pay the maximum price P=900. To do so, the promisor can use several tools, including bank guaranties, liens and his reputation.

However, is this second possibility also opened to a newcomer? Compared to a well-established competitor, a newcomer will expectedly have to pay more to reduce the promisee's estimation of his probability of willful litigation and bankruptcy. Furthermore, due to lack of collaterals, credit history, and verifiable data, newcomers are less able to reduce promisee estimates of their probability of willful litigation and bankruptcy, and might bear a full price deduction, threatening their market entry or survival.

To illustrate, in the foregoing example, giant well-established promisors would be able to reduce the promisee's estimation of their probability of willful litigation and bankruptcy to almost zero without costs. What happens when a newcomer promisor offers a new manufacturing process or other

benefit such as future discount after a year? Let us assume that in the first year of establishing, the newcomer has an extra entry cost EC=30 per contract. Furthermore, assume a weak newcomer promisor with a probability of willful litigation and bankruptcy of 0.3, respectively. Now assume that without screening, the promisee estimates the probability of willful litigation at q_1=0.3 with an average loss $L = (1-b)(V-P) = 0.7(V-P)$, and the probability of bankruptcy before delivery day at q_2=0.3 with an identical average loss. Accordingly, she might demand a contract price of P=828, since it guarantees her expected alternative profit $E(\pi) = (0.4\times172) + (0.6\times0.3\times172) = 100$. In this case, the promisor's expected profits are -20 = 0.4×(828-800) - 0.6×0.3×(1000-828), which, after deducting the first year entry cost of 30, leaves him with a total loss of 50 and out of the market! Furthermore, negotiations that allow the newcomer higher marginal profits are not likely to occur since the promisee would prefer to sign a better contract with a well-established promisor with the same profits for her.

To conclude, the promisee would require a much lower price from the newcomer promisor, making his entry and survival almost impossible. If the promisor is still determined to sign a deal he must face losses, hence a higher probability of bankruptcy. A new technology or process could benefit the promisee, but the expected loss due to the relatively high probability of willful litigation and bankruptcy tend to dissuade her from conducting due diligence of its value.

3.1.2 The Unique Good Bargaining Case

When the good is unique and has no market price, the parties will bargain over the contract price and terms, and in case of promisor breach of contract, the court will use the loss profit method to measure expectation damages.[31] When a promisee and a well-established promisor negotiate, they divide a contract pie comprised of the amount of benefit to the promisee minus the good's costs of production ($V-C$). We assume that the division is made relative to each party's negotiating power: $0<\alpha<1$ for the promisee and $1-\alpha$ for the promisor.

Let assume that a newcomer promisor and a promisee know the former's probability of willful litigation (q_1) and his probability of bankruptcy before delivery day (q_2). Both probabilities are unscreened for all newcomers and relatively high. Those risks will diminish the contract pie, and since the newcomer has high establishment costs, his part of the shrinking contract pie might be lower than his establishment costs, rendering him unable to enter or survive in the market.

The bargaining solution is:

$$\frac{\alpha}{1-\alpha} = \frac{(1-q1-q2)(V-P)+q1b(V-P)+q2b(V-P)}{(1-q1-q2)(P-C)-q1b(V-P)-q2b(V-P)}$$

---

[31] Notably, when the good is unique and has no market price, after trial the court is expected to rule for the promisee D=V-P=100.

Hence, $P = (1 - \alpha)V + \alpha \frac{b(q1+q2)V+(1-q1-q2)C}{Z}$,

where $Z = 1 - (1-b)(q_1+q_2)$.

The intuition behind the equilibrium price formula is that the contract price depends on the parties' relative negotiation power. When the promisee's negotiating power is relatively high, e.g. $0.5<\alpha<1$ the contract benefit for her (V) has a smaller effect on contract price (since $(1-\alpha)V$ is smaller). The higher the difference between V and the costs of production C, the higher the contract price for the newcomer.

To illustrate, with promisee bargaining power of $\alpha=\frac{2}{3}$, the contract price is $P=908$. Now assume a weak newcomer promisor with willful litigation and bankruptcy probabilities of 0.3 each. Given these probabilities, out of a potential contract pie of 200 (1000-800), the parties' total profits will be 80, with the lion's share of 53.3 going to the promisee ($0.4\times(1000-908)$ + $0.6\times0.3\times(1000-908)$). However, after deducting the first year entry costs of 30, the newcomer promisor bears manufacturing losses of $(80 - 53.3) = 26.7 - 30=$ -3.3 and his survival is at least doubtful.

The illustration shows that even with a monopoly on a new good (including a better manufacturing process), the risks of willful litigation and bankruptcy have a dramatic negative effect on transactions. In this case, a higher promisee bargaining power of $\alpha>0.625$ (since the contract pie in this case is 80 and the promisor has to profit more than 30 to cover his first-year entry costs) will leave the newcomer out of the market. Even with much lower bargaining power, the promisee might have a policy of not entering transactions with a surplus of less than $V-P=100$ or another high limit, with the same undesirable result for the newcomer promisor.

3.2 *The Third Goal of the Proposed Mechanism: Survival of Small Businesses and Lower Entry Barriers*

As explained above,[32] the proposed commitment mechanism meets both ex-post requirements: *first*, achieving only efficient breach of contract, and *second*, securing division of value as agreed by the parties to the contract.[33] In this section, we show that eliminating the risk of willful litigation and achieving those two ex-post goals of efficiency and distribution can mitigate the risks that promisees perceive in purchase contracts with newcomer promisors, increasing the contract pie, helping newcomers establish their business, and positively affecting the economy as a whole.

As described above,[34] a giant well-established promisor can reduce the promisee's estimation of his probabilities of willful litigation and bankruptcy almost to zero without costs, something newcomers cannot hope to achieve. Hence, in the competitive case, the promisee that has the alternative of buying the good from a well-established promisor will tend to prefer contracting with a well-established firm or dramatically lower a newcomer's contract price to account for his risks.

The main element of the proposed mechanism's positive ex-ante impact is that by eliminating willful litigation, it allows the promisee to offer the newcomer promisor a much better price. To illustrate using the example presented above for the competitive case, the promisee estimates – without screening – the probability of willful litigation at q_1=0.3 with an average loss $L = (1-b)(V-P) = 0.7(V-P)$, and the probability of bankruptcy before delivery day at q_2=0.3 with an identical average loss. As we explained above, the promisee might demand a contract price of P=828, so that the promisor's expected profits are -20 = 0.4×(828-800) - 0.6×0.3×(1000-828), which, after deducting the first year entry cost of 30, leaves him with a total loss of 50 and out of the market.

When the promisor assigns the obligation to a bank, the promisee will change her estimation of the promisor's probability of willful litigation to q_1=0, perceiving as only the promisor's unscreened probability of bankruptcy as risky (q_1=0.3). Notably, the probability of bankruptcy is not expected to increase for several reasons. First, the promisor will not be able to file for bankruptcy for debt avoidance purposes since the bank's threat to erase his credit history remains. Second, the bankruptcy court may dismiss the case following the promisee's request if the promisor is only trying to avoid payment.[35] Third, with the proposed commitment mechanism the promisor is expected to take optimal measures to avoid breach of contract, which could even reduce the probability of bankruptcy.

---

[32] See *supra* section 2.2.
[33] Except the risk of bankruptcy that will be discussed *infra* in Section 3.3.
[34] See *supra* section 3.1.
[35] See 11 USC §1112. Also see White and Medford (2004).

With the commitment mechanism, the promisee would demand a contract price $P=873$ (since it guarantees her expected alternative profits $E(\pi)$ = $(0.7\times127) + (0.3\times0.3\times127) = 100$), and the promisor's expected profits would increase from -20 to 40 ($0.7\times(873-800) - 0.3\times0.3\times(1000-873)$), allowing him to manufacture at a profit, even after the deduction of the 30 first-year entry cost!

Tables 4 and 5 below present the expected price for different types of promisors, with and without the promisor's obligation to a bank, in the competitive and bargaining case (with promisee bargaining power of $\alpha=\frac{2}{3}$), respectively.

		well-established			newcomer		
Type of promisor		**Big**	**Medium**	**Small**	**Promising**	**Weak**	**Failing**
Promisor probability of	willful litigation (q_1)	0	0.05	0.1	0.2	0.3	0.4
	bankruptcy (q_2)	0	0.05	0.1	0.2	0.3	0.4
Contract price in the competitive case	without an obligation to a bank	900	892	884	828	828	828
	with an obligation to a bank	900	896	892	873	873	873
Profits without an obligation to a bank	of the promisee	100	100	100	124	100	76
	of the promisor	100	80	60	20	-20	-60
Profits with an obligation to a bank	of the promisee	100	100	100	109	100	91
	of the promisor	100	90	80	51	40	29

Table 4: The expected price for different types of promisors with and without the promisor assigning an obligation to a bank in the competitive case

Table 4 shows that in the competitive case, that the risks of willful litigation and bankruptcy might prevent firms from entering commodities markets and establishing their business. With the commitment mechanism, all promisors gain higher profits, since some risks are eliminated and newcomers which are not strong enough shift from losses to profits, enabling them to survive.

		well-established			newcomer		
Type of promisor		**Big**	**Medium**	**Small**	**Promising**	**Weak**	**Failing**
Promisor probability of	**willful litigation (q_1)**	0	0.05	0.1	0.2	0.3	0.4
	bankruptcy (q_2)	0	0.05	0.1	0.2	0.3	0.4
Contract price in the competitive case	**without an obligation to a bank**	866.6	871	876	908	908	908
	with an obligation to a bank	866.6	869	871	882	882	882
Profits without an obligation to a bank	**of the promisee**	133.3	120	106.6	66	53.3	26.6
	of the promisor	66.6	60	53.3	54	26.6	-0.5
Profits with an obligation to a bank	**of the promisee**	133.3	126.6	120	102	93.3	85
	of the promisor	66.6	63.3	60	58	46.6	35

Table 5: The expected price for different types of promisors with and without the promisor assigning an obligation to a bank in the bargaining case

Table 5 shows that the same applies in the bargaining case: with the commitment mechanism, all promisors gain higher profits, and newcomers that bear losses without the mechanism shift to profits and better establish their business.

To sum up the illustration, with the commitment mechanism the contract pie is larger, and in the competitive case the promisee may agree to a higher

contract price for his contract with a newcomer promisor, enabling the latter's market entry possible. In the bargaining case, since the contract pie is larger, the division of the pie according to the parties' bargaining power yields higher gains for both. In turn, the proposed mechanism enables the newcomer promisor to establish his business faster or in some cases even overcome entry barriers, and the promisee to reveal in the long run, without undue risks, whether the newcomer really offers a lucrative new technology or process.

Notably, even the promising promisor bears heavy losses also from the unscreened nature of the promisee's perception of his risks, and all newcomers face severe financial difficulties due to the banking system's unwillingness to finance their business. Next, we ask whether the commitment mechanism can improve screening newcomers and higher bank participation in their financing.

3.3 Two Additional Goals of the Proposed Mechanism: Screening Newcomers, and Promoting the Financing of Promising Newcomers

3.3.1 The Banking System's Difficulties to Determine Newcomers' Risks and Finance their Business

It is in the banks' interest to finance businesses and small businesses are no exception. However, as we have seen, the banking system is unwilling to finance their activities. The asymmetric information problem caused by the absence of newcomers' track records makes it difficult for them to access credit.[36] This *liquidity constraint* was empirically found to be the primary problem of small businesses in their first seven years (Aghion et al., 2007).[37]

The banking system uses two types of loan decision. Big banks use *a ratio method*, an objective due diligence procedure, and usually prefer a big borrower. Small banks usually use *a relationship loan method* in their loan decision, which includes objective and subjective information about the potential borrower, usually a small business. The relationship loan is more expensive since information verification is costly (Rauch and Hendrickson, 2004). However, for both types, information, the Achilles' heel of newcomers, is essential.

To better understand why newcomer's borrowing is a difficult task, it is useful to observe the bank's typical requirements from a potential borrower. A survey of 266 commercial loan officers in American banks (Fulmer et al., 1991-1992) found that among numerous information requirements, all the lenders require new borrowers to submit historical financial statements, including balance sheet and income statement. Ninety percent of lenders

---

[36] See *supra* Section 1.1.

[37] In Aghion et al.'s (2007) research, small businesses' *liquidity constraints* were described as costs imposed on newcomers and not on well-established firms in the market, namely *entry barriers*. For further explanation of the term entry barriers and for the possibility of viewing financial constraints as entry barriers, see, for example, Varian (2010:415-7); and McAfee et al. (2004).

require a statement of cash flows, and 75% of them require three years of annual historical financial statements. Inter alia, 70% of lenders have a policy requiring a CPA firm report on historical financial statements. Lenders also examine qualitative variables, for example, condition and quality of assets and character of management. Most banks have formal loan policies and for most lenders, a combination of multiple factors affects the loan decision. The bottom line is that the various lender requirements and practices are usually impossible for a newcomer to meet.

Banks may require collaterals to secure loans. They distinguish between borrowers who are more or less risky by collecting information, and they require more collateral from the riskier borrowers (Leitner, 2006:9-11). However, in the case of newcomers, determining risk is difficult, and they often lack substantial assets. Furthermore, newcomers usually do not have long-term relationships with banks, which were empirically found to reduce the need for collateral (Leitner, 2006:10; Berger and Udell, 1995).

In this section, we show how the proposed mechanism can assist in creating a tool for the banking system to determine newcomers' risk as well as to screen newcomers according to their specific risks and qualities. This tool offers a better way to determine the values of a purchase contract and the promisor's obligation to a bank we use in the proposed commitment mechanism. Furthermore, we describe how the proposed mechanism can encourage the banking system to finance promising newcomers.

3.3.2 A Fourth Goal of the Proposed Mechanism: Screening Newcomers

The importance of pricing the purchase contract is clear: without other substantial assets, the purchase contracts are the most valuable assets a newcomer has. If banks could accurately determine the value of a purchase contract, the banking system and the goods markets would acquire an important advantage: the value of the purchase contract can screen between promisors in accordance with their risks and expected profits. A higher value for a contract represents a better project.

Furthermore, the ratio between the value of the obligation to the bank in accordance with the proposed mechanism and the value of the purchase contract is also significant as it can distinguish between newcomers who are more risky and less risky. A lower ratio represents a smaller risk for a failure of the newcomer's project.

The explanation for this advantage of the proposed mechanism is as follows. The purchase contract can be described as options,[38] and under the mechanism, using *option pricing theory*, the purchase contract can be better

---

[38] An *option* is a contract where its owner (the option buyer) has the right, but not the obligation, to buy (call option) or sell (put option) an underlying asset at an agreed price (strike price) during a certain period of time (American-style option) or on a specific date (European-style option). See, for example, McDonald (2013:35-43); Bodie et al. (2009:46-7,671-8).

priced. The notion that a contract can be described as an option has profound roots. Ayres (2005:3) noted that "[t]he Holmesian notion that a promise is the duty to perform or pay damages, can be reconceived as a promisor's option. Option theory can be used to price this breach option".[39]

Mahoney (1995)[40] used option pricing theory, which analyzing payments under options and prices their value,[41] to analyze the payment of a contract and price the value of contract remedies. Mahoney analyzed the purchase contract as a spot sale of the good in question from seller to buyer with a call option to buy back the good with the strike price of expectation damages.[42]

For the purpose of pricing a purchase contract we analyze it as follows: buying a *put option* to sell the same good with an exercise price equal to the purchase contract price (P) on delivery day (T_2),[43] and selling a *binary option* that entitles its owner to accept expectation damages if the newcomer promisor does not deliver.[44] The intuition behind dividing the purchase contract into those two particular options is that the first (put option) represents the value of

---

[39] For a similar explanation of option theory as derived from Oliver Wendell Holmes's arguments, see Posner (2011:170). For a presentation of a contract remedy as an option, see Kronman (1987:365-6); Schwartz (1990: 375-6). Option theory was used as an analytic tool in several fields, beyond contract remedies (Ayres, 2005:3).

[40] Specifically, Mahoney (1995) used option pricing theory to price the value of the promisee's option to demand damages instead of performance. This is the value the parties shift from the promisor to the promisee when contracting that the promisee wave her right to specific performance and instead be entitled to expectation damages.

[41] For an introduction to option pricing theory, see, for example, McDonald (2013: 265-433); Bodie et al. (2009:715-87). For another use of option pricing theory in tax legal analysis, see Terry (1995).

[42] Ayres and Talley (1995) used the option pricing theory for the same purpose, comparing between specific performance and a remedy of damages, and exploring the effects of different damages regimes.

[43] A *put option* entitles its buyer, in our case the newcomer promisor (the seller of the purchase contract), to sell the purchase contract's good to the option seller, in our case the bank or the promisee, at the purchase contract price (P) on delivery day (T_2). For a definition of the term *put option*, see *supra* note 38 and the references therein.

[44] A *binary option* entitles its buyer, in our case the bank or the promisee, to accept payment in the amount of the purchase contract's expectation damages (D) if the promisor does not deliver the good on delivery day (T_2). During the last few years, there is vast trading in *exotic options*, which differ from ordinary call or put options and can provide precise tailoring of risk exposure [See, for example, McDonald (2013:409-33); Bodie et al. (2009:701-4). The trade in *binary* or *digital options*, a type of exotic option, is permitted and regulated since 2008 (See Securities and Exchange Commission, Release No. 34-57744, File No. SR-ODD-2008-01, available at: http://www.sec.gov/rules/sro/occ/2008/34-57744.pdf). In the present analysis we use two types of binary options: (1) *cash-or-nothing binary option* (a binary option for the bargaining case) – a contract whose owner (the option promisee) receives a specific payment under a particular set of circumstances, usually related to the underlying asset's market price, and otherwise receives nothing; (2) a binary option similar to (1) except that the payment is the difference between the good's market price and contract price (a binary option for the competitive case) – in our terminology, *price-difference binary option*. For terminology and explanation of the types of binary options, for example, McDonald (2013: 663-7,883-8); Bodie et al. (2009:704).

performance, while the second (binary option) represents the losses from a breach. The binary option is also a theoretical equivalent to the obligation to a bank we use in the proposed commitment mechanism. Hence, this division could be also understood as a division between the value of performance and the value of the promisor's obligation to the bank in accordance with the proposed mechanism.

The value of the purchase contract is the value of a put option (to sell the same good with an exercise price equal to the purchase contract price) minus the value of a binary option (entitling the bank to accept expectation damages if the promisor does not deliver). A put option for selling a good can be priced using the Black-Scholes formula,[45] and so can a binary option (using the Black-Scholes formula for the bargaining case).[46] Hence, the value of the purchase contract could be better determined. As Mahoney (1995:144) noted, pricing in this method is an approximation, and the banking system could further develop it for the benefit of screening newcomers and as discussed next, financing the most promising of them.

3.3.3 A Fifth Goal of the Proposed Mechanism: Promoting the Financing of Promising Newcomers

After the bank has determined the value of the purchase contract and the value of the obligation assigned to it by the newcomer (valuated as a binary option) and identified him as a promising newcomer, the bank may consider financing his business.

In the case of a promising newcomer, with a high enough value for his contracts, the bank may consider financing the promisor's project, using the purchase contracts, now with more accurate value, as collateral. Among other factors, the bank can determine a loan-to-value (hereinafter: LTV) ratio, k_1 ($0<k_1<1$) that enables it to approve a credit line to a promising newcomer.[47]

Notably, now that the bank's willingness to finance the promisor has increased, it will have a stronger incentive to perform the due diligence

---

[45] For the pricing of a *put option* using the Black-Scholes formula, see ,for example, McDonald (2013:668-71); Bodie et al. (2009:729-37).

[46] For the pricing of a *cash-or-nothing binary option* (a binary option for the bargaining case – see *supra* note 44) using the Black-Scholes formula, see ,for example, McDonald (2013:663-7). A different method should be used to price a *price-difference binary option* (a binary option for the competitive case – see *supra* note 44), such as multiplying the estimated probability that the promisor's production costs exceed the good's market price by the expected difference between the good's market and contract prices.

[47] *A loan-to-value ratio* (LTV ratio) is a key factor for risk assessment of lending with collateral that banks and other lenders use to approve a loan with a pledge on an asset, for example mortgage. The ratio examined is the ratio between the value of the loan and the value of the asset that back the refunds. High LTV ratio means s higher risk, and banks determine standards for LTV ratio for a case of different collaterals that enable them to determine the maximum credit they are willing to grant against a given collateral. For further discussion of LTV ratio and its use by banks and other lenders, see Lin (2014); Jokivuolle and Peura (2003).

required to detect the promising newcomer's bankruptcy probability, and other factors necessary for its credit decisions, and eventually finance his project.

Furthermore, if the bank can use the contract as collateral in a specific case, it can also consider using it at the promisor's and promisee's request to back an obligation to the promisee to pay her all or some of the expectation damages ($D=P_t-P$ in the competitive case or $D=V-P$ in the bargaining case), even if the promisor does not pay expectation damages to the bank. In this case, if the ratio between the value of the obligation to a bank used in the mechanism (calculated as a binary option) and the value of the contract is low enough to meet the bank's standards (LTV ratio$<k_l$), then the bank may plausibly consider an obligation to pay expectation damages to a promisee if the promisor does not pay, with commission, a proper financial transaction.

Such a transaction could have a profound effect: for the parties it means that the bank, after due diligence, has found that the value of the contract is relatively high compared to the expectation damages amount the bank undertakes to pay, and is obliged to cover it and actually finance the promisor's project. It shifts part of the risk from the promisee to the bank and in turn, the promisee may agree to a further increase of the contract price, which promotes the newcomer's business development. If the bank is willing, in a specific case, to give the promisee full coverage, this promising promisor could get a contract price equal to the market price in the competitive case ($P=900$), or the best possible profits in the bargaining case! Without the proposed mechanism, only a well-established promisor with good enough collateral and reputation can secure those prices or profits.

Hence, the proposed commitment mechanism can screen newcomer promisors according to their specific risks and qualities and enable the promisor with a not-too- high risk of bankruptcy and other potential advantages to enter and prosper in the goods market.

3.4 Other Advantages of the Proposed Mechanism

Promisees and policy makers use several tools to deal with the problem that for many promisees, litigation costs are too high.[48] For example, promisees can demand adding a clause to the contract obliging the promisors to cover their legal costs or to unionize. Policy makers can encourage promisee incorporation or alternative dispute resolutions (ADRs) such as arbitration mechanisms. All those solutions have costs which the proposed mechanism can minimize.

---

[48] For a discussion of the legal and economic analysis of *positive collective costs,* see, for example, Schwartz (1990:395-403).

4. APPLYING THE CONTRACT LITIGATION MECHANISM

4.1 Mandatory or Voluntary

The commitment mechanism presented above can be either mandatory or a default rule. To make the mechanism mandatory, the law must determine that a contract is not binding unless it contains all of the following three components: an offer, acceptance, and obligation by the seller to the bank (the commitment).

The benefit from making the mechanism mandatory is that it prevents willful litigation and the negative externality it imposes on the established buyer by making him give an involuntary loan to the seller for the length of the trial. Moreover, in many legal systems court costs are not covered by the litigants and instead, are subsidized by the tax payers. Hence, making the mechanism mandatory will lessen the burden on the taxpayers.

On the other hand, there are justifiable reasons to keeping the mechanism as a default rule. The mechanism imposes a cost on the young company in cases in which the seller has a legally valid reason not to deliver the goods, such as in the case of *impracticability of performance* or anticipatory breach by the buyer. In such a case, the seller will have to deposit the funds in the bank until legal proceedings are completed, and even if the court rules in his favor and his deposit is returned, he will still lose the time value of the deposit, as it is almost certain that any interest he might receive on his deposit (if at all) would be far lower than his subjective discount rate. Making the mechanism optional will allow the parties to choose to adopt the rule if and only if it is optimal for them to do so; if the increase in the price that results from use of the mechanism is greater than the expected cost from justifiable litigation (as described above), the parties will choose to adopt the mechanism, and if not, not. Note, however, that while this yields optimality for the parties to the contract, it ignores the externality imposed on taxpayers, and if this cost is great the scales may still be tipped towards adopting a mandatory mechanism.

4.2 Comparing the Proposed Commitment Mechanism to Possible Alternative Tools

In this section, we compare the proposed commitment mechanism to other legal tools that could possibly eliminate willful litigation and promote the financing of promising newcomers, namely supracompensatory remedies, bank guarantees and letters of credit, "anti-insurance", and mandatory disclosure rules.

A major potential strength of the proposed mechanism is that the linkage to the banks' and credit bureaus' information sharing system dramatically increases the newcomer's costs of willful litigation and eliminates it at

negligible costs.[49] We further show,[50] that as a result of the mechanism, the ex-ante contracting price could rise, and the banking system could effectively screen newcomer promisors according to their specific risk and quality levels, all this at very low costs.

An important component of the proposed mechanism is that it allows the seller to notify the bank that he plans on litigating, and in such a case, the bank will hold the funds until after the court rules. As describe above, this component imposes costs on the young company, but these are expected to be low, especially for the newcomer who has no alternative to undertaking an obligation to a bank if he aims to enter the market and survive. For him, the costs of low probability future funds deposit are actually negligible.[51]

Next, we describe why other existing legal tools cannot serve the goals of eliminating willful litigation and promoting the financing of promising newcomers, or cannot serve them at affordable costs.

Supracompensatory remedies, for example – an available but unpopular contract tool – might overdeter newcomer sellers from non-delivery of goods, but would not eliminate willful litigation nor promote the financing of promising newcomers even at high costs, for two main reasons. First, as explained above, promisee bargaining for supracompensatory remedies is very costly.[52] If a promisee reports higher-than-true value, the contract price might be higher while she might gain a smaller profit. Hence, using supracompensatory remedies to eliminate willful litigation also comes at the high cost of reducing the parties' profits together with distorting efficient breach decisions. Second, it is impossible to design a supracompensatory remedy that eliminates willful litigation. Among other necessary parameters, the newcomer's subjective discount factor and his risk of willful litigation are impossible to determine, either ex-ante at the contracting stage, or ex-post during litigation. Hence, a proper supracompensation to efficiently deter the newcomer from willful litigation is also out of reach.

Other currently available financial tools, such as *bank guarantees* and *letters of credit*, if constructed properly, may serve the goals of eliminating willful litigation and promoting the financing of promising newcomers, albeit with high fee requirements and a demand for collateral by the bank. Those

---

[49] See *supra* Section 2.4.

[50] See *supra* Section 3.2 - Section 3.3.

[51] As described above in Section 4.1, the mechanism imposes costs on newcomers in cases in which the seller has a legally valid reason not to deliver the goods, as in the case of impracticability of performance or anticipatory breach by the buyer. However, newcomers do not have to fear from sellers' willfully triggering litigation since sellers have nothing to gain from newcomer's costs of funds deposit. Alternatively, buyers have incentives to purchase also from newcomers in order to diversify sellers, and gain from new technology and advanced competition between sellers. In order to gain from contracts with newcomers they have to build a reputation of non-misusing the seller's obligation of funds deposit. Notably, as opposed to newcomers' reputation, sellers' reputation could be easily revealed.

[52] See *supra* Section 2.3.

requirements, reflecting the bank's high risks, are virtually impossible for a typical newcomer to meet.

Another possible tool is *"anti-insurance"* (Cooter and Porat, 2002), requiring the promisor to pay damages in the case of non-delivery to a third party, not to the promisee. This last mechanism is designed to solve problems of bilateral precaution, not willful litigation. This tool increases the risk borne by the parties to the contract by selling the right to damages to a third party in advance. However, in case of a purchase contract with a newcomer promisor, requiring a third party – for reputational purposes, a commercial bank – to buy the right to damages in advance is a highly risky and expensive transaction. Since the bank cannot distinguish between newcomers and assess their risks of willful litigation and bankruptcy, the cost of this transaction might make it impossible to perform.

Finally, while cost-benefit analysis of *mandatory disclosure rules* might be elusive (Ben-Shahar and Schneider, 2014), they may increase the risks to an established seller's reputation and eliminate willful litigation and its negative consequences. However, the case of oversight on *newcomer* sellers' behavior using such regulation only does seem to promise some negligible chance of success, albeit at considerable costs. We note[53] that loan officers of different banks informally share loan information, and that the growing credit bureau industry collects small business loan information also from banks (even though at lower rates where the competition over clients is intense). In the case of a newcomer, the bank cannot use credit bureaus' information since the former's track records are still unavailable and would hopefully be created only in the future, making the threat to newcomers' reputation vague and ineffective. Furthermore, the growth of the US credit bureau industry in recent years is market- rather than regulation-based, and government intervention would negatively affect this trend. For example, without the proposed commitment mechanism, if banks are required to report to public or private bureaus' specific loan information, they might be even more reluctant to finance newcomers, almost, as argued above, without any credible threat to newcomers' reputation.

In sum, the inability of existing legal tools to eliminate willful litigation and promote the financing of promising newcomers, all at affordable costs, is the rationale for the necessity of our proposed mechanism.

V. CONCLUSION

In this article we have presented *the commitment mechanism*, a new financial tool designed to address the difficulties of small new businesses to enter the goods markets and survive, due to the risk of willful litigation and the banking system's unwillingness to finance their activities. The effect of the mechanism is to increase the cost of litigation to the seller; instead of alienating a single

---

[53] See *supra* Section 2.4.

buyer, the seller would be damaging his reputation and credit rating in the bank with which he hopes to have long-standing relationship

The expected gains from the mechanism are numerous. With the commitment mechanism, the seller will choose efficiently to breach and pay the bank the buyer's damages if he values the right more than the buyer, and to perform otherwise. Savings of redundant litigation are also important. The mechanism further enables newcomer sellers to overcome the entry barrier created by willful contract litigation. It can be used as a tool for the bank to determine the contract's value and screen newcomers according to their specific risk and qualities, and can incentivize the bank to finance a promising newcomer.

Some significant mechanism components should be further developed in order to implement it as a viable business method. Inter alia, an accurate pricing method to determine the value of the obligation to a bank as a binary option (entitling its owner to accept expectation damages in a case of non-delivery) and the value of a put option (to sell the same good with an exercise price equal to the purchase contract price) should be established. Together, they determine the value of the purchase contract. Furthermore, the terms for the bank willingness to use the purchase contract as collateral, to take risks by accepting an obligation to the buyer to collect damages, or to back the obligation to pay expectation damages to a buyer, even if the seller does not pay, are yet to be determined. The commitment mechanism is simple, with no risk to the bank and at negligible costs; nevertheless, its implementation details still have to be completely worked out.

REFERENCES

Aghion, Philippe, Thibault Fally, and Stefano Scarpetta. 2007. "Credit constraints as a Barrier to the Entry and Post-Entry Growth of Firms," *Economic Policy* 22:731-79.

Ayres, Ian. 2005. *Optional Law: The Structure of Legal Entitlements*. Chicago: University of Chicago Press.

Ayres, Ian, and Eric L. Talley. 1995. "Solomonic Bargaining: Dividing a Legal Entitlement to Facilitate Coasean Trade," *Yale Law Journal* 104:1027-117.

Barron, John M., and Michael Staten. 2003. "The Value of Comprehensive Credit Reports: Lessons from the U.S. Experience," manuscript, available at: http://www.privacyalliance.org/resources/staten.pdf.

Bartelsman, Eric J., John Haltiwanger, and Stefano Scarpetta. 2004. "Microeconomic Evidence of Creative Destruction in Industrial and Developing Countries," Discussion Paper No. 04-114/3, Tinbergen Institute, available at: http://hdl.handle.net/10419/86370.

Bebchuk, Lucian A., and Steven Shavell. 1991. "Information and the Scope of Liability for Breach of Contract: The Rule of Hadley v. Baxendale," *Journal of Law, Economics & Organization* 7:284-312.

Ben-Shahar, Omri, and Lisa Bernstein. 2000. "The Secrecy Interest in Contract Law," *Yale Law Journal* 109:1885-1925.

Ben-Shahar, Omri, and Carl E. Schneider. 2014. *More Than You Wanted to Know: The Failure of Mandated Disclosure*. Princeton University Press.

Berger, Allen N., and Gregory F. Udell. 1995. "Relationship Lending and Lines of Credit in Small Firm Finance," *Journal of Business* 68:351-81.

_____. 1998. "The Economics of Small Business Finance: The Roles of Private Equity and Debt Markets in the Financial Growth Cycle," *Journal of Banking & Finance* 22:613-73.

Bernstein, Lisa. 1992. "Opting Out of the Legal System: Extralegal Contractual Relations in the Diamond Industry," *Journal of Legal Studies* 21:115-57.

Blegvad, Britt-Mari. 1990. "Commercial Relations, Contract, and Litigation in Denmark: A Discussion of Macaulay's Theories," *Law & Society Review* 24:397-412.

Board of Governors of the Federal Reserve System. 2007. *Report to the Congress on the Availability of Credit to Small Businesses*, available at: http://www.federalreserve.gov/boarddocs/rptcongress/smallbusinesscred it/sbfreport2007.pdf.

Bodie, Zvi, Alex Kane, and Alan Marcus. 2009. *Investments*. 8th ed., Boston: McGraw-Hill.

Brown, Martin, and Christian Zehnder. 2007. Credit Reporting, Relationship Banking, and Loan Repayment," *Journal of Money, Credit and Banking* 39:1883-1918.

_____. 2008. "The Emergence of Information Sharing in Credit Markets," IEER Working Paper No. 317, University of Zurich, available at: http://ssrn.com/abstract=922661.

White, Bruce H., and William L. Medford. 2004. "Column: Dismissals of Bankruptcies Filed in Bad Faith: What's the Standard?" *American Bankruptcy Institute Journal* 23-10:26.

Cooter, Robert, and Ariel Porat. 2002. "'Anti-Insurance'," *Journal of Legal Studies* 31:203-32.

Diamond, Doug. 1991. "Monitoring and Reputation: The Choice between Bank Loans and Directly Placed Debt," *Journal of Political Economics* 99:688-721.

Dunworth, Terence, and Joel Rogers. 1996. "Corporations in Courts: Big Business Litigation in U.S. Federal Courts, 1971-1991," *Law Social Inquiry* 21:497-592.

Economic Report of the President. 2011. available at: http://www.whitehouse.gov/administration/eop/cea/economic-report-of-the-President/2011.

Farnsworth, E. Allan. 1999. *Contracts*. 3rd ed., New York: Aspen Publishers.

Fulmer, John G., Thomas A. Gavin, and William J. Bertin. 1991-1992. "What Factors Influence the Lending Decision: A Survey of Commercial Loan Officers," *Commercial Lending Review* 7:64-9.

Galanter, Mark. 1983. "Reading the Landscape of Disputes: What We Know and Don't Know (and think we know) about our Allegedly Contentious and Litigation Society," *UCLA Law Review* 31:4-71.

Hurst, J. Willard. 1980-1981. "The Functions of Courts in The United States, 1950-1980," *Law & Society Review* 15:401-71.

Jacobi, Osnat, and Avi Weiss. 2013. "The Effect of Time on Default Remedies for Breach of Contract," *International Review of Law & Economics* 35: 13-25.

Jokivuolle, Esa, and Samu Peura. 2003. "Incorporating Collateral Value Uncertainty in Loss Given Default Estimates and Loan-to-value Ratios," *Europe Financial Management* 9:299-314.

Kallberg, Jarl G., and Gregory F. Udell. 2003. "The Value of Private Sector Credit Information," *Journal of Banking & Finance* 27:449-69.

Klemm Analysis Group. 2005. "Impact of Litigation on Small Business," No. 265 SBA Research Summary.

Knaup, Amy E. 2005. "Survival and Longevity in the Business Employment Dynamics Data," *Monthly Labor Review* 128:50-6.

Kronman, Anthony. 1978. "Specific Performance," *University of Chicago Law Review* 45:351-75.

Leitner, Yaron. 2006. "Using Collateral to Secure Loans," *Business Review* 2:9.

Lin, Li. 2014. "Optimal Loan-to-Value Ratio and the Efficiency Gains of Default," *Annals of Finance* 10:47-69.

Macaulay, Stewart. 1963. "Non-contractual relations in business: A preliminary study," *American Sociological Review* 28:55–67.

Macneil, Ian. 1981. "Economic Analysis of Contractual Relations: Its Shortfalls and the Need for a 'Rich Classificatory Apparatus'," *Northwestern University Law Review* 75: 1018-63.

_____. 1982. "Efficient Breach of Contract Circles in the Sky," *Virginia Law Review* 68:947-69.

Mahoney, Paul G. 1995. "Contract Remedies and Options Pricing,' *Journal of Legal Studies* 24:139-63.

McAfee, R. Preston, Hugo M. Mialon, and Michael A. Williams. 2004. "What Is a Barrier to Entry?," *American Economic Review* 94:461-5.

Mcdonald, Robert L. 2013. *Derivatives Markets*. 3rd ed., Boston: Pearson.

Miller, Margaret J. 2003. "Credit Reporting Systems around the Globe: The State of The Art in Public and Private Credit Registries," in *Credit Reporting Systems and the International Economy*. Margaret J. Miller ed., Cambridge, Mass.: MIT Press.

Nelson, William E. 1990. "Contract Litigation and the Elite Bar in New York City, 1960-1980," *Emory Law Journal* 39:413-62.

Petersen, Mitchell A., and Raghuram G. Rajan. 1994. "The Benefits of Lending Relationships: Evidence from Small Business Data," *Journal of Finance* 49:3-37.

Posner, Richard A. 2011. *Economic Analysis of Law*. 8th ed., Aspen Publishers.

Rauch, James H., and Jill M. Hendrickson. 2004. "Does Bank Consolidation Hurt the Small Business Borrower?," *Small Business Economics* 23:219-26.

SBA (a), "Am I a Small Business?," available at: http://www.sba.gov/content/am-i-small-business-concern.

SBA (b), "Guide to Size Standards," available at: http://www.sba.gov/content/guide-size-standards.

SBA. 2012. "Table of Small Business Size Standards Matched to North American Industry Classification System Codes," available at: http://www.sba.gov/sites/default/files/files/Size_Standards_Table.pdf.

SBA. 2009. "The Small Business Economy – A Report to the President," available at: http://www.sba.gov/advocacy/849/6282.

Schelling, Thomas C. 2006. *Strategies of Commitment and other Essays*. Harvard University Press.

Schwartz, Alan. 1990. The Myth that Promisees Prefer Supracompensatory Remedies: An Analysis of Contracting for Damage Measures," *YALE Law Journal* 100:369-407.

Shavell, Steven. 1980. "Damage Measure for Breach of Contract," *Bell Journal of Economics* 11:466-490.

_____. 1984. "The Design of Contract and Remedies for Breach," *Quarterly Journal of Economics* 11:121-48.

Terry, Charles T. 1995. "Option Pricing Theory and the Economic Incentive Analysis of Nonrecourse Acquisition Liabilities," *American Journal of Tax Policy* 12: 273-397.

Uniform Commercial Code, Official Text and Comments. 2013-2014 ed., by the American Law Institute, Thomson West.

Varian, Hal R. 2010. *Intermediate Microeconomics*. 8th ed., W. W. Norton & Company, Inc.

White, James J., and Robert S. Summers. 2010. *Uniform Commercial Code*. 6th ed., St. Paul, MN: West Academic Publishing.