

COURTS AND CONTRACT ENFORCEMENT IN TRANSITION AGRICULTURE: THEORY AND EVIDENCE FROM POLAND

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ABSTRACT

The paper investigates theoretically and empirically the role of courts for contract enforcement in transition agriculture. In a survey of 306 Polish hog farmers conducted in 1999, only 38.5% of them reported to believe that they could use courts to enforce contracts with their most important customer. Furthermore, those who believe the legal system could be used would accept significant financial losses before taking action. We develop a theoretical model, based on the costs and benefits of court enforcement, which captures the boundary between contracts to be regarded as “enforceable” and “not-enforceable” and, simultaneously, the threshold of taking legal action. The empirical analysis strongly supports our model: (1) the farmers’ responds can be explained by cost-benefit calculations regarding the use of courts, (2) the legal “enforceability” of contracts depends not only on the efficiency of the legal system, but also on the attributes of the transaction, the contracts and the relationship between buyer and seller, and (3) the threshold of taking legal action is significantly influenced by indirect costs of court enforcement, such as the disruption of a valuable relationship, and by the availability of alternative enforcement mechanisms.

Keywords: Agricultural Contracts, Contract Enforcement, Courts, Transition

INTRODUCTION

Effective contract enforcement has long been recognized as essential for markets to function. Only recently, however, economists have begun to study different mechanisms of contract enforcement empirically. Important contributions result from analyzing contracting practices in European economic history (e.g. Milgrom, North and Weingast 1990; Greif 1993), in developing countries (e.g. Fafchamps 1996; Woodruff 1998) and most significantly, in transition economies (Greif and Kandel 1995; Koford and Miller 1995, 1999; Henderly, Murell and Ryterman 1998; McMillan and Woodruff 1999a, 1999b; Johnson, McMillan and Woodruff 1999; Gow and Swinnen 1998, 2001; Gow, Streeter and Swinnen 2000). The latter cases are particularly interesting because the institutional environment for a market economy is only slightly emerging. Due to ineffective laws and courts, economic agents often have to rely on contracts “without the shadow of the law” (McMillan and Woodruff 1999a: 637). In addition, transition is seen as “an experiment in the interaction between the courts and relational contracting” (Johnson, McMillan and Woodruff 1999: 1).

This paper contributes to this literature by examining the problem of contract enforcement through the legal system for contracts that govern transactions in the Polish agriculture. According to a survey we conducted in 1999, only 38.5% of 306 Polish hog farmers believed they could enforce contracts through legal proceedings (see Boger 2001a for details of the survey). Furthermore, hog farmer who believed courts could be used would except significant financial losses before taking a buyer to court. The data reveals a mean of financial losses of 5,414 Polish zloty and a remarkable variation ranging between 100 and 50,000 Polish zloty. Since hog farmers in Poland all act under the same law and on the same market, however, the inefficiencies of the legal system can hardly explain the significant variation in the responses received.

Hence, this paper's main objective is to identify the factors that determine the extent to which economic agents consider the legal system as a viable enforcement mechanism. Why do some farmers not consider contract enforcement through courts at all? Is it only because they believe that the legal system is ineffective? Why would some farmers take a buyer to court if they already face financial losses of 100 Polish zloty, while other farmers would accept financial losses of 50,000 Polish zloty? Why do the costs of enforcing contracts through the courts differ so much among economic agents in the same country?

In the discussion that follows, we investigate a larger set of determinants theoretically and empirically in order to explain the difference in the assessment of the courts' efficacy and costs. We gathered seller-buyer transaction specific data to examine not only the influence of the seller's characteristics, but also those of the buyer, the transaction, the contract, the relationship and the business environment. Our approach is also based on a systematic investigation of costs and benefits relating to court enforcement. These costs and benefits are determined by a number of factors, in which the efficiency of the legal system is an important, but not exclusive determinant.

We will show that: (1) the farmers' responses can be explained by cost-benefit calculations regarding the use of courts, (2) the legal "enforceability" of contracts depend not only on the efficiency of the legal system, but also on the attributes of the transaction, the contracts and the relationship between buyer and seller and (3) the threshold of taking legal action is significantly influenced by indirect costs of court enforcement, such as the disruption of a valuable relationship, and by the availability of alternative enforcement mechanisms.

The remainder of the paper is organized as follows. We first briefly review the literature with regard to the costs and benefits of court enforcement and alternative enforcement mechanism. We then develop a reduced form model that captures the boundary between "not enforceable" and "enforceable" based on cost-benefit calculations regarding the maximum of financial losses a farmer would accept before taking a buyer to court. Third, we examine the data by means of regression analysis and discuss the results in relation to theoretical propositions and similar empirical outcomes. And finally, we draw conclusions for further research.

ECONOMICS OF CONTRACT ENFORCEMENT

The economic literature on contract enforcement shows two extreme traditions with regard to the role of courts in contract enforcement. The first, the legal centralism tradition, assumes that agreements and contracts can be best and almost costlessly enforced by the legal system. As Williamson (1985: 20) based on Galanter (1981: 1) characterize it:

Most studies of exchange assume that efficacious rules regarding contract disputes are in place and are applied by the courts in an informed, sophisticated, and low-cost way. The "legal centralism" tradition maintains that "dispute resolution require 'access' to a forum external to the original social setting of the dispute [and that] remedies will be provided as prescribed in some body of authoritative learning and dispensed by experts who operate under the auspices of the state."

The second, the theory of self-enforcing agreements, implicitly or explicitly assumes that contracts between two parties are not enforceable through courts (e.g. Telser 1980; Klein and Leffler 1981; Bull 1987). As Telser (1980: 27) states:

A self-enforcing agreement between two parties remains in force as long as each party believes himself to be better off by continuing the agreement than he would be by ending it. It is left to the judgment of the parties concerned to determine whether or not there has been a violation of the agreement. If one party violates the terms then the only recourse of the other party is to terminate the agreement after he discovers the violation. No third party intervenes to determine whether a violation has taken place or estimate the damages from that result from such a violation.

To highlight the implications of these conflicting approaches, consider the following case. A seller and a buyer agree that the seller will deliver a particular good to the buyer to be paid for 14 days after delivery. The buyer receives the good but refuses to pay. Under the self-enforcing agreement assumption, the seller would take it and accept the financial loss, but never trade with the same buyer again.

Following the legal centralism approach, the seller instead would take immediately legal action by which the buyer would be forced to pay for the goods delivered. Under the assumption that state enforcement of contracts is costless, it is irrational to accept financial losses.

Although these extreme assumptions, costlessly enforceable or not enforceable, may be useful for analytical purposes, they do not agree with an empirical analysis. In fact, empirical evidence shows that legal enforcement is often possible, but obviously costly. Therefore, it is more reasonable to think about the costs and benefits of court enforcement in a comparable way. What are the costs and benefits of court enforcement and how are they determined? The latter are obvious and straightforward: the compensation for losses resulting from a breach of contract. They depend on the value of the contract and on the ability of the courts to adequately determine the magnitude of damages and enforce claims resulting from a breach of contract.

In regards to the costs of contract enforcement we distinguish them into two categories: direct costs and indirect costs. *Direct costs* of contract enforcement are time, effort and money that must be spent to take legal action (see Djankov et al. 2002). These are affected by (1) the efficiency of the legal system, (2) the type of agreement or contract and (3) the characteristics of the firm or individual. *Indirect costs* of court enforcement may arise in two ways: (1) the disturbance of a valuable relationship (see Mccaully 1963; Williamson 1979) and (2) the damage of firm's reputation in business or social networks (Ellickson 1991, 1994). In particular, Williamson (1979, 1985, 1991, 1996) emphasized that specific investments, which create valuable relationships, make both court ordering and self-enforcement very costly and give way to different ways of private ordering.

In the following discussion, we will present a reduced form model that formalizes these ideas.

A reduced form model of contract enforcement

Let us assume a seller i and a buyer j are engaged in a transaction, TA_{ij} . The transaction, TA_{ij} , has a certain value for the seller and the buyer, $V_{TA_{ij}}^i$ and $V_{TA_{ij}}^j$ respectively, and is governed by a contract AC_{ij} that may be at least partly enforceable through courts. Regardless of the actual transaction, the relationship between the seller and the buyer, RS_{ij} , has the value $V_{RS_{ij}}^i$ for the seller and $V_{RS_{ij}}^j$ for the buyer arising from quasi-rents generated by the value of future transactions, high switching costs or specific investments in the relationship.

Consider the following example of a contract breach: The seller delivers the good, but the buyer refuses to pay. What will the seller do? We assume that the seller can apply three enforcement mechanisms: (1) no enforcement, (2) self-enforcement (termination) and (3) court enforcement. All three mechanisms are connected with different costs and benefits. As we define losses in benefits as costs, we can treat the problem as one of cost minimization. The costs of "no enforcement", C_{NE} , is equal to the loss of the actual transaction's value. Since "no enforcement" will, as we assume, not disturb the relationship, its possible value is maintained.

$$C_{NE} = V_{TA} \quad (1)$$

Self-enforcement, in contrast, is based on the termination of the relationship. Therefore, the costs of self-enforcement, C_{SE} , are not only the loss in the transaction's value but also the loss in the value of the relationship.

$$C_{SF} = V_{TA} + V_{RS} \quad (2)$$

Court enforcement, finally, causes some fix costs, F , but has the benefit that the seller will get back at least part of the transaction's value, αV_{TA} . In addition, we assume that court enforcement has negative effects on the relationship between seller and buyer. It may cause the termination of the relationship combined with a partial compensation for financial losses. Alternatively, court enforcement may not fully destroy, but may reduce the value of the relationship. For that, we introduce βV_{RS} as a measure of how courts preserve the relationship or compensate for losses. Hence, both parameters α and β indicate the ability of courts to prevent or compensate for losses. We assume that the parameters can take any value between zero and one, which implies that over-compensation is not possible. The costs of enforcing contracts through courts are the direct fixed costs and the unenforceable part of the transaction's and relationship's values

$$C_{CF} = F + (1-\alpha)V_{TA} + (1-\beta)V_{RS} \quad (3)$$

The parameters F , α and β are affected by the effectiveness of the legal system. The less effective the legal system, the higher the fixed costs, F , and the lower the remaining parameters, α and β . In addition, the contract, AC , has an impact on the parameters. If AC is a written contract specifying all terms of the transaction and the relationship, F should be low and α and β should be high, which lowers the costs of court enforcement. Finally, the parameters may be influenced by characteristics of the seller and buyer. Seller specific characteristics, such as size or education, may influence the fixed costs F . Buyer specific characteristics, such as size, location or liquidity may affect the parameters α and β . If the buyer refuses to pay because of bankruptcy, α and β will likely be low.

In order to compare the different enforcement mechanisms, let us first assume that the relationship has no value, $V_{RS} = 0$. In this case, the equations (1) to (3) can be rewritten as

$$C_{NE} = V_{TA} \quad (5)$$

$$C_{SE} = V_{TA} \quad (6)$$

$$C_{CE} = F + (1-\alpha)V_{TA} \quad (7)$$

This case is illustrated in Figure 1.

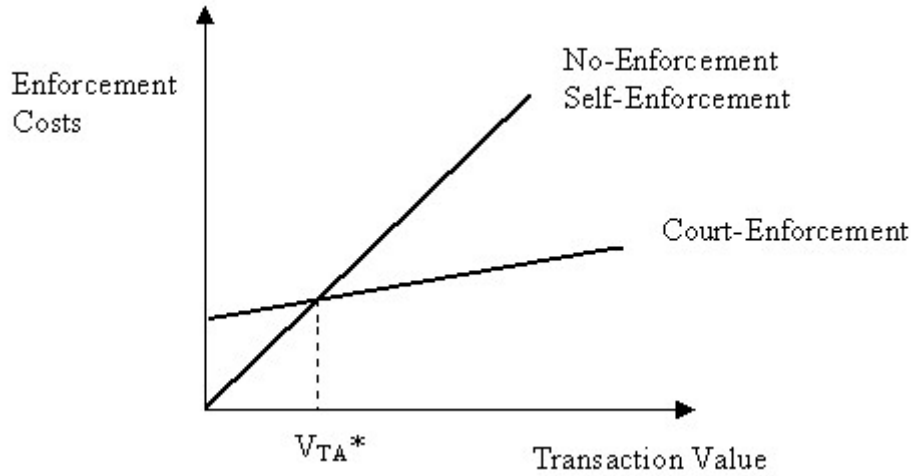


Figure 1. Enforcement Costs and Transaction Value.

It then makes no difference if a breach of contract is answered with termination or not, $C_{NE} = C_{SE}$. In this case, the threshold, V_{TA}^* , to enforce contracts through courts, or, in other words, the maximum of financial losses the seller will accept before he takes legal action can be defined by $C_{NE,SE} = C_{CF}$ or

$$V_{TA} = F + (1-\alpha)V_{TA} \quad (8)$$

$$V_{TA}^* = F/\alpha \quad (9)$$

The maximum financial losses a firm is willing to accept, V_{TA}^* , is strictly increasing in F and decreasing in α . It is independent of the transaction's actual value and only determined by those factors that influence F and α . These include the legal system, the contract and the characteristics of the seller and the buyer.

However, the judgment whether a contract governing a transaction is regarded as enforceable through courts, is likely to be influenced by the transaction's value. A cost minimization behavior requires that

$$V_{TA} < V_{TA}^* \rightarrow \text{no-enforcement, self-enforcement} \quad (10)$$

$$V_{TA} > V_{TA}^* \rightarrow \text{court enforcement} \quad (11)$$

This means that those sellers who perform only low value transactions or transactions in which the potential loss from a contract breach is low will not consider court enforcement a real alternative. They are more likely to negate the question whether they regard an agreement or contract as enforceable through courts.

Consider now the case where the relationship itself has a value, $V_{RS} > 0$. In this case, the following equations hold

$$C_{NE} = V_{TA}$$

$$C_{SF} = V_{TA} + V_{RS}$$

$$C_{CF} = F + (1-\alpha)V_{TA} + (1-\beta)V_{RS}$$

If the relationship has a value, “self-enforcement” is always suboptimal and will be strictly dominated by “no enforcement,” since the condition $C_{SF} > C_{NE}$ is always fulfilled. Thus, we can reduce the analysis to the comparison of “no enforcement” versus “court enforcement.” The threshold can be defined as V_{TA}^{**} or as

$$V_{RS}^*$$

$$C_{NE} = C_{CF}$$

$$V_{TA} = F + (1-\alpha)V_{TA} + (1-\beta)V_{RS}$$

$$V_{TA}^{**} = (F + (1-\beta)V_{RS}) / \alpha \quad (12)$$

$$V_{RS}^* = (\alpha V_{TA} - F) / (1-\beta) \quad (13)$$

V_{TA}^{**} indicates the lower limit of financial losses for which the seller would take legal action, while V_{RS}^* defines the upper limit in the value of the relationship for which the seller would take the buyer to court. This case is illustrated in Figure 2. The threshold level, V_{RS}^* , increases in α and V_{TA} and decreases in F and β .

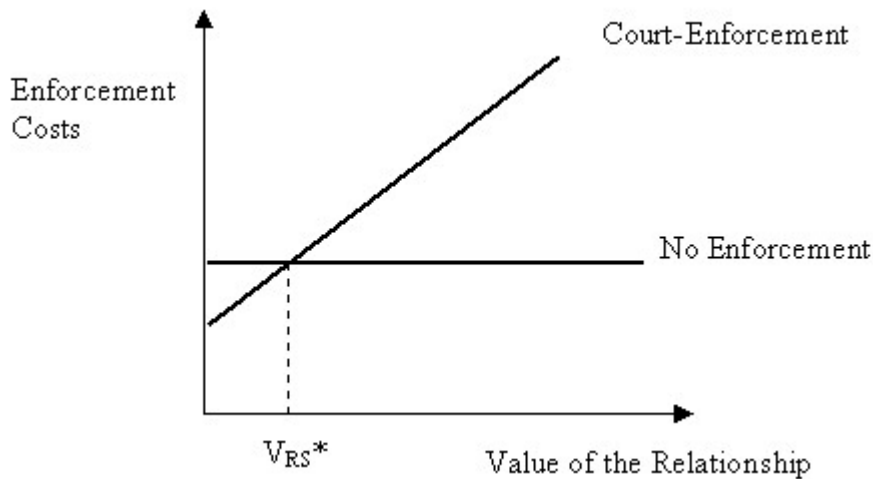


Figure 2. Enforcement Costs and the Value of the Relationship.

Again, cost minimization would imply the following behavior:

$$V_{RS} < V_{RS}^* \rightarrow \text{court enforcement} \quad (14)$$

$$V_{RS} > V_{RS}^* \rightarrow \text{no-enforcement} \quad (15)$$

From the empirical point of view, however, we are more interested in the lower limit of financial losses as indicated in equation (12). In addition to equation (8), equation (12) is strictly increasing in the value of the relationship, V_{RS} .

The equations (10) and (12) also indicate that the boundary between “no enforcement” and “court enforcement” is dependent on V_{TA} and V_{RS} . This boundary defines the range of the transaction values and the relationship values for which a contract will be regarded as enforceable through the courts, as illustrated in Figure 3.

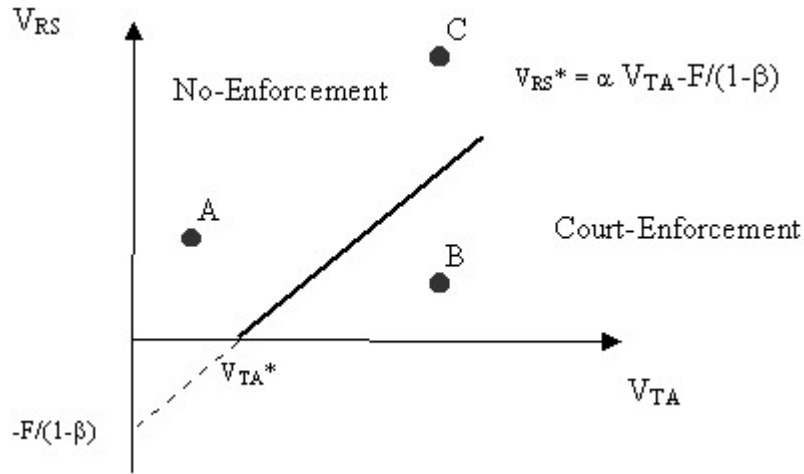


Figure 3. The Boundary of Court Enforcement.

If the value of the transaction, V_{TA} , is lower than V_{TA}^* , as in the first case, it is not profitable to take the buyer to court. Thus, sellers conducting low value transactions are less likely to regard contracts as enforceable through courts. If $V_{TA} > V_{TA}^*$, buyers will consider court enforcement when $V_{RS} < V_{RS}^*$, as the second case demonstrates. However, if for a given value of the transaction the value of the relationship exceeds the threshold V_{RS}^* , then buyers will again take no legal action, as the third case represents.

Inside the range of possible court enforcement ($V_{TA} > V_{TA}^*$, $V_{RS} < V_{RS}^*$), the willingness to accept losses before taking legal action increases with the value of the relationship. Thus, we expect the probability that buyers regard their contracts as enforceable to increase with the value of the transaction, but decreases with the value of the relationship. The acceptance of financial losses, however, is independent from the value of the transaction and increases with the value of the relationship. Both the perceived enforceability and the acceptance of financial losses, will, nevertheless, be influenced by the legal system, the type of agreement or contract and the characteristics of the seller and buyer.

It is also relevant to extend the above analysis to cases of private enforcement. This refers to renegotiations or sanctions in business networks. Let us assume that private enforcement is associated with the fixed costs, F' , and results in the benefits that occur from a reduction in the losses of the transaction's value, δV_{TA} , and the relationship's value, ϕV_{RS} . Again, δ and ϕ can take any value between zero and one indicating the ability to enforce the contract privately and to preserve the value of the relationship. In the following case, private enforcement has lower fixed costs than court enforcement, $F' < F$, the ability to preserve the value of the transaction is lower $\delta < \alpha$, but the ability to preserve the value of the relationship is higher, $\phi > \beta$, than through court enforcement. The costs of private enforcement can be written as

$$C_{PE} = F' + (1-\delta)V_{TA} + (1-\phi)V_{RS} \quad (16)$$

The whole set of relevant alternative enforcement mechanism is expressed then by

$$\begin{aligned} C_{NE} &= V_{TA} \\ C_{CE} &= F + (1-\alpha)V_{TA} + (1-\beta)V_{RS} \\ C_{PE} &= F' + (1-\delta)V_{TA} + (1-\phi)V_{RS} \end{aligned} \quad (17)$$

We are particularly interested in how far private enforcement mechanisms affect the lower level of financial losses for which a seller would take a buyer to court. This threshold V_{TA}^{***} is given by

$$\begin{aligned} C_{CE} &= C_{PE} \\ F + (1-\alpha)V_{TA} + (1-\beta)V_{RS} &= F' + (1-\delta)V_{TA} + (1-\phi)V_{RS} \\ V_{TA}^{***} &= (F - F' + (\phi-\beta)V_{RS})/(\alpha-\delta) \end{aligned} \quad (18)$$

The threshold increases in F , φ , δ and V_{RS} and decreases in F' , β and α as long as $\varphi > \beta$. Under certain circumstances, the threshold V_{TA}^{***} is greater than V_{TA}^{**} (see Figure 3.). This is the case when $F' \rightarrow 0$, $\varphi \rightarrow 1$ and $\delta \rightarrow \alpha$.

In conclusion, the availability of private enforcement mechanisms increases the lower limit of financial losses for which a seller would take the buyer to court. It also decreases the probability that seller regard their contracts as enforceable through courts.

Summarizing the arguments

The reduced form model can capture the boundary between “no enforcement” and “court-enforcement” in a simple and intuitive way. The boundary is the upper limit of financial losses firms would accept before taking legal action or the lower boundary of financial losses for which firms will take a buyer to court. The factors influencing responses can then be identified more precisely.

The likelihood that sellers perceive agreements with their buyers as enforceable through courts should increase with the efficiency of the legal system, the formalization and completeness of a contract and the volume of the transaction. On the other hand, that likelihood is expected to decrease with relationships of greater value and with the availability of the private enforcement mechanisms.

The acceptance of financial losses is positively related to the value of the relationship and the availability of private enforcement capacities. But it is negatively related to the efficiency of the legal system and the formalization of contracts. The acceptance of financial losses is independent of the value of the transaction.

INVESTIGATING THE DATA

We will now empirically investigate the question about Polish hog farmers who regard their agreements or contracts as enforceable through courts and why they are nonetheless willing to accept financial losses before taking legal action. We collected the data in 1999 in two regions in Poland: Poznan and Sieradz. This survey targeted the marketing behavior of hog farmers during transition. The data therefore include detailed information on transactions and contractual relations between hog producers and their buyers (see Table 1 for the description of variables). This affords the unique opportunity to analyze the relationship between different governance structures and their enforcement mechanisms with a particular focus on the role and costs of enforcing contracts through the legal system. Given the characteristics of the responses, we estimate two model types: a maximum likelihood estimator, MLE, for the qualitative response on the enforceability and an ordinary least square estimator, OLS, for acceptance of financial losses. The OLS model is applied to the sub-sample only. In both models we apply a variety of specifications to test the robustness our results.

The perceived enforceability of agreements or contracts through courts: MLE results

Table 2 presents the MLE results of the binomial logit model. For purposes of interpretation, we calculate marginal effects and use different specifications by subsequently adding or removing groups of variables.

Among the AC variables, which capture the contract’s characteristics, only the variable AC_1 for written contracts is significant in all model specifications at the 1% or 5% level. Hence, farmers having formalized contracts perceive ad greater chance of enforcing them through the courts. This supports Lyons (1996: 27) statement: “The agreement need not to be written, but it is obviously difficult to enforce it if it is not written or witnessed by a third party.” Written contracts increase the verifiability of the agreement by a third party and lower the costs of enforcing them through courts.

Transaction variables within the TA group prouce mixed results. The frequency of the transaction TA_1 has the expected negative sign, although it is not significant. The volume of the transaction TA_2 is significant positive at the 5% level in three out of four specifications. This result supports theoretical considerations that self-enforcement or private enforcement is cost minimizing when the transaction value is low. As the value of transactions increase, sellers are more likely to consider their contracts to be enforceable through courts.

Among the relationship characteristics RS, the “dependence on the buyer” reveals a robust and significantly negative effect on the probability that a contract is regarded as enforceable. This clearly supports the view

that court enforcement can harm the value of a relationship and that sellers prefer to rely on private enforcement mechanisms. The duration of business relationship and relation-specific investments shows the expected sign, however, they are not significant.

The buyer and seller characteristics, BC and SC, prove to be of partial importance. Among the BC variables, the type of buyer, a trader or a large processor, shows no significant impact. However, the distance variable does. If the buyer is distant, the likelihood that a farmer will consider his or her contract as enforceable through the courts is reduced. Long-distance businesses appear to raise the costs of taking legal action. Among the SC variables, only the farmer's age has a significant negative impact.

The BE variables used to describe the business environment prove also to be relevant. Better access to information significantly improves the likelihood that farmers perceive their contracts as enforceable through courts. Thus, information plays a critical role in transition economies. Furthermore, the membership in a producer association shows a negative, although not always significant, influence. The business environment, therefore, bears influence on the perception of court enforcement.

The characteristics of the legal system, LS, were only included in one specification, MLE-11. Both variables show the expected signs but are not significant.

Finally, the regional dummy RE consistently shows a significant negative impact on the likelihood that a farmer consider his or her contract as enforceable through the courts. Thus, there are still some are due to regional differences that are not reflected by other variables.

The willingness to accept financial losses before going to the court – OLS results

The results of the OLS regression are presented in Table 3. Most remarkable is the fact that all relationship variables, RS, have a highly significant, positive effect on the willingness to accept losses before enforcing contracts legally. It is not only the perceived dependence on the buyer, but also the duration of the relationship that seems to value the relationship. Unlike the MLE regression, the proxy for buyer-specific investments, RS₃, turned out to be significant. This result, robust in all model specifications, confirms the hypothesis that the value of a relationship affects the maximum financial losses a buyer is willing to accept, hence the reduced form model we presented in section 3.

A somewhat surprising outcome is that the written-contract variable AC₁ positively influences the magnitude of losses. Since the contracts usually cover only a one-year period they contribute to the relationship's value by incorporating the option of future sales with the same buyer. Additionally, they often secure price premiums for high-quality hogs and thereby safeguard quality-specific investments (Beckmann and Boger 2002).

As the correlation matrix for the sub-sample exhibits, the written contract variable, AC₁ is highly correlated with the large processor variable BC₂. Therefore, AC₁ and BC₂ both express a formalized and valuable relationship.

The variables for the business environment show that better access to information, BE₁, and membership in a producer association, BE₂, significantly increase the acceptance of losses. BE₂ raises the maximum level of financial losses by more than 4,000 Polish zloty. This might be explained by stronger private enforcement capacities through business networks or the potential negative network effects court enforcement brings about.

The seller characteristics, SC, are hardly significant. Only in one model, the variable SC₁, agricultural enterprise, causes a negative impact on the willingness to accept losses.

Finally, the LS variables generate surprising results. We would expect farmers who state that the enforceability of contracts has deteriorated would accept more financial losses, and vice versa. The model, however, indicates that those who perceive court enforcement to be more efficient are also willing to accept higher losses. How could this be? The indirect costs of court enforcement have to exceed the direct costs. If the direct cost of court enforcement decreases, the indirect costs must increase. This can only be the case if better court enforcement stimulates relation-specific investments. This might be the case here.

In summary, the OLS estimates provide solid support for the hypothesis that the value of a relationship determines the losses farmers are willing to accept before enforcing contracts legally. Farmers perceive court enforcement to severely damage a relationship's value. In addition, our results provide further evidence that the threshold for court enforcement increases when private enforcement mechanisms apart from self-enforcement are available.

CONCLUSIONS

The aim of the paper is to identify factors that determine the extent to which actors consider the court as a practicable mechanism to enforce their contracts. The most important results contributing to theory and empirics of contract enforcement are that (1) the farmers' responses to our questions could be explained by cost-benefit calculations with regard to court use, (2) the costs of court enforcement are not only dependent on the efficiency of the legal system, but also on the type of contract and the value of the relationship, (3) indirect costs of court enforcement can play a significant role and (4) the use of court enforcement is dependent on the availability of alternative enforcement mechanism.

There are, however, clear limitations to our study. First, we have limited information on the efficiency of the legal system. The enforceability of contracts could decline for many reasons, not only for reasons related to the legal system. The question was targeted at a specific buyer-seller relationship; we do not have a solid general judgment on the efficiency of courts. Second, we did not address specific issues of agreements and contracts but asked generally about contract enforceability. Some contract elements may be easier to enforce than others, e.g. delayed payments vs. cheating in quality measurement. Future research could benefit from focusing on improved information about the general efficiency of legal systems and details about the enforceability of single contractual aspects.

Another challenge is to get better data on direct and indirect costs of court enforcement in different institutional settings. Analysis by Djankov et al. (2002) promises a valuable way to pursue this endeavor. It certainly enhances knowledge to study all possible and observable contract enforcement mechanisms simultaneously (Henderly et al 1998; Kähkönen et al. 2001) or the consequences of courts, e.g. the question whether firms or individuals allocate their resources differently if they regard contracts as enforceable through courts (McMillan and Woodruff (1999b; Johnson, McMillan and Woodruff 2002).

Finally, the studies which have been carried out in transition and developing countries have no equivalent in developed market economies. How many hog farmers in the USA, Germany or France would answer that they can enforce agreements or contracts with their main buyers through courts? Do we expect positive response of 100%? If our results can be generalized, we have no reason to do so.

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Table 1. Definition and Descriptive Statistics of Variables.

Name	Measurement	N	Unit	Min	Max	Mean	Std.dev.	Mean Poznan	Mean Sieradz
CE ₁ -Contract enforceable by courts	Farmer states that the contract or agreement is enforceable by court=1, else=0	289	Dummy	0	1	0.408	0.492	0.373	0.474
CE ₂ -Financial Loss Willing to Accept	Financial loss the farmer is willing to accept before enforcing a contract by court	113	Polish Zloty	100	50000	5287.61	6789.93	5812.5	4602.04
AC ₁ -Written Contract	Contract is written=1, else=0	306	Dummy	0	1	0.127	0.334	0.193	0.0
AC ₂ -Immediate Payment on Delivery	l=Buyer pays immediate on delivery of hogs, 0=delay between delivery and payment	306	Dummy	0	1	0.196	0.397	0.153	0.278
AC ₃ -Quality matters	l=Buyer applies quality grading system, 0=else	306	Dummy	0	1	0.699	0.459	0.75	0.60
TA ₁ -Frequency of Transactions	Number of sales to the buyer in 1998	306	Number	1	120	15.68	13.20	18.38	10.43
TA ₂ -Volume per Transaction	Number of hogs sold to the buyer per transaction	306	Number	4	138	24.27	22.38	27.71	17.60
RS ₁ -Dependence on Buyer	Perceived problems if the buyer is no longer in existence, l= no problem, 5=serious problem	304	1-5	1	5	2.25	1.17	2.16	2.43
RS ₂ -Duration of Business Relationship	Number of years selling to the same buyer	306	Years	0	28	4.51	4.11	4.57	4.39
RS ₃ -Buyer Specific Investments	Specific investments in hog production measured by l=low investments to 6=high investments * RS ₁	304	1-30	1	30	6.78	5.92	6.93	6.49
BC ₁ -Buyer is a Trader	Buyer is a trader=1, else=0	306	Dummy	0	1	0.348	0.477	0.392	0.257
BC ₂ -Buyer is a Big Processor	Buyer is a big processor=1, else=0	306	Dummy	0	1	0.219	0.414	0.306	0.048
BC ₃ -Distance to the Buyer more than 20 km	Distance to the buyer is greater than 20 km=1, else=0	306	Dummy	0	1	0.241	0.428	0.31	0.10
SC ₁ -Agricultural Enterprise	Farm is an agricultural enterprise=1, family farm=0	306	Dummy	0	1	0.095	0.29	0.143	0.0
SC ₂ -Farmers' Education	Level of final education: 1=low, 5=high	306	1-5	1	5	3.36	0.85	3.48	3.13
SC ₃ -Farmers' Age	Age of the farmer in years	306	Years	19	70	42.36	10.43	42.30	42.38
BE ₁ -Information Access	Perceived access to useful hog market information, very difficult=1, very easy=5	302	1-5	1	5	3.168	0.908	3.226	3.058
BE ₂ -Member of Producer Association	Farmer is a member of a producers' association=1, else=0	306	Dummy	0	1	0.186	0.389	0.237	0.086
LS ₁ -Enforceability of Contracts Deteriorated	Farmer states that the enforceability of contracts declined in region since 1989=1, else=0	225	Dummy	0	1	0.330	0.471	0.410	0.173
LS ₂ -Enforceability of Contracts Improved	Farmer states that the enforceability of contracts improved in region since 1989=1, else=0	225	Dummy	0	1	0.116	0.320	0.134	0.065
RE-Poznan	Farm in Poznan=1, Farm in Sieradz=0	306	Dummy	0	1	0.660	0.474	1	0

Table 2. Explaining a Contract or Agreement to be Considered as Court Enforceable: MLE Estimates.

Dependent Variable $p(CE_{it}=1)$	MLE-1	MLE-2	MLE-3	MLE-4	MLE-5	MLE-6	MLE-7	MLE-8	MLE-9	MLE-10	MLE-11
Marginal effects after $\Pr(C_{it}) =$	0.405	0.406	0.403	0.0404	0.401	0.407	0.407	0.406	0.399	0.401	0.433
AC ₁ – Written Contract	0.223** (0.091)				0.203** (0.097)					0.326** (0.104)	0.315** (0.113)
AC ₂ – Immediate Payment on Delivery	-0.0026 (0.753)				0.016 (0.077)					0.061 (0.084)	0.019 (0.105)
AC ₂ - Quality matters	-0.0039 (0.0046)				-0.005 (0.004)					-0.003 (0.005)	-0.008 (0.007)
TA ₁ – Frequency of Transactions		-0.0004 (0.0023)			-0.001 (0.002)					0.001 (0.003)	0.002 (0.003)
TA ₂ – Volume per Transaction		0.0027** (0.0013)			0.0022 (0.0015)					0.0046** (0.0018)	0.0041** (0.0019)
RS ₁ – Dependence on Buyer			-0.061** (0.027)		-0.059** (0.027)					-0.067** (0.029)	-0.052 (0.035)
RS ₂ – Duration of Business Relationship			0.004 (0.007)	0.0038 (0.0075)	0.0027 (0.0074)					0.0023 (0.008)	-0.0005 (0.009)
RS ₃ – Buyer Specific Investments				-0.0053 (0.0054)							
BC ₁ – Buyer is a Trader						0.037 (0.071)	0.005 (0.065)			0.076 (0.074)	0.047 (0.089)
BC ₂ – Buyer is a Big Processor						0.046 (0.086)					
BC ₃ – Distance to the Buyer more than 20 km							-0.051 (0.074)			-0.176** (0.087)	-0.211** (0.099)
SC ₁ – Agricultural Enterprise								0.064 (0.116)		-0.045 (0.138)	-0.007 (0.165)
SC ₁ – Farmers' Education								-0.016 (0.039)		-0.037 (0.044)	-0.025 (0.053)
SC ₂ – Farmers' Age								-0.005* (0.003)		0.008** (0.003)	-0.003 (0.003)
BE ₁ – Information Access									0.062* (0.034)	0.076** (0.0367)	0.072* (0.042)
BE ₂ – Member of Producer Association									-0.084 (0.074)	-0.114 (0.078)	-0.101 (0.089)
LS ₁ – Enforceability of Contracts Declined											-0.018 (0.086)
LS ₂ – Enforceability of Contracts Improved											0.051 (0.125)

Table 2. continued

RE – Poznan	-0.137** (0.065)	-0.128* (0.066)	-0.123** (0.062)	-0.102* (0.061)	-0.165** (0.068)	-0.105 (0.105)	-0.076 (0.067)	-0.107* (0.063)	-0.097 (0.063)	-0.175** (0.078)	-0.174* (0.099)
Log Likelihood	-191.40*	-192.01**	-190.36*	-192.44	-186.33**	-187.52	187.44	-192.94	-189.75*	-169.93***	-127.03**
Pseudo R2	0.023	0.017	0.022	0.011	0.042	0.006	0.007	0.014	0.018	0.085	0.083
N	289	289	288	288	288	279	279	289	278	274	202

Note: a) standard error in parentheses, b) level of significance: * 10%, ** 5% and *** 1 %

Table 3. Explaining the Acceptance of Financial Losses before Going to Court: OLS Estimates.

Dependent Variable CE_2	OLS-1	OLS-2	OLS-3	OLS-4	OLS-5	OLS-6	OLS-7	OLS-8	OLS-9	OLS-10
α -Constant	22.26 (1778.48)	-307.75 (1360.32)	-182.82 (1390.32)	-1133.87 (1578.94)	-1288.12 (1713.01)	-266.2705 (1352.56)	203.54 (4345.09)	-2353.97 (4378.32)	5792.90 (4701.42)	-1574.24 (5389.96)
RS ₁ – Dependence on Buyer	1179.24** (604.93)									
RS ₂ – Duration of Business Relationship	423.14*** (148.16)	459.02*** (142.16)	435.52*** (141.07)	430.33*** (141.38)	469.52*** (146.82)	465.86*** (144.78)	321.32** (142.07)	299.69** (137.36)		426.51*** (159.63)
RS ₃ – Buyer Specific Investments		454.68*** (122.32)	448.64*** (120.54)	458.15*** (121.75)	472.01*** (127.83)	463.20*** (122.19)	376.56*** (127.74)	360.95*** (125.47)		439.85*** (146.08)
AC ₁ – Written Contract			3967.44** (1726.01)	3233.281* (1814.61)	1293.37 (2438.51)					
AC ₂ – Immediate Payment on Delivery			92.19 (1532.53)	230.41 (1545.32)	404.48 (1568.91)					
TA ₁ – Frequency of Transactions				35.42 (37.69)	46.48 (39.06)					
TA ₂ – Volume per Transaction				26.30 (25.81)	15.93 (26.95)					
BC ₁ – Buyer is a Trader					269.59 (1470.64)	-174.954 (1333.32)			-458.10 (1497.04)	
BC ₂ – Buyer is a Big Processor					2908.28 (2597.84)	3788.13** (1560.87)			5014.22** (1990.04)	
SC ₁ – Agricultural Enterprise							-6386.2* (3495.21)	-5333.89 (3358.06)	-1043.75 (2756.35)	-3707.71 (3693.10)
SC ₂ – Education							644.49 (835.07)	387.50 (802.74)	1000.87 (922.53)	-359.57 (950.11)
SC ₃ – Age							-58.12 (65.28)	-65.17 (63.43)	-103.57 (71.33)	-87.18 (76.07)
BE ₁ – Information Access								1219.83** (675.66)		1601.01** (777.49)
BE ₂ – Member of Producer Association								4755.52*** (1659.18)		4221.36** (1807.91)
LS ₁ – Enforceability of Contracts Declined										1840.88 (1516.36)
LS ₂ – Enforceability of Contracts Improved										6545.01*** (2144.32)
RE – Poznan	1754.08 (1266.26)	1386.95 (1191.93)	252.61 (1274.96)	-154.29 (1578.94)	-745.87 (1452.10)	-160.51 (1382.76)	-77.18 (1216.83)	-1117.189 (1210.837)	-747.32 (1530.28)	-2824.96* (1526.34)
F	4.37	7.99	6.0	4.53	4.13	7.05	6.02	5.49	2.41	5.8
R ²	0.108	0.181	0.221	0.234	0.273	0.255	0.288	0.366	0.12	0.459
N	112	112	112	112	112	112	112	111	110	87

Note: a) standard error in parentheses, b) level of significance: * 10%, ** 5% and *** 1 %