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Firms facing new institutions: transactional governance in Romania

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How do firms respond to new institutions? This question is addressed by analyzing the determinants of firms' strategies on transactional governance, using data from a Romanian survey. Strategy variables are regressed on factors that should determine behavior according to agency and transaction-cost theories. The results suggest that strategies do not reflect the long-run efficiency considerations emphasized by theory. Behavior reflects peculiarities of transition; history, ownership, and state relations are more important in determining responses to institutions. Firms use institutions but not as predicted by theories emphasizing efficiency, suggesting that institutional reform must reflect both transitional responses and predicted long-run behavior. *Journal of Comparative Economics* **31** (4) (2003) 695–714. IRIS Center, University of Maryland, College Park, MD 20742, USA.

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1. Introduction

Understanding how firms adjust to new institutions is integral in designing reforms and crucial in assessing how much can be expected from institutions before the long run. More than a decade after the start of transition, very little is known about the ways in which firms have responded to the new institutions that surround them. While there are literally hundreds of results on the reaction of enterprises to privatization, competition, and hardened budgets, papers on the adjustment of firms to institutions number in the single

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digits, and offer only weak conclusions (Djankov and Murrell, 2002). The desire to address this imbalance provides one motivation for this paper's empirical analysis.

One crucial set of institutions comprises those arrangements facilitating transactions between businesses. Recent work on transition economies has shown that firms are using these new institutions frequently and expressing surprisingly high levels of confidence in them. However, little is known about how these institutions have affected firm restructuring. A second motivation of this paper is to characterize how firms are adjusting to the new institutions.

Section 2 describes two contrasting characterizations of firm adjustment, one suggested by standard economic theories and the other motivated by special features of transition. A basic empirical question is which of these two characterizations has greater explanatory power. This paper develops the evidence for Romania. Section 3 presents key facts about firms and institutions in Romania, establishing the general relevance of evidence from that country. Section 4 describes the data used for dependent variables. These data are derived from a survey question that asks company directors which mechanisms they use to govern transactions. The raw data show that bilateral governance is by far the most important mechanism, with use of the legal system second. A principal components analysis of these data suggests that transactional strategies can be captured using three variables, which are the dependent variables in the ensuing analysis.

Section 5 contains the main results. The three strategy variables are regressed on those characteristics of goods and markets that should determine a firm's behavior, according to standard theories of transaction and contract. The fit of these regressions is poor. If those standard theories present a normative model for efficient transacting, the empirical results suggest that Romanian firms have not progressed far in aligning transactional governance with the dictates of efficiency. Hence, an alternative hypothesis is investigated, which relates a firm's transactional strategy to factors previously shown to be important in transition: the age of a firm, its origins, ownership, and relations with the state. The three strategy variables are regressed on these transitional variables. These regressions provide stronger results than those containing the characteristics of goods and markets. Comparison of the two sets of results implies that Romanian firms are adjusting very slowly to the possibilities offered by the new institutions. A concluding section summarizes the evidence and briefly identifies some implications for strategies of institutional change.

2. Firms and institutions in transition

Transition is an ideal testing ground for examining how firms react to new circumstances.[1] Large scale reforms were introduced quickly, and were exogenous for individual firms. Firms needed to respond rapidly and radically, leading to great differences between those firms that restructured and those that did not. Large rewards accrued to those making good decisions, making it easier than usual to differentiate between successes and failures. Hence, there has been much empirical work on the restructuring of firms in transition.

[1] A more extensive discussion of these points appears in Murrell (2003b).

Nevertheless, results on institutions and firms are not commonplace (Djankov and Murrell, 2002).

Consider an example, setting the boundaries of the firm, which is the paradigmatic problem of the new institutional economics. Firms first faced this problem when freedom of contract and corporate property rights were instituted. Before that, firm boundaries reflected the demands of the socialist system. A huge impetus for change was recognized by researchers (e.g., Earle et al., 1996). However, reported results on changing firm boundaries are surprisingly few. The results point to only small movements, and conclusions on causes are almost entirely absent. The paucity of published results and the small effects suggest that systematic results are difficult to find, either because firm boundaries are not changing much or because the process of change is not well understood.

Can one conclude, therefore, that the new institutions that facilitate business transactions are irrelevant for firms? In a succession of papers covering transition countries from Poland to Kyrgyz, this conclusion is shown to be false (Hendley et al., 2000; Johnson et al., 2002; Murrell, 2001a). Firms are using the new freedom of contract to develop relationships with a changing set of partners. Firms file suit frequently, visit the courts regularly, and evaluate the legal system positively. The confidence in the enforcement powers of the courts enhances the willingness to extend credit to trading partners. Firms that acquire legal human capital do better in their transactions. Existing results, then, suggest a paradox in the coexistence of the relative paucity of results on firm boundaries and the relative sanguinity of the findings on the use of the new transactional institutions. The resolution of this paradox can be found by analyzing which factors determine strategies of transactional governance.

The last three decades have witnessed the development of precise theories predicting the use of different transactional governance mechanisms, in the areas of economics known as the new institutional economics, agency theory, transaction cost economics, and incomplete contract theory (Williamson, 1985, 2000; Masten, 1996b; Masten and Saussier, 2002; Salanié, 1997; Chiappori and Salanié, 2002; Holmström, 1999).[2] These theories are supported by a considerable amount of empirical evidence from developed economies (Chiappori and Salanié, 2002; Williamson, 2000). Because they focus on the reactions of firms to informational and bargaining problems that exist in any environment, the theories offer a normative model against which the adjustment of firms can be calibrated. By examining the empirical fit between these theories and the data, judgments can be made on whether firms are adjusting their behavior toward that expected on the basis of efficiency considerations in long-run equilibrium in a market economy.

There are two complementary reasons why theories that work well in developed economies might founder in the transition environment. The first is that firms are slow to adjust to the new institutions. The second is that firm behavior reflects the special features of transition.

Slow adjustment might occur because of the sophistication of the problem faced by firms. Consider a manager pondering what to do when facing those new institutions

[2] Although there are important differences between the theories, the following analysis does not make fine distinctions, because these theories are highly complementary in suggesting the types of variables that explain choices of transactional governance mechanisms (Masten and Saussier, 2002).

pertinent to transactions in goods and services. Should the firm invest in relationships or in a legal staff? Should it merge with a supplier or spin off a division? Would a manager who previously relied on a planning bureaucracy even know enough to ask the right questions?[3] Indeed, the manager's problem has been a central part of research program in new institutional economics for more than two decades: to understand the characteristics of transactions and governance structures and to match specific transactions with particular governance structures (Williamson, 2000) The ultimate effectiveness of the new set of transactional institutions depends on each firm solving this theoretical problem. It would not be surprising if firms in transition have not yet done so.

Several features of the transition environment suggest that firms would not adjust to the new institutions in the manner predicted by those theories pertinent to an efficient market economy. Many firms have origins in old state enterprises. For those firms, the safe harbor of old networks might be more attractive than experimentation with new institutions. Firms emanating from the state sector under cloudy circumstances must avoid legal institutions to prevent disclosure of their dubious history.[4] Firms with soft budgets might find it easier to extract state aid than to construct self-enforcing agreements with customers. Hence, special characteristics of the transition environment might determine strategies of transactional governance.

In the empirical work, the dependent variables characterize transactional governance strategies. The basic objective is to find out whether these strategies are best explained by standard economic theories of transaction and contract or by the special features of transition.

3. Transactional institutions in Romania

For the empirical exercise to have consequence, the institutions studied must be new so that the results bear on learning curves; the institutions must be deemed relevant so that it is worthwhile for firms to develop strategies for using the new institutions; and the institutions must be of reasonable quality so that negative results do not simply reflect the country in question. This section presents information to show that these three conditions are satisfied in Romania. It does not provide a general overview of institutional reforms.[5]

The basic laws pertinent to transactions, the Civil Code, the Commercial Code, and the Civil Procedure Code, were first passed in the nineteenth century and remained in existence throughout the socialist period, but were hardly used. Transactional relations were regulated by a law on economic contracts between socialist enterprises, which made the codes moot. Similarly, the court system, although in existence during the socialist period, was largely irrelevant for inter-firm transactions. Contracts between state enterprises were constructed and enforced by an administrative structure, with disputes settled by a specialized bureaucracy.

[3] Posing the issue this way follows Nelson and Winter (1982).

[4] Hay and Shleifer (1998) state this point in a more general way, arguing that firms operating extra-legally will avoid using the legal system to prevent disclosure.

[5] Further details can be found in Earle and Telegdy (1998), Rühl and Daianu (2000), and Murrell (2001b).

Contractual autonomy came in 1990 and the old codes again became applicable. The socialist dispute settlement procedures were abandoned and the old court system became the forum for filing suits on contractual disputes. The newness of this revivified legal structure for firms is clearly manifested in the grant of contractual autonomy. For the first time in four decades, managers had the choice of whether to sign contracts, what the terms would be, and whether to rely on the courts or some other mechanism for enforcement.

New legislation soon revamped the old codes. There were new laws on companies, bankruptcy, secured transactions, leasing, and franchises. Myriad decrees, rulings, and regulations affected the conduct of transactions, e.g., on calculation of penalties, the determination of jurisdiction, the use of private arbitration, the properties of payment instruments, and the role of the banks as guarantors. The Law on Judicial Organization of 1992 recast court structure. The number of judges increased threefold in the 1990s to handle the new caseload, with many of the newcomers being recent graduates of law schools.

In sum, there is ample justification to conclude that the pertinent institutions were new to firms in the 1990s and therefore that the empirical results show firms on their learning curves.

Data from Romanian firms provides information on whether firms use the new institutions.[6] Firms are utilizing freedom of contract, freely choosing partners and negotiating agreements: firms report that one third of trading partners were new in the last two years. The overwhelming majority of firms use written contracts and these contracts are not mere formalities; for example, over two-thirds of firms use contracts with penalties for late delivery and more than three quarters have penalties for late payment. Firms claim that they frequently cite specific language from contracts when implementing agreements.

The threat of court enforcement implicit in contracts is not taken lightly; 66% of firms draft contracts with a view to filing suit in court should this be necessary. In addition, 89% of firms would use the courts against delinquent customers and 48% would use the courts if a customer cancelled an order after the goods were produced. In 2000, 73% of surveyed firms were plaintiffs in at least one suit involving matters of commercial law. Moreover, company managers are deliberately constructing strategies for use of laws and legal institutions, fully 61% of managers rating such strategies as very important. Hence, the new institutions are highly relevant to firms in Romania.

Hellman et al. (2000) find that Romania is somewhat above average for transition countries in the percentage of managers (55%) agreeing that the legal system will uphold contract and property rights. The EBRD (2000) rates commercial laws as reasonably clear and administrative and judicial support of the law as reasonably adequate in Romania, which rates above average for transition countries. Murrell (2003a) compares the quality of Romanian institutions with those of countries at a similar level of development and finds that Romanian legal institutions are slightly better than would be expected. Several cross country evaluations find that the Romanian courts are typical or better than average among transition countries, e.g., Djankov et al. (2003), USAID (1999), Johnson et al. (2002). Hence, Romania's institutions are roughly of the quality expected, given the country's

[6] The survey that is the data source is described in detail in Section 4.

general circumstances. Results on the adjustment of Romanian firms to new institutions can be generalized to other countries.

4. The dependent variables

This paper examines what factors affect the choice of strategies of transactional governance. The most similar existing empirical literature examines decisions on whether to use vertical integration to solve transactional problems (Masten, 1996a). In contrast, the present analysis presupposes that vertical integration is not an option, but that there exists a variety of alternative mechanisms of solving such problems. It examines the choice between these governance mechanisms, particularly between formal and informal ones.

Although the choice between formal and informal governance is much discussed in the theoretical literature, it has seen little empirical investigation since Macaulay's (1963) seminal study (Masten, 1996b; Masten and Saussier, 2002). The lack of an obvious source of data limits empirical work. Studies using measures of outcomes, such as success in fulfilling agreements or use of trade credit, do not establish a direct link between transactional properties and governance choice (see, e.g., Hendley et al., 2001; Johnson et al., 2002). Reliance on reports about frequency of the use of the courts is problematic since a very effective legal strategy might by-pass the courts (Hendley et al., 2001).

One possible approach is to collect data on transactional behavior from the source, asking company officials about their reliance on the different mechanisms of transactional governance. Such data for Romania were first reported by Hendley and Murrell (2003), who provide the motives and justification for the approach. They identify six conceptually distinct mechanisms for supporting transactions. These are summarized in Appendix A, which provides an English translation of a survey question presented to company general directors.

Two hundred and fifty-four Romanian firms in manufacturing and services in 12 cities were surveyed. A large variety of sectors and a broad a spectrum of ownership types were covered. Questions were administered in face-to-face interviews with four different company officials, a general director, a sales manager, a procurement manager, and the person responsible for legal matters, often the company lawyer.

Tables 1 and 2 summarize key aspects of the data obtained in answer to the question in Appendix A. As the means in Table 1 show, the two bilateral mechanisms, i.e., personal relationships and relying on each other's incentives, are most important, while the legal system also plays a significant role. Indeed, these two mechanisms, bilateralism and formal legal tools, which have been the traditional focus of the literature, provide the bulk of the support for agreements in Romania. Third-party mechanisms, e.g., networks, and private enforcement, e.g., criminal groups, play a relatively minor role, in contrast to the amount of discussion devoted to these mechanisms in the transition literature.

Table 2 presents the correlations between the six variables, all of which are either positive and significant or non-significant. This pattern, the dominant one in the data, most likely arises from the fact that firms with more severe transactional problems address these problems by increased use of several governance mechanisms. Hence, a single feature of a firm's strategy can be simultaneously reflected in all six variables, in this case,

Table 1
Romanian firms' use of mechanisms to support agreements

Method of supporting agreements	Means from responses of 254 firms to question in Appendix A
Personal relationships and trust	8.27
	(2.14)
Relying on each other's own incentives	8.57
	(1.91)
Third-party social or business relationships	3.83
	(3.07)
Using private dispute resolution services	2.45
	(2.97)
Government	2.37
	(2.94)
The legal system	6.59
	(3.14)

Note. The standard errors of responses in parentheses.

Table 2
Correlation coefficients between the use of different mechanisms to support agreements

	Personal relationships and trust	Relying on each other's own incentives	Third-party social or bus. services relationships	Private dispute resolution services	Government
Relying on each other's own incentives	0.40				
	(0.00)				
Third-party social or business relationships	0.14	0.15			
	(0.03)	(0.02)			
Using private dispute resolution services	0.09	0.07	0.35		
	(0.15)	(0.28)	(0.00)		
Government	−0.05	−0.03	0.34	0.40	
	(0.47)	(0.68)	(0.00)	(0.00)	
The legal system	−0.04	−0.09	0.13	0.16	0.25
	(0.54)	(0.13)	(0.04)	(0.01)	(0.00)

Note. The parentheses contain probability levels on tests of null hypotheses such that the correlation coefficients equal zero.

more intensive efforts on solving transactional problems. Not surprisingly, uses of the two bilateral mechanisms are highly correlated. Moreover, they are only weakly correlated with the use of any other mechanisms, and indeed the only negative correlations involve these two. Hence, bilateralism appears to be a single separate strategy.

These observations suggest that the empirical analysis will be more incisive if it focuses on a smaller set of variables, each capturing a single aspect of the firm's core strategy. These strategy variables are the ones that are most likely to be related directly to the characteristics of the firm and its markets. From a theoretical perspective also, it is more enlightening to focus on core strategies. The survey framework dictated the use of the six original variables on transactional mechanisms, but these variables do not necessarily represent the most interesting conceptual issues, e.g., whether there are systematic differences across firms in the aggregate use of governance mechanisms.

Table 3
Correlations between the six firm responses (X_{ij}) and the three strategy variables (S_{ij})

Methods of supporting agreements (X_{ij})	Aggregate use S_{1j}	Bilateralism S_{2j}	Legal system S_{3j}
Personal relationships and trust	0.28	0.79	−0.10
Relying on each other's own incentives	0.33	0.75	0.25
Third-party social or business relationships	0.71	0.03	−0.29
Private dispute resolution services	0.72	−0.15	−0.26
Government	0.70	−0.40	−0.05
The legal system	0.45	−0.20	0.83

The simplest technique for extracting a smaller set of underlying variables from a larger set of highly correlated variables is principal components. The raw data comprise X_{ij}, where j indexes firms and i indexes the six mechanisms listed in Appendix A. These six variables are a function of a smaller set of underlying strategies, S_{kj}, and idiosyncratic error terms ε_{ij}.

$$X_{ij} = \sum_{k=1}^{n} \alpha_{ik} S_{kj} + \varepsilon_{ij}, \quad i = 1, \ldots, 6;\ j = 1, \ldots, 254.$$

Both the α_{ik} and the S_{kj} are estimated from the data using principal components analysis. The S_{kj} provide the dependent variables for the subsequent empirical analyses.

Since the S_{kj} are by construction uncorrelated, the α_{ik} capture the correlations between the use of the six different mechanisms and the underlying strategy variables. Table 3 shows the α_{ik} for three underlying strategy variables, three being the number that exhausts the intuitively interpretable variables that can be obtained from these data.[7] An examination of these α_{ik} facilitates interpretation of the S_{kj} and shows that the three S_{kj} match broader theoretical concepts much more closely than do the X_{ij}.[8]

The first strategy variable, designated aggregate use, is positively correlated with the use of all six individual mechanisms. Aggregate use reflects how much and how effectively a firm actively pursues mechanisms to bolster transactional governance, the dominant pattern observed in the individual correlations.[9] The two bilateral mechanisms, trust and self-enforcement, are highly complementary, each contributing to the second strategy variable, labeled bilateralism. Table 3 shows that the third variable, designated legal system, is not associated with the use of other mechanisms, except for some reliance on the partners' bilateral incentives.[10]

[7] The number of separate strategies was not determined by statistical tests, but rather by an inspection of the results focusing on the intuitive interpretation of the various strategies.

[8] An earlier version of this paper (Murrell, 2003a, 2003b, 2003c) provides an extended discussion of the validity of the three strategy variables.

[9] This interpretation is bolstered by a correlation of 0.98 between S_{1j} and the sum of the X_{ij}.

[10] Interestingly this result clearly backs up the natural intuition that relying on personal trust is not associated with a legalistic strategy, but relying on the other party's narrow incentives can be.

5. Seeking the determinants of transactional strategies

This section examines whether Romanian firms exhibit "a discriminating match, according to which transactions are aligned with governance structures..." (Williamson, 2000, p. 599) or whether the choice of transactional strategies is more closely associated with those characteristics of firms that reflect the transition environment. The empirical approach is simple. The next subsection lists the explanatory variables suggested by standard economic theories of transaction costs and contract. Then each of the three strategy variables is regressed on the full set of transaction-cost and contract variables. The ensuing subsection identifies variables capturing the special character of the transition environment, and an analogous empirical exercise is conducted. Then, the relative success of the two sets of regressions is examined. Table 4 provides definitions and summary statistics for all variables used in the regressions.[11]

Table 4
Definitions and summary statistics

Category	Variable	Definition	Mean	St. dev.	Obs.
		Panel A. Dependent variables and characteristics of goods and markets			
Dependent	Aggregate use	First principal component of survey responses, reflecting use of all transactional mechanisms	0.000	100.000	254
	Bilateralism	Second principal component of survey responses, reflecting relative use of bilateral mechanisms	0.000	100.000	254
	Legal system	Third principal component of survey responses, reflecting relative use of the legal system	0.000	100.000	254
Asset specificity	Custom production	Percentage of sales plus purchases that involves customization to fit the needs of the purchaser	25.265	32.462	254
	Production to order	Percentage of sales plus purchases that is supplied to order (rather than out of inventory)	67.836	28.836	254
	Importance of partners[a]	Dummy variable equal to 1 if a single customer or supplier accounts for a large share of company purchases or sales	0.165	0.372	254
	Local transactions	Percentage of sales plus purchases that is conducted in the local region in which the firm is situated	46.275	36.196	252
	Lack of alternatives[a]	Dummy variable equal to 1 if it is difficult for firm to find alternative outlets for unwanted product or alternative sources when supply fails	0.307	0.462	254

(*continued on next page*)

[11] The S_{ij} derived from the principal components analysis are multiplied by a factor of 100 to simplify the presentation of results.

Table 4 (*Continued*)

Category	Variable	Definition	Mean	St. dev.	Obs.
Measurement costs	Importance of quality	Dummy variable equal to 1 if the quality of the most important product or the most important purchase can vary in non-obvious ways	0.732	0.444	254
	Non-verifiability	Dummy variable equal to 1 if it is difficult for third parties to verify the quality of the most important product or the most important purchase	0.453	0.499	254
Uncertainty	Exogenous uncertainty	Dummy variable equal to 1 if the firm's markets are affected by weather or transportation related disruptions	0.548	0.499	252
Frequency	Deliveries per month[a]	Weighted average of deliveries per month of the typical item sold and the typical item purchased; weights correspond to sales and purchases as a % of sales plus purchases	2.934	8.361	253
		Panel B. Characteristics reflecting the transition environment			
Age	Pre-1990 origins	Dummy variable equal to 1 if the firm was first founded before 1990	0.282	0.451	252
	New firm	Dummy variable equal to 1 if the firm was founded after 1992	0.194	0.397	252
Origins	Originally state owned	Dummy variable equal to 1 if the company was a state enterprise in 1989	0.575	0.495	254
	Spin-off from state	Dummy variable equal to 1 if the firm originated in a state enterprise but was not the legal successor of the enterprise	0.047	0.213	254
Relations with the state	Soft budgets	Dummy variable equal to 1 if the firm believes that it faces a soft budget, that is the government will aid it in problem times	0.169	0.376	254
Ownership	State majority	Dummy equal to 1 if the state has a majority ownership share	0.161	0.369	254
	Employee majority	Dummy equal to 1 if employees have a majority ownership share	0.472	0.500	254
	Block ownership	Percentage share of ownership of largest owner	43.137	34.464	251

[a] Data reflects observations made on two transactions, one as customer and one as supplier, rather than aggregate data on all the firm's transactions.

5.1. *Relating transactional strategies to characteristics of goods and markets*

Transaction cost economics, agency theory, and related theories collectively provide a normative model for behavior. If managers pursued efficient arrangements, then the choice of transactional governance strategy would be a function only of the characteristics of goods and markets identified in those theories (Williamson, 1985, 2000; Masten, 1996b; Masten and Saussier, 2002; Salanié, 1997; Chiappori and Salanié, 2002; Holmström, 1999). The remainder of this subsection examines whether firms react to the underlying characteristics of goods and markets in the manner predicted by these standard theories.

The predictions are well established and, for the most part, highly complementary between theories. Therefore, there is no need to document them in any detail, nor to draw fine theoretical distinctions.

These theories focus on four classes of variables: asset specificity, measurement, uncertainty, and frequency of trade. The survey of Romanian firms elicited information on all four. In many cases imperfect proxies are used, a feature common in this literature (Masten and Saussier, 2002). Many of the variables summarize aggregate features of the firm's transactions.[12] This is reasonable because a small number of similar products dominate activities in the one-plant firms that constitute an overwhelming majority of the sample.[13]

5.1.1. Asset specificity

When assets are dedicated to a specific transaction, hold-up is a possibility. Thus, asset specificity increases the payoff from considering carefully the properties of different governance mechanisms and from devoting resources to solving transactional problems. For example, the benefits of long-term contracting, which requires enforcement by the legal system, increase as asset specificity rises (Masten, 2000). Five forms of asset specificity are usually distinguished: physical capital, human capital, temporal, dedicated (market size), and locational.

Physical- and human-capital specificity are captured in the variable custom production, which reflects whether production requires dedicated equipment or human capital attuned to the needs of a particular customer. Also, once a customized product is made but not shipped, it constitutes the most dedicated of assets. Similarly, the variable production to order (rather than out of inventory) suggests attention to the needs of the particular customer. Many products that are made-to-order reflect temporal specificity in production processes, since ephemeral products are made only when orders are placed.

When one firm's purchases or sales are concentrated on one trading partner then opportunities for hold up increase. This effect is captured in the variable that measures the importance of the partners to the firm. Geographical proximity of buyer and seller also indicate a relationship of greater dependence (Masten, 1996b). Proximity is captured by a variable measuring the percentage of transactions that are local transactions.

The final asset specificity variable, lack of alternatives, is a catchall that summarizes whether alternative trading partners are available or not. Existing results show that specialized governance procedures are adopted when there are few alternatives (Joskow, 1988; Masten and Crocker, 1985).

5.1.2. Measurement costs

When quality varies and is not easily measured, specialized governance is needed to mute the opportunism that could arise from one party exploiting informational imperfections. Then, governance issues are more important in the aggregate, but some

[12] The data on a firm's transactions reflect those in goods and services only, not the hiring of labor or the purchases of large scale investment items.

[13] Several variables capture phenomena that reflect both the sales and purchasing sides of the firm's operation. In this case, the sales and purchase data are aggregated using weights reflecting the relative sizes of sales and purchases.

mechanisms of governance are relatively less effective. Agency theory (Chiappori and Salanié, 2002) predicts that specialized tools of contract are more valuable when information is more important to payoffs. When quality is easily verifiable, the neutral adjudication provided by the legal system or third parties has advantages over bilateral haggling. When quality is not easily verified by outsiders, the legal system and third parties face difficulties in adjudicating disputes. Hence, the repeated bargaining of bilateralism is relatively less costly with unverifiable quality.

The importance of quality variable reflects whether quality can vary in subtle ways, ones not immediately transparent to all. Non-verifiability moves one step beyond quality variation, capturing the difficulty that courts or third parties have in detecting problems with quality. Holding verifiability constant, greater variation in quality increases the need for stronger overall governance, favoring use of the legal system over bilateralism. Decreases in verifiability, holding the importance of quality constant, disfavor the legal system relative to bilateralism.

5.1.3. Uncertainty

As uncertainty increases, the importance of responding efficiently to changing circumstances rises. Then, sophisticated governance mechanisms are needed to ensure that adjustments lead to productive changes, not to breakdown. Contracts are more likely to be incomplete, with greater reliance on bilateralism, i.e., relational agreements. Court ordering is costly because delay in adjudication slows the responses of firms and because courts cannot process all pertinent information. The exogenous uncertainty variable reflects whether output or input markets are significantly affected by weather or transportation-related disruptions.

5.1.4. Frequency

One-time exchange increases incentives for opportunism, while repeated exchange gives scope for bilateralism, either by facilitating the development of personal trust or because the gains from short-term opportunism become small relative to the loss of future profits. The measure of frequency is the number of deliveries per month. Given the construction of the dependent variables, frequency should not affect the aggregate use of transactional governance mechanisms. However, greater frequency increases the attractiveness of bilateralism while reducing that of the legal system.

5.1.5. The results

Table 5 presents the results of OLS regressions of the three strategy variables on the explanatory variables capturing the characteristics of goods and markets. The likelihood ratio test suggests that this three-equation model has no more explanatory power than one that includes intercept terms only; t-statistics lead to the same conclusion. Of the 27 t-statistics for slope coefficients, 5 are higher than the 20% significance level, 2 are higher than the 10% level, and 1 is higher than the 5% level. This is slightly less than would be expected from random chance if classical assumptions held.[14] Apart from the result on the

[14] Note that these results do not reflect problems of multicollinearity because the R-squareds are also low. An analysis based on simple correlations provides the same picture.

Table 5
Effects of the characteristics of transactions on transactional governance

Category of expl. variable	Explanatory variable	Dependent variables: Aggregate use	Bilateralism	Legal system
Asset specificity	Custom production	0.344*	0.037	−0.144
		(1.57)	(0.19)	(0.64)
	Production to order	0.263	0.283	0.121
		(1.06)	(0.97)	(0.51)
	Importance of partners	6.172	−6.916	31.069*
		(0.36)	(0.37)	(1.59)
	Local transactions	0.179	−0.082	0.166
		(0.95)	(0.45)	(0.89)
	Lack of alternatives	−22.234*	−14.779	−7.840
		(1.57)	(1.05)	(0.54)
Measurement costs	Importance of quality	−4.348	28.463**	−10.957
		(0.26)	(1.81)	(0.76)
	Non-verifiability	2.704	−4.008	11.083
		(0.20)	(0.32)	(0.82)
Uncertainty	Exogenous uncertainty	2.372	−21.082	−18.858
		(0.14)	(1.21)	(1.22)
Frequency	Deliveries per month	−0.468	1.612***	−0.265
		(0.63)	(3.57)	(0.36)
	Intercept	−25.823	−29.335	−6.755
		(1.03)	(0.87)	(0.32)
	R^2	0.04	0.05	0.03
	Adjusted R^2	0.004	0.011	−0.009
	Observations	251	251	251

Notes. 1. Robust t-statistics are in parentheses 2. The $\chi^2(27)$ statistic for the likelihood ratio test of this model versus one with only intercepts is 29.4. 3. The critical values for the $\chi^2(27)$ statistic are 46.9 for the 99% significance level and 36.7 for the 90% significance level.

* Significance at the 20% level.
** Idem., 10%.
*** Idem., 5%.

frequency variable, the signs and sizes of the coefficients point toward the same conclusion. For example, the following results are the opposite of those predicted by theory: an increase in verifiable quality is associated with an increase in the use of bilateralism and a decrease in the use of the legal system, while increases in non-verifiability have the reverse effects. The overwhelming impression from Table 5 is that Romanian firms do not evidence any tendency to align governance structures and properties of transactions.

These results are most easily interpretable under the assumption that the characteristics of goods and markets are determined before transactional strategies, which is the usual assumption in the literature: only a few studies have dealt directly with possible endogeneity (Masten and Saussier, 2002). The assumption of exogeneity is reasonable in the transition environment, for several reasons. Older firms inherited their products, production processes, and trading partners from the old regime. Moreover, the set of trading partners surviving the chaos of early transition reflected that environment rather than endogenous selection in the more settled market and institutional environment existing at the time of data collection. For very new firms, it is likely that the entrepreneur identified a market niche and subsequently chose transactional strategies, rather than doing both simultaneously.

Nevertheless, it is helpful to understand how the interpretation of the regression results would change with relaxation of the exogeneity assumption. Consider a specific example: the relationship between uncertainty and use of the legal system. Assume firms pick their transactional strategies and their markets together so that the level of uncertainty and the degree of commitment to a legal strategy are partially the product of the same decision-making process, implying that uncertainty has an endogenous component. The problem facing the econometrician is that this endogenous component is not measured separately from the truly exogenous element of uncertainty. Then, given a regression of use of a legal strategy on measured uncertainty, there is bias in the estimates. However, the regression coefficient on uncertainty would consistently estimate a value that was equal to zero only if the exogenous component of uncertainty had no effect on the choice of legal strategy.[15] Under this scenario, just as in the case of exogeneity, if the pertinent economic theories describe the behavior of Romanian firms, then one should find evidence of non-zero coefficients in regressions reflecting those theories. The absence of such evidence is the central feature of the results in Table 5.

5.2. Relating governance structures to properties of the transitional environment

Are the foregoing results simply the product of noisy data or is it significant that predicted relationships do not arise? One way to address this question is to examine alternative explanations of patterns in governance structures, particularly focusing on why efficient adjustment does not occur. Special characteristics of the transition economy provide a prominent alternative explanation. If firms are adjusting slowly to fundamentals, inherited characteristics are important. For example, ownership and relationships with government are an important determinant of firm behavior in transition (Djankov and Murrell, 2002). This is especially likely to have been the case in Romania where the state has found it harder than usual in transition countries to focus on economic efficiency (Abdelati and Claessens, 1996; Coricelli and Djankov, 2001; Earle and Telegdy, 2002). Hence, this section considers several variables that reflect the special characteristics of the transition economy in Romania.

5.2.1. Age

Three distinctive formative periods are important for Romanian firms. Whether the firm was founded in the socialist era is captured by the dummy variable pre-1990 origins. In contrast, the dummy variable new firm reflects founding after 1992, when the transition was firmly established. The third time category, the one omitted in the statistical analyses, is during the non-capitalist–non-socialist penumbra of the first three years of transition, when any new firm would have needed to have close relationships with government officials.

15 Proof of this result is available from the author on request.

5.2.2. Origins

A firm's origin is also important. Firms ultimately tracing their origin to a state enterprise are distinct from those founded de novo. The dummy variable originally state owned indicates that a firm is a direct successor of a state enterprise. However, a firm might have emanated from a state enterprise in some less formal, even illegal, way so that it is not the direct legal successor of the enterprise. These firms are indicated by the dummy variable spin-off from state. Truly de novo firms are the omitted baseline category in the empirical analyses.

5.2.3. The state and ownership

Direct relations with the government are captured in the variable soft budgets, which indicates whether a firm believes that its budget constraint is soft. More formal relations with the government are represented in the dummy variable indicating whether there is state majority ownership. Another ownership dummy indicates employee majority ownership, while an outsider majority is the omitted category.[16] In studies of the effect of ownership, concentration is shown to be important; this is captured in the variable block ownership, which measures the percentage share owned by the largest single shareowner.

5.2.4. The results

The empirical analysis using these new variables appears in Table 6, whose structure is directly comparable to that of Table 5.[17] The likelihood ratio test suggests that this three-equation model does have more explanatory power than a model including intercepts only. Of the 24 t-statistics for slope coefficients, 10 exceed the 20% significance level, 5 are higher than the 10% level, and 3 are higher than the 5% level. This is far more than would be expected from random chance alone. Moreover, many of the signs of the coefficients are as expected. Firms with soft budgets use the state to help solve their problems; thus they need neither strong bilateral relations nor help from legal institutions. State-owned firms are more likely to use formal institutions. Informal spin-offs from state firms cannot use the legal system because their separation from the state might not have been legal (Hay and Shleifer, 1998).

In a world of smooth adjustment to the new institutions, the choice of transactional governance should not depend upon the variables included in the regressions of Table 6. Rather, governance should depend upon those intrinsic properties of goods and markets included in Table 5. Hence, the evidence suggests that Romanian firms have not been adopting those behavioral strategies that would be efficient in a long-run equilibrium under the new institutions.

There is a hint in the regression results suggesting why this might be so. The superior performance of the transition variables mainly occurs in the choice of particular governance mechanisms, not in the aggregate use of mechanisms. These results suggest that the need to do something to support more hazardous transactions is readily apparent to firms. The

[16] Only two firms do not have majority state, employee, or outsider owner; these two are classified on the basis of plurality.

[17] All the variables in Tables 5 and 6 could be used in a single analysis. When this was done, the lessons were exactly the same as those from the current presentation, but considerably more cumbersome to present.

Table 6
Effects of the transition environment on transactional governance

Category of expl. variable	Explanatory variable	Dependent variables: Aggregate use	Bilateralism	Legal system
Age	Pre-1990 origins	−25.477*	−7.559	−6.083
		(−1.65)	(−0.51)	(−0.40)
	New firm	−3.124	−38.288*	−17.496
		(−0.16)	(−1.49)	(−0.96)
Origins	Originally state owned	−8.440	−32.145***	13.064
		(−0.53)	(−2.04)	(0.91)
	Spin-off from state	−10.516	−17.089	−61.628**
		(−0.29)	(−0.51)	(−1.77)
Relations with the state	Soft budgets	23.308*	−48.049***	−21.767
		(1.29)	(−2.69)	(−1.18)
Ownership	State majority	29.898*	−29.373*	−19.292
		(1.55)	(−1.32)	(−0.91)
	Employee majority	9.746	−29.505***	−14.033
		(0.65)	(−1.99)	(−0.91)
	Block ownership	0.174	0.123	−0.341**
		(0.81)	(0.56)	(−1.74)
	Intercept	−7.640	52.140	29.096
		(−0.35)	(2.58)	(1.43)
	R^2	0.033	0.087	0.053
	Adjusted R^2	0.001	0.056	0.021
	Observations	249	249	249

Notes. 1. Robust t statistics are in parentheses. 2. The $\chi^2(24)$ statistic for the likelihood ratio test of this model versus one with only intercepts is 44.5. 3. The critical values for the $\chi^2(24)$ statistic are 43.0 for the 99% significance level and 33.2 for the 90% significance level.

* Significance at the 20% level.
** Idem., 10%.
*** Idem., 5%.

deeper conceptual problem is how to provide support in an optimal manner. The regressions indicate that solving this conceptual problem lies in the future for Romanian firms.

6. Conclusion

This conclusion begins by firmly stating what cannot be concluded from the results. They do not imply that the new institutions of transactional governance are irrelevant. Romanian firms do take advantage of the new transactional freedoms, construct new relationships, choose to go to court, and evaluate the legal system positively. Rather, the results provide evidence on the character of adjustment to the new institutions.[18] There is no evidence that firms are moving towards the behavior that would be an efficient response to the new institutions in the long-run.

[18] Using Russian case studies, Hendley (2001) also examines the strategies of firms as they face the new institutions. Her conclusions are consistent with those obtained here.

The results suggest that the new institutions are providing much smaller benefits now than they would in the longer run. Firms are using the new institutions: there is little choice. They are succeeding in some respects: for example, constructing new relationships and collecting debts with the help of the courts. But the real benefits of the new institutional environment still lie in the future, when there is efficient choice of governance structures.

Two complementary reasons explain why adjustment to efficient behavior is not occurring currently. First, the transition environment encourages different behavior. Traditional ties are hard to forsake and courts are risky for firms that would like to obscure their origins. Second, adjustment to efficient governance requires sophisticated decision-making, the building of human capital, the relinquishing of past practices, and the exit of many firms originating in a different era. Such adjustment requires years of trial and error and entry and exit.

The results suggest that institutional reforms must take into account what firms are capable of accomplishing, both in the short term and in the longer run. If a government's principal objective is growth soon after reforms, then the engineers of new transactional institutions should not focus solely on those benefits that institutions provide to firms in developed economies. Rather, there must also be consideration of how firms nurtured under the old environment use institutions in the short term. Appropriate institutional reform deploys information on the current capabilities of firms.

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Appendix A. The question posed to company directors

All over the world, businesses confront problems when developing trading relations, negotiating agreements, and transacting with suppliers and customers. Lawyers and economists often identify six different methods that businesses use when constructing viable trading relations and when preventing or resolving problems that arise when implementing transactions. These six methods are defined in the table below. Familiarize yourself with the definitions in the table. These definitions are somewhat complicated, so please make sure you are comfortable with them all, before going ahead and giving your responses.

Please rate the importance of each of the following methods for your firm. Your rating should reflect both frequency of use and effectiveness.

Please use a scale from 0 to 10: '0' means that either you never use the method or the method is totally ineffective; '10' means that you use the method in a very large percentage of transactions and it is very valuable to your business (Table A.1).

0	1	2	3	4	5	6	7	8	9	10
Method is not used or is very ineffective										Method is used very often and is very valuable

Table A.1

Method	Description	Respondent's rating on a scale from 0 to 10
Personal relationships and trust	When supplier and customer trust each other to fulfill an agreement and to resolve problems in mutually beneficial ways. This trust can be the result of long-standing business relationships or because of personal ties that have developed outside business.	
Relying on each other's own incentives	When supplier and customer know that each other will fulfill an agreement or will resolve a dispute in mutually beneficial ways because it is in the business interests of both to keep trading smoothly with each other in the future.	
Third-party social or business relationships	When supplier or customer can use (or threaten to use) the intervention of third-party firms or private individuals to prevent or resolve transactional problems. Such help might be obtained from other firms (e.g. members of a trade association, other suppliers or customers) or from important members of the community (e.g. community business leaders, leaders of social organizations).	
Using private dispute resolution services	When supplier or customer can pay for privately provided dispute resolution or enforcement (or threaten to use these). Such provision can be done by arbitration courts, legally registered security firms, or even criminal groupings.	
Government	When supplier or customer can use (or threaten to use) the help of government officials in preventing or resolving transactional problems.	
The legal system	When supplier or customer frame their agreements so that they can easily file suit in court (or threaten to file suit) if disputes do arise.	

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