

## **Reputation Flows**

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**Abstract:** This paper exploits a survey of manufacturing firms in five transitioning countries to evaluate the factors that affect whether or not information on contractual disputes between firms is disseminated to other market participants. We find that these reputation flows are channeled both through informal communication among firms as well as through third party organizations; in addition, they are sensitive to firms' perceptions of the macro-institutional environment and specific features of the bilateral relationship in which the dispute occurs. The finding that some trade associations play a meaningful role in coordinating these flows suggests that their private and social value is significant.

Key words: reputation, information, transition, business associations

JEL classification: D83, L2, O17, P3

## REPUTATION FLOWS<sup>1</sup>

"[T]he way one behaves in a particular [business] transaction, or series of transactions, will color his general business reputation. Blacklisting can be formal or informal. Buyers who fail to pay their bills on time risk a bad report in credit rating services such as Dun and Bradstreet. Sellers who do not satisfy their customers become the subject of discussion in the gossip exchanged by purchasing agents and salesmen, at meetings of purchasing agents' associations and trade associations, or even at country clubs and social gatherings where members of top management meet... Thus often contract is not needed as there are alternatives. (Macaulay, p. 64)

Macaulay's seminal article on relational contracting among businesses highlighted how inter-firm communication can substitute for the use of formal contracts and the public legal system. By reducing the incentives for opportunistic behavior, these flows of reputational information can widen the scope for market-based transacting. Moreover, this kind of inter-firm information exchange can reduce search costs and mitigate the inefficiencies that would otherwise arise from adverse selection. For some time now, economists have recognized the impact that the widespread dissemination of reputational information can have on the smooth functioning of markets (Kreps and Wilson, 1982). But only recently have they begun studying the mechanisms that arise to transmit it. In this paper, we rely upon micro-level data from five transitioning economies to evaluate the channels of inter-firm reputation flows and the factors that give rise to them.

We draw a distinction between two channels for reputation flows between and among businesses. One arises spontaneously through the *uncoordinated* actions of independent firms. A manager may first learn of a prospective trade partner and receive information as to its reliability from his/her friends and/or business contacts. This initial communication may be pre-meditated and purposeful or it may be the unplanned result of a

chance encounter or a conversation on another matter. The information may be elicited through questioning or it might be shared in an unprompted manner. However this exchange occurs, the initial source of information about a potential trade partner may well lead to other sources as the firm receives referrals to others that may have information relating to the firm in question. The distinguishing feature of this mode of communication is that it is neither coordinated nor organized by a third party. Its value to a firm will be a function of the density of the information networks into which it is plugged.

Information may also be exchanged through a formal organization that may or may not have been created for that very purpose. Reputation flows, that is, may be *coordinated* by a third party that either may be a for-profit concern such as a credit rating agency or a non-profit organization that works in the interests of a particular community, such as a trade association. In this case, the coordinating organization is a repository of information. It amasses data from firms as to the behavior of their trade partners and then makes this information available to interested parties.

Regardless of whether or not reputation flows are *coordinated* or *uncoordinated*, their existence carries the potential for enhancing market efficiency. As we will elaborate below, however, the particular manner in which these flows are channeled may have an impact on the degree of these welfare effects. Particularly in dynamic markets, in which the number of encounters between firms that have no prior relationship with one another is high, the relative value of coordination is potentially greater. In this paper, we focus on the role of a particular coordinating institution in such an environment. Specifically, we examine the role

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that trade associations are playing as organizations for coordinating reputation flows in the post-socialist transition.

In the aftermath of communism's collapse, governments in Eastern Europe and the former Soviet Union have struggled with establishing institutions to enforce contracts between private parties. At the same time, firms have struggled with building market-mediated relationships from scratch. With information on prospective trade partners scarce and commercial law in its infancy, the transition provides a setting in which reputation flows can act as both a critical source of support for relational contracting and an important means for reducing transaction costs.

This paper is structured as follows. Section II reviews the nature and varieties of inter-firm reputation flows. Section III provides a description of the economic environment in formerly socialist economies and outlines the nature of prior research relevant to reputation flows during the transition. Section IV presents survey evidence on information exchange among manufacturing firms in five transition countries. Section V investigates the factors that affect whether or not information on contractual disputes between firms is disseminated to other market participants. Particular focus is given to the relative importance of coordinated and uncoordinated mechanisms for channeling these reputation flows. Section VI concludes.

## **II. Reputation Effects**

Simple reputation effects can be operative in the relationship between two firms. Valuable information can be gleaned through repeated dealings as one (or both) learn about the other's capabilities and proclivities. Moreover, the prospect of future dealings between the two discourages opportunism. For even though each may recognize that the other may

be narrowly self-interested, transactions that carry the potential for opportunism by one (or both) may be sustainable because of a concern for one's reputation vis a vis the other party. The threat that the other will cut off future business can make the contract between them self-enforcing (Telser, 1980).

Reputation effects can extend beyond this bilateral mechanism. A given relationship between two firms may be situated within a wider network. Opportunism can be discouraged, informational gaps closed and market exchange expanded by disseminating performance-related information within this wider circle of relations. Parties that are "plugged in" can simply ask around about another's reputation. Concern for reputation within this larger community, therefore, provides an incentive for behaving well, one that is even stronger than the bilateral mechanism since multiple parties may impose sanctions or confer benefits. Information exchange can also increase the allocative efficiency of markets by reducing adverse selection.<sup>2</sup>

But in spite of their potential value, the appearance of these inter-firm reputation flows is not guaranteed. Presuming the costs of reputation transmission to be non-zero, the public-good-like qualities of valuable information suggest that it will be under-provided by profit-motivated businesses. What is more, even if the transmission costs are zero, a firm may not want to forego the rents that it could otherwise extract from trade partners by controlling a certain piece of information.<sup>3</sup>

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<sup>2</sup> We should note that the efficiency impact of these inter-firm reputation flows may be ambiguous. If the networks through which they are channeled are not accessible to all market actors, it is conceivable that firms that are "on the outside" may potentially be more productive but are ultimately uncompetitive because of their lack of access to the existing stock of reputational information. In this case, the welfare impact of reputation flows will be a function of the social value of information exchange within the network and the social cost of excluding those "on the outside."

<sup>3</sup> Pyle (2002) shows that the tradeoff between the cost of lost informational rents and the market-enhancing benefits of reputation flows is a function of the potential sharer's current market share.

But in spite of these considerations, we can cite numerous examples of institutions that have emerged to disseminate reputations among self-interested actors.<sup>4</sup> Some of the most noteworthy studies have focused on institutions that evolved in the pre-modern era. Greif (1993), for instance, shows how the rich flow of information among dispersed Maghribi traders helped expand trade between Mediterranean Sea ports in the eleventh century. And Milgrom *et al.* (1990) demonstrate how the Champagne Fairs coordinated reputation flows to allow medieval traders to identify reliable partners from distant cities and regions. A number of studies have focused on institutions to mitigate information asymmetries and enforcement problems in credit markets in modern economies. Klein (1992), for instance, discusses and models the incentives to share borrower credit histories through a credit bureau. And more recently, several authors have noted the role of trade associations in channeling these flows (Woodruff, 1998; Doner and Schneider, 2000).

Although such studies have made significant contributions to our understanding of reputation flows and their impact, they have generally been limited by a focus on single mechanisms for disseminating reputations. Many markets rely upon a diverse array of coordinated and uncoordinated mechanisms rather than one channel exclusively. And since most actors face a set of discrete choices for providing and accessing reputational information, understanding the reasons for and the effect of the mechanism(s) they choose to use requires understanding their full choice set.

What is more, at a more macro level, the mix between coordinated and uncoordinated mechanisms can affect how reputation flows impact market efficiency. Several reasons come to mind. First, when information exchange is coordinated, the stock

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<sup>4</sup> Recent issues of the *World Development Report* (1998/99, 2002) have highlighted many such institutions in the developing world.

of shared information within a group of firms does not diminish if the initial provider and subsequent recipient(s) of that information exit the market. The sum of the shared knowledge becomes embodied in the coordinating organization and can, therefore, outlast the firms that brought it into existence.

Second, when information sharing is coordinated, the provider and receiver of a piece of information do not necessarily have to know one another either directly or indirectly (*i.e.*, through mutual acquaintances). This enables an expansion in the number of channels for information transmission (Milgrom *et al.*; Klein).

Third, a coordinating institution may be more "visible" to a firm contemplating either supplying low quality output or delaying contracted payments or deliveries. Much of the process of inter-firm information exchange can be opaque to outsiders. A firm, that is, generally does not know the precise nature and number of contacts between its trade partners on matters related to its reliability. But only known (or suspected-to-exist) reputation flows can deter opportunism. A formal organization known widely to coordinate reputation flows can raise the profile of inter-firm information exchange, thereby discouraging payment delays or quality scrimping. But reputation flows about whose existence firms are unaware would not have these effects.

Fourth, coordinated reputation flows may be more apt to be truthful. A firm contributing information to a third party coordinator may recognize that it could itself benefit from that organization's information services in the future. Sharing information that might later be confirmed as false or misleading thus could be more damaging when the recipient is a coordinating institution than if it is a competitor or another firm with which the sharer has little interaction. And oftentimes, coordinating organizations themselves face



strong incentives to provide truthful information. For non-profits, the discipline comes from their membership and/or natural constituency; for for-profit organizations, the discipline comes from the market.

Besides their functional impact on the pattern of market-based transacting, the nature of reputation flows reveals something about the broader economic environment in which they are situated. First, reputation flows, as we have noted, may substitute for more formal, state-sponsored means of enforcing contracts. Thus, *ceteris paribus*, we would expect demand for reputational mechanisms to be greater in environments in which the courts are either weak or prohibitively costly to access. Macaulay, recall, addressed the importance of reputation flows in the context of the U.S. economy. His noteworthy point was that despite having a relatively well-functioning court system and a well-developed body of commercial law at their disposal, American businesses relied heavily upon information exchange to address their uncertainties as to the behavior of potential trade partners. In economies in which the public institutions for enforcing private contracts are perceived to be less developed, we might expect that the reliance on both coordinated and uncoordinated inter-firm information exchange would take on an even greater role. In what follows we will thus test the hypothesis that reputation flows will be sensitive to these considerations in addition to the existing infrastructure for reputation flows.

The mix between reliance on coordinated and uncoordinated mechanisms is also, likely, a function of the economic environment. Since there are costs to establishing coordination mechanisms, relatively stable communities, in which information flows along well-worn routes between firms, may make due without them. But in settings with a great deal of turnover or in which the percentage of first-time arms-length transactions is high, the

density of existing networks is compromised and the demand for an organization that can serve as a repository of information on firms' performance is great (Milgrom *et al.*).<sup>5</sup>

In subsequent sections, we rely upon data from an extensive firm-level survey to evaluate a fuller range of channels for reputation flows than most previous studies have been able to consider. Understanding the reasons for and the effect of firms' choices to contribute to or access these flows requires understanding the array of both uncoordinated and coordinated mechanisms at their disposal.

### **III. Transition and the Role of Reputation Flows**

The notion that it takes time to "build" well-functioning markets is no longer (and perhaps never was) a matter of controversy in the literature on the post-communist transition. It is now largely axiomatic that, absent an established set of supporting institutions, many of the new markets that grow up out of the ashes of socialism cannot re-allocate resources to more valuable uses in a quick and effective manner. Ten years ago, the countries of Eastern Europe and the former Soviet Union were poorly endowed in terms of rules, enforcement mechanisms and organizations that would help transmit market information, enforce property rights and contracts and manage competition.<sup>6</sup> This institutional poverty in large part explains the inability of markets and "private" property to bring about robust growth over the past decade.

The importance of market-supporting institutions has been widely noted in the transition literature, with commentators focusing on problems created by venal bureaucrats (Frye and Shleifer, 1997), poor protection of private property rights (Johnson *et al.*,

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<sup>5</sup> Pyle (2000) presents a rough theory that links market turnover, entry and exit, among one's clients and suppliers to the evolution of reputation flows.

forthcoming), and inadequate regulation in the financial sector (Glaeser *et al.*, 2002). The general thrust of much of this literature is directed at explaining when, how and why post-socialist states have failed to adequately remedy these problems.<sup>7</sup> Less attention generally has been paid to the role of privately-provided substitutes, such as reputation flows, for missing or ineffective public institutions.<sup>8</sup>

A number of recently published studies, most focused on transactional strategies in Russia, have begun to address this gap. In a survey of over three hundred industrial enterprises, Hendley *et al.* (2000) found that uncoordinated information sharing was important for ensuring contractual compliance and reducing information asymmetries. Half of the respondents held out the possibility of damaging a customer's reputation with others as a way of reacting to non-performance.<sup>9</sup> Ninety percent of sales directors reported that contacts with non-customers were important in customer relations; and over one-fifth of firms sought information from other enterprises when evaluating a customer's ability to pay. In the same study, Hendley *et al.* concluded that business associations in Russia played only a marginal role in helping to enforce contracts and spread information on prospective customers' ability to pay.<sup>10</sup> Despite the fact that 28% of respondents were members of a

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<sup>6</sup> We paraphrase here the *World Development Report's* (2002) definition of an institution.

<sup>7</sup> For a general discussion of "state failure" and its consequences, see the EBRD's *Transition Report 1999*.

<sup>8</sup> An exception to this statement, of course, is the study of the economic functions of organized crime.

<sup>9</sup> This survey included roughly equal numbers of firms from Moscow, Barnaul, Novosibirsk, Ekaterinburg, Voronezh and Saratov. Most of the enterprises had roots in the pre-reform system; 77% were privatized at the time of the survey. They ranged in size from 30 to 17,000 employees, with a mean and median of 300 and 980, respectively.

<sup>10</sup> Pyle (2002) points out that Russian banks generally refrained from sharing information on delinquent borrowers even though existing organizational structures, such as the Association of Russian Banks, could have been used for this purpose.

business association (or financial-industrial group), only 3.5% of them used the association to check up on their customers' ability to pay.

Recanatini and Ryterman (2001), however, present evidence that business associations have helped deepen markets in Russia.<sup>11</sup> They show that members of Russia's new business associations were less likely to experience a decline in output than non-members.<sup>12</sup> Although conceding that their data do not allow them to evaluate fully the reasons for this result, they present evidence that suggests that associations help reduce the costs of identifying and evaluating the reliability of potential trade partners.<sup>13</sup> They point out, for instance, that roughly 80% of members, but only 61% of non-members, knew of alternative suppliers of their inputs. Roughly 68% of members knew of alternative customers, relative to 45% of non-members.

Johnson, McMillan and Woodruff (2002) also present a positive, market-enhancing view of business associations during the transition. Using a survey of manufacturing firms from Poland, Slovakia, Romania, Russia and Ukraine, they show that the extension of trade credit is, in addition to other factors, sensitive to the manner in which the firm became known to its supplier. Specifically, they find that those identified through either a "social" or

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<sup>11</sup> Greif and Kandel (1995) report that the Russian Chamber of Commerce communicated to its members information on companies that had allegedly violated contracts.

<sup>12</sup> Specifically, their analysis suggests that the belonging to an association reduces the probability that output declines by 47%. Data for this survey were collected by a World Bank team in 1994; firms in five different Russian cities were asked about their membership in business associations. The authors found that a little less than half (42%) of the responding firms belonged to a business or trade association. Among members, half reported that their associations had been organized by an official of either Union or (Russian) republic-level ministries. Members painted a picture of diversely populated associations that brought together a firm's trade partners as well as its competitors. Members responded that their associations included their most important customers (39%), suppliers (37%) and competitors (36%) as well as financial institutions (37%).

<sup>13</sup> Firms reported joining to receive a diverse array of benefits: access to capital at market interest rates (24.6%), access to cheap capital (40.3%), access to important material inputs (55.2%) and access to product markets (50.9%).

"business" network are more likely to receive trade credit.<sup>14</sup> Moreover, members of trade associations that offer a set of public-good-like services,<sup>15</sup> including information on potential trade partners, also were shown to grant more trade credit.<sup>16</sup>

Neither Recanatini and Ryterman nor Johnson *et al.* address directly the full set of channels for reputation flows. Their concern lies more with the behavioral effects of information exchange rather than on the exchange mechanisms themselves. The former, as noted, ask whether firm-level output dynamics have been affected by membership in a trade association. While the latter evaluate how trade associations affect trade credit and switching costs. The implication in both studies is that the inter-firm reputation flows relevant to business-supplier relationships are fully captured by a trade association dummy.<sup>17</sup> As we have noted, however, reputation-related information may be transmitted through uncoordinated mechanisms as well. Moreover, it is possible that becoming a member of a trade association

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<sup>14</sup> A "business" network corresponded to the firm having learned from an existing business acquaintance, if the respondent used to work for identifying firm, or from a business association. A "social" networks designated the firm learned of its latest client from either a family member or a friend. The other sources of information against which these are compared include a government agency, a bank, a credit rating agency and "other" ("he contacted us," "advertisement," "met at a market fair," and "we found the company ourselves.")

<sup>15</sup> These services include at least one of the following: identifying potential trade partners, providing information about their trustworthiness, and assisting in settling commercial disputes. Since our concern is with information flows, we only investigate the effect of membership in trade associations that provide information services.

<sup>16</sup> Controlling for these effects, a firm that trusted the court system was found to be more willing to offer financing to new customers. A firm's confidence in the public legal system also faced lower expected switching costs. That is, when presented with the option, firms that had greater trust in the public enforceability of contracts expressed greater willingness to change to a more price-competitive supplier that they did not know. Controlling for this effect among others, membership in a trade association that offered information and arbitration services also increased a firm's willingness to switch suppliers.

<sup>17</sup> In Johnson *et al.*, the trade credit regression also includes a variable capturing from whence came the initial information on the trade partner. They note the potential endogeneity problem that would arise by including controls for frequency of the respondent's communications with other firms. In our analysis that follows, we look at the impact of communication frequency on reputation flows without raising the endogeneity problem.

simply puts a "coordinated" veneer on a set of "uncoordinated" ties that already exist. Belonging to a trade association, that is, may not have any marginal value with respect to a given amount of communication between and among firms. These previous studies did not evaluate the effects of association membership controlling for other channels for reputation flows. In what follows, we build on the work noted above by exploring directly the reasons for and the channels of reputation flows. We seek to answer what factors determine whether or not a firm shares its experiences with its trade partners by focusing explicitly on the extent to which existing mechanisms for information exchange, coordinated and uncoordinated, play a role.

#### **IV. Inter-Firm Communication**

The data presented here come from an EBRD-sponsored survey of roughly fifteen hundred small to medium-sized private manufacturing firms from five countries.<sup>18</sup> The survey was carried out in Russia and Ukraine in May and June of 1997. Then from September to December, firms in Poland and Romania and Slovakia were surveyed. With the exception of Slovakia, respondents were drawn from a single, medium-sized city in each country: Volgograd, Russia; Dnepropetrovsk, Ukraine; Katowice, Poland; Brasov, Romania. In Slovakia, roughly half of the firms were from Kosice and Bratislava with the rest coming from one of seven other cities. The majority of firms has less than a hundred employees and was started after 1990. More than those in Ukraine and Russia, the respondents in Eastern Europe operate in a more competitive environment, are more likely to be a "greenfield," have more contact with firms outside their city and express less skepticism

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<sup>18</sup> These are the same data used in the study of Johnson *et al* (2002).

toward the ability of courts to enforce commercial contracts. Table 1 presents these data and other information on variables that are used in our subsequent regression analysis.

The variables that we are most interested in concern inter-firm communication. Of course, there are many potential forums of inter-firm communication besides the communication between a supplier and client. Firms, for instance, may communicate with their competitors on matters of individual or mutual interest. They might seek assistance from one another on potential trade partners; or exchange reports on the reliability of existing trade partners; or share ideas and experiences relating to their production processes; or collude to reduce the competitiveness of their market; or coordinate efforts to influence relevant public policies. The potential range of reasons for contacting one's competitors is huge.

Tables 2 and 3 provide us with some sense of the frequency and nature of communication among potential competitors. With the exception of Ukraine, over a third of the manufacturing firms in all these countries contact other firms that produce goods similar to theirs at least once per month for some reason. This may well be a function of the comparatively lower degree of competition in the Ukrainian manufacturing sector. Firms in Ukraine, responded that on average, there were only 1.93 other firms in their city producing similar goods. The numbers in Poland, Slovakia, Romania and Russia were 10.71, 6.46, 8.84, and 3.24 respectively.

Intra-sectoral communication on matters relating to customers and suppliers appears not to be terribly unusual among East European firms. Roughly a third of firms in Poland, Slovakia and Romania report engaging in these sorts of contacts. Hardly any firms, however, in Ukraine and Russia talk with their competitors about trade partners. This

difference does not apply to technology and product design as healthy percentages of manufacturers across all of the countries report sharing this kind of information. Table 3 also shows that these two subjects hardly exhaust the potential matters for discussion. Roughly half of all respondents report talking about "other subjects."

Firms may also exchange valuable data with firms that are neither their competitors, nor their current nor prospective trade partners. For one, they may share information with firms with whom they share an existing or potential trade partner. These contacts, we suspect, would be particularly important for disseminating and building a firm's reputation for a certain type of behavior. Table 4 lays out the responses of the surveyed firms to questions regarding the frequency of their communication with their newest trade partners' trade partners. Here again, we see tremendous variation across countries. In Russia, over 60% of the firms reported having at least monthly communications with other suppliers of their newest customer. But in the four other countries, these types of contacts are much less frequent. In Poland, Romania and Ukraine, over 90% of firms report talking either not at all or infrequently (less than monthly) with the suppliers of their newest customer. Similar comparisons can be made between Russia and the rest of the countries regarding communications with the other clients of their newest suppliers. Over two-thirds of Russian firms report talking on at least a monthly basis with the other clients of their newest supplier. In not one of the other countries do more than 10% of firms report having those types of conversations with the same frequency.

From the manner in which the survey questions above were structured, we cannot know definitively whether the reported firm-to-firm communication has been carried out within or outside the framework of a coordinating institution like a trade association. Some firms, that is, may communicate with their competitors and/or others *because* they share



membership in the same trade association.<sup>19</sup> But inter-firm communication could just as well occur between firms that come into contact through some other means.

Table 5 provides data on trade association membership and the services that they provide. Membership rates are lowest in Poland and highest in Russia and Ukraine. Moreover, we see that association members in these two former Soviet republics rely upon them disproportionately for contract and/or dispute arbitration services. To the extent that we view these associations as offering services privately that substitute for ineffective or missing public institutions, these results are not surprising. As shown in Table 1, Russian and Ukrainian firms were the most skeptical about the effectiveness of the public courts.

We also present data on the firm's primary source of information about their newest customer and supplier before the relationship was initiated. Table 6 shows that prior business acquaintances are important sources of information in all the countries. Informal networks of family and friends play some role as well, particularly in Romania. In Russia, banks and government agencies occupy relatively important positions. Direct contacts from the prospective trade partner and advertisements occupy prominent positions in Eastern Europe. And finally, we see that business associations play relatively important roles in Romania, Ukraine and Russia as sources of information about prospective clients and suppliers.

And lastly, we present the responses to questions that get directly at the issue of reputation flows. The dependent variable in our subsequent regression analysis comes from a series of questions that ask the respondents about a hypothetical business dispute. Firms were first asked two questions about a possible dispute involving their newest customer:

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<sup>19</sup> Recanatini and Ryterman (2001) report that Russian trade associations are diversely populated; they

- (1a) If your firm had a dispute with this customer, would other suppliers of this customer find out about it?
- (1b) If this customer had a dispute with another firm, would your company find out about it?

Firms were then asked similar questions about a potential dispute involving their newest supplier:

- (2a) If your company had a dispute with this supplier, would other customers of this supplier find out about it?
- (2b) If this supplier had a dispute with another firm, would your company find out about it?

With respect to the scenarios described in questions 1a and 2a, the respondent would be in the position of potentially supplying valuable information to other, interested parties. Whereas in the scenarios depicted by questions 1b and 2b, the respondent would be on the receiving (demanding) end of this information.

All of these questions allow us to evaluate the extent to which information relating to a firm's business history circulates among a community of firms. Table 7 shows that there is a good deal of cross-country variation in the responses to these questions. For instance, relative to firms in Ukraine, a relatively high percentage of Russian firms believe that news of an inter-firm dispute would be much more likely to "get out." We could also generalize and say that information on customers is marginally more likely to be circulated as are disputes involving a firm's oldest trade partners. What these data do not show us are the answers to "how" and "why" this information "gets out."

## **V. Determinants of Reputation Flows**

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include financial institutions and a firm's trade partners as well as its competitors.

Based on our discussion to this point, we would anticipate that a firm's response to these questions would be sensitive to the nature of the information channels into which it is already plugged. The greater the extent to which one was "plugged in" to uncoordinated and coordinated information flows, presumably, should be positively related to it supplying and being supplied with news relating to inter-firm disputes. Firms that already communicate regularly with other firms (in addition to their regular trade partners) will be more likely to publicize their disputes with trade partners and to find out about those partners' disputes with others. We might also expect that membership in organizations that supply members with information on existing and potential trade partners would be more likely to partake in both the provision and receipt of information relating to contract disputes.

We would also expect that a firm's decision to demand reputational information would be sensitive to its perception of the effectiveness of public enforcement mechanisms. To the extent that the circulation of this information can substitute for ineffective courts, we would expect that a less favorable view of public institutions would be associated with a greater reliance on reputation mechanisms.

Lastly, reputation flows might be sensitive to the specific features of a particular buyer-seller relationship. First, the manner in which the respondent learned about its trade partner may influence whether or not it seeks out additional information as to its relationship with other firms. For one, that initial source of information may itself be a source of information on the firm's history or it might be directly or indirectly connected to other sources that are. For another, that source might be considered by the respondent to offer particularly trustworthy (untrustworthy) referrals in which case the respondent would not (would) feel the need to seek out additional information about the firm's performance history. Second, the degree to which a firm is dependent on or "locked in" to a particular

trade partner may influence either its desire to seek out reputational information or its decision to spread information on a dispute that the two might have. A firm, for instance, might be particularly motivated to track down the performance record of a supplier from which it may be receiving regular deliveries or a particularly important input. Or a supplier whose client can easily find alternative suppliers of the same input might be more interested in using the threat of publicizing its bad behavior. The same might be true for a supplier that had made an investment in the relationship (*e.g.*, trade credit).

Given these considerations, the structure of our probit regression is:

$$RF_i = \alpha + \beta_1 I_i + \beta_2 R_i + \beta_3 B_i + \beta_4 F_i + \beta_5 P_i + \beta_6 D_i + \varepsilon \quad (1)$$

where  $RF_i$  is the response to a question as to whether or not the information of a contractual dispute will become known (*i.e.*, whether there is an anticipated reputation flow).  $RF_i=1$  if the answer to the question 1a - 2b is "yes;" and  $RF_i=0$  if the answer to a question is "no."  $I_i$  is a vector of variables capturing the extent to which the respondent is plugged into existing *coordinated* and *uncoordinated* information flows.  $R_i$  is a vector of variables characterizing the buyer-seller relationship.  $B_i$  is a variable that captures the respondent's attitudes regarding the public legal system.  $F_i$  is a vector of variables corresponding to characteristics of the responding firm.  $P_i$  is a variable relating to characteristics of the respondent's trade partner. And  $D_i$  is a vector of country and industry dummy variables.

### Customer Relations

We focus now on Table 8 and regressions that explore the factors affecting whether or not disputes involving the respondent's customer become publicized.<sup>20</sup> In general, they

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<sup>20</sup> Since our interest here is in business-to-business relations, we exclude from consideration the relatively small share of observations in which the customer is an individual or household.

demonstrate that the nature of the communication networks in which the respondent is already participating influence subsequent reputation flows. We see that if a firm communicates on at least a monthly basis with its clients' other suppliers, the greater the chance that news of the dispute will be made available to those suppliers. These effects are consistently significant at the .01 level across all specifications. Looking at columns 1-4, we see that those respondents that talk on a monthly basis with suppliers are over 19% more likely to have news of their disputes with the firm publicized to other suppliers. Similarly, those same firms are roughly 18% more likely to learn of their customer's disputes with other firms.

The frequency with which one talks to one's competitors has a somewhat more muted impact. The positive effect of communication frequency with competitors is significant at the .10 level when the question is whether or not the respondent's disputes with that firm will become publicized. The effect is positive but statistically insignificant when the question regards learning about the customer's disputes with other firms.

Membership in a trade association need not necessarily increase a firm's access to reputation flows. Trade associations, after all, are multi-purpose organizations and some may not count the provision of information on trade partners among the list of services that it provides (Doner and Schneider, 2000; Frye, 2002). Indeed, as we see in columns (4) and (8) of Table 8, although trade association membership is positively associated with

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Respondent controls include a dummy for whether or not a firm in the same city had been set up by a former employee, the responding firm's age, whether or not it was a spin-off from a state enterprise, the number of producers of similar goods in same city, the number of employees, proportion of sales made to firms in the city, proportion of sales made to firms of different ownership type, a dummy for whether or not firm sells to intermediaries such as a wholesaler, number of customers and customer turnover rate. Trade partner controls include geographical location relative to respondent, a dummy for whether or not firm is wholly domestically owned, dummies for the firm's type (*eg.*, private industrial firm, state trading company), and the number of months it had been a customer.

reputation flows, its effect is not statistically significant. However, as shown in columns (1) – (3), if a firm belongs to a trade association that identifies prospective trade partners and/or provides recommendations on their trustworthiness, the information dissemination effect is significant at the .10 level. This effect holds significant across the three specifications. A firm that is a member of a trade association with these services is roughly 7% more likely to have its disputes with its customer publicized. The effect is not significant in any of the regressions related to learning about one's customer's disputes with other firms, although the sign on the coefficient in these regressions is consistently positive.

The manner in which the respondent first learned of this customer also is important for the eventual dissemination of information on the respondent's contract disputes. As shown in columns (1) and (4), a firm that learned about its customer through a business contact (*i.e.*, another customer, supplier or competitor) was over 11% more likely to think that information about a dispute with its customer would become known by other suppliers. And as we can see in columns (5) and (8), if a business contact is the initial source of information, the respondent is nearly 14% more likely to find out about a dispute involving the customer. Both effects are significant at the .01 level.

A firm that learned about its most recent customer through a family or friend, however, is 13% less likely to have its disputes with that firm become publicly known. This effect also is significant at the .01 level. If that firm were to have a dispute with another firm, the respondent would be less likely to find out given the initial source of information but the effect is not significant.

Finally, we see that if a firm received its information about the client from a trade association, the firm expects to find out about any trade dispute involving that client. This

effect is significant at the .01 level. However, the flow in the opposite direction appears to be unlikely. That is, a firm that first learned of its client through a trade association does not have any strong expectations about whether or not their trade disputes will become known to others.

A firm's attitude toward the court system as well as its own history with arrears also play roles in the dissemination of information on contract disputes. Firms that are less optimistic about the courts' abilities to enforce contracts are roughly 12% more likely to find out about a contractual dispute involving its customer. This effect is significant at the .01 level. Although there is also a negative association between a firm's confidence in the courts and the dissemination of information of its disputes with a customer, the effect is not statistically significant.

A firm with a customer in arrears is roughly 11% more likely to think that a dispute with their newest customer will be publicized. This effect is significant at the .01 level. This evidence suggests a learning process; firms that have experienced prior disputes may better understand the value of reputation mechanisms. The effect, however, is not significant with regard to a firm learning about its client's disputes with others.

Finally, we see that variables that are designed to capture bilateral lock-in effects explain some of the variation in the presumed spread of a firm's reputation. In the event that its most recent customer refused delivery, the longer the time for the respondent to find another buyer for its product, the more likely that its disputes with that customer would become known. This suggests, in other words, that the more dependent the respondent was on this particular firm (*i.e.*, the more "locked in" the respondent is to the relationship), the more it was likely to exploit reputational mechanisms to discipline it. This effect is

significant at the .05 level. Along these lines, we also see that a firm that has given trade credit to its client is more likely to avail itself of reputation mechanisms in the event of a dispute. This effect is not uniformly significant across all specifications. Finally, the shorter the length of time that it would take for the customer to find an alternative supplier (*i.e.*, the less that it is "locked in" to the relationship with the respondent), the more likely that a dispute that it had with the supplier would be publicized. Customers with outside options, that is, are more likely to be threatened with the punishment of having their bad behavior publicized. This effect is consistently significant at the .05 level. None of these variables, however, provide a statistically significant explanation for whether a firm learns of a dispute involving its customer and another firm.

### Supplier Relations

Table 9 presents the regressions in which responses to questions about disputes involving the respondent's most recent supplier serve as the dependent variable.<sup>21</sup> Again, we see that information dissemination is a function of existing informal networks. If the respondent talks with other clients of the supplier on at least a monthly basis, it is 23% more likely to have its disputes with that supplier publicized and 21% more likely to become aware of disputes involving the supplier and other firms. These effects are both significant at the .01 level. A firm that talks with equal frequency with its competitors about existing and potential trade partners believes that any dispute it might have with its newest supplier will

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<sup>21</sup> Respondent controls include: a dummy for whether or not a firm in the same city had been set up by a former employee, the responding firm's age, whether or not it was a spin-off from a state enterprise, the number of producers of similar goods in same city, the number of employees, proportion of purchases made from firms in the city, and proportion of purchases made from firms of different ownership type. Trade partner controls include geographical location relative to respondent, a dummy for whether or not firm wholly domestically owned, dummies for the firm's type (*e.g.*, private industrial firm, state trading company), and the number of months it had been a customer.



become known by the supplier's other customers. This effect is significant at the .01 level. In the regressions addressing whether a dispute involving that supplier and another firm would become known to the respondent, the association with inter-competitor information flows remains positive but is not significant.

As we saw above, membership in a trade association is positively associated with reputation dissemination; the effect, however, is not significant. But a firm that is in a trade association which identifies and/or vouches for the reliability of potential trade partners is at least 10% more likely to have its disputes with the supplier publicized and roughly 7% more likely to learn about its suppliers disputes with others. The former effect is significant at the .01 level whereas the latter is consistently significant at the .10 level.

If the respondent's primary source of information about the newest supplier prior to becoming its client was a trade association, it is 14% more likely that the respondent will learn about whether or not the firm becomes involved in a subsequent business dispute. This effect is significant at the .05 level. The effect, while positive, is not significant with regard to whether or not a firm's dispute with the supplier become known to others. As was the case with customers, receiving information about the supplier from a business contact is positively related to subsequent reputation flows. However, unlike the case with customers, learning about a supplier from a friend or family member is positively associated with those flows. Neither of these effects is significant.

Attitudes toward public enforcement institutions matter as well. Greater confidence in the courts is negatively associated both with publication of one's disputes and with learning about the disputes involving one's trade partners. The effect is consistently significant at the .01 level in the former case and at the .10 level in the latter case. Also, a

history of contractual disputes with suppliers is an important explanatory variable. If a firm's supplier has ever refused to accept the return of defective merchandise or refund money for goods returned due to low quality, it is more likely both to have its disputes with its newest supplier publicized and to learn about disagreements between that supplier and other firms. Both effects are consistently significant at the .01 level.

Finally, some of the variables that are meant to measure bilateral lock-in effects help explain variation in the dependent variables. As was true for the questions involving customer relationships, the less that the respondent's trade partner is locked in to the relationship and the more that the respondent is locked in, the greater the magnitude of reputation flows. If the supplier markets a product to the respondent that is unique (*i.e.*, it is not sold to other firms), a dispute between the two is less likely to become known by the supplier's other customers. This effect is significant at the .05 level across most specifications.

If the supplier only produces to fill orders from the respondent, and does not maintain inventories for it, the respondent is roughly 15% more likely to be on the supplying side and 11% more likely to be on the receiving end of reputation flows. Both effects are significant at the .01 level. A firm that receives frequent deliveries from the supplier is more likely to learn about that supplier's disputes with other firms and have its disputes with that supplier publicized. These effects are significant at the .01 and .10 levels, respectively. Finally, having an alternative supplier for the input that the supplier provides is positively associated with reputation flows. But this effect is not statistically significant.

Summarizing our results, we should stress that not all trade associations serve as conduits for reputation flows. But the analysis above suggests that some have a real and

significant effect on inter-firm reputation flows. Even when we control for the source of initial information and the frequency of communication with competitors and trade partners, being a member of a trade association that offers information services has a positive and significant effect on the circulation of news relating to contractual disputes. Trade association membership, in these cases, does not just represent a veneer of coordination on existing, uncoordinated reputation flows. The associations, themselves, are facilitating inter-firm information exchange.

Moreover, we found that controlling for the coordinated and uncoordinated information channels into which it is already plugged, a firm that learns of its trade partners - - both customers and suppliers -- through a trade association is much more likely to learn of that firm's contractual disagreements with its other clients. Clearly, this evidence further confirms the important role these organizations perform as informational hubs. It is interesting to note, however, that the effect on the reverse reputation flow is in no way noteworthy. That is, if a firm learns about a customer or supplier through a trade association it does not believe that its disputes are any more likely to be publicized than if it learned about that firm from another source. Perhaps this difference represents a tacit admission, of sorts, that firms tend to free ride on the public good provided by the trade association. That is, they expect to receive the data from the trade association but they do not readily reciprocate by sending reputational information back to it.

We can also point out that the effect of these reputation-disseminating trade associations seems to differ depending upon whether or not the trade partner is a supplier or customer. Specifically, their impact appears to be more pronounced in relationships with suppliers. Relative to a non-member, a firm that belongs to one of these associations is more likely both to publicize its disputes with its supplier and learn of its supplier's disputes

with others. These effects are statistically significant and economically meaningful. But the effect of trade association membership on information flows involving customers is more muted. Although membership in a trade association that identifies and provides information on potential trade partners is positively associated with learning of a customer's contract disputes with others, the effect is not significant.

Our results also suggest the powerful role of uncoordinated mechanisms. Controlling for membership in a trade association that offers information services, we found that the frequency with which a firm talks with its trade partner's trade partners influences reputation flows. Monthly communication with other suppliers of one's customer and with other clients of one's supplier meaningfully increases the probability that future disputes involving one's trade partners will become known. Interestingly, however, communication with competitors has an uneven effect on reputation flows. Firms that talk monthly with competitors feel that news of their own disputes with a trade partner will become more publicized than if they did not regularly communicate in this manner. But the same firms are not particularly more likely than their less communicative peers to learn of their trade partners' disputes with others. Perhaps this result is an expression of a firm's fear that its competitors will try to shield valuable information from it.

## **VI. Conclusion**

For reputation flows to shape behavior and improve market outcomes, information must be exchanged between and among market participants. The same holds true if the diffusely held stock of knowledge on firms' behavioral histories is to reduce search costs and mitigate adverse selection. In this paper, we have shown how both coordinated and uncoordinated mechanisms can work in tandem to promote these flows. We have also

shown that the flows are sensitive to the specific features of the relationship in which a contractual problem might arise. And we have also confirmed that they are sensitive to firm-level perceptions of the macro-institutional environment.

What we have not been able to do here is assess directly either the private or social value of these flows. Just because information is disseminated does not necessarily mean that it provokes a behavioral response that increases market efficiency. A firm might communicate to another the problems it has had with receiving payments from a client, but that other firm to which the information is communicated might never be in a position to use it, or that firm might not find the information trustworthy. Nevertheless, the fact that we found meaningful coordination of reputation flows is strongly suggestive that these flows have value in the transitional context. The role that we see some trade associations playing suggests that the costs of coordination have been willingly absorbed and the micro-level disincentives for sharing information, particularly with competitors, have been overcome. Presumably, this has been done because of the value that these flows provide. Given these findings, one logical extension of our work here would be to explore why some associations develop this role and some do not.

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**TABLE 1. CHARACTERISTICS OF ALL SURVEYED FIRMS**

	<b>All Firms</b>	<b>Poland</b>	<b>Slovakia</b>	<b>Romania</b>	<b>Russia</b>	<b>Ukraine</b>
Responding firm's age (in years)	6.89	7.39	6.10	6.96	6.75	6.08
Percent of firms spun-off from state owned enterprise	.33	.22	.23	.12	.49	.69
Number of competitors in same city	7.05	10.71	6.46	8.84	3.24	1.93
Number of employees in responding firm	54.27	63.04	56.97	56.41	33.47	60.10
Percent whose former employee set up firm in city	.14	.16	.28	.14	.02	.03
Number of customers	68.70	99.69	85.95	107.06	10.37	12.14
Customer turnover rate in previous year	.27	.29	.32	.31	.21	.19
Percent that have had any customer fail to pay for a product after delivery	.54	.76	.81	.74	.15	.12
Percent that have a supplier refuse to accept the return of defective merchandise or to refund money for merchandise of low quality	.24	.18	.37	.33	.09	.15
Percent that believe that court can enforce an agreement with a customer or supplier	.68	.73	.68	.87	.56	.55
Percentage of sales made to ...						
... state enterprises	29.43	23.12	13.57	21.46	49.31	47.55
... privatized former SOEs	16.96	15.58	30.89	10.84	10.35	16.14
... new private firms	35.66	37.37	32.47	52.89	25.32	25.14
... households and individuals	9.81	10.40	8.27	9.80	13.26	7.32
... foreign owned enterprises	7.05	11.62	12.84	3.82	1.76	3.88
Percent of sales to customers in or near city	63.35	59.63	52.84	64.08	78.69	69.48
Percent of firms that sell to intermediaries ( <i>e.g.</i> , wholesalers)	.46	.64	.55	.22	.43	.49
Percentage of supplies procured from						
... state enterprises	40.95	23.71	9.76	44.82	59.42	76.56
... privatized former SOEs	18.20	17.55	39.26	12.13	10.23	8.98
... new private firms	26.79	39.47	30.71	36.22	15.22	6.15
... state and foreign owned enterprises	9.77	12.61	12.12	3.45	13.76	7.44
... joint ventures	2.35	4.22	4.35	2.38	0	0



**TABLE 2. HOW OFTEN DO YOU TALK WITH PRODUCERS OF GOODS SIMILAR TO YOURS? (PERCENTAGE OF FIRMS RESPONDING "YES")**

	<b>All Firms</b>	<b>Poland*</b>	<b>Slovakia</b>	<b>Romania</b>	<b>Russia</b>	<b>Ukraine</b>
Daily	4.04	3.69	9.42	3.43	0.00	0.00
Weekly	11.10	15.10	13.64	12.15	3.19	5.48
Monthly	21.89	18.12	16.88	20.56	43.62	15.07
Less frequently/Not at all	61.06	55.03	60.06	63.86	53.19	79.45

\* 8.05% of the Polish firms' responses were "no answer."

Note: the question in the translated survey instrument asks about firms "within your city" but respondents seem to have taken the question to refer to any competitors, regardless of location. Among firms that responded that there were no other firms producing goods similar to theirs in their city, over ninety percent responded to the question of how often you talk with producers of goods similar to yours within your city.

**TABLE 3. WHAT DO YOU TALK ABOUT WITH PRODUCERS OF GOODS SIMILAR TO YOURS WITHIN YOUR CITY? (PERCENT OF FIRMS RESPONDING "YES")**

	<b>All Firms</b>		<b>Poland</b>		<b>Slovakia</b>		<b>Romania</b>		<b>Russia</b>		<b>Ukraine</b>	
	All	> 1 / month	All	> 1 / month	All	> 1 / month	All	> 1 / month	All	> 1 / month	All	> 1 / month
Customers and Suppliers	27.67	49.89	32.78	56.36	32.47	58.54	41.43	67.24	4.17	10.14	0.78	4.35
Tech. And Product Design	46.01	67.95	56.93	64.22	42.04	58.54	35.83	64.66	58.93	92.75	44.96	78.26
Other Subjects	48.08	47.27	43.56	44.95	54.29	57.72	47.35	68.10	40.48	5.80	55.04	21.74

Note: "> 1 / month" refers to firms that engage in at least monthly communications.

**TABLE 4. FREQUENCY OF TALKING WITH TRADE PARTNER'S TRADE PARTNERS**

	<b>All</b>	<b>Poland</b>	<b>Slovakia</b>	<b>Romania</b>	<b>Russia</b>	<b>Ukraine</b>
<i><b>With other suppliers of newest customer</b></i>						
No	75.34	90.43	77.60	90.65	27.85	59.28
Daily	1.03	0.00	2.92	0.62	1.27	0.00
Weekly	5.09	2.97	6.82	1.56	17.72	0.60
Monthly	7.72	2.31	1.95	2.18	41.77	6.59
Infrequently	10.82	4.29	10.71	4.98	11.39	33.53
<i><b>With other clients of newest supplier</b></i>						
No	73.75	86.87	73.11	84.38	21.90	61.48
Daily	0.86	0.34	1.31	0.62	2.86	0.00
Weekly	4.56	4.71	4.26	2.81	15.24	0.74
Monthly	8.09	4.38	3.28	4.38	49.52	3.70
Infrequently	12.74	3.70	18.03	7.81	10.48	34.07

**TABLE 5. BUSINESS ASSOCIATION MEMBERSHIP**

	<b>Percentage of firms belonging to business associations</b>	<b>OF ASSOCIATION MEMBERS, PERCENTAGE THAT SAY ASSOCIATIONS PROVIDE FOLLOWING SERVICES</b>				
		<b>Information on Technology</b>	<b>ID and location of new customers and suppliers</b>	<b>Information about trustworthiness of new customers and suppliers</b>	<b>Contract and/or dispute arbitration</b>	<b>Other</b>
Poland	28.9	41.38	50.00	42.53	31.03	20.93
Slovakia	31.5	54.64	47.42	42.27	29.90	31.25
Romania	44.2	59.57	69.50	30.50	21.28	9.22
Russia	74.4	58.29	35.83	45.99	71.66	8.11
Ukraine	67.3	59.78	39.44	33.33	64.80	8.33

**TABLE 6. PRIMARY INITIAL SOURCE OF INFORMATION ABOUT ...**

	<b>Poland</b>	<b>Slovakia</b>	<b>Romania</b>	<b>Russia</b>	<b>Ukraine</b>
<i><b>Newest customer</b></i>					
Managed / owned by family	0.33	0.65	1.87	1.19	1.20
Managed / owned by friend	3.63	12.34	21.18	8.93	7.78
I used to work for this firm	0.33	0.97	0.62	2.98	0.00
Previous Business Acquaintance	36.96	39.94	21.81	23.81	52.69
... customer	80.73	67.48	68.57	80.95	89.47
... supplier	2.75	4.88	1.43	14.29	8.42
... competitor	2.75	4.88	0.00	2.38	1.05
... other	13.76	22.76	30.00	2.38	1.05
Government Agency	0.66	0.32	1.56	15.48	3.59
Bank	0.00	0.97	3.74	14.29	3.59
Credit Rating Agency	0.00	1.30	0.62	10.71	8.98
Business Association	1.98	4.87	14.02	11.31	20.36
Advertisement	7.90	3.25	5.16	*	*
He contacted us/received offer	30.28	18.83	14.28	*	*
Met at a market fair	6.58	3.25	1.52	*	*
We found the company ourselves	0.99	1.62	7.90	*	*
Market research	3.95	1.62	0.00	*	*
Other	8.06	14.31	11.02	11.31	1.80
<i><b>Newest Supplier</b></i>					
Managed / owned by family	0.66	0.97	0.62	0.00	0.75
Managed / owned by friend	2.31	8.12	14.95	8.49	6.77
I used to work for this firm	1.98	1.95	0.93	0.94	0.75
Previous Business Acquaintance	45.21	41.88	22.43	27.36	65.41
... customer	10.95	10.08	16.67	3.03	0.00
... supplier	69.34	67.44	59.72	81.82	97.75
... competitor	4.38	6.98	1.39	12.12	0.00
... other	15.33	15.50	22.22	3.03	2.25
Government Agency	0.00	0.97	3.12	14.15	1.50
Bank	0.33	1.30	5.30	16.04	5.26
Credit Rating Agency	1.98	1.95	0.00	7.55	6.77
Business Association	1.32	6.49	13.40	23.58	12.03
Advertisement	12.87	8.77	16.20	*	*
He contacted us/received offer	13.20	10.07	5.30	*	*
Met at a market fair	9.24	4.55	3.43	*	*
We found the company ourselves	2.64	1.62	3.43	*	*
Market research	3.63	2.27	0.31	*	*
Other	6.93	14.93	11.83	1.89	0.75

Note: \* denotes that firms in Ukraine and Russia were not asked to elaborate on these sources.

**TABLE 7. INFORMATION DISSEMINATION AND DISPUTES WITH TRADE PARTNERS (NUMBERS ARE PERCENTAGE OF FIRMS RESPONDING "YES")**

<b>ALL</b>	<b>POLAND</b>	<b>SLOVAKIA</b>	<b>ROMANIA</b>	<b>RUSSIA</b>	<b>UKRAINE</b>
<i>If your firm had dispute with this customer, would its other suppliers find out?</i>					
27.74	26.69	35.69	22.78	41.67	10.83
<i>If this customer had a dispute with another firm, would your firm find out?</i>					
34.20	29.73	42.19	32.70	40.00	24.11
<i>If your firm had dispute with this supplier would its other customers find out?</i>					
21.88	20.21	30.20	18.67	29.81	5.47
<i>If this supplier had dispute with another firm, would your firm find out?</i>					
27.15	20.34	34.45	27.13	32.61	18.82

**Table 8. Reputation Flow Regression Results: Disputes Involving Newest Customer**

	If your company had a dispute with this customer, would other suppliers find out?				If this customer had dispute with another firm, would your company find out about it?			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Talk to competitors about suppliers and customers at least monthly	.100* (1.83)	.102* (1.87)	.102* (1.86)	.103* (1.87)	.012 (0.21)	.014 (0.25)	.024 (0.41)	.010 (0.18)
Talk with other suppliers of customer at least monthly	.191*** (3.64)	.201*** (3.82)	.197*** (3.75)	.192*** (3.67)	.184*** (3.40)	.188*** (3.47)	.175*** (3.24)	.190*** 3.50
Member of trade association				.028 (0.74)				.015 (0.37)
Member of trade association that has information services ...	.075* (1.81)	.071* (1.73)	.070* (1.71)		.044 (1.01)	.039 (0.90)	.040 (0.92)	
Before you began working with this customer, what was your primary source of information?								
... previous business acquaintance	.114*** (3.02)			.114*** (3.04)	.139*** (3.45)			.138*** (3.42)
... managed or owned by family or friend		-.135*** (-2.82)				-.056 (-1.05)		
... business association			-.005 (-0.08)				.180*** (2.67)	
Can courts enforce an agreement with a customer or supplier?	-.061 (-1.47)	-.054 (-1.31)	-.057 (-1.36)	-.059 (-1.41)	-.124*** (-2.75)	-.114** (-2.55)	-.114** (-2.54)	-.122*** (-2.71)
Has a customer ever failed to pay for a product after delivery?	.114*** (2.65)	.119*** (2.78)	.114*** (2.66)	.111*** (2.58)	.036 (0.78)	.042 (0.92)	.047 (1.01)	.030 (0.65)
Do you now or ever give credit to customer?	.064 (1.51)	.083** (1.96)	.077* (1.84)	.063 (1.50)	.036 (0.80)	.052 (1.16)	.050 (1.11)	.042 (0.94)
If customer refused to accept delivery, length of time to find another customer (scale 1-5 with 1 being day or less)	.032** (1.99)	.035** (2.22)	.033** (2.08)	.031* (1.95)	-.008 (-0.49)	-.005 (-0.28)	-.006 (-0.32)	-.011 (-0.62)
If you failed to deliver these goods, how long would it take customer to find alternative supplier (scale 1-5 with 1 being day or less)	-.044** (-2.50)	-.041** (-2.35)	-.040** (-2.25)	-.044** (-2.47)	-.013 (-0.68)	-.008 (-0.44)	-.011 (-0.56)	-.012 (-0.61)
Country Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Respondent Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Trade Partner Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prob > chi2	0.0000	0.0000	0.0000		0.0002	0.0023	0.0005	.0002
Number of observations	768	768	768		765	765	765	766
Pseudo R-square	.1266	.1257	.1165		.0889	.0779	.0840	.0884

**Table 9. Reputation Flow Regression Results: Disputes Involving Newest Supplier**

	If your company had a dispute with this supplier, would its other customers find out?				If this supplier had dispute with another firm, would your company find out?			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Talk to competitors about suppliers and customers at least monthly	.143*** (3.02)	.143*** (3.02)	.145*** (3.05)	.149*** (3.13)	.075 (1.51)	.077 (1.54)	.082 (1.63)	.080 (1.60)
Talk with other clients of supplier at least monthly	.232*** (5.47)	.234*** (5.51)	.232*** (5.47)	.236*** (5.58)	.211*** (4.76)	.213*** (4.79)	.210*** (4.74)	.213*** (4.81)
Member of trade association				.027 (0.84)				.020 (0.59)
Member of trade association that has information services ...	.104*** (2.89)	.105*** (2.92)	.102*** (2.84)		.077** (2.01)	.079** (2.08)	.074* (1.94)	
Before you began working with this customer, what was your primary source of information?								
... previous business acquaintance	.029 (0.91)			.027 (0.85)	.008 (0.23)			.005 (0.14)
... managed or owned by family or friend		.049 (0.95)				.083 (1.51)		
... business association			.062 (1.09)				.140** (2.31)	
Can courts enforce an agreement with a customer or supplier?	-.063* (-1.76)	-.062* (-1.76)	-.067* (-1.88)	-.059* (-1.66)	-.103*** (-2.65)	-.099*** (-2.56)	-.108*** (-2.79)	-.101*** (-2.61)
Has a supplier ever refused to accept return of defective merchandise or to refund money for merchandise returned because of low quality	.093*** (2.71)	.093*** (2.71)	.095*** (2.74)	.089*** (2.61)	.124*** (3.35)	.121*** (3.29)	.124*** (3.37)	.119*** (3.25)
Does supplier make same product uniquely for your firm?	-.108** (-1.98)	-.108** (-1.96)	-.107* (-1.95)	-.107** (-1.96)	-.002 (-0.04)	-.001 (-0.02)	-.006 (-0.11)	-.001 (-0.02)
Does supplier produce only to fill orders (as opposed to maintaining inventories)	.153*** (3.97)	.146*** (3.77)	.151*** (3.92)	.155*** (4.05)	.111*** (2.63)	.105** (2.46)	.111*** (2.62)	.112*** (2.65)
How often do you receive goods from supplier (scale 1-6 with 1 being daily)	-.022* (-1.71)	-.021 (-1.61)	-.021* (-1.65)	-.022* (-1.77)	-.049*** (-3.52)	-.047*** (-3.39)	-.048*** (-3.44)	-.050*** (-3.58)
Do you have other suppliers of this input?	.041 (1.27)	.043 (1.31)	.041 (1.26)	.034 (1.05)	.035 (0.99)	.037 (1.05)	.033 (0.94)	.028 (0.81)
Country Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Respondent Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Trade Partner Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prob > chi2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Number of observations	840	840	840	842	856	856	856	858
Pseudo R-square	.1515	.1516	.1519	0.1434	.1368	.1390	.1419	.1329