Non-performance risk and transaction costs in laboratory forward and spot markets

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Traders choose to participate in forward or spot auctions having some probability of contract non-performance in the forward market with no associated real cost or with a transaction cost levied randomly on a forward trade. Results from laboratory markets suggest that the spot market becomes a backstop to failed units in the forward market. Forward market activity is particularly sensitive to increased transaction costs. An increase of about 6% for each trader shifts about 40% of all sales to a spot market. If institutions are ineffective in enforcing forward contracts, a spot outlet is essential for exchange to continue. Journal of Comparative Economics 31 (2) (2003) 257–274. Saratov State Socio-Economic University, Saratov, Russia; Department of Agricultural and Applied Economics, University of Wyoming, Laramie, WY 82071-3354, USA; Department of Economics and Finance, University of Wyoming, Laramie, WY 82071-3985, USA; St. Petersburg University of Economics and Finance, St. Petersburg, Russia.

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1. Introduction

A market economy is dependent on working rules that serve to reduce costs associated with making transactions. Legal and economic institutions control the transaction costs of negotiating agreements and, once negotiated, determine the costs of enforcing such agreements (Bromley, 1993; Williamson, 1986). Weak institutions often lead to high transaction costs. Specifically, when contracts are difficult to arrange and when the legal system is not in place to provide effective enforcement, trading activity is likely to be restricted, creating inefficiencies in the market. Market infrastructure, e.g., legal procedures that enforce contracts and protect private property, is taken for granted in advanced market economies, but it may not exist or may be just developing in formerly planned economies. Market infrastructure does not evolve over a short period of time. In transition economies, dramatic political and economic changes increase instability so that it may take decades before the institutions can support market systems adequately. During these times, situations in which one or both parties may not fulfill previously agreed upon contractual obligations can be common. In the absence of an effective legal system, a party often can break a contract without being held responsible.

Food markets developed rapidly in Russia; however, about 85% of milk producers, 75% of producers of vegetables, livestock, and grain, and 65% of sunflower producers indicated that they experienced cases of failure with state procurement organizations in 1995 (Sedova, 1996). Contractual obligations in Russian agricultural and food markets are not fulfilled, entirely or in part, because of exogenous forces rather than opportunism. A common cause of non-performance is a state procurement organization not receiving the expected funds from a state budget in a timely manner. Another cause comes from processors who cannot pay for inputs because downstream buyers are delinquent in their payments. Thus, parties incur additional costs to collect payments due. Gow and Swinnen (2001) provide a number of detailed examples of, and causes for, contract breaches in transition economies.

The focus of this paper is on laboratory market outcomes resulting from contract non-performance in a forward auction market when the forward market is linked with a spot auction market. A good may be exchanged in the market according to two basic dynamics; either a producer may first produce the good and then sell it or a producer may contract with a buyer and then produce the good. The latter is referred to as production-to-demand (PTD) or a forward market (Carlton, 1989). The former is called advance production (AP) or a spot market; it is a cash market that requires relatively little contractual support for a transaction. Sellers in a cash market face a risk of inventory loss when storage is not feasible, e.g., perishable commodities, but they can reduce losses by trading at prices below unit cost. However, if inventory is not sold during a production period, the entire cost of production is lost. Hence, selling agents feel more secure trading in a forward market because revenues are known and they do not face risk of inventory loss that may occur in the spot market. Therefore, a forward market can be an important means of exchange, particularly for sellers.

Phillips et al. (2001b) report that about 85% of the trades are forward in laboratory markets, when agents are given a choice of forward or spot trading. However, if a forward contract fails, the seller or buyer cannot honor the contract. Hence, will the forward market
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