



# Financial networks and trading in bond markets

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## Abstract

We examine how financial networks influence asset prices and trading performance. Consistent with theoretical studies on the role of communication networks in information dissemination, we posit that global financial institutions, having more extensive and strategic financial networks, can more efficiently acquire and process information pertaining to asset trading due to their better access to order flows and, thus, have better trading performance than local financial institutions with less extensive and strategic financial networks. Using transaction level Turkish government bond trading data, we find that global financial institutions exhibit a stronger tendency to trade in more liquid bonds and consistently trade at more favorable prices than local financial institutions, suggesting that global financial institutions have an informational advantage. They also enjoy better trading performance on informed trades but this informational advantage tends to decline over time, indicating possible learning by local financial institutions as a result of trading with their global financial counterparts.

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*JEL classification:* G15; G21; F21

*Keywords:* Financial networks; Informational advantage; Bond market trading

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## 1. Introduction

Although it is well established that information moves security prices, how information flows through financial markets and is impounded in the prices of financial assets is not as well understood. Traditional asset pricing models assume that individuals behave anonymously with

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new information becoming known by all the agents in the market simultaneously, thereby making the information common knowledge. As a result, traditional approaches disregard the possibility that agent behavior (individually and collectively) may be influenced by a communication network. Information, however, can also gradually disseminate in a market by word-of-mouth and observational learning. Because of differences in institutional structures and traders' information processing abilities, it is unlikely that information diffusion will be amorphous. Instead, information is likely to spread more rapidly within trading firms than between trading firms, not only because of the presence of an intra-firm network but also because of financial incentives provided to traders that are related to firm profitability.

In this paper we examine the role of communication networks used by financial institutions in their trading activities and focus on whether these networks affect asset prices and trading performances. We define a communication network (hereafter to be referred to as a financial network) to be a set of trading platforms linked together by a system that collects and processes relevant information and then disseminates the information within the financial institution that uses these platforms. We refer to a financial institution with trading platform(s) that access only one market as “local” and one with trading platform(s) that access more than one market as “global.” Consistent with the implications of theoretical studies on the role of networks on information dissemination, we posit that global financial institutions, because of their extensive financial network, can more efficiently acquire and process information closely related to asset trading in global financial markets in which they operate than can local financial institutions with financial network restricted to their home market. Such an advantage may result in global financial institutions pursuing different trading strategies and outperforming local financial institutions in the local market in which they both compete.

Models of trading dynamics recognize the role of asymmetric information. The distinction between informed and uninformed traders leads to a number of useful insights. For instance, informed traders tend to respond more quickly to news, to trade in more liquid markets, and to show better performance than uninformed traders. Yet it is not entirely clear who the informed traders are or how they become informed. In this regard, several empirical studies show that individuals who reside or work in the same location tend to make similar financial decisions, which suggests the presence of some type of internal group communication.<sup>1</sup> The idea is that traders who are spatially or electronically close are exposed to similar information that is diffused via networks within the same group once the information is received by one or more of the traders. For example, anecdotal evidence suggests that Twitter, a social network, plays a role in assessing the markets in the agricultural commodity sector (Berry and Rees, 2009).

Existing research on whether certain types of traders are more informed than others often focuses on whether foreign or domestic traders are more informed using data on equity market trading. The logic favoring domestic traders being more informed than foreign traders is that they may be able to gather more timely and accurate information about the prospects of a company through their formal and informal local networks, be more familiar with local laws and information disclosure policies, and be able to avoid information distortions caused by linguistic and cultural differences. Supporting the position that the foreign investors are more informed is

<sup>1</sup>For example, investors tend to invest locally (e.g., Grinblatt and Keloharju, 2001; Ivković and Weisbenner, 2005; Massa and Simonov, 2003, 2006), as do professional money managers (Coval and Moskowitz, 2001). Investors also tend to follow their colleagues, neighbors, and local information sources (e.g., Duflo and Saez, 2003; Hong, Kubik, and Stein, 2005; Ivković and Weisbenner, 2007; Gurun and Butler, 2012). Along these lines, Hong, Kubik, and Stein (2004) develop a model in which stock market participation is influenced by social interaction, and Xia (2007) shows that the influence of information on transaction prices depends on the structure of the network.

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