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Does social trust affect international contracting? Evidence from foreign bond covenants

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Abstract
Building on rational choice institutionalism theory and Williamson's (J Econ Lit 38(3): 595–613, 2000) four-level social analysis framework, we investigate the influence of the informal institution of social trust on debt contract design in an international setting. Using a sample of non-U.S. firms that issue bonds in the U.S. debt market, we find that Yankee bond creditors impose fewer covenants on bond issuers domiciled in countries with a high degree of social trust. We further show that the inverse relationship between debt covenants and the informal institution of social trust is more pronounced for firms from countries with weak formal institutions, as well as for firms with poor corporate governance and greater information opacity. These findings are robust to endogeneity tests, within-country analysis, various empirical models and measures of trust, and alternative hypotheses. We also show that, while a lower level of informal social trust is associated with higher borrowing costs, this relationship weakens when formal covenants are added to the debt contract (i.e., a substitution effect). Our paper contributes to the international business literature by providing new insights into the role of informal institutions (social trust) in cross-border debt contracting.

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INTRODUCTION

Arrow's (1972: 357) insight that "virtually every commercial transaction has within itself an element of trust" has generated a large and growing body of related research. Recent empirical studies have examined how the informal institution of social trust affects financial and economic transactions. The evidence to date finds significant links between social trust and international merger and acquisition activities (Ahern, Daminelli, & Fracassi, 2015; Stahl, Chua, & Pablo, 2012), venture capital investments and outcomes (Bottazzi, Da Rin, & Hellmann, 2016), stock market participation and ownership structure (Guiso, Sapienza, & Zingales, 2008), bilateral trade in goods, financial assets, and foreign direct investment (Guiso, Sapienza, & Zingales, 2009), loan spreads

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(Hasan, Hoi, Wu, & Zhang, 2017), cost of debt (Meng & Yin, 2019), bank risk-taking (Kanagaretnam, Lobo, Wang, & Whalen, 2019), corporate cash holdings (Dudley & Zhang, 2016), and international IPO underpricing (Li, Wang, & Wang, 2019). In addition to financial transactions, social trust has been shown to play an important role in international management, marketing, entrepreneurship, and open innovation. Previous studies find a significant causal link between social trust and participants in international joint ventures (Ertug, Cuypers, Noorderhaven, & Benasou, 2013; Madhok, 2006; Ng, Lau, & Nyaw, 2007; Wang & Fulop, 2007), electrical equipment manufacturers and their component suppliers (Zaheer, McEvily, & Perrone, 1998), automaker–supplier relationships in the U.S., Japan, and Korea (Dyer & Chu, 2011), German subsidiary firms (Ambos, Asakawa, & Ambos, 2011), import–export relationship marketing (Katsikeas, Skarmeas, & Bello, 2009), and the joint production of patents (Brockman, Khurana, & Zhong, 2018). The ubiquity and importance of social trust as an informal institution is concisely captured in McEvily, Perrone, and Zaheer's (2003) claim that trust is a fundamental organizing principle for all forms of human coordination, including political, economic, and social activities.

Our study extends this line of research by examining the link between the informal institution of social trust and debt contract design (i.e., the number and intensity of debt covenants) in a cross-country setting. North (1991: 97) defines and distinguishes between formal and informal institutions: "Institutions are humanly devised constraints that structure political, economic, and social interaction. They consist of both informal constraints (sanctions, taboos, customs, traditions, and codes of conduct), and formal rules (constitutions, laws, property rights)." The formal institutions that support debt issuance include written legal codes, such as contract law and judicial procedures; in contrast, the informal institutions that support debt issuance consist of unwritten social norms and behaviors, such as social trust. Since formal creditor–debtor contracts are inherently incomplete, few economic transactions are more sensitive to the informal norms of social trust than long-term promises to pay periodic coupons and principal.[1] We select an international setting (i.e., Yankee bond issuances) to examine the role of social trust in overcoming information and agency problems because such problems are especially acute when the transacting parties are separated by geography, language, culture, and social norms. As stated in Ertug et al. (2013: 264), "While trust plays an important role in interorganizational relationships in general, it is even more crucial when these relationships are between organizations from different countries." Building on this literature, our main research question is whether stronger informal institutions in the form of social trust can reduce the need for formal, restrictive (and therefore costly) covenants in cross-border bond issuances.

We use the definition of social trust provided by Mayer, Davis, and Schoorman (1995: 712): "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other party will perform a particular action important to the truster, irrespective of the ability to monitor or control that other party."[2] This definition fits our empirical setting quite well, in that a Yankee bond creditor is vulnerable to the borrower's commitment to perform future actions (i.e., repayment of coupons and principal) that are important to the creditor (truster). Debt covenants are one mechanism used by creditors to help monitor and control the borrowing party. Debt covenants are legally binding clauses written in indenture contracts whereby the debtor promises that certain activities will be undertaken (i.e., affirmative covenants), or that certain activities will not be undertaken (i.e., negative covenants). Examples of affirmative covenants include providing creditors with audited financial statements, maintaining a specific credit rating, or carrying certain types of insurance policies. Examples of negative covenants include restrictions on future debt issuances, merger activities, or financial ratio thresholds (e.g., interest coverage ratios).

After defining our key terms, we employ the theoretical insight of rational choice institutionalism (Ingram & Clay, 2000; Shepsle, 1989) within the framework of Williamson's (2000) four-level social analysis to formulate four hypotheses that specify the direct and indirect relationships between social trust and debt covenants. Specifically, we examine the mechanisms through which an informal institution (social trust) affects transaction-level quantities (bond covenants) and prices (borrowing costs) for international business enterprises. We first test for a direct causal relationship from informal social trust to formal debt contracting, as trust imposes constraints on transactions (i.e., Hypothesis 1). We then test for indirect (interaction) effects of social trust on debt

contracting through formal institutions including investor protection and political institutions (i.e., Hypothesis 2), and governance structures including firm-level governance and information asymmetry (i.e., Hypothesis 3). We perform similar tests for the direct and indirect relationship between social trust and the cost of debt (i.e., Hypothesis 4).

We use the responses to the World Values Survey (WVS) as a proxy for country-level social trust. Specifically, we obtain the percentage of affirmative responses to the question "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" This notion of trust is impersonal in nature, as opposed to a personal concept of trust that emerges from repeated dealings with the same person or organization (Couper, Reuber, & Prashantham, 2020; Dudley & Zhang, 2016; Lai, Singh, Alshwer, & Shaffer, 2014). We capture the restrictiveness of bond covenants using two related measures: the *Number of Covenants* is the sum of all restrictive covenants (i.e., financing, investing, or payout covenants); and the *Intensity of Covenants* is the sum of three indicator variables for the presence of covenants in the three respective categories.

Our empirical analyses are based on a final sample of 934 Yankee bond issues by 31 countries over the period 1989–2014. We conduct Poisson regressions to determine the effect of social trust on restrictive covenants written into Yankee bond contracts, while controlling for issue-, firm-, and country-level variables. To ensure the robustness of our main evidence, we employ a three-level random coefficient Poisson model (RCM Poisson) that accounts for the time series and multilevel nature of our data (e.g., Cuervo-Cazurra & Dau, 2009; Dau, 2012). The results from the two estimation methods show that informal social trust plays a statistically and economically significant role in formal debt contracting, both directly and indirectly, and in terms of both restrictive covenant usage (i.e., Hypotheses 1–3) and the cost of debt (i.e., Hypothesis 4). After confirming our main hypotheses, we perform a series of endogeneity and other robustness tests, including alternative measures of trust, samples, empirical methods, and specifications of the control variables. In all such tests, our baseline results continue to hold.

Our study contributes to the growing literature on the role of informal institutions in shaping the behavior of international business enterprises. Kim, Kim, and Zhou (2017) note that this literature is relatively scarce compared to studies examining the role of formal institutions, while Schoorman, Mayer, and Davis (2007: 352) suggest that future research should focus on "the role that international and cross-cultural dimensions play in the model of trust." One important issue often faced in previous studies was how to distinguish between the direct and indirect effects of informal institutions (Aggarwal, Faccio, Guedhami, & Kwok, 2016; Xin & Pearce, 1996). Our study shows how an informal social characteristic such as social trust interacts with the country-level formal institutional environment and firm-level governance structure to influence transaction-level prices and quantities, thereby providing a comprehensive view of the multilevel links connecting a cultural attribute to bond contracting. These results add support to the rational choice approach to institutional analysis, consistent with Hall and Taylor's (1996: 956) observation that "rational choice analysts have begun to incorporate 'culture' or 'beliefs' into their work to explain why actors move toward one outcome when a conventional analysis specifies many possible equilibrium outcomes." By applying Shepsle's (1989: 136) concept of "structure-induced equilibrium" from rational choice institutionalism within Williamson's (2000) social analysis, we show that informal cultural characteristics such as social trust generate significantly different equilibrium outcomes for international business enterprises in terms of bond covenants and pricing.

Extant literature on debt contracting considers the role of the formal institutional environment but largely overlooks the influence of more fundamental and informal social factors such as trust.[3] Our new findings show that the effect of informal social trust on debt contracting is comparable to that of formal institutions; specifically, a one-standard-deviation increase in creditor rights (social trust) around the baseline mean is associated with a 0.28 (0.22) decrease in the number of covenants. Our study is also related to the recent work of Hasan et al. (2017) who find that firms located in U.S. counties with higher levels of social capital incur lower bank loan spreads. We extend Hasan et al. (2017) by focusing on cross-country, rather than within-country, variation in social capital, thus providing useful information to international business managers. Overall, our cross-country study offers a rich laboratory in which to examine the interactions between informal institutions (e.g., social trust) and formal institutions (e.g., legal codes, creditor rights, investor protection)

based on the insights of rational choice institutionalism.

BACKGROUND, THEORETICAL UNDERPINNING, AND HYPOTHESIS DEVELOPMENT

Background

Although business practitioners and scholars have long observed a connection between social trust and economic outcomes, formal theoretical analysis and empirical verification began in the 1980s and 1990s. Several studies in this period examine the effects of social capital on the real economy, including the development of human capital (Coleman, 1988), differences in economic performance between Northern and Southern Italy (Putnam, Leonardi, & Nanetti, 1993), and general economic prosperity (Fukuyama, 1995). Much of this research can be summarized by Knack and Keefer's (1997: 1251) finding that "trust and civic norms are stronger in nations with higher and more equal incomes, with formal institutions that restrain predatory actions of chief executives, and with better-educated and ethnically homogeneous populations." The finding that formal institutions can restrict the decisions and behaviors of individual actors is consistent with the approach of "choice-within-constraints" from rational choice institutionalism (Campbell, 2004; Ingram & Clay, 2000).

More recent research has refined the theoretical and empirical relationships between social trust and specific economic outcomes. Zak and Knack (2001) develop a theoretical model predicting that societies with more trust have higher long-run economic growth because of reduced risk and a greater investment rate. Stulz and Williamson (2003) show that a country's main religion can explain cross-country variation in creditor rights better than legal origin, openness to trade, and GDP per capita. Similar studies document that social capital/trust plays a significant role in explaining cross-country differences in financial development (Guiso, Sapienza, & Zingales, 2003), national savings, entrepreneurship, and income redistribution (Guiso, Sapienza, & Zingales, 2006), venture capital investment and success (Bottazzi, Da Rin, & Hellmann, 2016), stock market participation (Guiso et al., 2008), and stock market reactions to earnings announcements (Pevzner, Xie, & Xin, 2015). Research has also shown that trust plays a significant role in the cross-border activities between pairs of British and Indian SMEs (Puthusserry, Child, & Khan, 2020), Mexican and American alliance partners (Teegen, 1998), Japanese joint ventures with UK and Malaysian local partners (Gill & Butler, 2003), and consumer perceptions of multinational firm reputations in the chemical and pharmaceutical industry (Swoboda, Huber, Schuster, & Hirschmann, 2017).

Using variations at the U.S. county level, researchers have documented that social capital/trust plays a significant role in the cost of bank loans and public bonds (Hasan et al., 2017), as well as agency costs, profitability, and firm valuations (Hilary & Huang, 2015). At the firm level, a related line of research examines the effect of cross-sectional variation in corporate social responsibility on stock returns (Lins, Servaes, & Tamayo, 2017) and the pricing of public debt (Amiraslani, Lins, Servaes, & Tamayo, 2017) during the 2008–2009 financial crisis.

We extend these studies by examining the link between the informal institution of social trust and the use of debt covenants in the context of cross-border bond issuances (i.e., Yankee bonds). A Yankee bond is a foreign bond issued in the U.S. and denominated in U.S. dollars. In 2017, firms outside the U.S., excluding financial institutions, sold $338.2 billion in Yankee bonds according to data provider Dealogic. Yankee bonds account for an increasing share of total U.S. debt issuances. For example, Yankee bonds represent 41% of all bond issuances, which is the largest category of bonds issued in the U.S. according to Market Business News data from April 2015. The growing popularity of Yankee bonds can be attributed at least in part to the desire for higher yields among U.S. bond investors.[4]

Two examples of Yankee bond issuances in our sample include Petrobras and Royal Dutch Shell. The Brazilian oil giant, Petrobras, issued $8.5 billion of Yankee bonds in March 2014 to raise cash needed for its five-year investment plan. The firm's future plans include the sale of a series of Yankee bonds in the U.S. market.[5] Royal Dutch Shell PLC, an Anglo-Dutch oil and gas company headquartered in the Netherlands and incorporated in the UK, plans to issue $4 billion of Yankee bonds with maturities ranging from 2024 to 2049.[6] These and other Yankee bond issuances are supported by major financial institutions such as Mizuho, which seeks greater presence in the U.S. securities market

by assisting Asian and European company issuances.[7]

Our study is closely related to those of Qi et al. (2011) and Miller and Reisel (2012), both of which examine the impact of formal institutions on the use of Yankee bond covenants. Qi et al. (2011: 235) "find that bonds of firms incorporated in countries with stronger creditor rights use fewer covenants." In a related study, Miller and Reisel (2012) show that, while strong shareholder rights have little impact on creditor–debtor relationships, strong creditor rights decrease the need for bond covenants, consistent with Qi et al.'s (2011) main finding. In terms of Williamson's (2000) framework, these results suggest that creditor rights have a direct effect on international debt contracts. We follow both Qi et al. (2011) and Miller and Reisel (2012) in employing a sample of Yankee bonds to test our main hypotheses. Our study differs, however, in that we move the level of analysis up to an informal institution embedded in a country's social fabric–social trust. More specifically, we apply the approach of rational choice institutionalism to examine the degree to which informal institutions (social trust), interacting with formal institutions (creditor rights), constrain the debt contracts between individual creditors and debtors.

There are two general themes that run through these related studies: (1) both informal institutions and formal institutions have a significant effect on economic outcomes; and (2) the connection between institutions and economic outcomes can be studied formally using economic theory and empirical research methods, consistent with the two main propositions of new institutional economics in general and rational choice institutionalism in particular (Campbell, 2004; Hall & Taylor, 1996; Ingram & Clay, 2000; Shepsle, 1989; Weingast, 2002). The debt market is an ideal setting in which to examine the economic role of social trust because the ability to make credible commitments about future contingencies depends on one's trustworthiness. As stated in Ingram and Clay (2000: 528–9):

> the problem of credible commitment is faced by any party to an exchange who wants to promise in the present to do something in the future that may not be in his or her interest to do when the future actually arrives. The problem is endemic because in almost every exchange there is at least a moment when one of the parties has control over all or most of the goods and must decide whether to follow through on the agreed upon bargain or make a grab for more.

Nowhere is this problem more acute than in the debt markets where creditors exchange large sums of money in the present for debtors' promissory notes of future repayments.

What Is Social Trust?

Since the informal institution of social trust encompasses a potentially broad conceptual range, it is important to specify "the level, nature, and meaning of trust" (Zaheer & Zaheer, 2006: 22) that we employ in this study. We distinguish between personal trust and (impersonal) societal trust. Dudley and Zhang (2016: 363) describe these two types of trust:

> Specifically, when describing the relationship between a principal and an agent, two different types of trust are relevant. The first notion is personal trust, which is a set of beliefs about a specific person. This notion involves repeated interactions between two individuals. … The second notion of trust, societal trust, is easier to measure, but has a less obvious relationship with capital-raising activities of the firm. Societal trust refers to a set of beliefs about the behavior of a group of individuals. This notion of trust is rooted in deep-seated beliefs about others and it involves a person's cultural and religious backgrounds.

Our study focuses on the second notion of trust as "a set of beliefs about the behavior of a group of individuals." It is impersonal in nature, and not based on repeated interactions between particular persons.[8] Consistent with this notion of trust, Parkhe (1998: 228) suggests that trust involves uncertainty about the future and vulnerability (i.e., risk of losing something of value) to another party whose behavior is not under one's control. This definition of trust applies quite well to a creditor–debtor setting in general (i.e., uncertainty about future payments and vulnerability to debtor behavior), and the international debt contracting setting in particular (i.e., less ability to monitor and control debtor behavior across national boundaries). Our proxy for this view of social trust is based on a widely used measure from the WVS, specifically, the country-level average percentage of affirmative responses to the question "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?"

It is also important to note that there are potential discrepancies between our unit of measurement and our units of analysis. We use a proxy for social trust based on the WVS question, which is a within-country measure of social trust between

individuals, and then compare these values across countries (e.g., Ahern et al., 2015). Our research design, however, treats firm managers operating in a particular country as possessing the same social trust attribute as that of the overall country. That said, there are several studies suggesting that this discrepancy is unlikely to be problematic. For example, Ertug et al. (2013: 264) argue that "The differences in culture, norms, and institutions that produce different levels of propensity to trust between individuals from different countries are also likely to be evident in the practices of companies from those countries;" Parkhe (1991: 583) claims that "the influence of a society's culture permeates all aspects of life within the society including the norms, values, and behaviors of managers in its national companies;" and Harzing and Sorge (2003: 206) find that foreign subsidiaries of MNCs are "firmly and primarily impregnated by the country of origin."

Another potential discrepancy in our units of analysis is the assumption that outside creditors (i.e., individuals and institutions who buy Yankee bonds) have a similar assessment of the bond-issuing country's social trust as that of the insider citizens. Specifically, we assume that, if the citizens of a particular country possess high (low) levels of social trust between themselves, then outsider creditors will impute similarly high (low) levels of social trust to the same country. While this assumption might be considered less than ideal, it is consistent with the agency cost of debt framework that we develop below, in which factors that mitigate agency costs (i.e., within the country) will benefit all creditors—including those who reside outside the country. In addition, the notion that creditors outside the country impute a similar level of trust as that existing between creditors within the country is a commonly used assumption, both explicitly and implicitly, by related studies (e.g., Ahern et al., 2015; Kanagaretnam et al., 2019; Li et al., 2019; Meng & Yin, 2019).

Hypothesis Development

After defining social trust and our unit of analysis, we employ rational choice institutionalism within Williamson's (2000) theoretical framework to formulate and test our four main hypotheses. Campbell (2004: 15) argues that one of the most important contributions of rational choice institutionalists is the development of "the so-called choice-within-constraints approach—a view that takes seriously that institutions, including norms as well as formal rules and regulations, limit the range of choices individuals are likely to make as they pursue their interests." In our study, we indeed "take seriously" the role played by informal and formal institutions in influencing investor and managerial choices as they pursue their interests in the debt market.[9] Ingram and Clay (2000: 526) further describe the choice-within-constraints approach of rational choice institutionalism by identifying three key characteristics as follows:

> First, it holds that actors are boundedly rational in the sense that they pursue a broad set of self interests, but with limited knowledge and cognitive capacity. Second, institutions are defined as the rules, combined with their enforcement mechanisms, that constrain choices of actors. These rules include the laws of states, the policies of organizations, and the norms of social groups. Third, institutions ideally constrain actors such that their best choices are consistent with the collective good, enabling, for example, mutually profitable exchange between actors.

The motivation for our hypotheses follows closely from these three characteristics. First, Yankee bond investors are subject to bounded rationality and limited knowledge as they operate in an environment of information asymmetry (i.e., not knowing how Yankee bond issuers will behave after the receipt of funds). Second, Yankee bond investors will use the formal institutional mechanism of writing debt covenants in an attempt to constrain issuers' opportunistic choices. Third, Yankee bond investors and issuers are more likely to agree on mutually profitable bond covenants if formal and informal institutions (e.g., social trust) are effective in constraining opportunism. So, we begin our hypotheses development with the broad insights from rational choice institutionalism, and then tighten the focus using Williamson's (2000) four-level social framework. We end this section with four hypotheses that posit the specific mechanisms through which the informal institution of social trust can influence debt contracting. Figures 1 and 2 summarize our overall theoretical framework.

Within the framework of new institutionalism's choice-within-constraints approach, we utilize Williamson's (2000) four-level social analysis to specify more concretely the relationships between informal and formal institutions. Williamson's Level 1 comprises a country's informal institutions and customs (e.g., social trust) that are embedded in the social fabric. Highly persistent over time, these cultural traditions are effectively exogenous and not subject to social engineering. Level 2 comprises

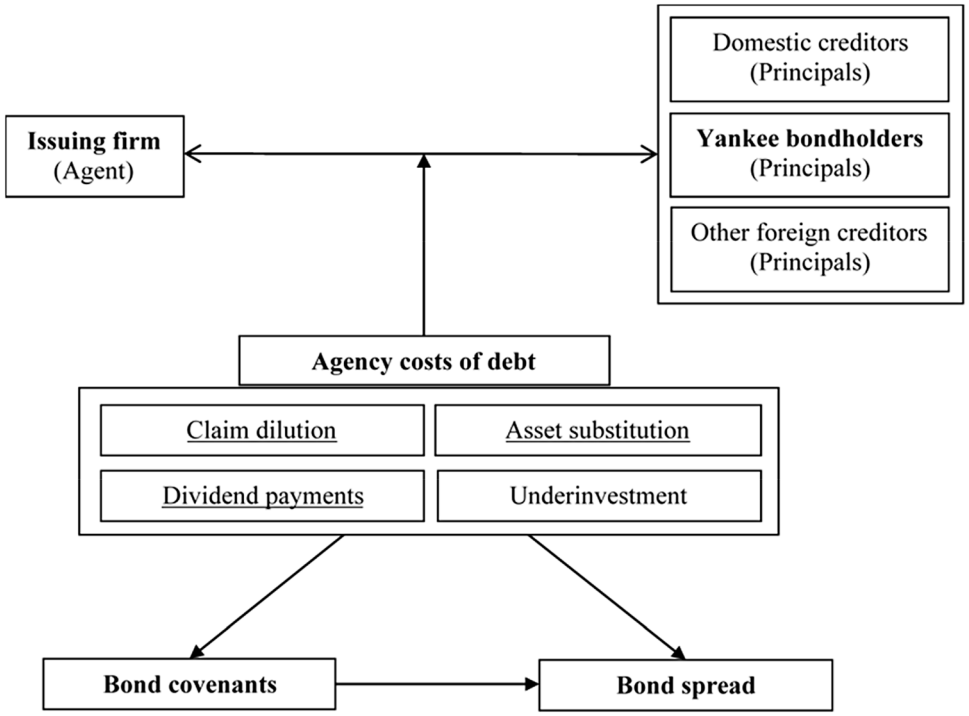

Figure 1 Agency costs of debt in international bond contracting.

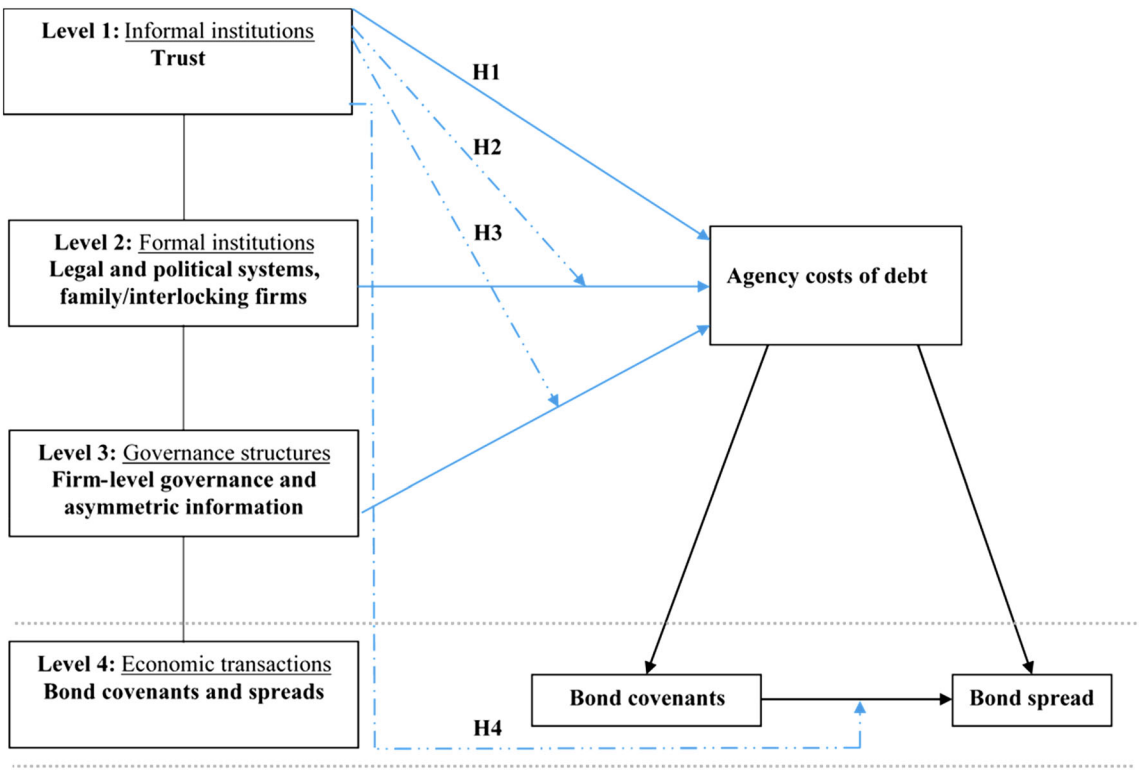

Figure 2 Informal institutions (trust), formal institutions, governance structures, and agency costs of debt.

a country's political, judicial, and economic institutions, while Level 3 comprises its governance structures, which influence individuals' incentives while playing the game. Level 4 comprises economic transactions that together determine prices, quantities, and allocation of resources. Within this hierarchical construct, higher-level informal institutional structures (e.g., social trust, unwritten norms) have a direct impact on lower-level institutional structures (e.g., legal institutions, property rights), but lower-level institutions have little to no impact on higher-level institutions. Our focus in this study is to examine the role played by a Level 1 informal institution (social trust) on Level 4 outcomes (debt covenants), while also taking into account any moderating effects from Levels 2 and 3 (formal rules and institutions).

Agency costs are the linchpin that connect social trust (i.e., Level 1 informal institution) to the use of debt covenants (i.e., Level 4 economic transactions). Debt covenants are costly to establish and to monitor, so they are put in place only to the extent that they are expected to reduce agency problems between shareholders and bondholders. Since higher social trust reduces agency costs (Coleman, 1988; Putnam, Leonardi, & Nanetti, 1993; Fukuyama, 1995; Knack and Keefer, 1997), then higher social trust will reduce the need for costly debt covenants, all else equal. Qi, Roth, and Wald (2011: 235) highlight this key connection between agency costs and the use of restrictive debt covenants as follows:

> Smith and Warner (1979) detail how restrictive covenants can mitigate agency conflicts between shareholders and bondholders. Management and shareholders are willing to adopt restrictive covenants in debt contracts to prevent firms from taking actions that expropriate creditors. Although including covenants reduces operational flexibility, it can maximize firm value by increasing debt capacity and reducing debt-financing costs. The number and types of covenants depends on the degree of agency conflicts, and on the costs and benefits of including restrictive covenants.

Principal-agent theory provides the mechanism that links higher (lower) social trust to fewer (more) restrictive debt covenants. Ross (1973) describes the inherent conflicts of interest between contracting parties within the context of principals and their agents. In our study, the principal is represented by the purchaser of Yankee bonds, and the agent is represented by the firms that issue Yankee bonds (i.e., a stockholder–bondholder conflict commonly referred to as the agency cost of debt). Smith and Warner (1979) describe four sources of agency costs of debt, as illustrated in our Figure 1: dividend payments, claim dilution, asset substitution, and underinvestment. Similar to a firm's domestic creditors, Yankee bondholders are exposed to the risk that issuing firms might pay out unsustainably large dividends to existing shareholders, thereby increasing the probability of future default. These bondholders are also exposed to the risk that their claims to future cash flows and asset liquidations could be diluted by additional debt issuances. An asset substitution problem can arise if issuing firms substitute high-risk projects for low-risk projects after selling their Yankee bonds to unsuspecting bondholders (Jensen & Meckling, 1976). Finally, an underinvestment problem occurs whenever issuing firms forgo profitable investment opportunities because Yankee bondholders would capture a disproportionate share of firm value resulting from such investments (Myers, 1977).

Although each of these four sources of agency costs of debt is inherent in all stockholder–bondholder relationships, they are especially acute when principals and agents are separated by geography, language, culture, and institutional background (Ertug et al., 2013). As argued by Thompson (1996: 375), "Assessing whether the other party is likely to fulfill all obligations can be arduous when a transaction is international." This additional arduousness is caused by the heightened possibility that the cross-border transacting parties have "asymmetric conceptions of trust" (Zaheer & Zaheer, 2006: 21). Contract enforcement can also be more challenging and expensive in a cross-border setting where Yankee bond issuers and owners are located in different countries. Legally binding bond covenants are a significant tool to reduce the additional risk of cross-border bond issuances. As described by Smith and Warner (1979: 122), bond covenants represent "a persistent phenomenon" that has been used for centuries to mitigate agency costs of debt. They explain this persistence (1979: 152) as follows: "Observed debt covenants reduce the costs associated with the conflict of interest between bondholders and stockholders; the ingenuity with which debt contracts are written indicates the strong economic incentives for the firm's owners to lower the agency costs which can result from having risk debt in the firm's capital structure." Smith and Warner also make it clear that, while there are benefits to adding restrictive covenants to debt contracts, there are also costs; in fact (1979: 153), "the direct and opportunity

costs of complying with the contractual restrictions appear to be substantial."

Social trust mitigates the agency costs of debt and thus influences the need for creditors to rely on restrictive debt covenants. Hasan et al. (2017: 1021) maintain that within-country social capital promotes trust and helps constrain opportunistic firm behaviors in debt contracting by "increasing decision-makers' perceived marginal costs of perpetrating opportunistic firm behaviors against debtholder." They assert that, in high-trust societies, opportunistic behaviors are unacceptable and can therefore lead to social sanctions (Coleman, 1988), increased aversive emotional states such as guilt and shame, and internal discomfort, even when such behaviors are unobserved. Building on Hasan et al. (2017), we argue that within-country social trust affects international debt contracting. The idea is that the disciplinary effect of trust on opportunistic and self-serving corporate dealings in debt contracting (i.e., agency costs of debt) will benefit all bondholders, both domestic and Yankee bondholders, as shown in Figure 1. Put differently, the lower agency costs of debt for bond-issuing firms from high-trust countries are not exclusive to domestic bondholders, but benefit all creditors, including Yankee bondholders. The role of trust in reducing the cost of debt could be even more important for Yankee bondholders, who likely face higher agency costs of debt and more information problems due to the international nature of the contract.

To the extent that social trust reduces the need for costly covenants (i.e., informal trust substitutes for formal covenants), Yankee bond-issuing firms located in high-trust countries can mitigate such costs by reducing the number or restrictiveness of covenants. This insight, consistent with rational choice institutionalism's concept of "choice-within-constraints" (i.e., choice of covenants within constraint of social trust), motivates our first hypothesis. In addition, our first hypothesis is consistent with related research showing that societal trust has been an effective mechanism in reducing the cost of borrowing (Meng & Yin, 2019), IPO underpricing (Li et al., 2019), and excessive risk taking by banks (Kanagaretnam et al., 2019).

The discussion above suggests that social trust has a direct and significant impact on debt contracting. More specifically, a higher level of social trust in the issuing firm's country of origin will lead Yankee bond investor-creditors to demand fewer and less intensive safeguards against contract breaches. More formally stated,

Hypothesis 1: A higher level of social trust reduces the use of restrictive covenants in debt contracts.

We test Hypothesis 1 by regressing the number (and intensity) of Yankee bond covenants on our measure of social trust and a set of country-, firm-, and issue-level control variables.

Next, we posit that the informal institution of social trust and formal institutions function as substitute mechanisms in terms of their impact on debt covenants; specifically, when trust is high (low), the marginal impact of formal institutions on bond covenants is low (high). While Hypothesis 1 seeks to establish a direct causal connection from social trust to bond covenants, Hypothesis 2 seeks to establish an indirect connection from social trust to bond covenants running through social trust's interaction with country-level formal institutions. In a parallel manner, Holmes, Miller, Hitt, and Salmador (2013: 531) show that "the country's informal institutions, in the form of cultural dimensions of collectivism and future orientation, shape the country's formal institutions" including political, economic, and regulatory institutions. Holmes et al. (2013) confirm that informal features (i.e., collectivism and future orientation) have an indirect impact on economic transactions (i.e., the quantity of inward foreign direct investment) through their interaction with formal institutions (i.e., political, economic, regulatory institutions). Our second hypothesis (Hypothesis 2) follows this same line of reasoning; specifically, we posit that an informal institution (i.e., social trust) has an indirect impact on economic transactions (i.e., the quantity and intensity of bond covenants) through its interaction with formal institutions (e.g., creditor rights, rule of law).

Combining Hypothesis 1's claim that higher social trust will reduce the number and intensity of covenants with the results of previous studies showing that stronger country-level formal institutions will also reduce the number and intensity of covenants (Miller & Reisel, 2012; Qi et al., 2010, 2011), we expect that social trust and formal institutions will act as substitute mechanisms in determining the number and intensity of covenants. Specifically, if formal institutions are strong (weak), then the impact of social trust on covenants will be less (more) significant. This perspective is

consistent with prior research. Guiso, Sapienza, and Zingales (2004) show that the effect of social capital on households' use of financial instruments (e.g., checks, stock, institutional credit) is stronger where legal enforcement is inefficient. Pevzner et al. (2015) show that social trust matters more to investor reactions to earnings news when investor protection is weak, suggesting a substitute relationship between trust and formal institutions. Meng and Yin (2019) document a similar interaction between trust and country-level governance indicators in determining the cost of debt financing.

Following the insights of Guiso et al. (2004), Holmes et al. (2013), Meng and Yin (2019), and Pevzner et al. (2015), our second hypothesis posits that social trust also affects debt contracting through its interaction with formal institutions (i.e., legal system, political system, prevalence of family/interlocking firms). Formally stated,

Hypothesis 2: There is a substitution effect between social trust and country-level formal institutions in determining the use of restrictive covenants in debt contracts.

Specifically, this hypothesis posits that the relationship between social trust and the use of restrictive covenants will be weakened when country-level formal institutions are stronger. We test Hypothesis 2 by regressing the number (and intensity) of Yankee bond covenants on our measure of social trust, various measures of the country-level formal institutional environment, the interaction between social trust and these measures of the country-level formal institutional environment, and our set of control variables.

Following the same reasoning that motivated Hypothesis 2 (i.e., that of Holmes et al. (2013) and Meng and Yin (2019)), we posit that social trust and governance structures will act as substitute mechanisms in determining the number and intensity of covenants; specifically, when governance structures are strong (weak), the marginal impact of social trust will be low (high). Klock, Mansi, and Maxwell (2005) show that corporate governance has a significant impact on the cost of borrowing. Combining our Hypothesis 1 claim that higher social trust reduces the need for covenants with Klock et al.'s finding that stronger corporate governance reduces the cost of debt financing, we expect to find an indirect (substitution) effect from social trust to the number and intensity of covenants that run through the firm's governance and information asymmetry. This posited substitution effect, similar to that in Hypothesis 2, is consistent with the findings of Meng and Yin (2019) and Xin and Pearce (1996).

Based on this discussion, our third hypothesis holds that social trust affects debt contracting through its interaction with governance mechanisms (i.e., firm-level governance and information asymmetry). Formally,

Hypothesis 3: There is a substitution effect between social trust and the firm-level governance and information asymmetry in determining the use of restrictive covenants in debt contracts.

Specifically, this hypothesis posits that the relationship between social trust and the use of restrictive covenants will be weakened when firm-level formal institutions are stronger. We test Hypothesis 3 by regressing the number (and intensity) of Yankee bond debt covenants on our measure of social trust, various measures of firm-level governance and information asymmetry, the interaction between social trust and these measures of firm-level governance and information asymmetry, and our set of control variables.

Our fourth hypothesis examines interaction effects between debt covenants and the cost of debt, all within the context of social trust. Previous research (e.g., Barclay & Smith, 1995; Myers, 1977; Smith & Warner, 1979) shows that agency and asymmetric information problems can be alleviated by an appropriate choice of debt maturity, covenants, and seniority. Creditors require a larger risk premium on covenant-free debt to compensate for the risk that the borrower's credit quality will decline. All else equal, fewer covenants lead to higher borrowing costs. Although the direct effect of higher social trust should reduce borrowing costs (Meng & Yin, 2019), higher social trust also reduces the use of covenants (Hypothesis 1)—and fewer covenants, all else equal, will increase borrowing costs. So, while higher social trust will directly lower borrowing costs, it can also reduce the use of covenants, which will (indirectly) increase borrowing costs. The net effect of covenants on borrowing costs is an empirical question that we address with Hypothesis 4. In summary, we predict that higher social trust reduces borrowing costs by decreasing agency and asymmetric information problems (a direct effect). In addition, higher social trust can (indirectly) increase borrowing costs through its

effect on the number and intensity of covenants (as examined in Hypothesis 1; an indirect effect). Our fourth hypothesis is thus stated as follows:

Hypothesis 4: A higher level of social trust lowers borrowing costs by mitigating agency and information problems (direct effect); there is also a substitution effect between social trust and the use of restrictive covenants on borrowing costs (indirect effect).

DATA, EMPIRICAL DESIGN, AND DESCRIPTIVE STATISTICS

Sample

We begin the sample selection process with foreign bonds issued in the U.S. (Yankee bonds) contained in the Fixed Investment Securities Database (FISD), which is widely used in studies on bond covenants (e.g., Miller & Reisel, 2012; Qi et al., 2011; Reisel, 2014). Our initial sample comprises 3064 issues by borrowers from 52 countries in the period 1989–2014. We exclude bonds issued before 1989 because of the poor quality of covenant data before 1989 (Miller & Reisel, 2012). To ensure the validity of covenant information, we also exclude from this sample medium-term notes, private placements, bonds with special characteristics such as convertible, pass-through, or payment-in-kind features, as well as issues with an offering amount that exceeds $50 billion or an offering yield that is greater than 50 basis points. Our initial sample represents an update to Qi et al.'s (2011) and Miller and Reisel's (2012) samples, which end in 2007. Next, we merge the FISD data with Compustat (North America and Global) by manually matching company names. This yields a sample of 1650 bonds across 38 countries. We then merge with the WVS to obtain data on trust. We exclude observations with missing values for variables used in our main regression and observations with a missing Campbell (1996) industry classification. This procedure yields a final sample of 934 bond issues from 31 countries.[10]

Variable Construction

Covenants

Our main dependent variable is the total number of covenants written into bonds issued by non-U.S. firms. Following Miller and Reisel (2012), we count the number of restrictive covenants in each outstanding debt issue. However, while the total number of covenants gives one measure of covenant use, it obscures the fact that some types of firm activities face more potential restrictions than others. To address this concern, we use as an alternative dependent variable the intensity of covenants, which is equal to the sum of three indicators equal to 1 if the debt contract contains a covenant in the given category. This alternative measure assigns equal weight to three categories of restrictions on firm activities, namely, restrictions on a firm's financing, investment, and payout activities.

Covenants on financing activities are designed to protect bondholders from claim dilution by limiting the firm's ability to enter into future obligations that could lead to bankruptcy. This category contains seven covenant terms: (1) the issuer is not allowed to issue secured debt unless it secures the current issue on a *pari passu* basis; (2) the issuer is not allowed to issue debt with initial maturity of one year or longer; (3) the issuer is not allowed to incur additional debt with limits on the absolute dollar amount of debt outstanding or the percentage of total capital; (4) the issuer is restricted on the amount of senior debt; (5) the issuer is not allowed to issue subordinated debt; (6) the issuer is not allowed to issue additional debt unless the issuer achieves or maintains a certain profitability level; and (7) the issuer is restricted on sale–leaseback transactions, which involve raising capital by selling an asset and simultaneously leasing the asset back for a fixed term at an agreed-upon rate.

Covenants on investment activities are designed to protect bondholders from asset substitution problems by limiting the firm's investments in excessively risky projects. This category contains four covenant terms: (1) the issuer is restricted on investment policy to reduce risky investments; (2) the issuer is restricted on mergers or consolidations; (3) the issuer is restricted on selling its assets; and (4) the issuer is required to use proceeds from the sale of assets to redeem bonds at par or at a premium.

The last category of covenants relates to corporate payouts. These restrictions are designed to protect bondholders from wealth transfers by limiting the firm's ability to transfer assets (through cash dividends) to shareholders. This category contains two covenant terms: (1) the issuer is not allowed to make dividend-related payments to shareholders or other entities above a certain percentage of net income or some other accounting

ratio; and (2) the issuer is restricted on non-dividend-related payments to shareholders or other entities.

Trust

Following prior literature, we construct our trust variable based on the WVS question "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?"[11] Specifically, we calculate the level of trust in a country as the mean percentage response in the country, where a response is recorded as 1 if the participant reports that most people can be trusted, and 0 otherwise. This question is documented in all six waves of the survey: 1981, 1990, 1995, 1999, 2005, and 2010.[12] We match the trust variable to firm-year observations in commensurate periods. For country-years with missing trust values, we fill in the missing values based on the previous wave. In robustness tests, we adopt alternative measures of trust, including 100% + (the mean percentage response to "most people can be trusted") − (the mean percentage response to "can't be too careful") as well as the mean response to the survey question asking the extent to which the participant trusts their neighborhood. Detailed variable definitions are reported in Online Appendix Table IA1.

Empirical design

We estimate several specifications of the following model using a Poisson regression[13]:

$$Covenants_{j,f,i,c,t} = \alpha_0 + \alpha_1 Trust_{c,t-1} + \alpha_2 ILV_{j,t} + \alpha_3 FLV_{f,t-1} + \alpha_4 CLV_{c,t-1} + \mu_t + \mu_i + \varepsilon_{j,f,i,c,t}, \quad (1)$$

where j is a bond issue index, f is a firm index, I is an industry index, c is a country index, and t is a year index. The dependent variable, *Covenants*, is either *Number of Covenants* or *Intensity of Covenants*. The treatment variable of interest, *Trust,* is our WVS-based measure of trust. *ILV* is a vector of issue-level control variables: *Amount* (natural logarithm of the bond issue's offering amount), *Maturity* (the maturity of the bond issue in days), and *Orthogonalized Rating* (the residuals obtained by regressing bond ratings on *Trust*).[14] These variables come from FISD. *FLV* is a vector of firm-level control variables: *Size* (natural logarithm of total assets), *Leverage* (total debt over total assets), *Interest Coverage* (earnings before interest and taxes over interest expenses), *Profitability* (earnings before interest and taxes over total assets), *Capital Expenditure* (capital expenditure over total assets), and *Tangibility* [following Berger, Ofek, & Swary 1996, (0.715 × receivables + 0.547 × inventories + cash + 0.535 × net property, plant, and equipment)/total assets]. These variables are collected from Compustat Global. *CLV* is a vector of country-level control variables: *GDP* (logarithm of GDP per capita), *GDP Growth* (growth of GDP per capita), *Financial Development* (private credit to GDP), *Inflation*, *Creditor Rights*, *Rule of Law*, and *Control of Corruption*. These variables are obtained from the World Development Indicators database, the World Governance Indicators (WGI) database, and Djankov, McLiesh, and Shleifer (2007).[15] Following a standard practice in the literature (e.g., Cuervo-Cazurra & Dau, 2009; Dau, 2012), we lag *Trust*, *FLV*, and *CLV* to ensure that bondholders have access to relevant country- and firm-level information at the issue date, and to mitigate potential reverse causality issues. We follow extant literature in choosing the controls to include in *ILV*, *FLV,* and *CLV* (e.g., Barclay & Smith, 1995; Chava, Kumar, & Warga, 2010; Miller & Reisel, 2012; Qi et al., 2011). Finally, we control for year (μ_t) and industry (μ_i) effects in all regressions, and we cluster standard errors at the country level.[16]

Descriptive Statistics

Table 1 summarizes our sample of bond issues in the initial sample and the Compustat subsample. Our initial sample comprises international public debt offerings from 1989 to 2014 and represents an update to Qi et al.'s (2011) and Miller and Reisel's (2012) samples. In general, our initial sample displays the same characteristics as in Qi et al. (2011) and Miller and Reisel (2012). Panel A, which reports bond characteristics and frequency by period, shows that the average offering amount is $573.93 million, consistent with the notion that the Yankee bond market is one of the few markets in which a foreign entity can issue large amounts of long-term fixed-rate debt (Karolyi & Johnston, 1998). Moreover, the use of covenants appears to be common, with a median of three covenants per bond. Most of the bonds are senior, callable, and have a maturity between 5 and 15 years.

Panel B of Table 1 shows the frequency by country for the final sample, which covers 31

countries. Consistent with prior studies (e.g., Miller & Puthenpurackal, 2002; Miller & Reisel, 2012), this sample is dominated by Canada (37.79%) followed by the UK (21.52%). At the other end of the spectrum, countries such as Colombia, India, and Indonesia have relatively few Yankee bond issues, with 0.11% of the observations each.[17]

Panel C of Table 1 summarizes firm and country characteristics for the Compustat subsample. Our main variable of interest, *Trust*, ranges from a low of 0.08 for Peru to a high of 0.65 for Norway, with an average of 0.35 and a standard deviation of 0.13. Importantly for our purposes, these figures suggest that there is a large degree of variation in the level of within-country trust across the globe.

Online Appendix Table IA3 presents Pearson correlation coefficients for our key regression variables. We find that *Trust* is significantly negatively related to our proxies for restrictive covenants, providing preliminary evidence that firms from countries with high levels of trust tend to issue fewer covenants. With very few exceptions, the correlation coefficients between the key explanatory variables are low. Notably, we observe a high correlation between trust and the rule of law (corruption) at 0.57 (0.59).[18] To test for multicollinearity, we calculate and report variance inflation factors (VIFs) in all regressions. The VIF values are generally below 10, especially for our main analysis, suggesting that multicollinearity is unlikely to affect our inferences (Dau, 2012).

EMPIRICAL RESULTS

Main Evidence

Table 2 presents our main evidence on the relationship between trust and debt covenants. Panel A shows the results using a Poisson regression. In Model 1, we regress the total number of covenants across all categories on *Trust*; that is, we regress Eq. (1) without controls and fixed effects. We find that the coefficient on *Trust* is negative and significant at the 1% level ($\alpha_1 = -0.516$; $p = 0.001$),[19] consistent with Hypothesis 1, which holds that covenants are more prevalent in bonds issued by firms from countries with a low level of trust. In Model 2, our baseline specification, we add to Model 1 controls for issue-, firm-, and country-level factors that may influence debt covenants as well as industry and year fixed effects; that is, we estimate Eq. (1). The coefficient on *Trust* continues to be negative and statistically significant ($\alpha_1 = -0.574$; $p = 0.005$). This effect is also economically significant: a one-standard-deviation increase in *Trust* around its mean leads to an average decrease in the number of covenants of 0.22. By comparison, we find that a one-standard-deviation increase in *Creditor Rights* around its mean results in an average decrease in the number of covenants of 0.28 (consistent with the finding in prior literature that country-level legal protection of creditors can substitute for contract-level covenants; Miller & Reisel, 2012; Qi et al., 2011).[20] These results support the view that higher levels of trust within a particular country reduce the agency costs of debt for U.S. bondholders, bringing positive externalities of trust and consequently reducing the need for debt covenants.

In Models 3, 4, and 5 of Table 2, we investigate the effect of trust on the number of covenants used in the financing, investment, and payout categories, respectively. We find that trust significantly reduces the use of restrictive covenants on investment and payout activities, which suggests that trust mitigates opportunistic behavior such as risk-shifting and wealth transfers. In Model 6, we use our alternative measure of debt covenants, *Intensity of Covenants*, which assigns equal weights to the three categories of restrictive covenants. We again document a negative and significant coefficient ($\alpha_1 = -0.420$; $p = 0.007$) on *Trust*.[21]

Since our research question deals with three levels of analysis, we employ a mixed-level modeling that accounts for the multilevel and time series nature of the data. More specifically, we follow Dau (2012) and use a three-level random coefficient Poisson model (RCM Poisson) (Rabe-Hesketh, Skrondal, & Pickles, 2005). According to Dau (2012: 268), "when compared to general linear models, RCM provides several important benefits that make it more suitable to test these types of analyses. It is robust to missing data and error structure sphericity violations (Ployhart, Holtz, & Bliese, 2002). Moreover, it models each subject within each level separately, allowing for a much more accurate specification (Raudenbush & Bryk, 2002)." Similar to our setting, Dau's model uses (2012: 268) "a three-level RCM with observations for each year (level 1) nested within firms (level 2) and firms, in turn, nested within countries (level 3)." Based on our estimated RCM in Panel B of Table 2, we find that our earlier results continue to hold; that is, higher levels of trust reduce the use of debt covenants. The coefficient on *Trust* is negative and significant at the 5% level when we consider

Table 1 Descriptive statistics for bond issues.

	Initial sample (n = 3064)			Compustat subsample (n = 1650)		
	Mean	Median	Std. dev.	Mean	Median	Std. dev.
Panel A: Bond characteristics and frequency by time period						
Offering amount (million)	573.93	350.00	692.70	628.61	450.00	736.47
Offering yield (%)	6.50	6.46	2.88	6.07	6.08	2.73
Number of covenants per bond	3.14	3.00	2.29	2.96	3.00	2.10
Percentage of transactions:						
Senior secured	5.61			3.21		
Senior	84.11			85.76		
Subordinated	8.06			8.67		
Callable	59.79			62.79		
Low maturity (< 5 years)	11.95			12.79		
High maturity (> 15 years)	14.62			17.15		

	Number of observations		Number of covenants				Intensity of covenants	Trust
	No.	Percentage	Total	Finance	Invest	Payout	Total	
Panel B: Frequency by country, final sample								
Argentina	5	0.54	3.20	1.60	1.60	0.00	1.60	0.17
Australia	48	5.14	2.27	1.04	1.15	0.08	1.29	0.50
Brazil	16	1.71	3.00	1.13	1.69	0.19	1.56	0.08
Canada	353	37.79	3.86	1.59	1.96	0.31	1.97	0.38
Chile	5	0.54	3.80	1.80	2.00	0.00	2.00	0.22
China	4	0.43	1.75	0.75	1.00	0.00	1.00	0.53
Colombia	1	0.11	3.00	1.00	2.00	0.00	2.00	0.14
Finland	3	0.32	4.00	2.00	2.00	0.00	2.00	0.55
France	62	6.64	2.92	1.23	1.44	0.26	1.53	0.19
Germany	12	1.28	2.67	1.17	1.25	0.25	1.58	0.32
Hong Kong	6	0.64	0.83	0.50	0.33	0.00	0.50	0.40
India	1	0.11	2.00	0.00	2.00	0.00	1.00	0.21
Indonesia	1	0.11	0.00	0.00	0.00	0.00	0.00	0.37
Israel	4	0.43	2.75	0.75	1.75	0.25	1.25	0.23
Italy	4	0.43	1.50	1.00	0.50	0.00	1.25	0.27
Japan	3	0.32	2.67	1.00	1.67	0.00	2.00	0.37
Korea, Rep.	17	1.82	3.35	1.65	1.59	0.12	1.65	0.30
Malaysia	1	0.11	4.00	2.00	2.00	0.00	2.00	0.09
Mexico	62	6.64	3.77	1.68	1.81	0.29	1.90	0.18
Netherlands	70	7.49	2.73	0.81	1.67	0.24	1.50	0.47
Norway	14	1.50	3.79	1.86	1.71	0.21	2.07	0.65
Peru	7	0.75	3.71	2.00	1.71	0.00	1.71	0.08
Philippines	4	0.43	7.00	3.00	3.00	1.00	3.00	0.09
Poland	6	0.64	6.00	2.00	3.50	0.50	2.50	0.17
Russian Federation	1	0.11	5.00	3.00	2.00	0.00	2.00	0.23
Singapore	6	0.64	4.00	1.33	2.33	0.33	2.33	0.15
Spain	5	0.54	3.00	1.00	2.00	0.00	2.00	0.32
Sweden	8	0.86	2.63	1.00	1.50	0.13	1.25	0.63
Switzerland	3	0.32	6.00	2.67	2.67	0.67	2.67	0.34
Thailand	1	0.11	3.00	1.00	2.00	0.00	2.00	0.41
United Kingdom	201	21.52	2.66	0.94	1.56	0.16	1.42	0.29

	Mean	Median	Std. dev.	N
Panel C: Firm and country characteristics for the Compustat subsample				
Size	9.63	9.68	2.19	1650
Leverage	0.35	0.30	0.37	1649
Interest Coverage	4.20	2.55	69.29	1626
Profitability	0.10	0.10	0.14	1618

Table 1 (*Continued*)

	Mean	Median	Std. dev.	N
Capital Expenditure	0.09	0.08	0.07	1412
Tangibility	0.45	0.47	0.14	1423
Trust	0.35	0.37	0.13	1624
GDP	31,593.67	28,620.41	16,525.39	1611
GDP Growth (%)	1.57	1.55	2.40	1611
Financial Development	132.81	128.72	54.90	1331
Inflation	4.08	2.17	49.91	1611
Creditor Rights	1.93	1.00	1.36	1650
Rule of Law	1.36	1.68	0.68	1650
Control of Corruption	1.77	2.23	0.85	1650

The sample consists of foreign bonds issued in the U.S. (Yankee bonds) contained in the FISD for the period 1989–2014. The Compustat subsample includes bonds from issuing companies with non-missing total assets in Compustat. Offering amount and *Size* are denominated in U.S. dollars. *Number of Covenants* refers to the total number of restrictive covenants based on three categories, namely, restrictions on firm-level financing, investment, and payout activities. *Intensity of Covenants* refers to the sum of three covenant indicators, with each of the indicators equal to 1 if at least a restrictive covenant exists in one of the three categories. *Trust* is the percentage of affirmative responses to the WVS question: Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people? Detailed variable definitions are provided in Online Appendix Table IA1.

Table 2 Effect of trust on the use of debt covenants.

	Number of covenants					Intensity of covenants
	All	All	Restrictions on financing	Restrictions on investment	Restrictions on payouts	All
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Results of Poisson regressions						
Trust	−0.516	−0.574	−0.476	−0.576	−2.106	−0.420
	(0.158)	(0.194)	(0.263)	(0.238)	(1.292)	(0.155)
Issue-level controls						
Amount		0.006	0.020	0.007	−0.065	0.014
		(0.015)	(0.014)	(0.019)	(0.038)	(0.015)
Maturity		−0.000	−0.000	−0.000	−0.000	−0.000
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Orthogonalized Rating		0.020	0.034	0.012	−0.141	0.019
		(0.015)	(0.023)	(0.016)	(0.063)	(0.013)
Firm-level controls						
Size		−0.085	−0.109	−0.025	−0.294	−0.037
		(0.020)	(0.035)	(0.016)	(0.132)	(0.024)
Leverage		0.538	0.410	0.400	1.545	0.597
		(0.152)	(0.112)	(0.161)	(0.604)	(0.134)
Interest Coverage		0.004	0.000	0.004	0.010	0.003
		(0.003)	(0.000)	(0.002)	(0.006)	(0.002)
Profitability		−0.114	0.694	−0.289	−2.131	−0.076
		(0.317)	(0.445)	(0.258)	(1.261)	(0.262)
Capital Expenditure		0.058	−0.004	0.224	0.360	0.375
		(0.242)	(0.400)	(0.153)	(0.514)	(0.196)
Tangibility		0.441	0.700	0.282	0.011	0.552
		(0.227)	(0.402)	(0.170)	(0.550)	(0.208)
Country-level controls						
GDP		−0.000	0.000	−0.000	−0.000	−0.000
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Table 2 (*Continued*)

	Number of covenants					Intensity of covenants
	All	All	Restrictions on financing	Restrictions on investment	Restrictions on payouts	All
	(1)	(2)	(3)	(4)	(5)	(6)
GDP Growth		−0.016	−0.005	−0.016	−0.091	−0.022
		(0.012)	(0.022)	(0.009)	(0.045)	(0.010)
Financial Development		−0.003	−0.003	−0.002	−0.007	−0.002
		(0.001)	(0.001)	(0.001)	(0.003)	(0.001)
Inflation		0.011	0.004	0.018	−0.003	0.004
		(0.006)	(0.008)	(0.006)	(0.025)	(0.005)
Creditor Rights		−0.072	−0.104	−0.048	−0.164	−0.060
		(0.026)	(0.034)	(0.020)	(0.067)	(0.021)
Rule of Law		0.149	0.217	0.071	0.305	0.064
		(0.177)	(0.207)	(0.139)	(0.678)	(0.123)
Control of Corruption		0.131	−0.063	0.262	0.576	0.121
		(0.142)	(0.162)	(0.112)	(0.468)	(0.098)
Constant	1.362	1.783	−0.002	0.833	−12.021	0.421
	(0.055)	(0.328)	(0.414)	(0.223)	(1.715)	(0.239)
Industry and year dummies	No	Yes	Yes	Yes	Yes	Yes
Observations	944	934	934	934	934	934
VIF	1	7.57	7.57	7.57	7.57	7.57

	Number of covenants					Intensity of covenants
	All	All	Restrictions on financing	Restrictions on investment	Restrictions on payouts	All
	(1)	(2)	(3)	(4)	(5)	(6)
Panel B: Results of three-level random coefficient Poisson regressions						
Trust	−1.785	−2.584	−1.860	−0.995	−2.887	−1.647
	(0.793)	(0.979)	(1.088)	(0.655)	(1.223)	(0.729)
Issue-level controls						
Amount		−0.004	0.028	0.034	−0.108	0.013
		(0.031)	(0.031)	(0.033)	(0.074)	(0.019)
Maturity		0.000	0.000	0.000	0.000	0.000
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Orthogonalized Rating		−0.011	−0.008	−0.012	−0.169	−0.015
		(0.015)	(0.024)	(0.022)	(0.043)	(0.019)
Firm-level controls						
Size		−0.017	−0.108	0.022	−0.293	−0.039
		(0.025)	(0.042)	(0.020)	(0.094)	(0.036)
Leverage		0.922	0.508	0.310	1.905	0.525
		(0.362)	(0.151)	(0.218)	(0.492)	(0.120)
Interest Coverage		0.009	0.001	0.005	0.016	0.003
		(0.004)	(0.003)	(0.003)	(0.006)	(0.002)
Profitability		−0.157	0.236	0.233	−3.781	−0.089
		(0.462)	(0.429)	(0.803)	(1.308)	(0.445)
Capital Expenditure		0.456	0.085	2.137	−0.980	0.639
		(0.374)	(0.447)	(1.113)	(1.661)	(0.326)
Tangibility		0.122	0.255	0.163	−0.465	0.311
		(0.260)	(0.304)	(0.296)	(0.435)	(0.230)
Country-level controls						
GDP		0.000	0.000	0.000	0.000	0.000
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Table 2 (*Continued*)

	Number of covenants					Intensity of covenants
	All	All	Restrictions on financing	Restrictions on investment	Restrictions on payouts	All
	(1)	(2)	(3)	(4)	(5)	(6)
GDP Growth		−0.016	0.026	−0.002	−0.107	0.017
		(0.021)	(0.022)	(0.014)	(0.075)	(0.013)
Financial Development		−0.002	−0.001	0.001	−0.002	−0.001
		(0.002)	(0.002)	(0.001)	(0.003)	(0.003)
Inflation		0.031	0.027	0.050	0.019	0.023
		(0.006)	(0.009)	(0.013)	(0.016)	(0.006)
Creditor Rights		−0.040	0.131	−0.132	−0.170	−0.089
		(0.080)	(0.056)	(0.047)	(0.131)	(0.049)
Rule of Law		0.248	3.282	0.144	−0.259	1.325
		(0.413)	(0.912)	(0.351)	(0.648)	(1.205)
Control of Corruption		0.265	−0.960	0.345	0.604	−0.206
		(0.298)	(0.338)	(0.254)	(0.549)	(0.438)
Constant	1.061	1.585	−1.412	−0.667	3.103	0.075
	(0.484)	(0.666)	(1.095)	(0.402)	(2.015)	(1.071)
Industry and year dummies	No	Yes	Yes	Yes	Yes	Yes
Observations	944	934	934	934	934	934
Unobserved variability between countries	0.998	0.838	0.885	0.946	0.743	0.930
Unobserved variability between firms within each country	1	0.998	0.998	0.999	0.963	0.999
VIF	1	7.57	7.57	7.57	7.57	7.57

This table presents the main evidence on the relationship between trust and debt covenants using Poisson regressions (*Panel A*) and a three-level random coefficient Poisson model (*Panel B*). *Number of Covenants* refers to the total number of restrictive covenants based on three categories, namely, restrictions on a firm's financing, investment, and payout activities. *Intensity of Covenants* refers to the sum of three covenant indicators, with each of the indicators equal to 1 if at least a restrictive covenant exists in one of the three categories. *Trust* is the mean percentage of affirmative responses to the WVS question: Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people? Additional variable definitions are provided in Online Appendix Table IA1. Models 1 to 5 present our main evidence on the relationship between *Trust* and *Number of Covenants*. Model 6 reports the relationship between *Trust* and *Intensity of Covenants*. The sample consists of foreign bonds issued in the U.S. (Yankee bonds) contained in the FISD. The merged data cover 934 bond issues from 31 countries over the 1989–2014 period. Standard errors, reported in parentheses, are clustered at the country level.

both the number ($\alpha_1 = 1.785$; $p = 0.024$) (Model 1) and intensity of covenants ($\alpha_1 = 1.647$; $p = 0.024$) (Model 6). This effect is economically significant: a one-standard-deviation increase in *Trust* around its mean leads to an average decrease in the number of covenants of 0.68. These findings reinforce those reported in Panel A, and provide further support for Hypothesis 1. We find that the unobserved variability between countries is slightly less than (but approximately the same size as) the unobserved variability between firms within each country. These results suggest that country-level characteristics are as important as firm-level characteristics in determining debt contracting.

Overall, the results in Table 2 support Hypothesis 1, thereby confirming that social trust significantly affects debt contracting by reducing the number (and intensity) of debt covenants. These results also suggest that, since a high level of trust alleviates the need for restrictive bond covenants, these can act as a substitute mechanism for trust in firms operating in low-trust environments.[22]

Cross-Country Variation in the Effects of Trust on Debt Covenants

In this section, we examine cross-country variation in the relationship between social trust and debt covenants. Specifically, in Eq. (2), we test whether our main finding (i.e., a higher level of social trust reduces the use of debt covenants) is more pronounced in countries with high agency costs (e.g., Bae, Kang, & Kim, 2002; Dyck, Volchkova, & Zingales, 2008; Johnson, Boone, Breach, & Friedman, 2000; La Porta, Lopez-de-Silanes, Shleifer, &

Table 3 Cross-country variation in the effect of trust on the use of debt covenants.

	Number of covenants					Intensity of covenants				
	Debt Recovery	Efficiency of Debt Enforcement	Efficient Judiciary	Rule of Law	Control of Corruption	Debt Recovery	Efficiency of Debt Enforcement	Efficient Judiciary	Rule of Law	Control of Corruption
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Interaction between trust and investor protection										
Trust × Interaction variable	0.040	0.047	1.022	0.362	0.773	0.023	0.032	1.168	0.298	0.415
	(0.013)	(0.017)	(0.446)	(0.150)	(0.401)	(0.009)	(0.013)	(0.404)	(0.141)	(0.355)
Interaction variable	−0.001	−0.002	−0.444	−0.117	−0.235	0.000	−0.001	−0.495	−0.057	−0.094
	(0.003)	(0.004)	(0.198)	(0.052)	(0.174)	(0.000)	(0.002)	(0.180)	(0.049)	(0.165)
Trust	−4.423	−5.166	−5.415	−3.978	−2.088	−2.729	−3.554	−5.930	−3.301	−1.218
	(1.114)	(1.484)	(2.115)	(1.585)	(0.874)	(0.812)	(1.158)	(1.877)	(1.467)	(0.725)
Issue-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry and year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	933	933	934	934	934	933	933	934	934	934
VIF	5.73	5.55	7.66	9.20	4.99	5.73	5.55	7.66	9.20	4.99

	Number of covenants				Intensity of covenants			
	Press Freedom (score)	Voice and Accountability (WGI)	Political Stability (WGI)	Government Effectiveness (WGI)	Press Freedom (score)	Voice and Accountability (WGI)	Political Stability (WGI)	Government Effectiveness (WGI)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel B: Interaction between trust and political institutions								
Trust × Interaction variable	0.033	0.965	0.701	0.664	0.031	0.755	0.538	0.589
	(0.016)	(0.462)	(0.320)	(0.353)	(0.009)	(0.372)	(0.309)	(0.307)
Interaction variable	−0.015	−0.256	−0.201	0.055	−0.018	−0.302	−0.062	0.314
	(0.005)	(0.215)	(0.140)	(0.220)	(0.004)	(0.191)	(0.132)	(0.195)
Trust	−3.160	−1.801	−1.413	−1.658	−2.717	−1.242	−1.191	−1.170
	(1.295)	(0.606)	(0.428)	(0.633)	(0.748)	(0.507)	(0.373)	(0.574)
Issue-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry and year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	893	934	934	934	893	934	934	934
VIF	6.40	5.08	4.09	5.73	6.40	5.08	4.09	5.73

Table 3 continued

	Number of covenants				Intensity of covenants			
	Intragroup Tax	Consolidation	Prevalence of Family Group	Prevalence of Business Group	Intragroup Tax	Consolidation	Prevalence of Family Group	Prevalence of Business Group
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel C: Interaction between trust and interlocking business groups								
Trust × Interaction variable	0.634	−2.427	−0.091	−0.075	0.326	−2.017	−0.057	−0.049
	(0.294)	(1.118)	(0.037)	(0.028)	(0.198)	(0.913)	(0.027)	(0.025)
Interaction variable	−0.148	0.441	0.016	0.013	−0.073	0.439	0.008	0.009
	(0.074)	(0.286)	(0.008)	(0.007)	(0.045)	(0.236)	(0.007)	(0.005)
Trust	−2.640	−0.471	0.543	0.704	−1.509	−0.340	0.308	0.452
	(1.031)	(0.194)	(0.372)	(0.409)	(0.677)	(0.146)	(0.346)	(0.443)
Issue-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry and year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	929	929	929	929	929	929	929	929
VIF	5.70	4.28	4.19	4.44	5.70	4.28	4.19	4.44

This table presents the cross-country variation in the effect of trust on debt covenants using Poisson regressions. *Number of Covenants* refers to the total number of restrictive covenants based on three categories, namely, restrictions on a firm's financing, investment, and payout activities. *Intensity of Covenants* refers to the sum of three covenant indicators, with each of the indicators equal to 1 if at least a restrictive covenant exists in one of the three categories. *Trust* is the mean percentage of affirmative responses to the WVS question: Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people? Additional variable definitions are provided in Online Appendix Table IA1. *Panel A* shows the interaction between trust and investor protection. *Panel B* shows the interaction between trust and political institutions. *Panel C* shows the interaction between trust and interlocking business groups. The sample consists of foreign bonds issued in the U.S. (Yankee bonds) contained in the FISD. The merged data cover 934 bond issues from 31 countries over the 1989–2014 period. Standard errors, reported in parentheses, are clustered at the country level.

Vishny, 1997, 1998), where we capture agency costs using the strength of investor protection, the political environment, and the presence of interlocking business groups. Hypothesis 2 predicts significant substitution effects between social trust and these country-level institutions in determining the number (and intensity) of debt covenants.

$$\begin{aligned} Covenants_{j,f,i,c,t} &= \lambda_0 + \lambda_1\, Trust_{c,t-1} \times country \\ &\quad - level\ institutions_{c,t-1} + \lambda_2\, Trust_{c,t-1} + \lambda_3\, country \\ &\quad - level\ institutions_{c,t-1} + \lambda_4\, ILV_{j,t} + \lambda_5\, FLV_{f,t-1} \\ &\quad + \lambda_6\, CLV_{c,t-1} + \mu_t + \mu_i + \varepsilon_{j,f,i,c,t} \end{aligned} \tag{2}$$

Investor protection

The seminal work of La Porta et al. (1997, 1998) documents substantial cross-country variation in the legal protection of investors. Johnson et al. (2000) and Dyck and Zingales (2004) further show that private benefits of control are greater in countries with weaker legal protection of investors. We capture the strength of investor protection in a country using five measures. *Debt Recovery* (Djankov, La Porta, Lopez-de-Silanes, & Shleifer, 2008b) is the recovery rate of secured creditors; higher recovery rates indicate better creditor protection. *Efficiency of Debt Enforcement* (Djankov, Hart, McLiesh, & Shleifer, 2008a) is the present value of the terminal value of the firm upon bankruptcy; higher values suggest greater bankruptcy procedure efficiency. *Efficient Judiciary* (Djankov et al., 2008a) is the logarithm of the number of days needed for the judiciary to collect on a bounced check. *Rule of Law* is an index that captures perceptions of the degree to which people have confidence in and abide by the rules of society, particularly the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Finally, *Control of Corruption* is an index that captures perceptions of the degree to which public power is exercised to benefit private interests, including petty and grand forms of corruption, as well as "capture" of the state by elites. Online Appendix Table IA1 provides further details on these variables.

In Panel A of Table 3, we examine the interaction between these measures of investor protections and *Trust*. In Models 1–5, we regress *Number of Covenants* on *Trust*, the investor protection variables, the interactions between the investor protection variables and *Trust*, and the control variables. The coefficients on the interaction terms are positive and significant, which suggests that, in line with Hypothesis 2, investors rely more on social trust in countries where investor protection is weak. In Models 6–10, we repeat this analysis after replacing the dependent variable with *Intensity of Covenants*. The results are qualitatively unchanged, which provides additional evidence in support of the effect of social trust being more pronounced in countries with a weak formal institutional environment.

To better isolate the moderating effect of the investor protection variables, we interact *Trust* with the residuals from regressing each investor protection variable on *Trust*, and present the results in Online Appendix Table IA4. We find that the interaction terms between all of the orthogonalized investor protection variables (except for *Control of Corruption*) and *Trust* are positive and significant at the 5% level or better. These coefficients indicate that the relationship between social trust and the use of restrictive covenants is weakened when country-level formal institutions are stronger, consistent with Hypothesis 2.

Political institutions

A country's political environment can also influence firms' agency costs (Qi et al., 2010). For instance, if the media can be easily influenced by political pressure, expropriation activities may be more easily concealed from the public, whereas independent media can increase the costs of diverting firm resources (Dyck et al., 2008) and discourage corporate fraud (Dyck, Morse, & Zingales, 2010; Miller, 2006). In addition, a large literature shows that political interference in corporate decision-making, including in state-owned enterprises and politically connected firms, can lead to expropriation at the cost of minority shareholders' interests (Boubakri, Cosset, & Saffar, 2008; Chen, El Ghoul, Guedhami, & Nash, 2018; Faccio, Masulis, & McConnell, 2006; Megginson & Netter, 2001).

To examine the influence of political institutions, we first use *Press Freedom*, an index that assesses the degree of print, broadcast, and Internet media independence; we adjust this index so that a higher score represents a higher level of press freedom. Next, we use Kaufmann, Kraay, and Mastruzzi's (2011) *Voice and Accountability,* which measures the perceived degree to which a country's citizens can participate in selecting their government as well as their freedom of expression and association, and *Political Stability,* which measures the perceived likelihood that the government will be destabilized or overthrown by unconstitutional

or violent means (e.g., politically motivated violence and terrorism). Finally, we employ *Government Effectiveness,* which measures the perceived degree of government effectiveness, including the quality of public services, quality of the civil service, degree of independence from political pressure, and quality of policy design and implementation.

In Panel B of Table 3, we run an analysis similar to that in Panel A but we use the political institution measures above rather than the investor protection measures. Consistent with the results in Panel A, we find that the interaction terms are positive and statistically significant, which further supports Hypothesis 2 by showing that the effect of social trust on the use of debt covenants is significantly influenced by the country-level political environment. Specifically, country-level formal institutions attenuate the relationship between social trust and the use of restrictive covenants.

Interlocking business groups

Prior research suggests that business groups, and particularly family groups, are associated with private benefits of control due to the divergence of cash flow and control rights (Bae et al., 2002; Johnson et al., 2000; La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1999). Bae et al. (2002), for instance, argue that the wedge between cash flow and control rights can lead to intragroup transactions within a business group that result in wealth transfers from a firm for the benefit of its controlling shareholders.[23] Such transactions are referred to as tunneling. Consistent with creditors' higher expropriation risk under a business group structure, Boubakri and Ghouma (2010) and Lin, Ma, Malatesta, and Xuan (2011) find that the agency costs embedded in business groups are associated with higher costs of debt financing.

To capture the degree of intragroup tunneling among business groups, we employ four measures that come from Masulis, Pham, and Zein (2011). *Intragroup Tax* captures the extent to which a country's tax law regulates intragroup transactions. *Consolidation* is a dummy variable equal to 1 if a parent firm can consolidate its subsidiary with an ownership stake of less than 90%, and 0 otherwise. *Prevalence of Family Group* is the percentage of total market capitalization held by firms that belong to a family group. *Prevalence of Business Group* is the percentage of total market capitalization held by firms that belong to a business group, including family and non-family business groups. Online Appendix Table IA1 provides further details on these variables.

In Panel C of Table 3, we re-run the analysis in Panels A and B using the four business group measures rather than the investor protection and political institutions variables. The interaction terms have positive loadings on *Intragroup Tax* and negative loadings on *Consolidation*, *Prevalence of Family Group*, and *Prevalence of Business Group*. Thus, consistent with Hypothesis 2, the results show that the effect of social trust on debt contracting is more pronounced in the presence of interlocking business groups. Our business group results in Panel C represent an intermittent or transition stage between country-level formal institutions and firm-level governance structures. While business group membership is a firm-level measure, the degree to which business groups dominate the national ownership structure is a country-level formal institutional characteristic.

Cross-Firm Variation in the Effect of Trust on Debt Covenants

In this section, we shift focus from formal country-level factors (i.e., Hypothesis 2) to firm-level factors (i.e., Hypothesis 3) that influence the relationship between trust and the use of restrictive covenants. More specifically, we test the following model:

$$\begin{aligned} Covenants_{j,f,i,c,t} = {} & \pi_0 + \pi_1 Trust_{c,t-1} \times firm \\ & - level\,factors_{f,t-1} + \pi_2 Trust_{c,t-1} \\ & + \pi_3 firm - level\,factors_{f,t-1} + \pi_4 ILV_{j,t} \\ & + \pi_5 FLV_{f,t-1} + \pi_6 CLV_{c,t-1} + \mu_t + \mu_i + \varepsilon_{j,f,i,c,t}. \end{aligned} \tag{3}$$

We use three measures to capture the quality of firm-level governance and information asymmetry: *Corporate Governance*, a composite index created by ASSET4 that assesses a company's ability to create incentives as well as checks and balances to enhance long-term shareholder value; *Error*, the percentage forecast error, which is equal to the percentage difference between actual and forecasted earnings per share; and *R&D*, the ratio of research and development expense over total sales. Hypothesis 3 predicts significant substitution effects between social trust and firm-level corporate governance and information asymmetry in determining the number (and intensity) of covenants.

Table 4 presents regression results on the influence of firm-level corporate governance and information asymmetry on the relationship between

Table 4 Cross-firm variation in the effect of trust on the use of debt covenants.

	Number of covenants			Intensity of covenants		
	Corporate governance	Error	R&D	Corporate governance	Error	R&D
	(1)	(2)	(3)	(4)	(5)	(6)
Trust × Interaction variable	0.025	−0.046	−10.354	0.026	−0.031	−14.894
	(0.012)	(0.015)	(5.658)	(0.013)	(0.009)	(7.599)
Interaction variable	−0.012	0.030	3.689	−0.009	0.020	5.261
	(0.004)	(0.009)	(1.911)	(0.004)	(0.006)	(2.542)
Trust	−3.253	0.778	−0.207	−2.730	4.042	0.047
	(0.894)	(2.358)	(0.265)	(1.235)	(2.392)	(0.362)
Issue-level controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm-level controls	Yes	Yes	Yes	Yes	Yes	Yes
Country-level controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry and year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	329	115	931	329	115	931
VIF	7.07	32.51	4.02	7.07	32.51	25.9

This table presents the cross-firm variation in the effect of trust on debt covenants using Poisson regressions. *Number of Covenants* refers to the total number of restrictive covenants based on three categories, namely, restrictions on a firm's financing, investment, and payout activities. *Intensity of Covenants* refers to the sum of three covenant indicators, with each of the indicators equal to 1 if at least a restrictive covenant exists in one of the three categories. *Trust* is the mean percentage of affirmative responses to the WVS question: Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people? Additional variable definitions are provided in Online Appendix Table IA1. Models 1–3 examine the cross-firm variation in the effect of trust on *Number of Covenants*. Model 1 shows the interaction between trust and the quality of firm-level governance. Models 2 and 3 show the interaction between trust and firm-level information asymmetry. Models 4–6 repeat the results of Models 1–3 by replacing the dependent variable with *Intensity of Covenants*. The sample consists of foreign bonds issued in the U.S. (Yankee bonds) contained in the FISD. The merged data cover 934 bond issues from 31 countries over the 1989–2014 period. Standard errors, reported in parentheses, are clustered at the country level.

social trust and the use of debt covenants. We use *Number of Covenants* as the dependent variable in Models 2 and 3, and *Intensity of Covenants* in Models 5 and 6. In line with Hypothesis 3, the coefficients on the interaction terms are consistently statistically significant with the expected signs, which shows that stronger corporate governance and lower information asymmetry can compensate for low levels of social trust.

Taken together, the results in Tables 3 and 4 show that country-level formal institutions and firm-level governance and transparency can substitute for social trust. These results suggest that while it may be difficult if not impossible to reduce the use of restrictive covenants by improving social trust within a country, policymakers and firm managers can achieve this aim through improvements to formal institutions and governance structures and information asymmetry, respectively.

Endogeneity

Reverse causality is unlikely to explain our results because, as Williamson (2000) argues, transaction-level outcomes (i.e., the use of debt covenants) are unlikely to influence a country's informal institution (i.e., social trust). It is possible that an omitted variable can simultaneously influence social trust and the use of debt covenants, leading to a spurious relationship between the two. In this section, we conduct a two-stage least squares (2SLS) analysis to further alleviate concerns about endogeneity that may undermine the inference of a causal effect of social trust on the use of debt covenants.

To capture the exogenous variations in social trust, we use three predetermined instrumental variables motivated by prior research.[24] The first is *Tropical*, a dummy variable equal to 1 if the country is in a tropical climate zone, and 0 otherwise (Beck, Demirgüç-Kunt, & Levine, 2003). The motivation for this variable is that a country's climate can affect its level of social trust. As Bjørnskov and Méon (2013) point out, survival through winters in cold climates was historically dependent on help from strangers. Therefore, the extension of trust towards unfamiliar people was an evolutionary strategy in cold countries, such as those in Scandinavia. The second instrument, *Genetic Distance,* measures the genetic distance between the population of one country and that of the U.S. (where Yankee bonds are issued). This instrument, which is obtained from Spolaore & Wacziarg (2009), measures the probability that random selection by two alleles at a given locus from the population of one country and the population of the U.S. will be

Table 5 Endogeneity.

	First stage	Second stage	
	(1)	Number of covenants (2)	Intensity of covenants (3)
Trust		−2.422	−1.756
		(0.856)	(0.691)
Instruments			
Tropical	−0.087		
	(0.033)		
Genetic Distance	−0.001		
	(0.000)		
2nd Person Differentiation	−0.070		
	(0.008)		
Issue-level controls	Yes	Yes	Yes
Firm-level controls	Yes	Yes	Yes
Country-level controls	Yes	Yes	Yes
Industry and year dummies	Yes	Yes	Yes
Observations	879	879	879
First stage *F* statistic	56.06		
overid Hansen's *J* statistic	–	2.08	1.23
Overid *p* value	–	0.35	0.54
VIF	14.46	11.18	11.18

This table presents the 2SLS regressions examining the effect of trust on debt covenants. *Number of Covenants* refers to the total number of restrictive covenants based on three categories, namely, restrictions on a firm's financing, investment, and payout activities. *Intensity of Covenants* refers to the sum of three covenant indicators, with each of the indicators equal to 1 if at least a restrictive covenant exists in one of the three categories. *Trust* is the mean percentage of affirmative responses to the WVS question: Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people? *Tropical* is a dummy variable equal to 1 if the country is in a tropical climate zone, and 0 otherwise. *Genetic Distance* is the genetic distance between the population of one country and that of the U.S. *2nd Person Differentiation* is a dummy variable equal to 1 if the number of second person pronouns used in spoken language differs by the type of person with whom one interacts, and 0 otherwise. Additional variable definitions are provided in Online Appendix Table IA1. The first-stage regression is reported in Model 1. Models 2 and 3 report the second-stage regressions using the fitted values of *Trust*. The sample consists of foreign bonds issued in the U.S. (Yankee bonds) contained in the FISD. The merged data cover 934 bond issues from 31 countries over the 1989–2014 period. Standard errors, reported in parentheses, are clustered at the country level.

different.[25] Genetic distance between two populations is a reflection of their common linguistic and cultural roots. Therefore, genetically similar countries should exhibit higher levels of trust (Guiso et al., 2009). The third instrument is the *2nd Person Differentiation*, a dummy variable equal to 1 if the number of second person pronouns used in spoken language differs by the type of person with whom one interacts, and 0 otherwise. Tabellini (2008) argues that the structure of language, in particular its specific grammatical rules, can exert an independent causal effect on concept formation and cultural traits, including trust and respect. Specifically, some languages use multiple personal pronouns according to the type of interpersonal relationship between speakers, whereas others do not differentiate. The distinction between personal pronouns is associated with a hierarchy of power and social distance, and therefore reflects less respect for the individual and greater individual mistrust.[26] Accordingly, a country exhibiting a greater variation in the use of second person pronouns is associated with a lower level of trust. In general, we expect trust to be negatively associated with *Tropical, Genetic Distance*, and *2nd Person Differentiation*.

Table 5 reports the results of 2SLS regressions using these three instruments. In Model 1, we report the results from the first-stage regression in which the dependent variable is *Trust*. Overall, we find that our instruments are significantly correlated with *Trust,* as expected. More specifically, *Tropical, Genetic Distance,* and *2nd Person Differentiation* are associated with lower levels of trust. These results suggest that our instruments satisfy the relevance requirement. The relevance of our instruments finds further support from the first-stage *F* statistic of 56.06, which is well above the threshold value of 10.

In Models 2 and 3 of Table 5, we report results from second-stage regressions of debt covenant use on social trust. We find significantly negative coefficients of −2.422 (number of covenants, Model 2) and −1.756 (intensity of covenants, Model 3) on

Trust, thus confirming that creditors demand fewer restrictive covenants from firms domiciled in countries with a high level of trust (after controlling for endogeneity). The bottom of Table 5 reports the results of Hansen's (1982) over-identification test for the null hypothesis that our instrumental variables are exogenous. We find that the *p* values exceed 10% in both Model 2 and Model 3, which suggests that the null hypothesis cannot be rejected. In general, our main findings continue to hold after addressing endogeneity concerns, and the results based on this instrumental variable approach are consistent with earlier results based on non-instrumental variable approaches.

Out-of-Sample Evidence

Although our cross-country setting allows us to examine the effects of social trust on debt contracting across a wide variety of societies, it is also susceptible to concerns about potential omitted country-specific traits. We further mitigate this concern by performing an out-of-sample analysis using covenants in public corporate bonds issued within a single-country setting (i.e., by U.S. companies operating in the United States). In addition to providing out-of-sample evidence, the use of U.S. bond covenants helps to alleviate any concerns about omitted country-level variables, since these U.S. firms share a similar formal institutional (e.g., political, legal, social, and economic) environment.

Following our main analysis, we use WVS to construct *Trust US* at the U.S. region level. Consistent with our baseline model, we control for the same set of issue- and firm-level variables. We replace the country-level control variables with state-level variables; namely, *State GDP* (logarithm of the state-level GDP per capita) and *State GDP Growth* (growth of the state-level GDP per capita). The state-level GDP information is collected from the U.S. Bureau of Economic Analysis. Standard errors are clustered at the firm level.[27]

Online Appendix Table IA5 reports the results. Reinforcing our main evidence, we find that *Trust US* loads negatively and significantly on both the *Number of Covenants* and the *Intensity of Covenants*, thereby alleviating any concerns that omitted country-level characteristics are driving the documented relationship between trust and the use of debt covenants.

Robustness Tests

We conduct a series of tests to check the robustness of our main findings. Specifically, we examine whether our main findings continue to hold after considering alternative proxies, explanations, samples, and empirical methods.

We begin by examining whether our results are sensitive to using two alternative measures of *Trust*. The first measure is based on the formula 100 + (% of WVS participants who respond "most people can be trusted") − (% of WVS participants who respond "can't be too careful") (Pevzner et al., 2015). The second measure is the country-year average of a rescaled response to the WVS question "Do you trust your neighborhood completely, somewhat, not very much, or not at all?" The results are reported in Panel A of Online Appendix Table IA6. We find that social trust continues to have a negative and significant effect on both *Number of Covenants* and *Intensity of Covenants*, which demonstrates that our main results are robust to using alternative proxies for *Trust*.

Next, we examine whether alternative stories can explain the relationship between social trust and the use of debt covenants. One could argue that trust is a manifestation of cultural values, and that these (non-trust) cultural values are the real factors that drive the relationship we document. We investigate this possibility in Panel B of Online Appendix Table IA6, where we add various proxies for (non-trust) cultural values to our baseline regression using *Number of Covenants*. Our first set of tests employs Hofstede's (2001) cultural dimensions (individualism, uncertainty avoidance, power distance, and masculinity), which are widely used in studies of cross-cultural values (e.g., Karolyi, 2016). Models 1–4 consider these four dimensions separately, while Model 5 runs a horserace on all four of Hofstede's dimensions. We find that the loadings on Hofstede's (2001) cultural dimensions are insignificant, suggesting that (non-trust) cultural values as captured by Hofstede (2001) cannot explain the effect of social trust on the use of debt covenants that we document. In contrast, *Trust* continues to load significantly negatively in all specifications, in line with our earlier results. In Models 6 to 8 we employ the embeddedness and mastery measures of Schwartz (1994). Model 9 considers the power distance, institutional collectivism, uncertainty avoidance, and assertiveness measures of House, Hanges, Javidan, Dorfman, and Gupta (2004), which are based on the GLOBE database. In Model 10, we use the tightness measure of Gelfand et al. (2011). Results of these additional tests are qualitatively similar to our main findings. When we repeat these tests after

replacing *Number of Covenants* with *Intensity of Covenants* (Models 11–20), we again find that the results are qualitatively similar to our main findings. We therefore find strong evidence that (non-trust) cultural values cannot explain the relationship between social trust and the use of debt covenants that we document.[28]

We also test whether the results hold after controlling for a firm's previous issuance of Yankee bonds and the issuer's home country foreign direct investment in the U.S. The idea is that prior local issuing of bonds and the degree of foreign direct investment may make a firm appear credible, thus lowering the likelihood of bond covenants. We include two additional controls in Panel C. The first, *Active Previous Bonds*, is dummy variable equal to 1 if a firm has an active Yankee bond issued prior to the focal bond. The second, *FDI/GDP*, is the foreign direct investment stock from the issuer's home county in the U.S. scaled by the issuer's home country GDP. The results, reported in Panel C of Online Appendix Table IA6, suggest that our inferences on the role of *Trust* are not affected by including these additional controls.

We also consider alternative samples. Focusing on our initial sample of Yankee bonds, we note that, similar to other studies of Yankee bonds (e.g., Miller & Puthenpurackal, 2002; Qi et al., 2011), our sample is unbalanced. Some countries account for a large percentage of our sample: for instance, Canada (36.40%) and the UK (20.43%), while Colombia (0.10%), India (0.10%), and Indonesia (0.10%) account for a small percentage. To examine whether our main findings could be driven by sample composition bias, we re-estimate our baseline regressions after excluding Canadian firms (Models 1 and 5), British firms (Models 2 and 6), firms from Canada and the UK (Models 3 and 7), and firms from countries with no more than five observations (Models 4 and 8). The results, reported in Panel D of Online Appendix Table IA6, continue to show significant negative loadings on *Trust*, mitigating concerns about sample composition bias.

Finally, we employ alternative empirical methods. The use of country fixed effects can mitigate the influence of time-invariant country-level unobserved variables. However, our regressions above do not include country fixed effects because *Trust* varies little over time. As Wooldridge (2002: 286) points out, fixed effects can generate imprecise estimates for explanatory variables that are relatively stable over time. Nevertheless, in Models 1 and 3 of Panel D, we re-run our baseline model after including country fixed effects. We find that *Trust* loads with a negative and significant coefficient in both models, consistent with our main findings. We also re-run our baseline specification using a negative binomial regression—an alternative approach to estimating count variables—rather than a Poisson regression. As can be seen in Models 2 and 4 of Panel E, the coefficients on *Trust* are negative and significant at the 1% and 5% levels, respectively, which shows that our main results do not depend on the choice of estimation method.

The Pricing Effect of Covenants

In this section, we test our final hypothesis, Hypothesis 4, which holds that social trust reduces borrowing costs by reducing agency and information problems (direct effect) and by reducing the use of debt covenants (indirect effect).

We test Hypothesis 4 using two specifications. We first regress Yankee bond interest rates on maturity-matched Treasury rates (i.e., Treasury spreads) on social trust and our set of control variables. In the second regression, we re-run this model after adding an interaction term between social trust and a debt covenants indicator. Hypothesis 4 predicts that higher levels of social trust will have a less favorable impact on borrowing costs when covenants are added to the debt contract (i.e., debt covenants substitute for social trust in countries where social trust is low).

To test Hypothesis 4, we employ the treatment-effects model of Greene (2000) to examine the pricing effects of Yankee bond covenants and social trust (particularly for low-trust countries) on the issuing firm's cost of debt. Following Miller and Reisel (2012), our treatment-effects model comprises a system of two equations: a covenant selection equation (Eq. (4)) and a bond pricing equation (Eq. (5)). Note that both covenant selection and bond pricing can be endogenously determined. The treatment-effects model mitigates this concern by simultaneously estimating both equations as follows:

$$Covenants_{j,f,i,c,t} = \delta_0 + \delta_1 Trust_{c,t-1} + \delta_2 Z_{j,f,c,t-1} + \mu_t + \mu_i + \varphi_{j,f,i,c,t} \quad (4)$$

$$Bond\ Spread_{j,f,i,c,t} = \beta_0 + \beta_1 D(Covenants_{j,f,t}) + \beta_2 Trust_{c,t-1} + \beta_3 D(Covenants_{j,f,t}) \times Trust_{c,t-1} + \beta_4 X_{j,f,c,t-1} + \mu_t + \mu_i + \varepsilon_{j,f,i,c,t}, \quad (5)$$

where *D*(*Covenants*) is a dummy variable equal to 1 if the debt contract contains a covenant of any type, and 0 otherwise. In the covenant selection equation (Eq. (4)), *Z* is a vector that includes all of the control variables (i.e., *ILV*, *FLV*, and *CLV*) in our main model (Eq. (1)) as well as year and industry indicators. In the bond pricing equation (Eq. (5)), *Bond Spread,* or the cost of debt, is the difference between the bond yield and the benchmark Treasury, and *X* is a vector that contains bond, firm, and macroeconomic factors that determine the *Bond Spread*: the previously defined *Amount*, *Maturity*, *Size*, *Leverage*, *Interest Coverage*, *Profitability*, and *Capital Expenditure,* as well as *Term Spread* (the 10-year Treasury rates minus the 2-year Treasury rate), *Credit Spread* (the yield spread between Aaa- and Bbb-rated corporate bonds), *Log Exchange Rate Volatility* (the natural logarithm of exchange rate volatility), *ADR* (an indicator of whether a firm has previously issued an ADR), *Secured* (an indicator of whether the security is a secured issue), *Subordinated* (an indicator of whether the security is a subordinated issue), *Orthogonalized Rating* (the residuals obtained from regressing ratings on *Trust*),[29] *Sinking Fund* (an indicator of whether the issue has a sinking fund), *Callable* (an indicator of whether the security issue is callable), and *Gross Spread* (the difference between the price received by the underwriter and the price paid by investors, which captures bond liquidity). Equations (4) and (5) also control for year and industry effects.

Table 6 presents results of the pricing equation. In Model 1, we start by showing the results of estimating an OLS for the impact of *Trust* on the cost of debt. We find that bond-issuing firms from high-trust countries benefit from lower debt-financing costs ($\beta_2 = -114.595$; $p = 0.019$). Economically, moving *Trust* by one standard deviation is associated with a 14.90 basis point reduction in the cost of debt. In Model 2, we estimate the treatment effects models shown in Eqs. (4) and (5) by accounting for the independent pricing effects of *D*(*Covenants*) and *Trust*. We find that *D*(*Covenants*) ($\beta_1 = -70.542$; $p = 0.001$) and *Trust* ($\beta_2 = -144.750$; $p = 0$) load negatively. Economically, we find that the presence of covenants is associated with a 70.54 basis point reduction in *Bond Spread*. If we increase *Trust* by one standard deviation, *Bond Spread* decreases by 18.82 basis points. These results confirm our prediction that restrictive covenants and social trust are priced by investors. When we compare our results to those of Miller and Reisel (2012),[30] who also show that *Creditor Rights* is priced by investors, we find that the effect of *Creditor Rights* is significantly lower when *Trust* is included in the pricing effect model. This suggests that the pricing effect of *Creditor Rights* is subsumed by *Trust*; that is, investors may weigh the level of social trust more heavily than the extent of legal protections when pricing debt. Thus, consistent with Williamson's (2000) hierarchical model, we find that social trust has greater influence on transaction prices than does creditor rights.

Next, we investigate the interaction effects of *D*(*Covenants*) and *Trust* on the cost of debt. If both debt covenants and social trust can reduce managerial opportunism, the protection provided by covenants should be more valuable when the level of social trust is low. Consistent with this conjecture, Model 3 shows that the coefficient on the interaction between *D*(*Covenants*) and *Trust* is positive and significant ($\beta_3 = 166.341$; $p = 0.044$), with an impact level of 166.34. Economically speaking, by moving from a country with a trust value half a standard deviation above the mean to a country with a trust value half a standard deviation below the mean, the presence of covenants can reduce the cost of debt by 21.62 basis points. In extreme cases, such as Norway (the country with highest level of trust in our sample), the presence of covenants reduces the cost of debt by 44.38 basis points, while in Peru (the country with lowest level of trust in our sample), the presence of covenants can reduce the cost of debt by 117.74 basis points.

Overall, the results in this section improve our understanding of the pricing of debt contracts. High levels of social trust at the country level, as well as the use of debt covenants at the firm level, can reduce a firm's cost of debt. More importantly, we show that the role of debt covenants in reducing the cost of debt is more important when the issuing firm is located in a country with a low level of social trust; that is, we show that social trust and debt covenants act as substitutes in assuring the firm's creditors.

Table 6 Effects of trust on the pricing of covenants.

Dependent variable	Bond spread		
	OLS	Treatment effect model	
	(1)	(2)	(3)
D(*Covenants*)		−70.542	−131.050
		(20.447)	(52.004)
Trust	−114.595	−144.75	−244.757
	(48.972)	(43.599)	(71.987)
D(*Covenants*) × *Trust*			166.341
			(82.757)
Creditor Rights	−0.644	−1.967	−6.832
	(4.954)	(3.934)	(3.733)
Amount	9.067	23.126	−2.940
	(9.347)	(8.661)	(7.946)
Maturity	−0.001	0.001	0.000
	(0.002)	(0.001)	(0.000)
Size	−44.623	−22.680	−19.247
	(7.462)	(4.648)	(4.694)
Leverage	17.073	85.539	78.734
	(51.736)	(30.441)	(36.283)
Interest Coverage	0.567	0.507	0.554
	(0.164)	(0.116)	(0.175)
Profitability	−525.347	−315.224	−394.904
	(119.942)	(74.345)	(66.933)
Capital Expenditure	510.221	330.083	565.414
	(185.535)	(89.453)	(84.39)
Term Spread	5.279	−54.442	19.008
	(17.029)	(7.098)	(63.360)
Credit Spread (AAA-BAA)	179.397	183.904	−21.159
	(26.656)	(17.977)	(264.488)
Log Exchange Rate Volatility	−0.978	1.572	−0.737
	(3.056)	(2.758)	(2.377)
ADR	−5.206	−25.013	−33.701
	(28.922)	(17.995)	(16.44)
Secured	1.246	10.092	4.090
	(20.767)	(67.280)	(58.429)
Subordinated	109.122	32.445	79.539
	(40.717)	(73.739)	(68.568)
Orthogonalized Rating	−17.191	−11.191	−6.399
	(6.415)	(5.018)	(4.571)
Sinking Fund	−130.066	−131.963	−80.905
	(114.093)	(51.750)	(53.579)
Callable	33.193	22.077	22.170
	(14.752)	(11.619)	(11.141)
Gross Spread	2.735	0.463	1.107
	(2.242)	(1.052)	(0.954)
Constant	389.120	42.728	472.892
	(141.498)	(125.671)	(441.955)
Industry and year dummies	No	Yes	Yes
Observations	708	565	605
VIF	1	–	–

This table presents the pricing effect of trust and covenants using OLS and the treatment-effects model of Greene (2000). *Bond Spread* measures the difference between the yield of the bond and benchmark Treasury. *D*(*Covenants*) is a dummy variable equal to 1 if the debt contract contains a covenant of any type, 0 otherwise. *Trust* is the mean percentage of affirmative responses to the WVS question: Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people? Additional variable definitions are provided in Online Appendix Table IA1. The sample consists of foreign bonds issued in the U.S. (Yankee bonds) contained in the FISD. The merged data cover 934 bond issues from 31 countries over the 1989–2014 period. Standard errors, reported in parentheses, are clustered at the country level.

DISCUSSION AND CONCLUSION

Our study investigates how informal institutions (i.e., social trust) can impact managerial decision-making (i.e., debt contracting) within the international business environment. We apply the insights of rational choice institutionalism (Campbell, 2004; Hall & Taylor, 1996; Ingram & Clay, 2000; Shepsle, 1989; Weingast, 2002) and Williamson's (2000) four-level social structure to examine how country-level social trust can directly influence the issuing firm's use of bond covenants and borrowing costs. We also investigate whether social trust can indirectly influence the use of covenants and borrowing costs through its impact on country-level formal institutions and organization-level governance structures. Building on extant research suggesting that social trust is a fundamental determinant of economic outcomes (Ahern et al., 2015; Arrow, 1972; Guiso et al., 2008, 2009), we argue that a high level of social trust will reduce borrower opportunism and, therefore, creditor demand for restrictive covenants.

Using a sample of 934 Yankee bond issues from 31 countries for the period 1989–2014, we find that firms from high-trust countries issue bonds with fewer bond covenants. The effect of social trust on the use of debt covenants is moderated, however, by the presence of strong formal institutions and strong firm-level governance mechanisms and information transparency, suggesting that these factors can substitute for social trust in influencing debt contracting. These results are robust to a series of robustness tests to alleviate concerns about potential endogeneity, omitted variable bias, and the use of an unbalanced sample. The results are also robust to using alternative proxies for social trust and alternative model specifications. Finally, we examine the direct and indirect pricing effects of social trust and find that high social trust is related to significantly lower borrowing costs, but this effect is reduced in the presence of covenants. We conclude that issue-level debt covenants act as a substitute for social trust in countries where the level of trust is low.

Our study contributes to the literature on the role of informal (unstructured) institutions in shaping the behavior of individuals and organizations, consistent with the "choice-within-constraints" concept within rational choice institutionalism (Campbell, 2004). Although this literature has been growing over the past decade, it is still relatively small compared to the body of literature that examines the effects of formal (structured) institutions on individuals and organizations (Kim et al., 2017). While our main focus is on the direct effects of social trust on the debt contracts of international businesses (i.e., from a cultural attribute to an economic transaction, our study also produces new results related to interaction effects between social trust and various formal institutions such as the country-level institutional environment and the firm-level governance structure. We find consistently strong substitution effects between informal institutions and formal institutions on international debt contracting. Overall, our results provide a more comprehensive picture of the multilevel links connecting social trust and international bond covenants than that found in the previous literature. In addition, our study contributes indirectly to the related work of Hasan et al. (2017) by focusing on cross-country variation rather than within-country variation in social capital. In our global setting, we are able to examine a rich set of interactions between social trust and other levels within Williamson's (2000) social analysis.

Our study has significant implications for international business managers and government regulators. Williamson's (2000) social framework makes it clear that informal institutions (e.g., social trust, religion, culture) are deeply entwined in the societal fabric. Such institutions change very slowly over long time horizons, thus making them relatively insusceptible to top–down social engineering. The implication for corporate managers and government regulators is that, while it is important to evaluate the level of their society's social trust, this level should be taken as a relatively fixed feature of the surrounding environment. Against this relatively fixed background, the regulator's main task should be to design optimal formal institutions that protect the legal rights of creditors and shareholders, and that minimize transaction costs between financial market participants. Similarly, the manager's main task should be to design optimal formal institutions that strengthen the firm's corporate governance structures, thereby reducing agency costs, as well as strengthen formal institutions that promote financial transparency, thereby reducing asymmetric information costs.

Although our study is motivated by well-established theories (e.g., rational choice institutionalism, social analysis, principal–agent theory), and employs widely used datasets and empirical methods, our findings and conclusions remain subject to limitations. As discussed above, there are potential

discrepancies between our unit of measurement and our units of analysis. Our research design treats firm managers operating in a particular country as having the same social trust attributes as the overall country. We also assume that, if citizens of a particular country possess high (low) levels of social trust between themselves, then outside creditors will impute similarly high (low) levels of social trust to the same country. While there are likely to be exceptions to this assumption, previous studies (e.g., Kanagaretnam et al., 2019; Li et al., 2019; Meng & Yin, 2019) suggest that it is not particularly onerous. Another potential limitation is the mixing of individual and organizational trust. While our main measure of trust is based on an individual-to-individual measure, some actors in our empirical setting can be organizations (e.g., bond-issuing firms or bond-purchasing mutual funds).

With these limitations in mind, we believe that the theoretical framework and empirical findings in this study not only make significant contributions to the literature but also suggest several directions for future research. First, there are other societal characteristics (e.g., attitudes toward power distance, uncertainty, individualism versus collectivism, indulgence versus restraint) that could be used to examine what (if any) role they play in economic transactions (i.e., debt contracting). Second, in addition to direct effects, future research could examine the indirect effects of these various societal characteristics on debt contracting through their interactions with formal institutions and corporate governance structures. Third, there are many other economic transactions and activities that future research could analyze within the same multidimensional framework that we develop in this study. And finally, in addition to economic activities, future research could apply rational choice institutionalism within Williamson's social framework to examine a broader range of political and social phenomena.

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NOTES

[1]The use of social trust as an informal institution to enhance economic outcomes has also been analyzed in development economics. In the context of Africa's economic development, for example, Odera (2013: 121) examines how "trust, framed as an informal institution, plays an important role in business operations in the informal sector by filling the vacuum left by the lack of formal institutions."

[2]A related definition of social trust is provided by Rousseau, Sitkin, Burt, and Camerer (1998: 395): "Trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another."

[3]For example, previous studies show that weak legal environments (Qi, Roth, & Wald, 2011) and creditor rights (Miller & Reisel, 2012) increase the use of bond covenants, while weak political rights (Qi, Roth, & Wald, 2010) and investor protection (Bae & Goyal, 2009) increase the cost of debt financing. Relatedly, El Ghoul, Guedhami, Kwok, and Zheng (2020) find that creditor rights affect the costs of high leverage.

[4]See https://blogs.wsj.com/moneybeat/2018/01/16/foreign-companies-flock-to-the-u-s-bond-market/.

[5]See https://www.wsj.com/articles/petrobras-raises-8-5-billion-from-bond-sale-1394481639.

[6]See https://www.globallegalchronicle.com/royal-dutch-shells-us4-billion-triple-tranche-bond-offer/.

[7]See https://www.bloomberg.com/news/articles/2017-04-23/mizuho-seeks-bigger-presence-in-yankee-bonds-to-boost-fee-income.

[8]In contrast to this impersonal aspect of trust, other studies (e.g., Bidault, de la Torre, Batten, Zanakis, & Ring, 2018; Cruz, Gómez-Mejia & Becerra, 2010; Gulati, 1995; Jeffries & Reed, 2000;

Jones & George, 1998; Luhmann, 1988), examine a personal aspect of trust that is developed through repeated personal interactions.

[9]Some rational choice institutionalists (e.g., Shepsle, 1989) use the terms "unstructured and structured" institutions when referring to "informal and formal" institutions, respectively.

[10]We compare issue-level and firm-level characteristics of the excluded observations in the sample construction process to the final sample observations. In unreported results, we find that the excluded sample has a smaller fraction of callable bonds, shorter maturity, larger firm size, lower profitability, and higher tangibility. We do not find significant differences in leverage, interest rate coverage, or capital expenditure.

[11]Specifically, this measure captures the level of trust within a particular country. It does not measure trust across countries (i.e., the level of trust within one country for another country). As we argue in our theory section, this commonly used assumption seems to be appropriate for our debt contract setting; to the extent that social trust mitigates opportunistic firm behaviors in debt contracting, outside creditors will take into consideration the level of within-country social trust.

[12]Since trust is deeply embedded in a country's social fabric, it should be relatively constant across time. Consistent with this viewpoint, we find that the average autocorrelation of trust is 97% for our sample countries.

[13]In a sensitivity check, we also estimate a negative binomial regression. The results are qualitatively unchanged.

[14]We also estimate an extended model that incorporates additional issue-level controls consisting of the following bond indicator variables: secured, subordinated, junk, sinking fund, and callable. The data requirements of this extended model reduce the sample size by roughly 50%, but the main findings persist.

[15]We obtain the creditor rights index from Djankov et al. (2007). The data cover the period 1978–2004 and are therefore available for each individual year over 1989–2004. We use the 2004 value of this index for the period 2005–2014. This approach is reasonable given the high level of persistence in the index (Djankov et al., 2007). For instance, over the period 1989–2004, only 4 of the 31 countries in our sample experience changes of any kind in the index (i.e., 6 total changes, 2 upward and 4 downward). As a robustness check, we also use an alternative measure of creditor rights from the World Bank's Doing Business database covering the period 2004–2014. Because this alternative index starts in 2004 (our sample starts in 1989) and covers 18 of the 31 countries in our sample, the total number of observations (392) drops significantly compared to our main sample. Importantly, our Online Appendix Table IA2 shows that all our empirical results continue to hold when we use this alternative proxy for creditor rights.

[16]Our main findings persist when we cluster standard errors at the firm level.

[17]In robustness tests, we show that our main findings hold after excluding countries with an extremely large or small number of observations

[18]In our robustness section, we account for the correlation between social trust and investor protection variables.

[19]Following Meyer, van Witteloostuijn, and Beugelsdijk (2017), we report standard errors in the tables and *p* values in the text.

[20]When we address endogeneity below, the economic impact of *Trust* becomes stronger than that of *Creditor Rights*.

[21]We replicate Table 4 in Miller and Reisel (2012). Following their study, we restrict the sample to bonds issued from 1989 through the first quarter of 2006. We have 745 observations while Miller and Reisel (2012) have 697 observations. Similar to their findings, we show that creditor rights significantly reduce the use of debt covenants.

[22]According to Mansi, Qi, and Wald (2013), the use of debt covenants may reflect a herding behavior, whereby the use by many firms of a particular type or group of covenants in bond issues increases the probability of these covenants being used again. Accordingly, we follow Mansi et al. (2013) and capture the herding behavior in the use of bond covenants by controlling for the average number of covenants included in bonds issued in each country in the previous year. In untabulated results, we continue to find a negative and statistically significant coefficient at the 1% level on *Trust*, while the measure of the herding is statistically insignificant for our sample.

[23]For example, under the chaebol "LG Group," the profitable member firm, LG Securities, acquired the unprofitable member firm LG Merchant Bank because of the transaction's positive effect on controlling shareholders. As expected, this acquisition led to substantial losses for the non-controlling investors of LG Securities.

[24]See Beugelsdijk, Ambos, and Nell (2018) for a discussion about measuring and operationalizing distance constructs in the field of international business research.

[25]See Kong (2016) for additional evidence on the relationship between generalized trust and genes, specifically 5-HTTLPR S-allele levels.

[26]In unreported results, we also use another grammar rule suggested by Tabellini (2008), i.e., the license to drop pronouns, and find that our results are qualitatively similar. In addition, using proxies for religious affiliation as instruments for trust yields similar findings.

[27]Clustering at the firm level does not change the results.

[28]As an additional robustness test, we control for shareholder protection using the revised anti-director rights index from Djankov et al. (2008b). The unreported results show that the effect of social trust on debt covenants persists when we control for shareholder protection, which is statistically insignificant.

[29]We find similar results if we control for credit ratings using a junk bond indicator variable or three indicators of credit ratings for securities rated in the A category (AA+, AA, AA−, A+, A, and A− for S&P's ratings; and Aa1, Aa2, Aa3, A1, A2, and A3 for Moody's ratings), for securities rated in the B category (BBB+, BBB, BBB−, BB+, BB, BB−, B+, B, and B− for S&P's ratings; and Baa1, Baa2, Baa3, Ba1, Ba2, Ba3, B1, B2, and B3 for Moody's ratings), and for securities rated in C category (CCC−, CC, and C for S&P's ratings; and Caa2 and Ca for Moody's ratings).

[30]Miller and Reisel's (2012) pricing model (which does not consider *Trust*) shows that a one-standard-deviation increase in *Creditor Rights* leads to a 4.41 basis point reduction in *Bond Spread.*

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