Social trust and the speed of corporate leverage adjustment: evidence from around the globe

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Social Trust and the Speed of Corporate Leverage Adjustment: Evidence from around the Globe

Abstract

We examine the relation between social trust and the speed of leverage adjustment (SOA) around the world. Using a large international sample (65 countries, 1996 to 2016), we find that social trust has a positive effect on SOA. In the cross section, we find that the positive effect of social trust on the SOA is more pronounced for: (1) over-levered firms; (2) firms with higher information asymmetry; (3) firms with lower ease of financing; and (4) firms located in countries with weaker governance quality. Overall, we highlight the role of social trust in shaping corporate capital structure.

JEL Classification: G32; G41

Keywords: Social Trust; Capital Structure; Speed of Leverage Adjustment

"In the absence of trust it would become very costly to arrange for alternative sanctions and guarantees, and many opportunities for mutually beneficial cooperation would have to be foregone."

Kenneth Arrow (1969)

1. Introduction

Social trust has played an important role in affecting financial and economic transactions, especially during periods of financial and economic crisis. According to the former US Labor Secretary Robert Reich, "*the fundamental problem isn't lack of capital. It's lack of trust. And without trust, Wall Street might as well fold up its fancy tents*" (Reich, 2008). During the 2008-2009 financial crisis, US firms with high social trust, as measured by their corporate social responsibility intensity, had stock returns that were 4-7% points higher than, otherwise comparable, firms with low social trust (Lins, Servaes, and Tamayo, 2017). Another example exists in the Yankee bond market: Yankee bond creditors impose fewer and less restrictive covenants on bond issuers domiciled in countries with a high degree of social trust (Brockman, et al., 2020).

In this paper, we examine whether the speed of adjustment (SOA) of corporate leverage is related to this important characteristic which has been overlooked so far in the capital structure literature, namely, the level of social trust at a country level. While firm-specific characteristics and country-level legal institutions and political and macroeconomic conditions play important roles in shaping the economic activities of firms, we argue that social capital, and in particular, social trust, plays an equally crucial role in affecting corporate behaviour in general and corporate capital structure decisions in particular.

Trust is defined as meaning that "the probability that someone will perform an action that is beneficial is high enough for us to consider engaging in some form of cooperation with him"

(Gambetta, 2000).[1] As a key element of culture and social capital, trust is deeply rooted in a person's cultural, ethnic, religious and social backgrounds and is a long-lasting and persistent behavioural trait (Fukuyama, 1995; Guiso, Sapienza, and Zingales, 2006; Putnam, 1993). Trust is central to any financial relation and commercial transaction and virtually underlies all economic exchanges (Arrow, 1972; Williamson, 1993).

Consistent with the importance of trust in any economic activity, the literature has well established the important role played by trust in economic development and growth (Fukuyama, 1995; Knack and Keefer, 1997; La Porta et al., 1997; Zak and Knack, 2001); financial development (Guiso, Sapienza, and Zingales, 2004); stock market participation (Guiso, Sapienza, and Zingales, 2008); international trade (Guiso, Sapienza, and Zingales, 2009); peer-to-peer lending (Duarte, Siegel, and Young, 2012); M&A activities (Ahern, Daminielli, and Fracassi, 2015); financial reporting quality (Garrett, Hoitash, and Prawitt, 2014); stock market reactions to corporate earnings announcements (Pevzner, Xie, and Xin, 2015); venture capital investment (Bottazzi, Da Rin, and Hellmann, 2016); corporate cash holdings (Dudley and Zhang, 2016), debt contracting (Hasan et al., 2017), and bank risk-taking (Kanagaretnam, et al., 2019). Yet, whether and how trust affects corporate capital structure dynamics remains an unanswered, meaningful question. In this paper, we help fill this gap in the literature by exploring the empirical implication of social trust for corporate leverage SOA.

Across the existing capital structure literature, many prior studies have examined the speed of corporate leverage adjustment. According to the trade-off theory, there exists an optimal leverage ratio at which a firm can maximize its value. Such an optimal leverage ratio balances the benefits and costs of debt financing and when firms deviate from this ratio, they should move back toward it (Fischer, Heinkel, and Zechner, 1989; Strebulaev, 2007). However, in this process, firms face a

[1] This definition is refined from Gambetta (1988) who defines trust as the subjective probability that an individual assigns to the event of a potential counterparty performing an action that is beneficial or at least no harmful to that individual.

diverse range of nontrivial adjustment costs, including transaction costs, opportunity costs and agency costs, which can significantly reduce the leverage SOA, making leverage adjustment dynamic in nature.[2] We embrace the complexity of such dynamic adjustment in our analysis.

Prior studies have identified a number of factors that have an impact on the leverage SOA, including both firm-level characteristics[3] and the macroeconomic and institutional environment in which a firm operates.[4] In particular, one stream of literature investigates the cross-country variations in corporate leverage SOA and finds that legal institutions and financial traditions (Öztekin, 2015; Öztekin and Flannery, 2012); business cycle effects (Drobetz, Schilling, and Schröder, 2015); and political uncertainty (Colak, Gungproydinoglu, and Öztekin, 2018) are important factors that have significant impacts on corporate leverage SOA. Our focus on country-level social trust augments the accumulated evidence derived from these macro-style factors.

The potential link between social trust and corporate leverage SOA emerges from at least two plausible sources.[5] First, social trust reduces the cost of both debt and equity financing, which enhances the speed with which firms adjust their capital structure. In more trusting countries, households are more willing to participate in capital markets (Guiso, Sapienza, and Zingales, 2008), making it easier for firms to access funding when they need to issue either debt or equity to adjust their leverage toward its target. As indirect support of this view, Pevzner, Xie, and Xin (2015) find that investor reactions to earnings announcements are significantly higher in more trusting countries, suggesting the existence of a more efficient equity market in countries with a higher level of trust. Further, Hasan et al. (2017) find that firms headquartered in the US counties with higher

[2] See, for example, Cassar and Holmes (2003); Fama and French (2002); Faulkender et al. (2012); Korajczyk and Levy (2003); Leary and Roberts (2005); Morellec, Nikolov, and Schürhoff (2012); Shivdasani and Stefanescu ((2010).
[3] See, for example, Chang, Chou, and Huang (2014); Chang, Jackson, and Wee (2018); Devos, Rahman, and Tsang (2017); Elsas, Flannery, and Garfinkel (2014); Flannery and Rangan (2006); Ho, Lu, and Bai (2020); Warr et al. (2012); Zhou et al. (2016).
[4] See, for example, Benson, Faff, and Smith (2014); Cook and Tang (2010); Drobetz, Schilling, and Schröder (2015); Elsas and Florysiak (2011); Öztekin (2015); Öztekin and Flannery (2012).
[5] We note that these two sources are not mutually exclusive and, indeed, are necessarily interrelated.

levels of social trust incur lower bank loan spreads and face loosened nonprice loan terms. Similarly, in an international context, Meng and Yin (2019) report that firms in countries with a higher level of social trust have lower bond yield spreads. Using a sample of non-US firms that issue bonds in the US debt market, Brockman et al. (2020) find that Yankee bond creditors impose fewer and less restrictive covenants on bond issuers domiciled in countries with a high level of social trust. From a different perspective, a trust shock (e.g. Madoff Ponzi scheme) leads investors to shift their investments from the capital market to bank deposits (Gurun, Stoffman, and Yonker, 2018), making it more difficult for firms to adjust their leverage. Given the need for firms to access the capital market to action material leverage adjustment and that capital market participants' behaviour and perceptions are affected by social trust, we expect there to be a positive relation between social trust and corporate leverage SOA.

Second, trust improves information production and information sharing, which results in less information asymmetry and, thus, reduced transaction costs. Myers (1984) and Myers and Majluf (1984) find that firms with a high degree of information asymmetry incur large transaction costs and thus become reluctant to issue risky securities. As indirect support of this view, Garrett, Hoitash, and Prawitt (2014) demonstrate that trust improves financial reporting quality and therefore lowers the incidence of misstated financial statements. Similarly, Nanda and Wysocki (2013) show that trust is positively associated with financial reporting quality, which enhances earnings transparency and timely recognition of bad news. To the extent that trust improves information quality and mitigates information asymmetry, firms in more trusting countries should exhibit faster leverage SOA given the reduced transaction costs.

Accordingly, we hypothesize that social trust has a positive and significant effect on the leverage SOA. We empirically test this hypothesis by constructing a large international sample across 65 countries for the period of 1996-2016. We follow several prior studies (Dudley and Zhang, 2016; Guiso, Sapienza, and Zingales, 2008; La Porta et al., 1997; Pevzner, Xie, and Xin, 2015) and

measure social trust on the country-level basis based on each country's citizens' average response to a relevant question in the World Value Surveys (WVS). We follow the capital structure literature and use the partial adjustment model to operationalize leverage SOA (Flannery and Hankins, 2013; Faulkender et al., 2012). In particular, we first use a one-step model to estimate firms' target leverage and obtain their deviation from that target using the Blundell and Bond (1998) system Generalized Method of Moments (GMM) estimation method. We then use OLS with bootstrapped standard errors to examine whether the leverage SOA varies with the level of social trust.

As predicted, we find evidence that social trust has a positive effect on the leverage SOA, suggesting that firms located in more trusting countries adjust their leverage more quickly toward the target capital structure. In terms of the economic significance, we document that a one standard deviation increase in our country-level trust measure leads to an economically significant increase of 10% in the leverage SOA for an average firm. Our findings are robust to a battery of checks, namely: fixed effects, an alternative model specification, alternative measures of trust, and different subsamples of countries. In particular, our results survive firm fixed effect estimation.

We further address endogeneity concerns by adopting an instrumental variable (IV) approach. Specifically, we use a country's ethnicity, language and religion as instruments, as these variables are important determinants of social trust (Guiso, Sapienza, and Zingale, 2006) but are unlikely to be directly related to corporate leverage SOA. Our results continue to hold in the IV regressions. Together with the firm fixed effect results, our evidence suggests a causal relationship between social trust and the leverage SOA: a higher level of social trust leads to a faster leverage SOA.

Having robustly established our baseline result, we then explore cross-sectional variations in the effect of social trust on the leverage SOA. Two core pieces of empirical findings emerge from our analyses. First, at the firm level, we show that the positive effect of social trust on the leverage SOA is more pronounced for: (1) over-levered firms; (2) firms with higher information

asymmetry; and (3) firms with lower ease of financing. These findings suggest that firms facing higher leverage adjustment costs can adjust their leverage more quickly if located in more trusting countries, consistent with the notion that social trust can effectively reduce information asymmetry and transaction costs.

Second, at the country level, we find that this positive effect is more pronounced for firms located in countries with weaker governance quality. This piece of evidence is consistent with the existing literature that informal social capital is a substitute for formal institutions in a country. When formal institutions are weaker in a country, then investors and corporations rely more on social trust to conduct their economic activities (Aghion et al., 2010; Carlin, Dorobantu, and Viswanathan, 2009; Dudley and Zhang, 2016; Guiso, Sapienza, and Zingales, 2004; Pevzner, Xie, and Xin, 2015).

Our paper contributes to the literature in several ways. To the best of our knowledge, our study is the first in examining the effect of social trust on corporate capital structure dynamics in a multi-country setting. We provide novel cross-country evidence on the positive and significant role played by social trust in determining corporate capital structure decisions. Compared to other international studies on social trust (Dudley and Zhang, 2016; Pevzner, Xie, and Xin, 2015) or capital structure dynamics (An, Li, and Yu, 2015; Colak, Gungoraydinoglu and Öztekin, 2018), our analyses utilize a more comprehensive dataset which covers many more countries around the globe.

Further to the contribution delivered by our paper, we meaningfully engage with and extend upon two strands of literature. First, we contribute to the strand of literature on capital structure and corporate leverage SOA. The existing literature has identified different determining factors that affect the speed of corporate leverage adjustment toward its target capital structure. Faulkender et al. (2012) find a first-order effect of cash flows on the leverage SOA. Warr et al. (2012) argue that equity mispricing impacts the leverage SOA and find that for undervalued firms,

when they are over-levered, their leverage SOA is much slower. Elsas, Flannery, and Garfinkel (2014) find that firms facing major investment decisions tend to issue securities to finance such investments and move toward their target leverage ratio. Chang, Chou, and Huang (2014) show that firms with weak corporate governance have slower leverage SOA. Zhou et al. (2016) find that firms whose cost of equity is more sensitive to leverage deviation have faster leverage SOA. Finally, macroeconomic conditions and institutional factors also have significant impacts on the leverage SOA.[6] However, all these studies ignore the potentially important effect of informal social capital, in particular, social trust. We add to the literature by identifying social trust as a new factor which helps explain cross-country variations in corporate leverage SOA. We show that social trust has a significant impact on corporate leverage SOA, which is over and above the impacts of such firm-, industry- and country-level determinants that are already identified by prior studies.

Second, we also contribute to the recent literature regarding the effect of national culture in general and social trust in particular on economic activities.[7] We augment this strand of literature by documenting a positive effect of social trust on corporate capital structure dynamics. In more trusting countries, the quality of information environment is improved (Garrett, Hoitash, and Prawitt, 2014) and the capital market tends to be more efficient (Pevzner, Xie, and Xin, 2015). As a result, firms benefit from the reduced cost of capital and are able to move to their target leverage ratio more quickly. This value-improving process enables firms to make better quality investments and thus generate growth. Our findings therefore offer an avenue to partially explain the well documented positive relation between trust and investment and economic growth (Knack and Keefer, 1997; Zak and Knack, 2001). In addition, our findings are consistent with prior studies in

[6] See, for example, Cook and Tang (2010); Drobetz, Schilling, and Schroder (2015); Elsas and Florysiak (2011); Hackbarth, Miao, and Morellec (2006); Öztekin (2015); Öztekin and Flannery (2012).
[7] See, for example, Ahern, Daminelli, and Fracassi (2013); Bottazzi, Da Rin, and Hellmann (2016); Duarte, Siegel, and Young (2012); Dudley and Zhang (2016); Fukuyama (1995); Garrett, Hoitash, and Prawitt (2014); Guiso, Sapienza, and Zingales (2004, 2008, 2009); Knack and Keefer (1997); La Porta et al. (1997); Orlova, Rao, and Kang (2017); Pevzner, Xie, and Xin (2015); Zak and Knack (2001).

confirming a substitution effect between the informal social capital and formal institutions at the country level.[8]

The remainder of the paper is organized as follows. Section 2 describes the empirical methods used in this paper. Section 3 describes the data and the construction of our key variables. Section 4 examines the impact of trust on corporate leverage SOA, conducts a battery of robustness checks, and addresses endogeneity concerns. Section 5 explores cross-sectional variations in the effect of social trust on the leverage SOA. Section 6 concludes.

2. Empirical Design

2.1 Estimating Target Leverage with a Partial Adjustment Model

A standard partial adjustment model of corporate capital structure uses the following regression:

$$LEV_{ij,t+1} - LEV_{ij,t} = \alpha + \lambda\left(LEV^{*}_{ij,t+1} - LEV_{ij,t}\right) + \tilde{\varepsilon}_{ij,t} \quad (1)$$

where $LEV_{ij,t}$ and $LEV_{ij,t+1}$ denote firm i's actual leverage ratios at time t and $t+1$, respectively, and j denotes the country. $LEV^{*}_{ij,t+1}$ denotes the firm's target leverage. The deviation $\left(LEV^{*}_{ij,t+1} - LEV_{ij,t}\right)$ measures the amount that the leverage must change to bring the firm back to the target leverage ratio and the coefficient λ is the leverage SOA, which measures the speed at which the firm moves toward the target leverage in the presence of adjustment costs. An SOA of unity (zero) indicates an instantaneous (no) movement in which the target is reached immediately (never reached).

The existing capital structure literature typically models corporate target leverage as a function of firm-, industry-, and country-level characteristics (Fama and French, 2002; Flannery

[8] See, for example, Aghion et al. (2010); Carlin, Dorobantu, and Viswanathan (2009); Dudley and Zhang (2016); Guiso, Sapienza, and Zingales (2004); Pevzner, Xie, and Xin (2015).

and Rangan, 2006; Lemmon et al., 2008; Margaritis and Psillaki, 2007; Rajan and Zingales, 1995; Titman and Wessels, 1988). That is,

$$LEV^{*}_{ij,t+1} = \boldsymbol{\gamma}' \boldsymbol{X_{ij,t}} \quad (2)$$

where $\boldsymbol{X_{ij,t}}$ includes an array of firm-, industry-, and country-specific determinants of capital structure, and $\boldsymbol{\gamma}$ denotes a vector of the corresponding coefficients. Firm and year fixed effects are also included in this model. [9]

Following Faulkender et al. (2012), we start by estimating the partial adjustment model for all sample firms by substituting Equation (2) into Equation (1):

$$LEV_{ij,t+1} = \alpha + (1-\lambda) LEV_{ij,t} + \lambda \boldsymbol{\gamma}' \boldsymbol{X_{ij,t}} + \tilde{\varepsilon}_{ij,t} \quad (3)$$

Equation (3) is known as a one-step partial adjustment model in the capital structure literature. We use the Blundell and Bond (1998) system Generalized Method of Moments (GMM) estimation method as this generally provides adequate estimates (Flannery and Hankins, 2013; Faulkender et al., 2012). This enables us to concurrently estimate λ and $\boldsymbol{\gamma}$, and thus compute $\widehat{LEV}^{*}_{ij,t+1}$.

2.2 The Impact of Social Trust on Leverage SOA

We hypothesize that social trust has a positive impact on the leverage SOA. Accordingly, we employ the following equation to model this relation:

$$\lambda_{ij,t} = \delta Trust_{j,t} + \beta' \boldsymbol{X_{ij,t}} \quad (4)$$

[9] In unreported analysis, we examine the effect of social trust on the level of target leverage by regressing leverage on social trust, along with all other control variables. We find that, social trust has a positive and significant effect on the target leverage, which is consistent with the view that social trust reduces the cost of debt financing (Meng and Yin, 2019). Details are available from the authors upon request. We thank an anonymous reviewer for pointing us in this direction.

where $Trust_{j,t}$ is the social trust level of country j where firm i operates. $\boldsymbol{X_{ij,t}}$ includes the same array of variables as in Equation (2). Year, industry, country and firm fixed effects are also controlled for. We then substitute Equation (4) into Equation (1) to obtain the following model:

$$LEV_{ij,t+1} - LEV_{ij,t} = \alpha + (\delta Trust_{j,t} + \beta' \boldsymbol{X_{ij,t}})\left(LEV^{*}_{ij,t+1} - LEV_{ij,t}\right) + \tilde{\varepsilon}_{ij,t} \quad (5)$$

Using the estimated $\widehat{LEV}^{*}_{ij,t+1}$ as a proxy for $LEV^{*}_{ij,t+1}$ and defining $DEV_{ij,t} = \widehat{LEV}^{*}_{ij,t+1} - LEV_{ij,t}$ and $\Delta LEV_{ij,t+1} = LEV_{ij,t+1} - LEV_{ij,t}$, we further simplify Equation (5) to yield:

$$\Delta LEV_{ij,t+1} = \alpha + \delta Trust_{j,t} DEV_{ij,t} + \beta' \boldsymbol{X_{ij,t}} DEV_{ij,t} + \tilde{\varepsilon}_{ij,t} \quad (6)$$

We follow Faulkender et al. (2012) and estimate Equation (6) using OLS with bootstrapped standard errors[10] to account for the generated regressor (Pagan, 1984). Given our hypothesis that social trust has a positive impact on the leverage SOA, we expect the coefficient δ to be positive.

3. Data and Sample

3.1 Sample Selection

We collect data from several sources. Social trust data are obtained from the World Values Survey (WVS). Firm level data are from Compustat Global Vantage. We also control for country-level characteristics provided by the World Bank. After excluding firms with missing data on the variables used in the regressions, the final sample consists of 352,318 firm-year observations across 65 countries,[11] over the 1996–2016 period. To the best of our knowledge, our sample has the largest sample size and country coverage among social trust studies.

[10] We use 50 iterations when calculating bootstrapped standard errors. We obtain qualitatively similar conclusions when using White-Huber robust standard errors or standard errors clustered at country level.
[11] The identity of the 65 countries is shown in Table 1 soon.

3.2 Variable Construction

3.2.1 Measure of Social Trust

Following prior studies such as Dudley and Zhang (2016), Guiso, Sapienza, and Zingales (2008), La Porta et al. (1997), and Pevzner, Xie, and Xin (2015), we capture the level of a country's social trust by its citizens' average response to a question in the WVS: "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" A survey participant's response that most people can be trusted is coded as 1 and 0 otherwise. We then define the variable *Trust* as the mean value of the response in each country year. The survey is carried every few years so that the trust variable is time-variant, which provides us with the chance to investigate the effect of within country variation of social trust on the leverage SOA. When the value is missing in a country year, we replace it with a linearly interpolated value.

3.2.2 Measures of Leverage

We follow prior studies (Byoun, 2008; Flannery and Rangan, 2006) and measure corporate leverage using book leverage (BLEV). Specifically, we calculate book leverage as the book value of total debt scaled by the book value of total assets. In addition, we follow Faulkender et al. (2012) and decompose a firm's leverage change into passive and active components. Specifically, we add one period ahead net income to total assets in defining a firm's leverage, that is $LEV^{p}_{i,t} = \frac{Book\ Debt_{i,t}}{Book\ Assets_{i,t} + Net\ Income_{i,t+1}}$. This is the passive leverage should the firm engage in no net capital market activities. Accordingly, the partial adjustment model takes the form:

$$LEV_{ij,t+1} - LEV^{p}_{ij,t} = \alpha + \lambda\left(LEV^{*}_{ij,t+1} - LEV^{p}_{ij,t}\right) + \tilde{\varepsilon}_{ij,t} \qquad (7)$$

We focus on book leverage and active leverage because there is insufficient evidence to show that firms target their market leverage.[12] Yin and Ritter (2019) also suggest that due to the biasedness of SOA estimation with market leverage, it is unreliable to use it as a robustness check.

3.2.3 Control Variables

Following the existing literature (Flannery and Rangan, 2006; Öztekin, 2015; Öztekin and Flannery, 2012), we control for a standard set of firm-, industry-, and country-level variables that are important factors determining capital structure. They include firm size (*SIZE*), market-to-book ratio (*M/B*), profitability (*ROA*), asset tangibility (*TANG*), research and development (*R&D*) expenses, an R&D dummy (*R&DD*), depreciation (*DEP*), liquidity (*LIQ*), the industry mean leverage (*INDLEV*), GDP growth rate (*GDPG*), GDP per capita (*GDP/P*), stock market capitalization scaled by GDP (*C/GDP*), GDP Deflator (*DEF*), and the World Governance Indicators (*WGI*).[13] Definitions of variables are provided in the Appendix.

3.3 Summary Statistics

In Table 1, we present the summary statistics for the main variables used in our empirical analyses for each country and for the entire sample. To alleviate the influence of outliers, we winsorize *M/B*, *INDLEV*, *LIQ*, *TANG*, *ROA*, *R&D* and *DEP* at the 0.5% level in both tails.

[Insert Table 1 here]

Across the entire sample, on average, a firm has a book leverage ratio of 0.23. The active average ratio is 0.22 for an average firm. In terms of the social trust variable, the mean value is

[12] See, for example, Barclay, Smith, and Watts (1995); Bratton (2006); Graham and Harvey (2001); Nash, Netter, and Poulsen (2003); Welch (2004).

[13] To alleviate any concern that social trust might be a consequence of these legal and institutional attributes, as an unreported robustness check we add three more country-level variables: law of origin (a dummy equal to 1 if English law), anti-self-dealing index (ASDI), and newspaper circulation as a measure for news media coverage. We find that the inclusion of such variables does not change our main finding that social trust increases SOA, suggesting that the impact of social trust is over and above the effects of such legal and institutional attributes. Details are available from the authors upon request. We thank an anonymous reviewer for pointing this out.

0.36. Developed countries generally have a higher trust value than developing countries. An average firm has total assets (book value) of 944 million USD, a market-to-book ratio of 2.07, a liquidity ratio of 2.73, an asset tangibility ratio of 0.30, a return-on-asset of -0.08, an R&D ratio of 0.03, and a depreciation ratio of 0.04. At the country-level, the average GDP growth rate is 3.26%; the average GDP per capita is 20,333 USD; the market capitalization of the stock market is 4.5 times of GDP; and the average WGI index is 0.93. We note that our summary statistics are largely in line with those in recent studies (Dudley and Zhang, 2016; Colak, Gungoraydinoglu and Öztekin, 2018).

4. Social Trust and the Speed of Corporate Leverage Adjustment

4.1 Estimation of Target Leverage and Country-level SOA

As discussed in Section 2.1, we follow Flannery and Hankins (2013) and use Blundell and Bond (1998) GMM method to estimate Equation (3) and then compute the estimated target leverage $\widehat{LEV}^{*}_{i,t+1}$. All firm, industry and country characteristics, as well as year and firm fixed effects are included to estimate target leverage. Regression results are reported in Table 2. The global average leverage SOA is estimated as 0.181 (that is 1-0.819) for book leverage and 0.295 for active leverage (that is 1-0.705), consistent with the existing literature (Colak, Gungoraydinoglu, and Öztekin, 2018; Öztekin and Flannery, 2012).

[Insert Table 2 here]

The estimated leverage SOA for each country is reported in the last two columns in Table 1. We report the leverage SOA for each country based on both book leverage (SOA_B) and active leverage (SOA_A). Then we plot the leverage SOA against trust in Figure 1 with a linear fitted line.

[Insert Figure 1 here]

The univariate country-level evidence in Figure 1 lends preliminary support for a positive relation between trust and the leverage SOA. As shown, for more trusting countries, firms have faster leverage SOA. According to Table 1, for the 65 countries with available information for estimating the leverage SOA, their sample size varies from 39 (Venezuela) to 82,117 (United States), which leads to concerns that the relationship could be driven by some large countries. Evidence at the country-level is therefore important because we find that, as clearly shown in Figure 1, the positive relationship between trust and the leverage SOA is not likely to be driven by a certain country.

However, it is still possible that this relationship is not statistically significant or it is driven by other factors that are associated with trust. For example, firm characteristics in high trust countries may be very different from those in low trust countries. We thus explore this relation further in the following multivariate regression setting by controlling for other firm-, industry- and country-level factors.

4.2 Baseline Regression Results

We estimate Equation (6) and report the baseline regression results in Table 3.[14] The variable of interest is the interaction term between the social trust level (*Trust*) and leverage deviation (*DEV*). As discussed in Section 2.2, we expect the coefficient δ on this interaction term to be positive. We note that all other control variables on the right-hand side of Equation (6) are also interacted with leverage deviation (*DEV*). For the sake of labelling brevity, we show the individual variables involved in the interaction, instead of the full interaction terms with *DEV* in Table 3 and all the following tables. For example, the variable "*Trust"* actually represents the interaction term between *Trust* and *DEV*, the variable "*SIZE"* represents the interaction term between *SIZE* and *DEV*, and so on.

[14] We would like to thank Mark Flannery for providing guidance on these estimations.

[Insert Table 3 here]

We find that the coefficient δ on *Trust*DEV* is positive and significant at the 1% level across all columns in Table 3, corroborating the univariate evidence in Section 4.1 and confirming our hypothesis that social trust has a significantly positive impact on corporate leverage SOA. As shown, the results are robust with or without firm and country characteristics. Moreover, this effect is economically significant. For example, consider book leverage, providing an estimated coefficient on *Trust* of 0.112 in column 3. This means that a one standard deviation (0.16) increase in the *Trust* variable will lead to an increase of 1.79% in the SOA. With the sample mean SOA being 0.181 based on book leverage, this amounts to an economically significant increase of 10% in the leverage SOA for an average firm. The impact of trust on the leverage SOA is quite similar, but, if anything, even slightly more pronounced based on the active leverage measure. In column 6, the coefficient δ is 0.202, suggesting that an increase of one standard deviation in the *Trust* measure is associated with an increase of 3.23% in the SOA. Given the sample mean SOA of 0.295 based on active leverage, this amounts to an increase of 11% in the leverage SOA for an average firm.

Turning to the control variables, we find that our results are largely consistent with those in prior studies (Colak, Gungoraydinoglu, and Öztekin, 2018; Öztekin and Flannery, 2012). Specifically, firms with higher depreciation ratios, lower tangibility, liquidity and ROA ratios; have higher SOAs. Further, firms in wealthy countries (with high GDP per capita) or when capital markets are well developed (with a high stock market capitalization per capita), have higher SOAs, consistent with Cook and Tang (2010).

4.3 Robustness Checks

4.3.1 Fixed Effects and an Alternative Model Specification

Our baseline regression models do not control for any fixed effects. In this section, we examine whether our results still hold when fixed effects are included in the estimation. In the SOA literature, fixed effects are not commonly controlled. However, we expect that the leverage SOA is very likely to be affected by unobserved year, industry, country and firm specific factors. Given that *Trust* is a time-variant variable, we are able to investigate its within-country variation effect via country or firm fixed effects. Thus to alleviate potential omitted variable bias, we first add year dummies, then SIC2 industry dummies, and finally country dummies to the model. To the best of our knowledge, we are among the first to systematically introduce fixed effects into the SOA research.[15] We report the results in Table 4.

[Insert Table 4 here]

Results show that our main finding that social trust has a positive effect on the leverage SOA remains intact across all the different specifications of fixed effect models. Most notably, the coefficient on the interaction term between *Trust* and *DEV* is positive and highly significant at the 1% level across all six columns in Table 4, corroborating the results from Table 3. Surprisingly, while the estimated coefficients on the *Trust*DEV* interaction in columns 1 and 2 are similar to the baseline results in Table 3, the counterpart has more than doubled in column 3 when country fixed effects are controlled. Taking within-country variation of social trust into account, the effect of social trust on the leverage SOA is much larger than what the baseline results reveal.

We further investigate whether firm fixed effects impact our findings. However, due to the complexity of equation (6), we are not able to apply firm fixed effects directly.[16] We therefore propose an alternative model specification to incorporate firm fixed effects:

[15] Other corporate leverage SOA studies that have examined the impact of fixed effects include Colak, Gungoraydinoglu and Öztekin (2018), and Dang et al. (2019).
[16] More specifically, three commonly used techniques for removing firm fixed effects (firm dummies, demeaning all variables, or taking first differences) are not applicable here.

$$\frac{\Delta LEV_{ij,t+1}}{DEV_{ij,t}} = \alpha + \delta Trust_{j,t} + \beta' \boldsymbol{X_{ij,t}} + \tilde{\tau}_{ij,t} \quad (8)$$

where the left-hand side is the ratio of leverage change to leverage deviation. Intuitively, the higher the ratio, the quicker the SOA. The right-hand side is similar to equation (6) except that these variables are not interacted with leverage deviation. We expect that equation (6) and (8) should lead to the same qualitative conclusions on how right-hand side variables affect the SOA. We evaluate the validity of this new model specification and estimate the effect of trust on the SOA with firm fixed effects using demeaned variables.

In column 1 of both panels of Table 5, we report the results with both year and firm fixed effects. Because some firm-years have zero deviation, we are not able to calculate the ratio of leverage change to leverage deviation in equation (8) and have to drop these observations. To alleviate the effect of extreme values, the ratio is also winsorized at both sides by 2%.[17] Again, we find that our baseline results survive the firm fixed effect model and the positive effect of trust on the leverage SOA remains statistically and economically significant. Indeed, the magnitude of the effect has increased materially compared to other validation-based columns in this table (details discussed below).

[Insert Table 5 here]

We also validate the new model specification by repeating our baseline analysis and year/industry/country fixed effect estimations using Equation (8). Results are reported in columns 2-7 of Panel A for book leverage (Panel B for active leverage) in Table 5. While there are some quantitative differences, we find that results in columns 2-4 of Panel A (Panel B for active leverage) are qualitatively similar to those in columns 1-3 (4-6 for active leverage) in Table 3. Results in columns 5-7 of Panel A (Panel B for active leverage) are qualitatively similar to those in columns

[17] The results are robust when we drop extreme values or if we investigate subsamples with smaller-than-median values or larger-than median values. Details are available from the authors upon request.

1-3 (4-6 for active leverage) in Table 4. The signs and statistical significance of most variables are consistent with prior tables based on equation (6).

Taken together, the results presented and discussed in this sub-section show that our main finding is robust to different estimation models and different specifications of fixed effects. In particular, the positive effect of trust on the leverage SOA survives the firm fixed effect challenge, suggestive of a causal relationship.

4.3.2 Alternative Measures of Trust

As our first alternative proxy for trust, we use a similar measure but obtained from an alternative data source - Global Preference Survey (GPS) - to check the robustness of our main results. Similar to WVS, the GPS survey participants are asked if they assume that other people within their society, only have the best intentions. We use the average value of such responses as the alternative measure of trust. This measure is not time-variant so we only interact year and industry dummies with *DEV*.

[Insert Table 6 here]

In columns 1 and 2 of Table 6, we find qualitatively unchanged results as in Table 3. In particular, for both book leverage and active leverage, we find that the coefficients on the interaction term between *Trust (GPS)* and *DEV* are positive and highly significant at the 1% level, confirming our findings in Table 3 that trust has a positive impact on the leverage SOA and firms in more trusting countries exhibit faster leverage adjustment speed toward their target capital structure.

As our second alternative proxy for trust, we follow Aghion et al. (2010) and Pevzner, Xie and Xin (2015) by using the trust in major companies of a given country. This measure (sourced from WVS) is time-variant, so that we are able to control for country fixed effects by interacting country dummies with *DEV*.

Columns 3 and 4 in Table 6 show that the results from this alternative trust measure are also consistent with our main analysis in Table 3. For both book leverage and active leverage, the coefficients on the interaction term between *Trust (companies)* and *DEV* are positive and statistically significant at the 1% and 5% level, respectively. Interestingly, while the correlation between *Trust* and *Trust (GPS)* is as high as 0.44, the correlation between *Trust* and *Trust (companies)* is close to zero. In an unreported analysis, we find that both *Trust* and *Trust (companies)* are significantly positive when they are estimated in the model simultaneously. We also find that *Trust* and *Trust (companies)* have strong supplementary effects.

4.3.3 Excluding the US and Countries with High Levels of Trust from the Sample

As the US provides the dominant number of observations in our sample as shown in Table 1, one concern is that our results may be driven by this particular country. To alleviate this concern, we exclude the US from the sample and examine the effect of trust on the leverage SOA for the remaining 64 countries. The results are reported in the first two columns of Table 7. Once again, we confirm evidence that trust has a significantly positive effect on the leverage SOA. For both book leverage and active leverage, the estimated coefficient on the interaction term between *Trust* and *DEV* is positive and significant at the 5% level, confirming that our results are not simply driven by the US.

[Insert Table 7 here]

Another related concern is that our main findings might be driven by countries with very high levels of trust. Accordingly, we exclude the following countries whose measured trust level is above 0.5 and re-run our regressions: Australia, China, Denmark, Finland, Netherlands, New Zealand, Norway, Saudi Arabia and Sweden. As shown in the last two columns of Table 7, the results remain robust, confirming that the outcome of our analysis is not driven by these particular countries with high trust levels.

4.4 Additional Endogeneity Concerns

With regard to the potential reverse causality problem, we argue that while social trust has a positive effect on corporate leverage SOA, the causality is unlikely to go the other way around. The reasoning for taking this position is that social trust is part of the social culture of a country, which is formed over time and through history and, thus, it is unlikely and implausible that the firm-level leverage SOA has any significant impact on the country-level social trust.

Another source of endogeneity concern still remains: omitted variable bias. For the potential unobserved heterogeneity, having controlled for year and firm fixed effects in section 4.3.1, from a major perspective, we largely address the omitted variable bias problem due to time-invariant factors. However, it is still possible that our results are driven by unobservable time-varying variables that affect corporate leverage SOA and social trust in a country at the same time. Therefore, to mitigate these concerns and ensure the robustness of our results, we take further steps and execute some IV corrections.

In the spirit of Dudley and Zhang (2016) and Pevzner, Xie, and Xin (2015), we use three empirical constructs as alternative instruments for social trust: ethnicity, language, and religion. These variables are identified as important determinants of trust in the existing literature (e.g. Guiso, Sapienza, and Zingale, 2006). For example, countries with more diversified ethnicity may have lower trust and countries with more diversified religion may have better social inclusion and therefore higher trust.

[Insert Table 8 here]

We report the IV regression results in Table 8. Columns 1 and 3 present the first stage results for book leverage and active leverage, respectively, where the dependent variable is the interaction between the level of social trust and leverage deviation (*Trust*DEV*). As expected, we find that all these three instruments (interacted with *DEV*) are highly significant at the 1% level,

suggesting the relevance of the instruments. To further check the validity of our instruments, we test whether they satisfy the standard relevance and exclusion conditions. First, the Kleibergen-Paap test of weak instruments is rejected at the 1% level for both book (F-stat: 184.44) and active leverage (F-stat: 143.484), confirming the relevance condition. In addtion, the first-stage R-squared is very large (94.7% for book leverage and 93.9% for active leverage), indicating that our estimation is efficient. Second, as we have more IVs (three) than the variables that need to be instrumented (one), we are able to carry out an exclusion test on the instruments. Hansen's J tests for both book (J-stat: 2.414) and active leverage (J-stat: 2.508) do not suggest any evidence against exclusion. Taken together, these tests suggest that our IVs satisfy both relevance and exclusion conditions and, thus, are valid.

The second stage results are reported in columns 2 and 4. The dependent variable is the change of leverage and the key independent variable is the interaction term between the fitted value of *Trust* from the first stage regression and the leverage deviation *DEV*. We find that, for both book leverage and active leverage, the coefficients on the interaction term are positive and highly significant, confirming that trust has a positive impact on the leverage SOA. In short, based on this IV analysis, our key finding is robust once more.

5. Cross-sectional Variations in the Effect of Social Trust on Leverage SOA

5.1 Cross-firm Variations in the Effect of Social Trust on Leverage SOA

5.1.1 Over- and Under-levered Firms

Among the firms located in countries with different levels of social trust, one would expect there to be differences in the leverage SOA, conditional on whether the firm is over-levered or under-levered. Existing capital structure studies on the pecking order theory suggest that over-levered firms have a greater leverage SOA than under-levered firms, since being over-levered is more

costly (Byoun, 2008). For instance, when over-levered firms face attractive investment projects, they may have to forgo such opportunities simply because of high costs of issuing debt or equity. Therefore, to avoid such weakness in financial flexibility, over-levered firms are more motivated to adjust their leverage toward the target and thus tend to have a faster leverage SOA. To the extent that social trust provides firms with easier access to the capital market and mitigates information asymmetry problems and, thereby reduces adjustment costs, we expect the positive relation between trust and the leverage SOA is more pronounced for over-levered firms than under-levered firms.

We test this hypothesis by adding a dummy variable, *OverLev*, which equals 1 for over-levered firms and 0 otherwise, to Equation (4):

$$\lambda_{ij,t} = \delta Trust_{j,t} + \mu OverLev_{ij,t} + \sigma Trust_{j,t} OverLev_{ij,t} + \beta' \boldsymbol{X_{ij,t}} \quad (9)$$

Substituting Equation (9) into Equation (1), we obtain the following modified model:

$$\Delta LEV_{ij,t+1} = \alpha + \delta Trust_{j,t} DEV_{ij,t} + \mu OverLev_{ij,t} DEV_{ij,t} + \sigma Trust_{j,t} OverLev_{ij,t} DEV_{ij,t} + \beta' \boldsymbol{X_{ij,t}} DEV_{ij,t} + \tilde{\varepsilon}_{ij,t} \quad (10)$$

We estimate Equation (10) and our focus is on the coefficient of the triple interaction term, σ. According to our previous discussion, we expect σ to be positive and significant. Our results are reported in Table 9.

[Insert Table 9 here]

As expected, we find that the estimated coefficient is positive and highly significant at the 1% level for both book leverage and active leverage, consistent with our conjecture that trust has a more pronounced effect on the leverage SOA for over-levered firms. Moreover, this effect is economically significant. For example, consider book leverage, providing an estimated coefficient on the triple interaction term of 0.191 in column 1. This estimate implies that a one standard deviation (0.16) increase in the *Trust* variable will lead to an increase of 3.06% in the SOA

(compared to the base case of under-levered firms). With the sample mean SOA being 0.181 based on book leverage, a 3 percentage point increase in the SOA amounts to an economically significant increase of 17% in SOA for an average firm.

5.1.2 Firm-level Information Asymmetry and Ease of Financing

As discussed earlier, our underlying argument and intuition is that social trust facilitates information production and sharing, and therefore mitigates information asymmetry problems. Firms with a high degree of information asymmetry usually incur substantial transaction costs and thus are reluctant to issue risky securities, resulting in a slower leverage SOA (Myers, 1984; Myers and Majluf, 1984). Therefore, if the positive effect of trust on the leverage SOA is channelled through trust's ability to facilitate the production and dissemination of corporate information, then this effect should be weaker (stronger) for firms with lower (greater) information asymmetry.

Following Dudley and Zhang (2016) and Zhang (2006), we use firm size as a measure of information asymmetry. Due to fewer customers, suppliers, and a limited shareholder base, small firms typically have less information available to the market than larger firms and greater difficulty bearing high (fixed) disclosure preparation costs (Zhang, 2006). Accordingly, we first construct a dummy variable *Large Size* which equals 1 if the firm size is above the sample median and 0 otherwise, and then add this dummy variable to the interaction term between *Trust* and *DEV*, and obtain a triple interaction term: *Trust*×*DEV*×*Large Size*. Our interpretation of the coefficient on this triple interaction term is that it captures the impact of trust on the leverage SOA, conditional on the degree of information asymmetry. We thus expect this coefficient to be negative. The results are reported in the first two columns of Table 10.

[Insert Table 10 here]

As expected, the results show that the estimated coefficient on the triple interaction term is negative and significant at the 10% (5%) level for book (active) leverage. This finding confirms

our conjecture and suggests that the positive effect of trust on the leverage SOA is weaker for firms with lower information asymmetry. In other words, mistrust is less of an obstacle when there is sufficient information available about the firms. This is exactly the argument offered in Guiso, Sapienza, and Zingales (2008) that more information "*overcomes the barrier created by lack of trust*". In terms of economic significance, take book leverage in column 1 for example. A one standard deviation increase in the *Trust* variable will lead to a smaller increase in the SOA for firms with lower information asymmetry as compared to those with higher information asymmetry, with the difference being 5.22%.

We further explore how the ease of financing for a firm affects its leverage SOA. Intuitively, well-performing firms have easier access to the capital market as investors have more confidence in their future profitability and capability to honour their financial obligations. Thus, such firms have relatively lower issuance costs and are more likely to adjust their leverage toward the target. To the extent that social trust helps reduce leverage adjustment costs, we expect that the positive effect of trust on the leverage SOA is weaker for firms who can access the capital market with ease.

We use ROA, a common indicator for corporate performance, as a proxy for the ease of financing. Similarly, we construct a dummy variable *Positive ROA* which equals 1 if the ROA is positive and 0 otherwise. We add this variable to the interaction term between *Trust* and *DEV* and obtain a triple interaction term: *Trust*×*DEV*×*Positive ROA*. Our interpretation of the coefficient on this triple interaction term is that it captures the impact of trust on the leverage SOA, conditional on the degree of ease of financing. We thus expect this coefficient to be negative. The results are reported in the last two columns of Table 10.

As expected, we find that the estimated coefficient is negative and highly significant at the 1% level for both book leverage and active leverage, suggesting that the positive impact of trust on the leverage SOA is weaker for firms with ease of financing. In terms of economic significance, take book leverage in column 3 for example. A one standard deviation increase in the *Trust* variable

will lead to a smaller increase in the SOA for firms with higher ease of financing, as compared to those with lower ease of financing, with the difference being 6.90%.

5.2 Cross-country Variations in the Effect of Social Trust on Leverage SOA

We next explore how the effect of social trust varies with the strength of a country's formal institutions. We focus on a country's governance quality as formal institutions. As is well established in the existing literature, informal social capital is a substitute for formal institutions (Aghion et al., 2010; Carlin, Dorobantu, and Viswanathan, 2009; Dudley and Zhang, 2016; Guiso, Sapienza, and Zingales, 2004; Pevzner, Xie, and Xin, 2015). We thus expect social trust to play a more (less) important role in countries with weaker (stronger) formal institutions. We examine this "substitution" effect prediction by interacting country-level governance quality as measured by the WGI Index with *Trust*. Note that a higher value of the WGI Index reflects a higher quality formal national governance system. We replace each WGI indicator with a dummy variable that equals 1 if the value of the indicator is above the sample median and 0 otherwise. The results are reported in column 1 of panels A and B of Table 11 for book leverage and active leverage, respectively.

[Insert Table 11 here]

We find that the effect of trust on the leverage SOA varies significantly according to country governance quality. The coefficient on the interaction term between *Trust* and *WGI* is negative and highly significant at the 1% level, suggesting that trust has a greater effect on the leverage SOA in countries with lower levels of governance. This finding confirms that, as predicted, trust matters more in countries with weaker formal institutions and that there is a substitution effect between the informal social capital and formal institutions at the country level.

Similar to Dudley and Zhang (2016), we further examine whether this interactive effect is driven by a particular dimension of country governance. The WGI index has six constituent components: Voice and Accountability (*VA*), Political Stability and Absence of Violence (*PSAV*),

Government Effectiveness (*GE*), Regulatory Quality (*RQ*), Rule of Law (*RL*), and Control of Corruption (*CC*). We estimate a separate regression for each dimension given that these six measures are highly correlated. That is, each dimension of the WGI index is included in the regression as a stand-alone variable, along with its interaction with *Trust*. We report the results in columns 2-7 of Panel A for book leverage (Panel B for active leverage).

We find that results are largely consistent with those using the WGI index. Notably, the effect documented in column 1 of both panels does not seem to be driven by a particular dimension of the WGI index. For book leverage, we find negative and significant coefficients on the interaction term in four out of six dimensions. Political Stability and Absence of Violence, Government Effectiveness, Rule of Law, and Control of Corruption all interact significantly and negatively with *Trust*, suggesting that the effect of social trust is weaker when these formal institutions are stronger. The results for active leverage are even stronger. Except for Voice and Accountability, all the other five dimensions have negative and highly significant estimated coefficients on the interaction term, confirming a substitution effect between social trust and country governance quality.

We further note that, across all columns in Table 11, the coefficient on *Trust* is positive and highly significant at the 1% level (except for column 2 of Panel B where the significance is at the 10% level). Taken together with the interactive effect between social trust and country governance quality, we conclude that: (1) trust has a significantly positive effect on corporate leverage SOA; (2) the positive effect is weaker for firms in countries with stronger formal institutions, implying that informal social capital is a substitute for formal institutions and governance.

6. Conclusion

We examine the effect of country-level social trust on the speed at which firms adjust their financial leverage toward the target capital structure. Using a comprehensive international sample across 65

countries over the 1996-2016 period, we find that social trust has a positive and significant effect on the speed of adjustment (SOA) of corporate leverage. Our baseline finding is robust to a battery of checks, comprising: fixed effects; alternative model specification; alternative measures of trust; and different subsamples of countries. We further address endogeneity concerns by using the IV approach. Results from firm fixed effect estimations and the IV approach confirm that the positive effect of social trust on the leverage SOA is plausibly causal.

We further explore the cross-sectional variations in the effect of trust on the leverage SOA. At the firm level, we find that this effect is more pronounced for: (1) over-levered firms; (2) firms with higher information asymmetry; and (3) firms with lower ease of financing. Additionally, at the country level, we find that this effect is more pronounced for firms located in countries with weaker governance quality. Overall, we find evidence that informal social capital is a substitute for formal institutions and governance.

At a general level, our findings highlight the important role played by social trust in shaping corporate capital structure. As an illustrative case, the economic significance of our baseline finding shows a one standard deviation increase in the *Trust* variable leads to an increase of 10% in SOA for an average firm. As such, we contribute to the literature on capital structure dynamics by identifying a new country-level factor that has a significant statistical and economically meaningful effect on firm-level financial leverage adjustment.

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Appendix: Variable Definitions

Social Trust Measures

Trust = Mean value of survey participants' responses in each country year 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?". A response is assigned a value of 1 if the answer is "Most people can be trusted", and 0 otherwise. This variable is time-variant. When the value is missing in a country year, we replace it with the interpolated value. (Source: World Values Surveys)

Trust (GPS) = Mean value of survey participants' responses that they assume that other people only have the best intentions. A response has a value range of 0 to 10. This variable is time-invariant. (Source: Global Preference Survey)

Trust (companies) = Mean value of survey participants' responses in each country year to the question "How much confidence you have in major companies, is it a great deal, quite a lot, not very much or none at all?". A response is assigned a value of 1 if the answer is "A great deal", and 0 otherwise. This variable is time-variant. When the value is missing in a country year, we replace it with the interpolated value. (Source: World Values Surveys)

Firm Characteristics (source: Compustat Global Vantage)

Book Leverage (BLEV) = (Long-term Debt + Short-term Debt)/Total Assets

Active Leverage (ALEV) = (Long-term Debt + Short-term Debt)/(Total Assets + Net Income(t+1))

SIZE = Natural log of Total Assets.

M/B = (Long-term Debt + Short-term Debt + Market Capitalization)/Total Assets

INDLEV = Average value of book leverage in an industry year, where industry is measured at 2-digit SIC.

LIQ = Current Assets/Current Debt

TANG = Net Property, Plant and Equipment/Total Assets

ROA = (Earnings Before Interest and Tax - Interest Payments - Tax Payments)/Total Assets

R&D = Research and Development Expenditure/Total Assets

R&DD = 1 if a firm has positive Research and Development Expenditure, and 0 otherwise.

DEP = Depreciation/Total Assets

Country Characteristics

GDPG = Annual percentage growth rate of GDP at market prices based on constant local currency. (Source: World Bank Open Data)

GDP/P = Natural log of GDP per capita which is calculated as gross domestic product divided by midyear population. (Source: World Bank Open Data)

C/GDP = Market capitalization of listed domestic companies divided by GDP. (Source: World Bank Open Data)

DEF = Inflation as measured by the annual growth rate of the GDP implicit deflator, which shows the rate of price change in the economy as a whole. (Source: World Bank Open Data)

WGI= The average of the six Worldwide Governance Indicators, including Voice and Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law and Control of Corruption. These indicators are time-variant. When the values are missing in a country year, we replace them with the interpolated values. (Source: WGI Project)

Table 1: Summary Statistics

This table reports the mean values of variables used in our study by country for the entire sample. The last two columns report the estimated book leverage SOA and active leverage SOA for each country. Variable definitions are provided in the Appendix.

Country	Obs	BLEV	ALEV	TRUST	SIZE	M/B	INDLEV	LIQ	TANG	ROA	R&D	R&DD	DEP	GDPG	GDP/P	C/GDP	DEF	WGI	SOA_B	SOA_A
Argentina	680	0.21	0.21	0.19	6.49	2.66	0.25	1.67	0.37	0.03	0.00	0.04	0.05	2.98	9.00	2.65	17.97	-0.23	0.17	0.20
Australia	17743	0.14	0.14	0.51	3.55	2.33	0.19	5.53	0.36	-0.28	0.02	0.20	0.03	3.00	10.70	4.63	2.63	1.59	0.25	0.46
Austria	1074	0.25	0.24	0.35	6.12	1.24	0.25	2.23	0.30	0.02	0.02	0.42	0.05	1.77	10.53	3.02	1.56	1.57	0.21	0.29
Bahrain	111	0.06	0.06	0.34	4.03	1.34	0.25	3.43	0.33	0.08	0.00	0.00	0.03	4.52	9.93	4.35	3.79	0.06	0.15	0.26
Bangladesh	154	0.29	0.27	0.23	7.92	2.44	0.25	1.56	0.41	0.07	0.00	0.24	0.03	6.03	6.61	3.32	7.41	-0.87	0.19	0.31
Belgium	1403	0.23	0.23	0.33	6.20	1.62	0.24	1.81	0.28	0.02	0.03	0.40	0.05	1.71	10.49	4.16	1.62	1.34	0.19	0.30
Brazil	2553	0.32	0.31	0.08	7.16	4.95	0.25	1.85	0.32	-0.04	0.00	0.14	0.04	2.33	8.97	3.85	8.12	0.00	0.19	0.37
Bulgaria	86	0.29	0.29	0.18	5.03	1.23	0.23	1.72	0.47	0.02	0.00	0.07	0.04	1.83	8.86	2.86	5.22	0.22	0.19	0.32
Canada	19544	0.19	0.18	0.41	4.13	0.80	0.20	4.35	0.44	-0.30	0.03	0.27	0.04	2.30	10.52	4.77	1.87	1.63	0.24	0.41
Chile	1443	0.25	0.24	0.15	10.64	7.33	0.27	2.40	0.43	0.03	0.00	0.07	0.04	3.88	9.20	4.59	4.68	1.16	0.17	0.31
China	24047	0.20	0.20	0.58	7.93	2.57	0.23	2.29	0.32	0.02	0.01	0.32	0.03	8.95	8.51	3.93	3.42	-0.52	0.24	0.34
Colombia	175	0.16	0.16	0.06	13.83	1.62	0.26	1.72	0.43	0.04	0.00	0.01	0.03	4.11	8.76	3.84	3.91	-0.29	0.25	0.31
Croatia	413	0.26	0.27	0.20	7.17	1.07	0.25	1.86	0.54	0.00	0.00	0.08	0.04	0.54	9.46	3.65	1.66	0.41	0.21	0.32
Cyprus	404	0.28	0.28	0.09	4.45	1.17	0.24	2.33	0.45	-0.01	0.00	0.06	0.03	0.16	10.27	2.87	0.75	1.04	0.23	0.37
Czech	75	0.18	0.18	0.27	9.53	0.94	0.27	2.51	0.53	0.02	0.00	0.25	0.06	3.42	9.18	2.94	3.35	0.81	0.21	0.32
Denmark	681	0.27	0.27	0.68	7.30	1.65	0.26	1.98	0.35	0.01	0.02	0.22	0.05	2.07	10.47	3.98	2.04	1.83	0.21	0.33
Egypt	572	0.20	0.20	0.20	6.81	1.32	0.25	2.55	0.41	0.03	0.00	0.05	0.03	3.56	8.05	3.01	10.60	-0.84	0.23	0.35
Finland	673	0.23	0.23	0.55	5.91	1.66	0.26	2.01	0.31	0.01	0.03	0.56	0.06	3.63	10.24	4.75	1.40	1.92	0.20	0.33
France	9130	0.22	0.21	0.24	5.67	1.53	0.23	1.84	0.18	0.01	0.02	0.30	0.04	1.45	10.43	4.30	1.37	1.20	0.22	0.35
Germany	9080	0.20	0.20	0.37	5.25	1.56	0.23	2.58	0.22	-0.01	0.03	0.40	0.05	1.34	10.49	3.79	1.10	1.51	0.23	0.37
Greece	2418	0.35	0.36	0.22	4.84	1.12	0.25	1.65	0.37	0.00	0.00	0.26	0.03	-0.97	10.07	3.46	1.33	0.49	0.19	0.24
Hong Kong	11689	0.19	0.20	0.44	7.11	1.97	0.23	3.21	0.24	-0.03	0.01	0.23	0.03	3.51	10.38	6.63	0.80	1.39	0.26	0.41
Hungary	172	0.17	0.17	0.25	10.77	2.03	0.24	2.42	0.42	0.04	0.01	0.27	0.06	1.75	9.42	2.99	3.51	0.77	0.16	0.25
India	20134	0.30	0.30	0.29	8.08	1.68	0.24	2.56	0.33	0.02	0.00	0.31	0.03	7.40	7.20	4.29	5.61	-0.26	0.21	0.32
Indonesia	4203	0.33	0.32	0.42	12.74	3.87	0.26	2.27	0.40	0.03	0.00	0.08	0.04	4.63	7.60	3.53	10.91	-0.52	0.21	0.29
Ireland	771	0.21	0.20	0.38	5.19	1.67	0.22	2.67	0.27	-0.01	0.02	0.35	0.03	5.33	10.73	3.89	2.03	1.51	0.27	0.34
Israel	2662	0.25	0.24	0.23	5.70	2.70	0.23	2.86	0.20	-0.07	0.06	0.49	0.03	3.58	10.32	4.26	2.21	0.64	0.24	0.36
Italy	2373	0.27	0.27	0.30	6.39	1.31	0.24	1.64	0.22	0.00	0.01	0.25	0.04	0.06	10.38	3.52	1.97	0.63	0.21	0.32
Japan	51396	0.22	0.22	0.37	10.72	1.14	0.24	1.98	0.29	0.02	0.01	0.62	0.03	0.86	10.55	4.29	-0.61	1.20	0.21	0.28
Jordan	659	0.17	0.18	0.20	3.25	1.28	0.25	2.38	0.40	0.01	0.00	0.07	0.03	3.53	8.26	4.49	5.51	-0.07	0.21	0.33
Kazakhstan	53	0.19	0.18	0.39	10.79	1.23	0.25	2.84	0.52	0.07	0.00	0.00	0.05	3.96	9.26	2.76	9.95	-0.53	0.19	0.30
Korea	11577	0.27	0.27	0.30	12.62	1.22	0.23	1.85	0.34	0.02	0.01	0.42	0.04	3.69	9.97	4.30	1.95	0.73	0.23	0.35
Kuwait	83	0.19	0.18	0.29	4.79	1.91	0.26	2.86	0.21	0.05	0.00	0.02	0.02	9.31	10.34	4.72	13.80	0.27	0.21	0.35
Luxembourg	279	0.24	0.24	0.30	7.18	2.66	0.27	2.26	0.39	0.02	0.00	0.30	0.04	3.08	11.39	4.89	2.36	1.72	0.20	0.30

Malaysia	12523	0.22	0.22	0.09	5.69	1.23	0.25	2.87	0.35	0.01	0.00	0.16	0.03	4.81	8.85	4.92	3.53	0.35	0.20	0.27
Malta	104	0.29	0.27	0.22	4.19	3.00	0.27	1.57	0.44	0.03	0.01	0.14	0.04	3.99	9.95	3.74	2.29	1.15	0.21	0.29
Mexico	1215	0.24	0.23	0.16	9.58	1.33	0.26	2.10	0.44	0.05	0.00	0.04	0.04	2.62	9.02	3.37	6.73	-0.13	0.22	0.34
Morocco	117	0.19	0.18	0.12	7.68	1.66	0.24	1.66	0.34	0.09	0.00	0.07	0.04	3.65	8.01	3.95	0.79	-0.30	0.28	0.38
Netherlands	2288	0.23	0.22	0.57	6.12	1.84	0.24	1.70	0.24	-0.01	0.02	0.29	0.05	2.09	10.55	4.56	1.94	1.73	0.27	0.46
New Zealand	1449	0.22	0.21	0.53	4.76	2.00	0.25	2.79	0.36	-0.04	0.02	0.28	0.04	2.84	10.25	3.54	2.19	1.78	0.21	0.35
Nigeria	605	0.21	0.21	0.16	9.49	2.01	0.25	1.60	0.46	0.06	0.00	0.05	0.04	4.54	7.65	2.61	13.71	-1.11	0.22	0.31
Norway	2320	0.29	0.29	0.72	7.02	2.58	0.24	2.40	0.32	-0.05	0.02	0.28	0.05	1.79	11.16	3.91	3.53	1.72	0.24	0.39
Pakistan	2627	0.30	0.30	0.24	8.49	1.38	0.27	1.56	0.46	0.06	0.00	0.11	0.03	4.11	6.96	3.13	9.05	-1.04	0.24	0.33
Peru	721	0.20	0.19	0.08	6.60	1.32	0.23	1.96	0.50	0.08	0.00	0.03	0.04	5.16	8.40	3.69	3.08	-0.25	0.25	0.35
Philippines	1954	0.21	0.21	0.05	8.29	2.79	0.24	4.16	0.35	0.00	0.00	0.15	0.03	5.11	7.48	4.01	4.36	-0.37	0.21	0.30
Poland	3625	0.18	0.18	0.23	5.08	1.54	0.23	2.11	0.30	0.01	0.00	0.15	0.04	3.43	9.36	3.40	2.00	0.78	0.21	0.34
Portugal	698	0.39	0.39	0.16	7.04	1.19	0.26	1.13	0.33	0.01	0.00	0.07	0.05	0.94	9.80	3.55	2.27	1.11	0.22	0.27
Qatar	65	0.22	0.22	0.21	8.34	1.58	0.27	2.30	0.36	0.01	0.00	0.05	0.03	5.90	11.18	4.47	-4.77	0.51	0.17	0.27
Romania	92	0.18	0.18	0.14	6.41	0.96	0.24	2.15	0.52	0.01	0.00	0.16	0.04	0.47	8.97	2.12	7.02	0.12	0.19	0.32
Russia	621	0.30	0.29	0.28	9.90	2.42	0.25	2.92	0.42	0.04	0.00	0.18	0.04	1.39	9.43	3.51	9.42	-0.73	0.20	0.37
Saudi Arabia	551	0.24	0.24	0.51	7.91	1.96	0.25	2.45	0.49	0.06	0.00	0.10	0.04	4.02	10.03	4.13	-1.60	-0.32	0.20	0.32
Singapore	7283	0.21	0.21	0.28	5.16	1.41	0.24	2.39	0.28	-0.02	0.00	0.13	0.03	5.38	10.56	5.32	1.02	1.50	0.25	0.36
Slovakia	60	0.21	0.23	0.16	7.51	1.14	0.25	1.95	0.49	0.01	0.00	0.28	0.05	2.96	9.32	1.34	3.04	0.69	0.16	0.24
Slovenia	299	0.29	0.28	0.20	7.24	1.13	0.26	1.73	0.48	0.02	0.01	0.15	0.04	1.81	9.93	2.97	2.54	0.95	0.19	0.24
South Africa	3645	0.17	0.16	0.18	7.18	1.59	0.23	2.18	0.30	0.06	0.00	0.21	0.04	2.82	8.51	5.32	7.08	0.32	0.26	0.37
Spain	1751	0.28	0.27	0.26	7.56	1.52	0.25	1.69	0.31	0.03	0.00	0.21	0.04	2.07	10.08	4.30	2.08	1.00	0.22	0.27
Sweden	1085	0.19	0.19	0.65	7.19	1.72	0.24	2.21	0.25	-0.07	0.03	0.35	0.06	2.85	10.33	4.56	1.62	1.76	0.24	0.41
Switzerland	2997	0.21	0.20	0.48	6.35	1.82	0.23	2.46	0.29	0.02	0.03	0.49	0.04	1.87	11.00	5.34	0.51	1.75	0.25	0.33
Thailand	6108	0.26	0.26	0.38	8.08	1.44	0.26	2.33	0.39	0.04	0.00	0.02	0.04	3.40	8.29	4.16	2.68	-0.15	0.21	0.28
Tunisia	103	0.22	0.23	0.16	4.40	1.95	0.25	1.76	0.35	0.04	0.00	0.07	0.04	2.55	8.29	2.91	4.31	-0.21	0.18	0.25
Turkey	2053	0.22	0.22	0.11	7.19	2.57	0.26	2.42	0.32	0.02	0.00	0.43	0.03	5.15	9.13	3.23	14.52	-0.14	0.20	0.37
United Kingdom	12910	0.18	0.18	0.31	4.19	2.01	0.23	2.41	0.27	-0.05	0.03	0.30	0.04	2.62	10.45	4.81	2.16	1.55	0.23	0.38
United States	82117	0.25	0.22	0.37	4.87	0.98	0.23	3.04	0.25	-0.23	0.07	0.63	0.05	2.57	10.64	4.83	1.90	1.35	0.23	0.42
Venezuela	39	0.21	0.22	0.15	11.20	3.95	0.31	1.52	0.52	-0.02	0.00	0.00	0.05	-0.25	8.32	2.02	29.02	-0.62	0.20	0.38
Vietnam	1783	0.27	0.26	0.51	13.38	1.19	0.25	2.08	0.27	0.05	0.00	0.01	0.03	5.92	7.47	3.15	7.78	-0.49	0.22	0.35
Full Sample	352318	0.23	0.22	0.36	6.85	2.07	0.23	2.73	0.30	-0.08	0.03	0.40	0.04	3.26	9.92	4.50	2.38	0.93	0.18	0.30

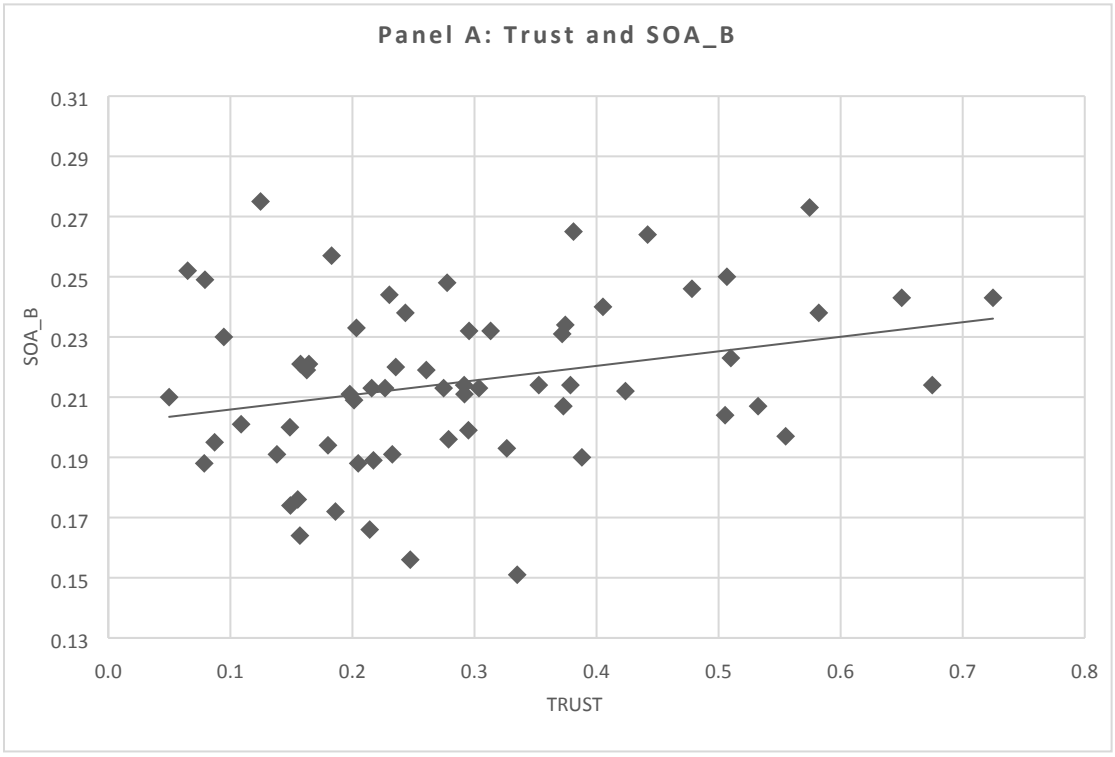
Table 2: Estimation of the Speed of Leverage Adjustment

This table reports the regression results for estimating the leverage SOA across the entire sample. We use Blundell and Bond (1998) GMM method to estimate Equation (3). The sample period is 1996-2016. The definitions of variables are provided in the Appendix. Standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Variable	Book Leverage	Active Leverage
	(1)	(2)
Leverage	0.819***	0.705***
	(0.000)	(0.000)
Trust	-0.005	-0.012
	(0.394)	(0.111)
SIZE	-0.001***	-0.000
	(0.000)	(0.195)
M/B	-0.004***	-0.003***
	(0.000)	(0.000)
INDLEV	0.085***	0.145***
	(0.001)	(0.000)
LIQ	-0.001**	-0.002***
	(0.026)	(0.000)
TANG	0.003	0.007
	(0.602)	(0.267)
ROA	-0.007	0.007
	(0.119)	(0.152)
R&D	0.054**	0.049*
	(0.028)	(0.077)
R&DD	-0.003	-0.006**
	(0.261)	(0.038)
DEP	0.001	0.018
	(0.972)	(0.658)
GDPG	-0.002	-0.004
	(0.338)	(0.112)
GDP/P	0.000	0.000
	(0.815)	(0.857)
C/GDP	0.001	-0.000
	(0.335)	(0.712)
DEF	0.000	0.000
	(0.255)	(0.842)
WGI	-0.003	-0.001
	(0.115)	(0.736)
Observations	352,318	313,803
Year Dummies	Yes	Yes

Figure 1: Social Trust and SOA in the World

This figure shows the relationship between social trust and the leverage SOA at the country level. Panel A uses the book leverage SOA, while Panel B shows the active leverage SOA.



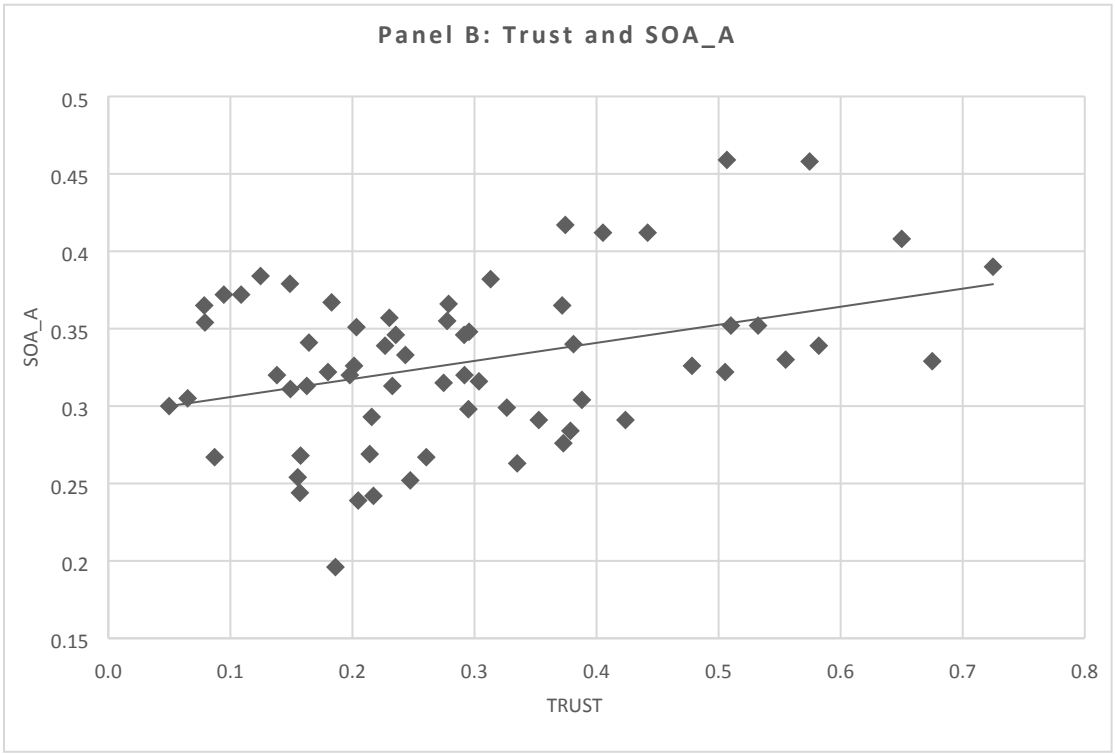


Table 3: The Effect of Social Trust on Corporate Leverage SOA – Baseline Results

This table reports the regression results for estimating the effect of social trust on the leverage SOA. We use OLS with bootstrapped standard errors to estimate Equation (6). All variables are interacted with the leverage deviation *DEV*. The sample period is 1996-2016. The definitions of variables are provided in the Appendix. Standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Variable interacting	**Book Leverage**			**Active Leverage**		
with DEV	(1)	(2)	(3)	(4)	(5)	(6)
Trust	0.113***	0.105***	0.112***	0.268***	0.206***	0.202***
	(0.014)	(0.014)	(0.015)	(0.021)	(0.022)	(0.023)
SIZE		0.000	-0.001		-0.012***	-0.013***
		(0.001)	(0.001)		(0.001)	(0.001)
M/B		-0.000	-0.000		-0.001	-0.001*
		(0.000)	(0.000)		(0.001)	(0.001)
INDLEV		-0.031	-0.014		-0.103*	-0.061
		(0.032)	(0.032)		(0.053)	(0.054)
LIQ		-0.005***	-0.005***		-0.008***	-0.008***
		(0.000)	(0.000)		(0.001)	(0.001)
TANG		-0.024***	-0.021***		-0.035***	-0.030**
		(0.007)	(0.007)		(0.012)	(0.012)
ROA		-0.016***	-0.014***		-0.022***	-0.019**
		(0.003)	(0.003)		(0.008)	(0.008)
R&D		0.016	0.015		0.194***	0.195***
		(0.018)	(0.018)		(0.037)	(0.037)
R&DD		-0.009**	-0.011***		-0.011	-0.014**
		(0.004)	(0.004)		(0.007)	(0.007)
DEP		0.081*	0.097**		0.223***	0.268***
		(0.045)	(0.046)		(0.082)	(0.082)
GDPG			-0.003***			-0.002
			(0.001)			(0.001)
GDP/P			0.014***			0.039***
			(0.003)			(0.005)
C/GDP			0.018***			0.029***
			(0.003)			(0.005)
DEF			-0.001***			0.000
			(0.000)			(0.000)
WGI			-0.040***			-0.080***
			(0.005)			(0.009)
Observations	352,318	352,318	352,318	313,803	313,803	313,803
R-squared	0.238	0.243	0.244	0.289	0.301	0.303

Table 4: The Effect of Social Trust on Corporate Leverage SOA – Fixed Effects Specifications

This table reports the regression results for estimating the effect of social trust on the leverage SOA, using different fixed effect specifications. We use OLS with bootstrapped standard errors to estimate Equation (6). All variables are interacted with the leverage deviation *DEV*. The sample period is 1996-2016. The definitions of variables are provided in the Appendix. Standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Variable interacting	**Book Leverage**			**Active Leverage**		
with DEV	(1)	(2)	(3)	(4)	(5)	(6)
Trust	0.091***	0.087***	0.267***	0.177***	0.164***	0.358***
	(0.015)	(0.015)	(0.067)	(0.023)	(0.023)	(0.109)
SIZE	-0.001	-0.001	-0.000	-0.014***	-0.013***	-0.017***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
M/B	-0.000	-0.000	-0.000	-0.001**	-0.001**	-0.002***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
INDLEV	0.055*	0.568***	0.606***	0.067	0.397*	0.439**
	(0.034)	(0.123)	(0.123)	(0.056)	(0.211)	(0.209)
LIQ	-0.005***	-0.005***	-0.005***	-0.008***	-0.009***	-0.009***
	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
TANG	-0.019***	-0.033***	-0.032***	-0.027**	-0.054***	-0.049***
	(0.007)	(0.009)	(0.009)	(0.012)	(0.015)	(0.015)
ROA	-0.012***	-0.012***	-0.012***	-0.016**	-0.014*	-0.010
	(0.003)	(0.003)	(0.004)	(0.008)	(0.008)	(0.008)
R&D	0.012	0.012	0.013	0.197***	0.181***	0.181***
	(0.018)	(0.019)	(0.019)	(0.036)	(0.038)	(0.038)
R&DD	-0.006	-0.005	-0.003	-0.006	-0.000	-0.002
	(0.004)	(0.005)	(0.005)	(0.007)	(0.007)	(0.008)
DEP	0.146***	0.187***	0.188***	0.326***	0.403***	0.382***
	(0.046)	(0.048)	(0.048)	(0.081)	(0.083)	(0.083)
GDPG	-0.003***	-0.003***	-0.004***	-0.002	-0.002	-0.003*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
GDP/P	0.002	0.003	0.037***	0.019***	0.021***	0.096***
	(0.004)	(0.004)	(0.011)	(0.005)	(0.005)	(0.017)
C/GDP	0.012***	0.014***	-0.009	0.019***	0.022***	0.018*
	(0.003)	(0.003)	(0.007)	(0.005)	(0.005)	(0.011)
DEF	-0.001**	-0.001***	-0.001***	0.001	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
WGI	-0.009	-0.015**	0.052***	-0.031***	-0.040***	0.016
	(0.007)	(0.007)	(0.020)	(0.010)	(0.010)	(0.031)
Observations	352,318	352,318	352,318	313,803	313,803	313,803
R-squared	0.245	0.246	0.247	0.305	0.306	0.309
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
SIC2 Dummies	No	Yes	Yes	No	Yes	Yes
Country Dummies	No	No	Yes	No	No	Yes

Table 5: The Effect of Social Trust on Corporate Leverage SOA – Alternative Model Specification to incorporate Firm Fixed Effects

This table reports the regression results for estimating the effect of social trust on the leverage SOA, using a modified model Equation (8) to incorporate firm fixed effects. The sample period is 1996-2016. The definitions of variables are provided in the Appendix. Standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Book Leverage							
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Trust	0.392***	0.095***	0.109***	0.096***	0.095***	0.094***	0.198*
	(0.125)	(0.021)	(0.021)	(0.023)	(0.023)	(0.024)	(0.104)
SIZE	-0.030***		-0.003***	-0.004***	-0.005***	-0.005***	-0.000
	(0.004)		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
M/B	-0.001*		-0.002***	-0.002***	-0.002***	-0.002***	-0.002***
	(0.001)		(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
INDLEV	0.240		0.003	0.014	0.112**	0.081	0.124
	(0.213)		(0.049)	(0.049)	(0.051)	(0.178)	(0.179)
LIQ	-0.007***		-0.009***	-0.009***	-0.009***	-0.010***	-0.009***
	(0.001)		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
TAN	-0.010		-0.029**	-0.027**	-0.031***	-0.036***	-0.032**
	(0.027)		(0.011)	(0.011)	(0.011)	(0.014)	(0.014)
ROA	-0.049***		-0.040***	-0.040***	-0.036***	-0.035***	-0.044***
	(0.010)		(0.006)	(0.006)	(0.006)	(0.007)	(0.007)
R&D	0.046		-0.080**	-0.081**	-0.061*	-0.062*	-0.065*
	(0.063)		(0.033)	(0.033)	(0.033)	(0.034)	(0.035)
R&DD	-0.020*		-0.008	-0.007	-0.007	-0.010	-0.010
	(0.012)		(0.006)	(0.006)	(0.006)	(0.007)	(0.007)
DEP	0.015		0.132*	0.201***	0.245***	0.259***	0.221***
	(0.129)		(0.078)	(0.078)	(0.078)	(0.083)	(0.084)
GDPG	-0.004**			0.001	0.001	0.000	-0.003*
	(0.002)			(0.001)	(0.001)	(0.001)	(0.002)
GDP/P	0.076***			0.021***	0.005	0.006	0.054***
	(0.019)			(0.005)	(0.006)	(0.006)	(0.017)
C/GDP	-0.017			0.014***	0.005	0.005	-0.001
	(0.013)			(0.005)	(0.005)	(0.005)	(0.012)
DEF	-0.001			-0.001	-0.000	-0.000	-0.001*
	(0.001)			(0.001)	(0.001)	(0.001)	(0.001)
WGI	-0.003			-0.049***	-0.014	-0.014	0.045
	(0.035)			(0.008)	(0.009)	(0.009)	(0.029)
Constant	-0.507***	0.184***	0.233***	0.014	0.058	0.049	-0.429***
	(0.188)	(0.008)	(0.016)	(0.053)	(0.057)	(0.078)	(0.162)
Observations	351,821	351,821	351,821	351,821	351,821	351,821	351,821
R-squared	0.002	0.000	0.001	0.001	0.002	0.002	0.002
Year Dummies	Yes	No	No	No	Yes	Yes	Yes
SIC2 Dummies	No	No	No	No	No	Yes	Yes
Country Dummies	No	No	No	No	No	No	Yes
Firm Fixed Effects	Yes	No	No	No	No	No	No

Panel B: Active Leverage							
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Trust	0.461***	0.128***	0.153***	0.154***	0.157***	0.150***	0.232*
	(0.153)	(0.027)	(0.027)	(0.029)	(0.030)	(0.030)	(0.133)
SIZE	-0.027***		-0.008***	-0.009***	-0.009***	-0.009***	-0.007***
	(0.005)		(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
M/B	-0.005***		-0.002***	-0.003***	-0.003***	-0.003***	-0.003***
	(0.001)		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
INDLEV	0.268		0.050	0.053	0.111*	0.116	0.184
	(0.278)		(0.062)	(0.063)	(0.066)	(0.238)	(0.239)
LIQ	-0.008***		-0.011***	-0.011***	-0.011***	-0.012***	-0.012***
	(0.001)		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
TAN	0.007		-0.014	-0.015	-0.017	-0.030*	-0.024
	(0.035)		(0.015)	(0.015)	(0.015)	(0.018)	(0.018)
ROA	-0.005		-0.000	-0.004	-0.002	0.001	-0.006
	(0.013)		(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
R&D	0.185**		0.083**	0.077*	0.088**	0.084*	0.076*
	(0.082)		(0.042)	(0.042)	(0.042)	(0.044)	(0.044)
R&DD	0.009		-0.004	0.003	0.003	0.006	0.009
	(0.015)		(0.008)	(0.008)	(0.008)	(0.008)	(0.009)
DEP	0.290*		0.356***	0.444***	0.459***	0.450***	0.405***
	(0.163)		(0.100)	(0.100)	(0.101)	(0.106)	(0.108)
GDPG	-0.003			0.003**	0.002	0.002	-0.003
	(0.002)			(0.001)	(0.002)	(0.002)	(0.002)
GDP/P	0.102***			0.013*	0.003	0.003	0.092***
	(0.024)			(0.007)	(0.007)	(0.007)	(0.021)
C/GDP	0.007			0.028***	0.022***	0.023***	0.033**
	(0.017)			(0.006)	(0.006)	(0.006)	(0.015)
DEF	0.000			0.001	0.001	0.001	-0.001
	(0.001)			(0.001)	(0.001)	(0.001)	(0.001)
WGI	0.011			-0.043***	-0.023*	-0.028**	0.040
	(0.043)			(0.010)	(0.012)	(0.012)	(0.038)
Constant	-0.868***	0.232***	0.292***	0.070	0.099	0.068	-0.709***
	(0.234)	(0.010)	(0.020)	(0.068)	(0.074)	(0.103)	(0.207)
Observations	313,140	313,140	313,140	313,140	313,140	313,140	313,140
R-squared	0.001	0.000	0.001	0.001	0.001	0.002	0.002
Year Dummies	Yes	No	No	No	Yes	Yes	Yes
SIC2 Dummies	No	No	No	No	No	Yes	Yes
Country Dummies	No	No	No	No	No	No	Yes
Firm Fixed Effects	Yes	No	No	No	No	No	No

Table 6: The Effect of Social Trust on Corporate Leverage SOA – Alternative Measures of Trust

This table reports the regression results for estimating the effect of social trust on the leverage SOA, using alternative measures of trust. We use OLS with bootstrapped standard errors to estimate Equation (6). All variables are interacted with the leverage deviation *DEV*. The sample period is 1996-2016. The definitions of variables are provided in the Appendix. Standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Variable interacting with DEV	Trust (GPS)		Trust (companies)	
	Book	Active	Book	Active
	(1)	(2)	(3)	(4)
Alternative Trust	0.038***	0.032***	0.587***	0.430**
	(0.008)	(0.012)	(0.102)	(0.168)
SIZE	0.000	-0.013***	0.000	-0.017***
	(0.001)	(0.001)	(0.001)	(0.002)
M/B	-0.000	-0.002***	-0.000	-0.002***
	(0.000)	(0.001)	(0.000)	(0.001)
INDLEV	0.571***	0.373*	0.600***	0.416**
	(0.129)	(0.225)	(0.122)	(0.205)
LIQ	-0.005***	-0.009***	-0.005***	-0.009***
	(0.001)	(0.001)	(0.001)	(0.001)
TANG	-0.032***	-0.046***	-0.035***	-0.047***
	(0.009)	(0.016)	(0.009)	(0.015)
ROA	-0.013***	-0.013	-0.014***	-0.012
	(0.003)	(0.008)	(0.004)	(0.008)
R&D	0.010	0.183***	0.016	0.176***
	(0.019)	(0.039)	(0.019)	(0.038)
R&DD	0.000	0.001	-0.003	0.001
	(0.005)	(0.008)	(0.005)	(0.007)
DEP	0.174***	0.374***	0.183***	0.386***
	(0.050)	(0.086)	(0.049)	(0.084)
GDPG	-0.004***	-0.001	-0.006***	-0.004***
	(0.001)	(0.001)	(0.001)	(0.001)
GDP/P	0.002	0.023***	0.034***	0.097***
	(0.004)	(0.006)	(0.010)	(0.017)
C/GDP	0.003	0.019***	-0.018**	0.011
	(0.004)	(0.007)	(0.007)	(0.011)
DEF	-0.001***	0.000	-0.001***	-0.000
	(0.000)	(0.000)	(0.000)	(0.001)
WGI	-0.010	-0.037***	0.035*	-0.001
	(0.008)	(0.012)	(0.020)	(0.031)
Observations	312,608	277,843	349,426	311,131
R-squared	0.251	0.311	0.247	0.308
Year Dummies	Yes	Yes	Yes	Yes
SIC2 Dummies	Yes	Yes	Yes	Yes
Country Dummies	No	No	Yes	Yes

Table 7: The Effect of Social Trust on Corporate Leverage SOA – Different Subsamples of Countries

This table reports the regression results for estimating the effect of social trust on the leverage SOA for different subsamples of countries. We use OLS with bootstrapped standard errors to estimate Equation (6). All variables are interacted with the leverage deviation *DEV*. The sample period is 1996-2016. The definitions of variables are provided in the Appendix. Standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Variable interacting with DEV	Excluding US		Excluding High Trust Countries	
	Book	Active	Book	Active
	(1)	(2)	(3)	(4)
Trust	0.147**	0.250**	0.181**	0.240**
	(0.068)	(0.108)	(0.072)	(0.118)
SIZE	0.001	-0.010***	-0.000	-0.018***
	(0.001)	(0.002)	(0.001)	(0.002)
M/B	-0.000	-0.001	-0.000	-0.002***
	(0.000)	(0.001)	(0.000)	(0.001)
INDLEV	0.567***	0.502*	0.440***	0.239
	(0.157)	(0.260)	(0.129)	(0.218)
LIQ	-0.005***	-0.009***	-0.005***	-0.008***
	(0.001)	(0.001)	(0.001)	(0.001)
TANG	-0.034***	-0.056***	-0.029***	-0.041***
	(0.011)	(0.017)	(0.009)	(0.016)
ROA	-0.026***	-0.040***	-0.010***	-0.004
	(0.006)	(0.012)	(0.004)	(0.008)
R&D	-0.002	0.088	0.019	0.198***
	(0.036)	(0.071)	(0.019)	(0.038)
R&DD	-0.007	0.002	-0.004	-0.005
	(0.005)	(0.008)	(0.005)	(0.008)
DEP	0.375***	0.445***	0.171***	0.352***
	(0.071)	(0.110)	(0.049)	(0.085)
GDPG	-0.003***	-0.001	-0.005***	-0.002
	(0.001)	(0.001)	(0.001)	(0.001)
GDP/P	0.029**	0.087***	0.007	0.040**
	(0.012)	(0.018)	(0.013)	(0.020)
C/GDP	0.002	0.033***	-0.014*	0.003
	(0.007)	(0.011)	(0.008)	(0.012)
DEF	-0.001*	-0.001	-0.001**	-0.000
	(0.000)	(0.001)	(0.000)	(0.001)
WGI	0.021	0.012	0.062***	0.038
	(0.022)	(0.032)	(0.020)	(0.031)
Observations	270,192	241,641	307,800	275,264
R-squared	0.241	0.296	0.248	0.309
Year Dummies	Yes	Yes	Yes	Yes
SIC2 Dummies	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes

Table 8: The Effect of Social Trust on Corporate Leverage SOA – Additional Endogeneity Corrections using the IV Approach

This table reports the two-stage regression results using instruments. First stage results are reported in columns 1 and 3, where the dependent variable is the interaction term between the fitted value of *Trust* obtained from the first stage and leverage deviation *DEV*. Second stage results are reported in columns 2 and 4, where the dependent variable is the leverage change, and the independent variable of interest is the instrumented *Trust*DEV* from the first stage. Standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Variable interacting with DEV	Book Leverage		Active Leverage	
	First Stage	Second Stage	First Stage	Second Stage
	(1)	(2)	(3)	(4)
Trust (Instrumented)		0.227***		0.392***
		(0.057)		(0.106)
Ethnicity	-0.162***		-0.157***	
	(0.008)		(0.009)	
Language	0.124***		0.103***	
	(0.013)		(0.013)	
Religion	0.101***		0.087***	
	(0.011)		(0.011)	
SIZE	0.004***	-0.001*	0.004***	-0.014***
	(0.000)	(0.001)	(0.000)	(0.001)
M/B	-0.000	-0.000	-0.000	-0.001***
	(0.000)	(0.000)	(0.000)	(0.001)
INDLEV	-0.013	0.534***	0.060	0.344*
	(0.050)	(0.112)	(0.054)	(0.197)
LIQ	0.001***	-0.005***	0.000***	-0.009***
	(0.000)	(0.001)	(0.000)	(0.001)
TANG	0.007*	-0.038***	0.007	-0.053***
	(0.004)	(0.008)	(0.005)	(0.014)
ROA	-0.011***	-0.010***	-0.013***	-0.012
	(0.001)	(0.003)	(0.002)	(0.008)
R&D	-0.005	0.016	0.003	0.178***
	(0.006)	(0.016)	(0.006)	(0.038)
R&DD	0.005***	-0.006	0.004**	0.002
	(0.002)	(0.004)	(0.002)	(0.007)
DEP	-0.015	0.208***	0.020	0.421***
	(0.017)	(0.046)	(0.018)	(0.081)
GDPG	0.009***	-0.005***	0.006***	-0.003***
	(0.001)	(0.001)	(0.001)	(0.001)
GDP/P	0.040***	-0.002	0.034***	0.014**
	(0.004)	(0.003)	(0.004)	(0.006)
C/GDP	-0.027***	0.017***	-0.019***	0.026***
	(0.003)	(0.003)	(0.003)	(0.004)
DEF	0.002***	-0.001***	0.002***	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
WGI	0.025***	-0.021***	0.019***	-0.051***
	(0.007)	(0.006)	(0.007)	(0.010)
Kleibergen-Paap F statistic	184.404		143.484	
Hansen J statistic	2.414		2.508	
Observations	352,028	352,028	313,380	313,380
R-squared	0.947	0.245	0.939	0.305
Year Dummies	Yes	Yes	Yes	Yes
SIC2 Dummies	Yes	Yes	Yes	Yes

Table 9: The Effect of Social Trust on Corporate Leverage SOA – Cross-sectional Variation – Over- vs. Under-levered Firms

This table reports the regression results for estimating the effect of social trust on the leverage SOA, conditional on whether a firm is over- or under-levered. OverLev is a dummy variable which equals 1 for an over-levered firm and 0 otherwise. The sample period is 1996-2016. The definitions of variables are provided in the Appendix. Standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Variable interacting with DEV	Book Leverage	Active Leverage
	(1)	(2)
Trust*OverLev	0.191***	0.322***
	(0.014)	(0.019)
OverLev	0.004***	0.010***
	(0.000)	(0.000)
Trust	0.196***	0.192*
	(0.066)	(0.107)
SIZE	-0.001	-0.013***
	(0.001)	(0.002)
M/B	-0.001**	-0.001**
	(0.000)	(0.001)
INDLEV	0.505***	0.327
	(0.127)	(0.210)
LIQ	-0.005***	-0.008***
	(0.001)	(0.001)
TANG	-0.032***	-0.044***
	(0.009)	(0.015)
ROA	-0.011***	-0.007
	(0.004)	(0.008)
R&D	0.033*	0.193***
	(0.019)	(0.037)
R&DD	-0.002	-0.004
	(0.005)	(0.008)
DEP	0.142***	0.293***
	(0.048)	(0.082)
GDPG	-0.004***	-0.002*
	(0.001)	(0.001)
GDP/P	0.045***	0.114***
	(0.011)	(0.017)
C/GDP	-0.005	0.024**
	(0.007)	(0.011)
DEF	-0.001***	-0.001
	(0.000)	(0.001)
WGI	0.058***	0.031
	(0.019)	(0.030)
Observations	352,318	313,803
R-squared	0.251	0.314
Year Dummies	Yes	Yes
SIC2 Dummies	Yes	Yes
Country Dummies	Yes	Yes

Table 10: The Effect of Social Trust on Corporate Leverage SOA – Cross-sectional Variation – Firm-level Information Asymmetry and Ease of Financing

This table reports the regression results for estimating the effect of social trust on the leverage SOA, conditional on the degree of firm-level information asymmetry (proxied by size) and ease of financing (proxied by ROA). The sample period is 1996-2016. The definitions of variables are provided in the Appendix. Standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Variable interacting with DEV	Information Asymmetry		Ease of Financing	
	Book	Active	Book	Active
	(1)	(2)	(3)	(4)
Trust*Large Size	-0.059*	-0.126**		
	(0.033)	(0.050)		
Trust*Positive ROA			-0.078***	-0.101***
			(0.027)	(0.039)
Trust	0.295***	0.411***	0.303***	0.392***
	(0.069)	(0.111)	(0.070)	(0.112)
Large Size	0.022*	-0.007		
	(0.012)	(0.018)		
Positive ROA			0.009	-0.050***
			(0.010)	(0.015)
SIZE			-0.001	0.392***
			(0.001)	(0.112)
ROA	-0.013***	-0.029***		
	(0.003)	(0.007)		
M/B	-0.000	-0.001**	0.000	-0.014***
	(0.000)	(0.001)	(0.000)	(0.002)
INDLEV	0.563***	0.444**	0.566***	-0.002***
	(0.122)	(0.203)	(0.121)	(0.001)
LIQ	-0.005***	-0.009***	-0.006***	0.394*
	(0.001)	(0.001)	(0.001)	(0.202)
TANG	-0.037***	-0.061***	-0.041***	-0.009***
	(0.009)	(0.015)	(0.009)	(0.001)
R&D	0.015	0.170***	0.026	0.168***
	(0.019)	(0.038)	(0.018)	(0.037)
R&DD	-0.003	-0.003	-0.004	-0.000
	(0.005)	(0.007)	(0.005)	(0.007)
DEP	0.204***	0.422***	0.246***	0.407***
	(0.049)	(0.084)	(0.047)	(0.079)
GDPG	-0.005***	-0.003**	-0.005***	-0.002*
	(0.001)	(0.001)	(0.001)	(0.001)
GDP/P	0.040***	0.096***	0.039***	0.093***
	(0.011)	(0.017)	(0.011)	(0.017)
C/GDP	-0.009	0.020*	-0.008	0.024**
	(0.007)	(0.011)	(0.007)	(0.011)
DEF	-0.001***	-0.001*	-0.001***	-0.001
	(0.000)	(0.001)	(0.000)	(0.001)
WGI	0.056***	0.029	0.049**	0.014
	(0.020)	(0.031)	(0.019)	(0.031)
Observations	352,318	313,803	352,318	313,803
R-squared	0.247	0.307	0.247	0.309
Year Dummies	Yes	Yes	Yes	Yes
SIC2 Dummies	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes

Table 11: The Effect of Social Trust on Corporate Leverage SOA – Cross-sectional Variation – Role of Country Governance Quality

This table reports the regression results for estimating the effect of social trust on the leverage SOA, conditional on country-level governance quality as measured by the WGI index. The sample period is 1996-2016. The definitions of variables are provided in the Appendix. Standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Book Leverage							
Variable interacting with DEV	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Trust	0.552***	0.249***	0.325***	0.381***	0.337***	0.471***	0.497***
	(0.099)	(0.078)	(0.075)	(0.088)	(0.077)	(0.086)	(0.090)
WGI	0.033						
	(0.025)						
Trust*WGI	-0.420***						
	(0.120)						
VA		-0.006					
		(0.024)					
Trust*VA		0.027					
		(0.078)					
PSAV			0.025				
			(0.019)				
Trust*PSAV			-0.109*				
			(0.061)				
GE				0.020			
				(0.024)			
Trust*GE				-0.183*			
				(0.100)			
RQ					0.034		
					(0.021)		
Trust*RQ					-0.109		
					(0.070)		
RL						0.060***	
						(0.023)	
Trust*RL						-0.288***	
						(0.081)	
CC							0.058***
							(0.022)
Trust*CC							-0.344***
							(0.098)
Observations	352,318	352,318	352,318	352,318	352,318	352,318	352,318
R-squared	0.247	0.247	0.247	0.247	0.247	0.247	0.247
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SIC2 Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Active Leverage							
Variable interacting with DEV	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Trust	1.009***	0.238*	0.566***	0.665***	0.552***	0.728***	0.910***
	(0.151)	(0.134)	(0.120)	(0.134)	(0.119)	(0.130)	(0.135)
WGI	0.119***						
	(0.035)						
Trust*WGI	-0.928***						
	(0.187)						
VA		-0.075*					
		(0.044)					
Trust*VA		0.191					
		(0.143)					
PSAV			0.085***				
			(0.028)				
Trust*PSAV			-0.330***				
			(0.093)				
GE				0.026			
				(0.038)			
Trust*GE				-0.477***			
				(0.154)			
RQ					0.058**		
					(0.029)		
Trust*RQ					-0.298***		
					(0.103)		
RL						0.125***	
						(0.034)	
Trust*RL						-0.506***	
						(0.119)	
CC							0.106***
							(0.032)
Trust*CC							-0.792***
							(0.149)
Observations	313,803	313,803	313,803	313,803	313,803	313,803	313,803
R-squared	0.309	0.309	0.309	0.309	0.309	0.309	0.309
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SIC2 Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes