

Can I trust you with my money? The role of social trust in corporate cash policy

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Abstract

We examine how corporate cash policy is related to the level of social trust in a country, with trust defined as the *subjective* probability that an individual assigns to the event of a potential counterparty performing an action that is beneficial or at least not harmful to that individual. We explore two competing hypotheses. On the one hand, in a high-trust country, shareholders are less concerned about managers abusing corporate cash resource for personal gains and therefore allow firms to maintain larger cash holdings. On the other hand, the reduced concern about managerial moral hazard in high-trust countries increases investors' willingness to provide capital to firms. The resultant greater accessibility of external finance weakens firms' precautionary saving motive and leads to lower corporate cash reserve. Our analysis of a large sample of firm-year observations from 41 countries supports the first hypothesis. Specifically, corporate cash holding is significantly and positively related to a country's level of social trust. In addition, consistent with a substitutive relation between subjective belief and formal rules and regulations, the impact of trust is more pronounced in countries with poorer investor protection and weaker legal enforcement. We also observe an elevated effect of trust following negative shocks to investors' confidence in formal institutions created by high-profile corporate scandals. Finally, we find that the market value of corporate cash holding is significantly higher in high-trust countries. Overall, our results highlight the importance of social trust as an informal institution in influencing corporate cash policy.

“In choosing CEOs of subsidiaries, Berkshire would try to secure trustworthiness, skill, energy, and love for the business and circumstances the CEO was in.” - Charlie Munger, Vice Chairman of Berkshire Hathaway, 2014 Shareholder Letter

I. Introduction

In a typical large corporation, most financial and operational decisions are made by managers whose incentives and actions are not perfectly observed and known by outside investors (Holmstrom (1979, 1982)). The unobservable nature of managerial actions is the origin of the moral hazard problem that underlies the agency conflicts between managers and minority shareholders at publicly traded corporations. In response to this problem, a variety of corporate governance mechanisms and institutions have developed at the firm, market, and country levels to ensure that investors receive a fair return on the provided capital (Shleifer and Vishny (1997)). However, given the incompleteness of contracts and the inability of any combination of governance devices to eradicate the potential for managerial opportunism, the willingness of investors to part with their money when they invest in firms and the extent to which they will go to protect their investment are at least partially determined by how much they “trust” managers to do “the right thing”, i.e., maximizing firm value rather than advancing personal interests at investors’ expense. The above quote from Berkshire Hathaway’s 2014 shareholder letter also highlights the importance of a CEO’s trustworthiness as a trait that is distinct from his/her skill in the eyes of shareholders. Therefore, the level of trust is likely to have important ramifications for corporate governance and major corporate financial policies. Yet, there is little extant evidence in the literature regarding the effect of trust on the investor-manager interaction and firm decision making.

We aim to contribute to a better understanding of this issue by examining how trust affects firms’ cash policy. Corporate cash holding has been a subject of significant interest in both the

popular press and academic research. News articles and commentaries frequently appear in major business media outlets that draw attention to substantial cash build-ups at some prominent companies and often highlight the unease expressed by outside investors about firms hoarding a staggering amount of money on their balance sheet. At the same time, there has been a continuing stream of research on the determinants of the level, accumulation, dissipation, and market value of corporate cash holdings.¹ One particular strand of the literature focuses on the substantial cross-country variations in corporate cash holdings and finds that country-level corporate governance institutions and the expected agency problems at the firm level affect the amount and market value of corporate cash reserve (Dittmar, Mahrt-Smith, and Servaes (2003), Pinkowitz, Stulz, and Williamson (2006), and Kalcheva and Lins (2007)). We extend these studies by examining whether corporate cash policy around the world is related to an important characteristic of firms' operating and contracting environment that has so far eluded prior research, i.e., the level of social trust in a country.

Gambetta (1988) 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 not harmful to that individual, and it is a key element of culture and social capital (Putnam, 1993; Fukuyama, 1995; and Guiso, Sapienza, and Zingales, 2006, 2010).² As with other aspects of culture, trust is deeply rooted in an individual's ethnic, religious, familial, and social backgrounds and is a relatively

¹ An incomplete list of studies in this literature include early work by Baumol (1952), Miller and Orr (1966), and Jensen (1986) and more recent research by Kim, Mauer, and Sherman (1998), Opler, Pinkowitz, Stulz, and Williamson (1999), Harford (1999), Dittmar, Mahrt-Smith, and Servaes (2003), Pinkowitz, Stulz, and Williamson (2006), Dittmar and Mahrt-Smith (2007), Foley, Hartzell, Titman, and Twite (2007), Kalcheva and Lins (2007), Harford, Mansi, and Maxwell (2008), Bates, Kahle, and Stulz (2009), Riddick and Whited (2009), Duchin (2010), Dittmar and Duchin (2013), Gao, Harford, and Li (2013), Harford, Klasa, and Maxwell (2014), and Nikolov and Whited (2014).

² Guiso, Sapienza, and Zingales (2006, 2010) synthesize and improve upon a number of different definitions of culture and social capital proposed in the sociology and economics literatures. They define culture as "customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation," and social capital as "persistent and shared beliefs and values that help a group overcome the free rider problem in the pursuit of socially valuable activities."

persistent behavioral trait. Consistent with the notion that trust underlies virtually all economic exchanges (Arrow (1972) and Williamson (1993)), it has been shown that a higher level of social trust facilitates economic growth and social efficiency (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1997; Knack and Keefer, 1997; and Zak and Knack, 2001), international trade and investment (Guiso, Sapienza, and Zingales, 2009), financial development (Guiso, Sapienza, and Zingales, 2004, 2008b), and corporate financing and merger and acquisition (M&A) transactions (Bottazzi, Da Rin, and Hellmann, 2011; Duarte, Siegel, and Young, 2012; and Ahern, Daminielli, and Fracassi, 2012).³ Yet, the impact of trust on corporate cash policy remains an unexplored issue. This is surprising considering that much of the contention about corporate cash holdings is due to a lack of trust on the part of capital providers in parting with their money and putting it in the hands of managers whose interests are not entirely aligned with them.

Self-serving managers or insiders have incentives to misuse corporate cash holdings to extract private benefits of control (Pinkowitz, Stulz, and Williamson (2006), Dittmar and Mahrt-Smith (2007), Kalcheva and Lins (2007), and Masulis, Wang, and Xie (2009)). Recognizing such incentives, investors are rationally apprehensive in providing capital to firms or allowing firms to keep a large amount of cash reserve whose utilization is almost entirely at the discretion of corporate insiders. Economic theory suggests that trust can play an important role in the interaction between managers/insiders and outside investors given incomplete contracting and the potential for moral hazard (Williamson, 1993; Guiso, Sapienza, and Zingales, 2008b; and Carlin, Dorobantu, and Viswanathan, 2009). In fact, as we elaborate below, trust is closely linked to two primary explanations for corporate cash holdings, the precautionary saving motive and the agency

³ See Guiso, Sapienza, and Zingales (2006, 2010) for excellent reviews of the literature on the effects of culture and social capital on economic outcomes.

conflicts view, and the two theories have conflicting predictions regarding the impact of trust on corporate cash policy.

On the one hand, the precautionary saving motive of corporate cash holding argues that in the presence of information asymmetry between firms and outside investors, external capital is costly and may not be readily available. Therefore, firms hold cash so that they can satisfy unexpected liquidity needs or take advantage of valuable growth opportunities without incurring the costs of external financing (Opler, Pinkowitz, Stulz, and Williamson (1999)). A higher level of trust can mitigate the effect of information asymmetry and reduce the cost of external finance for the following reason. Specifically, the reluctance of outside investors to provide capital and the costly nature of external finance are driven by outside investor's concern about being exploited by corporate insiders in possession of private information about firm value (Myers and Majluf (1984)) or by managers intent on abusing corporate resources for private benefits consumption. Guiso, Sapienza, and Zingales (2008b) argue that investors in more trusting countries assign a lower probability to corporate insiders behaving opportunistically and, thus, are more willing to provide capital to firms. Consistent with this notion, they find that the stock market participation rate is significantly higher in countries with a higher level of societal trust. The greater availability of external capital at potentially lower costs in high-trust countries reduces firms' precautionary motive for maintaining large cash reserve. Therefore, we expect trust to have a negative effect on the level of corporate cash holdings.

On the other hand, corporate cash policy is also shaped by agency conflicts. Under this argument, managers choose to hoard cash because cash as a form of liquid assets can be easily diverted or utilized for private benefits consumption purposes. For example, cash can be either squandered on "pet projects" and empire-building activities or used as a buffer for negative shocks to firm performance if managers want to enjoy a "quiet life". Consistent with this agency view, the

market value of cash is lower when investor protection is weaker and expected agency problems are more severe (Pinkowitz, Stulz, and Williamson (2006), Dittmar and Mahrt-Smith (2007), Kalcheva and Lins (2007), and Masulis, Wang, and Xie (2009)). Anticipating the actions of self-serving managers, investors are likely to object to firms keeping a large amount of cash on their balance sheet. Indeed, Dittmar, Mahrt-Smith, and Servaes (2003) find that firms in countries with stronger investor protection hold less cash, suggesting that more empowered shareholders are more effective at limiting cash reserve buildup by firms.⁴ Trust, on the other hand, can have a different impact than investor protection. To the extent that investors in high-trust countries are more likely to believe that managers are trustworthy and forthright and thus are less concerned about moral hazard or outright expropriation by managers (Guiso, Sapienza, and Zingales, 2008b)), they may allow firms to maintain larger cash holdings. These arguments lead to the prediction that trust has a positive effect on the level of corporate cash holding.

We examine the two competing hypotheses in a large sample of firm-year observations across 41 countries spanning the years from 1995 to 2010. Following prior studies such as La Porta et al. (1997) and Guiso, Sapienza and Zingales (2008b), we measure a country's level of societal trust by its citizens' average response to a question in the World Values Survey (WVS): "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?"⁵ We find that firms in more trusting countries hold significantly more cash. In terms of economic magnitude, *ceteris paribus*, a firm's cash-to-assets ratio will rise by about 5

⁴ In a domestic context, Gao, Harford, and Li (2013) find that private firms hold significantly less cash than similar public firms, despite their greater difficulty in accessing external financing. This lends additional support to the agency explanation of corporate cash holding.

⁵ As noted by Guiso, Sapienza, and Zingales (2010), an individual's response to this question captures her level of generalized trust, i.e., trust toward generic members of the population in her own country. In robustness analysis, we find that our results continue to hold and are actually even stronger when we use a measure that captures individuals' confidence in corporations. Because corporations are ultimately run by individuals, we choose to use the generalized trust measure in most of our analysis.

percentage points, which is roughly 50% of the sample median, as the level of trust increases from the 25th percentile to the 75th percentile. This evidence is consistent with the hypothesis that investors in more trusting countries are less worried about corporate insiders abusing corporate cash reserve and thus are comfortable with leaving larger amount of cash in the hand of managers. Our findings are robust to controlling for a wide array of both firm- and country-level characteristics, such as investor protection, rule of law, political corruption, economic development, capital market development, and many other dimensions of culture. The positive relation between trust and corporate cash holding also survives the inclusion of country fixed effects in the regressions, despite the slow-changing nature of a country's social trust level.

Next, we examine the causal nature of the relation between trust and corporate cash holding. As is typical of cross-country studies, it is difficult to conclude definitively that more trust leads to a higher level of corporate cash reserve, because there are many country level characteristics (observable or unobservable, time variant or invariant) that are potentially related to both trust and corporate cash policy.⁶ After all, trust as part of culture and social capital does not develop in a vacuum. Instead, its formation, accumulation, and/or depreciation are interconnected with history, politics, religion, ethnicity, personal upbringing, education, and formal institutions (Aghion, Algan, Cahuc, and Shleifer, 2010; Glaeser, Laibson, and Sacerdote, 2002; and Guiso, Sapienza, and Zingales, 2006, 2010). We take three approaches to address this concern. We first resort to the theoretical development in the trust literature and explore whether the relation between trust and corporate cash holdings displays any cross-country or cross-firm variations as theory predicts. Consistent with extant theory and evidence, we find that the positive effect of trust on corporate cash holdings is more pronounced in countries with poorer investor protection and

⁶ The aforementioned control for country fixed effects can mitigate the concern of time-invariant country characteristics as omitted variables.

weaker rule of law and for firms associated with greater information asymmetry. These findings suggest, respectively, that trust acts as a substitute for formal institutions at the country level (Guiso, Sapienza, and Zingales (2004), Carlin, Dorobantu, and Viswanathan (2009), and Aghion et al. (2010)) and that trust plays a more important role in environments of higher information opacity (Guiso, Sapienza, and Zingales, 2008a).

Our second approach exploits a quasi-natural experiment setting for the identification of the effect of trust. Ideally, we would like to have exogenous shocks to a country's social trust level and then conduct a difference-in-difference analysis of corporate cash holding. However, such shocks are difficult to come by given the slow-changing nature of social trust and that it is rooted in a country's ethnic, religious, and historical backgrounds. Therefore, as an alternative, we utilize the large negative shocks to investors' confidence in formal institutions (e.g., investor protection and disclosure requirement) brought forth by the collapse of Enron and WorldCom amid a slew of corporate scandals in 2001 and 2002. Based on the aforementioned substitutive relation between trust and formal institutions (Aghion et al. (2010)), these shocks should enhance the role of trust in corporate cash policy in the post-Enron/WorldCom years. This is precisely what we observe in the data.

Finally, we address the causality issue by estimating a two-stage least squares (2SLS) regression in which we instrument trust by a country's ethnic homogeneity. The idea behind this instrument is that people of the same ethnicity share common cultural values and social norms, which foster more trust. Consistent with this notion, Putnam (2007) demonstrates that trust decreases with ethnic heterogeneity. On the other hand, there is no direct economic link between a country's ethnic diversity and corporate cash policy. We find that our results continue to hold after correcting for endogeneity.

The evidence discussed so far collectively supports the hypothesis that investors in high-trust countries assign a lower probability to managers acting opportunistically against their interests and thus are less concerned about cash reserve buildup by firms. For larger corporate cash holdings in more trusting countries to be an equilibrium outcome, managers in those countries must indeed engage in less shareholder expropriation and abuse of corporate resources. A direct implication of this argument is that the market value of a firm's cash holdings is higher in more-trusting countries. We put this conjecture to test and find strong supportive evidence. The higher market value of cash in more trusting countries provides a rational justification for investors' subjective belief about managerial incentives and actions in these countries.

We make two primary contributions to the literature. First, we identify societal trust as a new factor that can help explain cross-country variations in corporate cash holding. This represents the first evidence on the broad issue of whether culture affects the outside investor-corporate insider interaction and corporate financial policies. Our findings imply that corporate financial decisions in general and cash policy in particular are impacted not only by formal institutions at the country level (e.g., Dittmar et al. (2003)) but also by informal ones such as culture and, in particular, social trust. In addition, by establishing the impact of trust on corporate cash policy, we demonstrate that trust affects micro, firm-level behavior. As such, we complement the existing literature on how trust affects various macro-level economic activities and exchanges.

Second, our results indicate that trust increases investors' confidence in managers deploying corporate resources efficiently and thus raises their tolerance for large cash holdings by firms. Investors' trust in managers, as it turns out, is not misplaced, because managers utilize corporate cash reserve in a judicious manner, leading to a higher market value of cash. Viewed together, our twin findings that firms in high-trust countries have more liquid assets at their disposal and they manage these assets more efficiently provide a micro-level mechanism for how

trust increases the aggregate investment and growth in an economy (Knack and Keefer, 1997; and Zak and Knack, 2001).

The remainder of our paper is organized as follows. Section 2 describes the sample and variable construction. Section 3 presents the empirical results. Section 4 concludes.

2. Sample and variable description

2.1. Sample construction

Our sample spans a 16-year period from 1995 to 2010. We begin our sample construction process with all the firms in Worldscope. We first require that firms in our sample have the following information to construct country-level variables: (1) data from the World Value Survey (WVS) to construct trust variables; (2) the anti-self-dealing index from Djankov et al. (2008), which is an updated version of the antidirector-rights index developed by La Porta et al. (1997); (3) the rule of law index and political corruption index from the International Country Risk Guide; (4) data from the World Bank on the market value of all listed firms in a country and the country's GDP, and (5) data from the IMF International Financial Statistics database on the credit extended by a country's deposit taking financial institutions to the private sector.

We then remove the following sets of firms from our sample: (1) firms with operations in the financial industries (SIC codes starting with 6); (2) firms with operations in utility industries (SIC codes within 4910-4940); (3) firms with missing values of cash and cash equivalents; (4) firms with missing values of necessary control variables discussed in Section 2.2.3 below. Our final sample consists of 120,380 firm-years from 41 countries.

2.2. Variable definitions

2.2.1. Cash measures

Following prior literature (e.g., Dittmar, Mahrt-Smith, and Servaes (2003) and Kalcheva and Lins (2007)), we measure corporate cash holdings as the ratio of cash and cash equivalents to net assets, which is equal to total assets minus cash and cash equivalents. We find similar results if we deflate cash and cash equivalents by just total assets or by sales. We also report robustness results when we use the logarithm transformation of the cash to assets ratio as in Dittmar et al. (2003).

2.2.2. Trust measures

We follow prior studies in the trust literature (e.g., La Porta et al. (1997), Guiso, Sapienza, and Zingales (2008), and Ahern, Daminelli, and Fracassi (2012)) and measure societal trust based on the following question from 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?

We recode the response to this question to 1 if a survey participant reports that most people can be trusted and 0 otherwise and then calculate the mean of the response in each country year as our measure of societal trust. Since WVS survey was carried out only in five waves in 1981-1984, 1989-1993, 1994-1998, 1999-2004, and 2005-2008, we use the most recent trust measure for each country-year in our sample.

We also construct two alternative measures of trust in robustness test. One is calculated for each country based on the following formula: $100 + (\% \text{ of participants who respond "most people can be trusted"}) - (\% \text{ of participants who respond "can't be too careful"})$. Unlike the trust measure mentioned earlier, this index is time invariant.⁷ The other alternative measure reflects people's trust toward major corporations (Guiso, Sapienza, and Zingales (2008) and Aghion et al. (2010)). It is based on the following WVS question: *"Do you have a lot of confidence, quite a lot of confidence,*

⁷ It is available for download from www.worldvaluessurvey.org.

not very much confidence, no confidence at all in the following: Major companies?..." The answers range from 1 for a lot of confidence, through 2 for quite a lot of confidence, 3 for a little confidence, and 4 for no confidence. We create an indicator variable capturing trust in corporations that is equal to 0 if the respondent chooses the answer "no confidence" and 1 otherwise. We then take the average of the responses in each country year to construct the trust measure.

2.2.3. Control variables

Following Dittmar et al. (2003), we control for a wide array of country and firm characteristics that have been shown in the literature to affect corporate cash holdings. More specifically, we control for two country-level investor protection variables: the anti-self-dealing index (*AD*) from Djankov et al. (2008) and the rule of law index (*Law*) from the International Country Risk Guide. We standardize these two indices to be between 0 and 1 for ease of interpretation of coefficients later in the paper. We also control for the development of a country's capital markets using the following two variables: the market capitalization of all listed firms as a percentage of GDP as a measure of stock market development (*Stkmkt*), and the ratio of total credit provided by deposit taking financial institutions to the private sectors relative to GDP as a measure of credit market development (*Pcred*). We further include the logarithm of each country's GDP in U.S. dollars to control for the overall economic development. Finally, we include a country's political corruption index as an additional control (Caprio, Faccio, and McConnell (2013)).

Our firm-level controls include the following variables. Firm size (*Size*) is measured by the logarithm of the firm's book value of total assets in U.S. dollars at the beginning of the fiscal year. The market to book ratio (*MB*) is the ratio of the market value of equity divided by the book value of equity. Sales growth (*Growth*) is measured as the current year's sales minus last year's sales divided by last year's sales. Cash flow volatility (*CFVol*) is computed as the standard deviation of a firm's

cash flows to total assets ratio over the past five years. The return on total assets (*ROA*) is measured as the net income divided by total assets. Net working capital (*NWC*) is equal to current assets minus current liabilities minus cash and cash equivalents scaled by total assets. *Payer* is an indicator variable equal to one if a firm pays dividend and zero otherwise. *Capex* is calculated as the ratio of capital expenditures to total assets. *R&D* is measured as the ratio of R&D expenditures to total assets. All variable definitions can also be found in the appendix.

2.3. Research design

We estimate the following baseline regression model to test our competing hypotheses regarding the effect of trust on corporate cash holdings.

$$Cash_i = a_0 + a_1 * Trust + a_2 \sum_2^k a_i * Control_i + e_i \quad (1)$$

Cash is the ratio of cash to net assets, *Trust* is the level of societal trust in a firm's country derived from the World Values Survey (WVS), and *Control_i* is a vector of country and firm level control variables. We anticipate *a₁* to be positive (negative) if social trust increases (decreases) corporate cash holdings.

We also estimate the following two regression models to explore cross-country and cross-firm variations in the effect of trust on corporate cash holdings.

$$Cash_i = a_0 + a_1 * Trust + a_2 * Trust * Investor Protection + \sum_3^k a_i * Control_i + e_i \quad (2a)$$

$$Cash_i = a_0 + a_1 * Trust + a_2 * Trust * Information Asymmetry + \sum_3^k a_i * Control_i + e_i \quad (2b)$$

Investor protection in model (2a) is measured by the anti-self-dealing index or the rule of law index. *Information Asymmetry* in equation (2b) is measured by one of four proxies: firm size (*Size*), the cash flow volatility (*CFVol*), the market-to-book ratio (*MB*), and an indicator for firms from high-tech industries (*High-tech*).⁸ With respect to model (2a), to the extent that social trust and formal institutions are substitutes (Guiso, Sapienza, and Zingales (2004), Carlin, Dorobantu, and Viswanathan (2009), and Aghion et al. (2010)), we expect any effect of trust on corporate cash holdings to be mitigated by investor protection. Regarding model (2b), because trust is especially important in the presence of incomplete information and high information opacity (Williamson (1993) and Guiso, Sapienza, and Zingales (2008b)), we expect any effect of trust on corporate cash holdings to be more pronounced in firms with greater information asymmetry.

Finally, we estimate the following regression model to examine if and how the market value of corporate cash holdings is related to trust.

$$MV = a_0 + a_1 * Cash + a_2 * Cash * Trust + a_3 * Trust + \sum_4^k a_i * Control_i + e_i \quad (3)$$

MV is a firm's market value, computed as the market value of equity plus the book value of debt, divided by the book value of total assets. This equation closely follows the model specification used in Pinkowitz, Stulz, and Williamson (2006, p. 2739), which is built upon the firm value regression model developed by Fama and French (1998). The coefficient a_1 is expected to be positive because corporate cash holdings contribute positively to firm market value. The coefficient of particular interest to us is a_2 , which can be either positive or negative depending on which of our hypotheses prevails. Specifically, if trust mitigates investors' concern of moral hazard and increases their willingness to supply capital when firms need external financing, we expect the market value of

⁸ Dittmar et al. (2003) argue that firms with more growth opportunities have more uncertainties and are associated with greater information asymmetry.

corporate cash holdings to decrease with trust, because the precautionary saving benefits of keeping cash are lower. On the other hand, if investors in more trusting countries are more tolerant of high corporate cash holdings because they assign a lower probability to managers abusing cash reserve, managers must indeed behave responsibly and judiciously in the deployment of corporate cash resources for this to be an equilibrium outcome. This argument suggests a positive relation between trust and the market value of cash holdings.

We estimate all regressions controlling for year and industry fixed effects. All continuous variables are winsorized at their respective 1st and 99th percentiles to reduce the influence of outliers. The standard errors are adjusted for heteroskedasticity and firm level clustering (Petersen (2009)).⁹

3. Empirical results

3.1. Summary statistics

We report the year distribution of our sample observations in Panel A of Table 1. The number of annual observations displays a gradual rise over time due to the increasing coverage of WorldScope. Panel B of Table 1 shows the country distribution of observations and the country averages of corporate cash holding and social trust. The total number of observations in a given country ranges from 20 for Hungary to 28,011 for the U.S. Similar to prior studies (e.g., Pinkowitz, Stulz, and Williamson (2006)), we find that the average ratio of cash to net assets in each country exhibits substantial cross-country variations, ranging from 4% in Slovak Republic to 24% in Hong Kong. The level of societal trust also displays large cross-country variations, with a low of 0.06 in Brazil, Peru, and Philippines and a high of 0.66 in Sweden. The correlation between social trust and the country average cash-to-assets ratio is significantly positive at about 30%, indicating that

⁹ Our results remain qualitatively similar when we cluster standard errors at the country level.

corporate cash holdings tend to be higher in more trusting countries. It is worth noting that the U.S. (28,011) and Japan (19,363) have the largest numbers of observations in our sample. In robustness test, we remove these two countries from our sample and continue to find similar results, suggesting that our findings are not driven by the disproportionate presence of firms from these two countries.

Table 2 presents the summary statistics of main variables for the entire sample. We find the mean (median) ratio of cash to net assets is 0.165 (0.105). For country-level variables, the mean (median) value of social trust (*trust*) is 0.392 (0.411), the mean (median) value of the anti-self-dealing index (*AD*) is 0.620 (0.583), the mean (median) value of the rule of law index (*Law*) is 0.818 (0.830), the mean (median) value of the political corruption index (*Corrp*) is -0.923 (-1.327), the mean (median) of the private credit to GDP ratio (*Pcred*) is 1.076 (1.070), and the mean (median) ratio of the market capitalization of all listed firms to GDP (*stkmkt*) is 1.144 (1.048), and the mean (median) of $\log(GDP)$ is 9.955 (10.364). With respect to firm-level controls, the average (median) firm in our sample has a logarithm of total assets (*Size*) of 5.724 (5.650), a market-to-book ratio (*MB*) of 2.598 (1.547), an annual sales growth rate (*Growth*) of 0.512 (0.156), a cash flow volatility (*CFVol*) of 0.091 (0.044), a return on assets (*ROA*) of 0.041 (0.065), a net working capital to assets ratio (*NWC*) of -0.293 (-0.277), a capital expenditure to assets ratio (*CAPEX*) of 0.056 (0.038), and a R&D expense to sales ratio (*R&D*) of 0.021 (0.000). Moreover, 63.3% of the firms in our sample pay dividends. These summary statistics are largely consistent with prior studies in the literature. In unreported results, we find Pearson (Spearman) correlation between a firm's cash-to-assets ratio and social trust is 0.144 (0.110) and significant at 1% level. We also find that the correlation between cash holdings and the anti-self-dealing index is negative, consistent with Dittmar et al. (2003). Moreover, trust is negatively correlated with the anti-self-dealing index, consistent with the notion that social trust and formal institutions in a country are substitutes (Aghion et al. (2010)).

3.2. Baseline regression results

We test our main hypotheses by estimating the regression model specified in equation (1) and present the results in Table 3. The dependent variable is the cash-to-assets ratio. In columns (1) *Trust* is the only country-level explanatory variable included in the regression. We find that it has a significant and positive effect (coefficient: 0.295; p-value<0.001) on corporate cash holdings. In column (2), we control for six other country level variables, including the investor protection indices (*AD* and *Law*), the political corruption index (*Corrp*), the capital market development measures (*Stkmkt* and *Pcred*), and the overall economic development measure (*GDP*). We find that the coefficient on *Trust* remains positive (0.228) and highly significant (p-value<0.001). These findings are consistent with the hypothesis that investors in more trusting countries are less worried about corporate insiders abusing cash reserve and thus allow firms to maintain large cash holdings. Our results are also economically meaningful. For example, based on the coefficient on *Trust* in column (2), all else being equal, an interquartile increase in the level of social trust will lead to an increase in the cash-to-assets ratio of about 5%, which is nearly 50% of the sample median.

With respect to control variables, their coefficients are largely in line with prior studies such as Opler et al. (1999), Dittmar et al. (2003), and Bates et al. (2009). Specifically, we find that the anti-self-dealing and rule of law indices are both significantly and negatively related to corporate cash holdings, consistent with the interpretation that investors in countries with better investor protection have more power to force managers to disgorge large cash balances. We also find that firms hold more cash in countries with more developed capital markets and economy, consistent with a larger supply of and easier access to capital in these countries. In agreement with the precautionary saving motive, cash holdings are higher in firms with more growth opportunities (*MB*, *Growth*, and *R&D*) and higher cash flow volatility (*CFVol*), and lower in firms that are larger

(*Size*) and more profitable (*ROA*). Finally, corporate cash holdings are lower at firms with larger capital expenditures (*Capex*).

A common concern for cross-country investigations like ours is that it is difficult, if not impossible, to control for all relevant country-level characteristics. To partially address this issue, we augment our regression model by controlling for country fixed effects. This approach has the benefit of removing the confounding effects of any time-invariant country-level characteristics that are not explicitly controlled for in column (2), but it comes at the cost of absorbing the substantial cross-country variations in our key explanatory variable, social trust, and leaving only within-country over-time variations to drive our results. In other words, given the slow-changing nature of a country's social trust level, controlling for country fixed effects represents a more stringent identification strategy but it risks underestimating the economic relation between trust and corporate cash holdings. Column (3) presents the regression results. We find that even with country fixed effects in place as additional controls, social trust continues to have a positive coefficient. As expected, the coefficient's magnitude is about 30% smaller compared to that in column (2), but it remains statistically significant with a *p*-value of less than 1%. This evidence provides assurance that the positive relation between trust and corporate cash holdings is not driven by any time-invariant country-level characteristics that are not adequately controlled for in our regressions.

3.3. Cross-country variations in the effect of trust on corporate cash holdings

In our baseline regressions, we control for a number of country level variables that are potentially related to both social trust and corporate cash holdings. However, the possibility that many other country level characteristics (observable or unobservable, time-variant or invariant) can drive the relation between trust and corporate cash holdings prevents us from making a causal

statement. To aid in a causal interpretation of the relation between trust and corporate cash holdings, we first investigate whether the relation displays any cross-country (this section) and cross-firm (next section) variations as theory predicts.

Prior literature suggests that trust acts as a substitute for formal institutions at the country level (Guiso, Sapienza, and Zingales, 2004; Carlin, Dorobantu, and Viswanathan, 2009; and Aghion et al. (2010)). Therefore, we expect trust to play a more important role in countries characterized by weaker formal institutions. For example, among countries with more effective investor protection, the probability of managers engaging in opportunistic behavior is lower to begin with, leaving less room for trust as a subjective belief to have an impact. In contrast, in countries with poorer investor protection, the unconditional probability of managers acting against shareholder interests in pursuit of private benefits consumption is higher. It is precisely in these environments that investors' subjective belief about managerial incentive and action will affect their stance toward corporate cash holdings.

We test our conjecture by estimating the regression model specified in equation (2a), in which we interact trust with one of two investor protection measures, the anti-self-dealing index (*AD*) and the rule of law index (*Law*). Table 4 presents the regression results. We find that the standalone term of societal trust continues to have a significantly positive effect on corporate cash holdings. More importantly, the coefficients on the interaction terms, *Trust*×*AD* and *Trust*×*Law*, are negative and significant, suggesting that the positive effect of trust on corporate cash holdings is more pronounced in countries with weaker investor protection. These findings are consistent with our expectation that trust serves as a substitute for a country's formal institutions and therefore is a more important factor driving corporate cash holdings in countries with weaker formal institutions.

3.4. Cross-firm variations in the effect of trust on corporate cash holdings

In this section we explore cross-firm variations in the relation between trust and corporate cash holdings. More specifically, we examine whether the effect of trust on corporate cash holdings is more pronounced in firms associated with greater information asymmetry. The rationale behind this conjecture is that trust plays a more important role in situations characterized by incomplete information and higher information opacity (Williamson (1993) and Guiso, Sapienza, and Zingales, 2008a). For example, there would not be any room for trust as a subjective belief if firms operate in a fully transparent environment and investors have complete information about managerial incentives and actions.

To test our conjecture, we estimate the regression model specified in equation (2ii), where we interact trust with a proxy for firm information asymmetry. We use the following four measures of information asymmetry: firm size (*Size*), cash flow volatility (*CFVol*), the market-to-book ratios (*MB*), and a high-tech industry indicator (*HighTech*).¹⁰ We expect smaller firms, firms with higher cash flow volatility, more growth opportunities, and from the high-tech industries are associated with greater information asymmetry. Table 5 presents the regression results. We find that the standalone term of social trust continues to have a significantly positive coefficient in all four columns. More importantly, the coefficients on the four interaction terms suggest that the positive effect of trust on corporate cash holding is more pronounced in firms that are smaller, with higher cash flow volatility, more growth opportunities, and from high-tech industries, all situations associated with greater information asymmetry. These results are consistent with our conjecture that trust plays a more important role in determining corporate cash holdings when firms are associated with greater information asymmetry.

¹⁰ We use the high-tech industry definition in Loughran and Ritter (2004).

Collectively, the cross-sectional variations in the effect of trust on corporate cash holdings along country-level formal institutions (section 3.3) and firm-level information asymmetry (section 3.4) point to a causal relationship between trust and corporate cash holdings. In the next two sections, we turn to a quasi-natural experiment setting and an instrumental variable (IV) approach, respectively, to further address the causality issue.

3.5. Negative shocks to investor confidence in formal institutions and the effect of trust

Natural or quasi-natural experiments are powerful settings that can allow researchers to gain more traction with their identification efforts. Ideally we would like to have an experiment that creates exogenous shocks to the level of social trust in a country or countries and then conduct a difference-in-difference (DiD) type of analysis with respect to corporate cash holdings. However, given that trust is deeply rooted in a country's ethnic, religious, social and historical backgrounds and thus is slow-moving, such shocks to social trust are rare.¹¹ As an alternative, we lean on the substitutive relationship between social trust and formal institutions established in the literature (e.g., Aghion et al. (2010)) and exploit shocks to the perceived strength of a country's formal institutions. More specifically, we utilize the collapse of Enron and WorldCom amidst a spate of corporate scandals in 2001 and 2002, which severely undermined world-wide investors' confidence in formal institutions' ability to protect investors from managerial malfeasance. Based on the aforementioned substitutive relationship, we expect the perceived weakening of formal institutions to elevate the importance of social trust, which reflects investors' *subjective* belief of managerial opportunism. In other words, we expect to observe an enhanced effect of trust on corporate cash holdings in the post-Enron/WorldCom era.

¹¹ Since any exogenous shock to a country's social trust will potentially impact all firms in that country, a DiD analysis will have to face the challenge of finding control firms from another country that are comparable to firms in the treatment country.

To put our conjecture to test, we create a dummy variable, *Post Enron/WorldCom*, that is equal to one for all firm-year observations from year 2003 onward and zero otherwise. We then interact this new variable with our social trust measure. For this particular analysis, we end the sample period in 2007 to avoid potential confounding effects of the 2008-2009 financial crisis. While the most recent financial crisis clearly represents another negative shock to investors' confidence in the financial system and formal institutions in general, it also has a direct impact on corporate cash policy through the capital market upheaval and severe economic recession it brought forth.

Table 6 presents the regression results. In column (1), we reestimate the baseline regression of corporate cash holdings as specified in equation (1) and verify that the coefficient on social trust is still positive and significant for the shortened sample period of 1995 to 2007. The model specification for column (2) includes the aforementioned interaction term. We find that the standalone term of social trust continues to have a significantly positive coefficient. More importantly, the interaction term between social trust and the post-Enron/WorldCom dummy has a significantly positive coefficient as well. This suggests that the marginal impact of social trust on corporate cash holding is more pronounced following the collapse of Enron/WorldCom, which is consistent with our conjecture that investors' subjective belief of managerial incentives and behavior takes on a more important role when laws and regulations are considered ineffective at preventing corporate malfeasance.

3.6. Identification using instrumental variable

Even though the results presented in the previous subsections are supportive of a causal interpretation that higher trust leads to higher corporate cash holdings, we more directly address the "omitted variable" problem and related endogeneity concerns by employing a two-stage least

square (2SLS) regression framework. We use a country's ethnic homogeneity as an instrument for the level of societal trust. Putnam (2007) shows that social trust increases with ethnic homogeneity, as a more uniform ethnic makeup in a country brings about common traditions, social norms, and cultural values, thereby fostering trust. On the other hand, it is difficult to establish a direct economic link between a country's ethnic homogeneity and corporate cash policy.

We obtain information on the ethnicity of a country's citizens from the World Value Survey. Based on the survey responses, we compute a Herfindahl index for the ethnicity of a country's population, with a higher value of the Herfindahl index indicating an ethnically more homogenous country. We use this ethnic homogeneity measure as the instrumental variable for trust in the first stage regression of the 2SLS framework.

We present the 2SLS regression results in Table 7. Column (1) reports the results from the first stage regression, where the dependent variable is the level of a country's social trust. Consistent with Putnam (2007), we find that the ethnic homogeneity measure has a significantly positive effect on trust. Therefore, our instrumental variable satisfies the relevance condition. Column (2) presents the second-stage regression results, with the dependent variable being the cash-to-assets ratio. Consistent with the results in Table 3, we find that the instrumented version of trust obtained from column (1) continues to have a positive and significant effect on corporate cash holdings, suggesting that our main findings are robust to correcting for the endogeneity of trust.¹²

3.7. Validity of the trust measure

So far our analysis is based on a measure of trust of average citizens in a country. As noted by Guiso, Sapienza, and Zingales (2010), an individual's response to this question captures her level

¹² For robustness, we also measure a country's ethnic homogeneity based on whether the largest ethnic group accounts for at least 50%, 60%, ..., or 100% of the survey respondents in that country. We use these alternative measures as instruments in the 2SLS regression and our results continue to hold.

of generalized trust and thus reflects the general culture in one specific country. This is consistent with much of the literature that examines how economic outcomes are related to trust and culture in general.¹³ However, one potential drawback of the trust measure in our context is that the trust of average citizens may not accurately reflect the trust of investors in firms. This is ultimately an empirical question and is best addressed by constructing a measure of trust for stock investors in each country. However, we are not aware of any database that provides such information. As a result, we take several approaches to mitigate the measurement concerns.

3.7.1. Trust of individuals with high income

As the first approach, we create an alternative trust measure based only on the responses of survey participants who are in the higher income stratospheres of their respective countries. These wealthier individuals are more likely to invest in the stock market (Guiso, Sapienza, and Zingales (2008) and therefore the trust measure constructed based on them should be more representative of the participating shareholders. The WVS puts survey participants from each country into deciles based on their responses to an income-level related question. We construct a new trust measure based on individuals with above-country-median incomes (deciles 6 to 10). We reestimate regression model (1) with this new trust measure and present the results in column (1) of Table 8. We find that the new trust measure still has a significant and positive coefficient.

3.7.2. Trust of countries with higher homogeneity

¹³ Examples of such studies the international context include Guiso, Sapienza, and Zingales (2009), Ahern, Daminielli, and Fracassi (2012), Giannetti and Yafeh (2012), Bottazzi, Da Rin, and Hellmann (2011), and Chui, Titman, and Wei (2010), while examples in the domestic U.S. context include Hilary and Hui (2009), Kumar, Page, and Spalt (2012), and Shu, Sulaeman, and Yeung (2012). A notable exception is Guiso, Sapienza, and Zingales (2008), who relate the level of trust of individual Dutch households to their stock market participation decisions.

As the second approach, we examine the robustness of our findings in subsamples of countries with higher religious or ethnic homogeneity, since religion and ethnicity are two important determinants of trust (Guiso, Sapienza, and Zingales (2006)). Ceteris paribus, in religiously or ethnically more homogenous countries, shareholders are more likely to have the same religious or ethnic background as the average citizens and thus share the same level of trust. We take the responses of WVS participants to the question about religious denomination and the question about ethnic group. We define a religious denomination or ethnic group as dominant if it accounts for at least 50% of the survey participants in a country. We then re-estimate our regression model (1) in countries with a dominant religion or ethnicity and present the results in columns (2) and (3) of Table 8. We find that social trust continues to have a significant and positive coefficient in both subsamples of more homogenous countries.

3.7.3. Trust in firms with lower foreign ownership

As the third approach, we investigate the role of trust in firms with lower foreign institutional ownership, since foreign investors are unlikely to share the same level of trust as a country's domestic investors. We construct the firm level foreign institutional ownership measure using the global institutional ownership data from FactSet's LionShares database, which has previously been used in Ferreira and Matos (2008), Ferreira, Massa, and Matos (2010), and Aggarwal, Erel, Ferreira, and Matos (2011).¹⁴ We then partition our sample based on whether a firm's foreign institutional ownership in a given year is below the median of its corresponding country-year cohort. We re-estimate our regression model (1) in the subsample of firms with

¹⁴ Since the LionShares data are available only from 1999, all our analyses using institutional ownership data are limited to firm-year observations from 1999 onward.

below-median foreign institutional ownership and present the results in column (4) of Table 8. We again find that the coefficient on trust remains significant and positive.

Overall, the positive relation between social trust and corporate cash holdings continues to hold when (1) we construct a trust measure based on individuals who are more likely to be participating shareholders; or (2) we focus on subsamples of countries where average citizens are more representative of participating shareholders; or (3) we focus on subsamples of firms whose investors are more likely to be domestic citizens. These results suggest the effect of trust on corporate cash holdings persists in conditions where we refine the validity of our trust measure, reinforcing the evidence based on the trust of average citizens.

3.8. Robustness tests

Our results survive a battery of additional sensitivity analyses. First, following Dittmar et al. (2003), we examine whether our results are robust to using the logarithmic transformation of the cash-to-assets ratio. This is to address the concern that the original cash measure is subject to extreme values and skewed distributions. Results presented in column (1) of Table 9 indicate that social trust continues to have a significant and positive effect on corporate cash holdings.

We next check the robustness of our results to two different measures of trust. Specifically, we re-estimate equation (1) using an alternative definition of societal trust, namely a trust index calculated for each country based on the following formula: $100 + (\% \text{ of participants who respond "most people can be trusted"}) - (\% \text{ of participants who respond "can't be too careful"})$. Results presented in Column (2) of Table 9 show that this alternative definition of trust continues to have a positive and significant effect on corporate cash holdings. We also follow Guiso, Sapienza, and Zingales (2008) and Aghion et al. (2010) in replacing the generalized trust measure we currently use with a measure of trust specifically toward major corporations. Results in column (3) of Table 9

show that the positive and significant effect of trust on corporate cash holdings remains.¹⁵ It is worth noting that the coefficient on the measure of trust in corporations is much larger than that of general trust in Table 3.

We further check whether our results are driven by omitted country-level characteristics. In column (4) of Table 9, we control for other dimensions of culture such as hierarchy and individualism. Similar to the construction of the trust measure, we use the average response of WVS survey participants in each country year to measure the degree of hierarchy and individualism in a society. The detailed definitions of these two variables are in the appendix. The association between hierarchy and individualism and corporate cash holdings are not clear *ex ante*. Results show that *Hierarchy* has a positive and significant coefficient while the coefficient on *Individualism* is negative and insignificant. However, more important for our purpose, we find that trust continues to significantly increase corporate cash holdings. In column (5) of Table 9, we control for the four cultural indices constructed by Hofstede (1980) to capture individualism, power distance, uncertainty avoidance, and masculinity in the regression. The results show three of these cultural measures have significant impact on corporate cash holdings, while trust continues to have a significant and positive coefficient, suggesting that the effect of trust on corporate cash holdings is incremental to other dimensions of culture.

Finally, given the disproportionately large representation of firms from the US and Japan in our sample, we evaluate the concern whether our results are primarily driven by one specific country in our sample. First, we re-estimate model (1) by excluding US and Japan and report the results in column (6) of Table 9. Social trust continues to have a significantly positive effect on corporate cash holdings. Second, we re-estimate model (1) at the aggregate country level, where we

¹⁵ We lose some observations in column (3) to (5) due to additional data requirement.

take the annual country average of each variable in the model.¹⁶ Column (7) of Table 9 presents the regression results. We find that despite the much smaller sample size, societal trust still has a significant and positive effect on corporate cash holdings, reinforcing the evidence from the firm-year analysis in Table 3.

3.9. Trust and the market value of cash

So far, we have presented robust findings that social trust leads to higher corporate cash holdings. These findings are consistent with the hypothesis that investors in high-trust countries assign a lower probability to managers acting opportunistically against their interests and thus are less concerned about cash reserve buildup by firms. However, for larger corporate cash holdings in more trusting countries to be an equilibrium outcome, managers in those countries must indeed engage in less shareholder expropriation and abuse of corporate resources. A direct implication of this argument is that the market value of a firm's cash holdings should be higher in more-trusting countries. We test this conjecture by estimating our regression model (3), where the dependent variable is a firm's market value and the independent variable of interest is the interaction term between *Trust* and *Cash*.

Table 10 presents the results. The coefficient estimates reported in column (1) indicate that corporate cash holdings contribute positively and significantly to firm value. More importantly, the contribution of cash to firm value is greater in high-trust countries, as evidenced by the significantly positive coefficient on the interaction term between social trust and corporate cash holdings. In column (2), we add the interaction term between the anti-self-dealing (AD) index and cash to the regression. Consistent with Pinkowitz, Stulz, and Williamson (2006), we find a positive and

¹⁶ The country aggregate analysis treats each country-year as one observations regardless how many firms a country has in a given year.

significant coefficient on $AD \times Cash$, suggesting that the market value of cash is higher in countries with better investor protection. More relevant for our purpose, the coefficient on the interaction term $Trust \times Cash$ continues to be positive and significant. Finally, our results remain intact when we control for country fixed effects in column (3).¹⁷ The robust evidence of cash contributing more to firm value in high-trust countries provides a rational justification for investors' subjective belief about managerial incentives and actions and their willingness to allow large cash holdings by firms in high-trust countries.

4. Conclusion

In this paper, we examine whether the level of trust in a country affects corporate cash policy. We explore two competing hypotheses. On the one hand, a higher level of trust mitigates shareholders' concern of moral hazard. Therefore, they allow firms to maintain larger cash holdings. On the other hand, investors in a high-trust country are more willing to provide capital to firms, making external finance more accessible. This reduces firms' precautionary saving motive and results in lower corporate cash reserve. We analyze a large sample of firm-year observations from 41 countries and find that firms in high trust countries hold significantly more cash. The positive effect of trust on corporate cash holdings is robust to alternative measures of cash, alternative measures of trust, controlling for a wide array of country-level characteristics and even country fixed effects, as well as different sample constructions. These results are consistent with the hypothesis that outside shareholders in high-trust countries are more trusting of managers with the deployment of cash resources and thus more tolerant of large corporate cash holdings.

¹⁷ Controlling for country fixed effects removes the standalone term of the AD index from the regression, because there is no time-series variation in a country's AD index.

In further analysis, we find that the positive effect of trust on corporate cash holdings is more pronounced in countries with weaker formal institutions and for firms associated with greater information asymmetry. These cross-sectional variations point to a casual interpretation that higher trust leads to more cash holdings by firms. We further directly address the causality issue by estimating two-stage least squares (2SLS) regressions and find that our results continue to hold after correcting for endogeneity. Lastly, we find that the market value of corporate cash holdings is significantly higher in high-trust countries, justifying investors' subjective belief about managerial incentives and actions in these countries.

Overall, we identify societal trust as a new factor that can help explain cross-country variations in corporate cash holdings. Our findings suggest corporate cash policy is not only shaped by formal institutions but also informal ones such as culture and, in particular, social trust. Moreover, our findings that firms in high-trust countries have more liquid assets at their disposal and they manage these assets more efficiently provide a micro-level mechanism for how trust increases the aggregate investment and growth in an economy.

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Appendix

Variables	Definition
Cash	Cash and equivalents divided by total assets minus cash and its equivalents
Trust	Based on responses to the WVS question: <i>Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?</i> We recode the response to this question to 1 if a survey participant reports that most people can be trusted and 0 otherwise and then calculate the mean of the response in each country year. Higher index values correspond to higher trust. (Source: World Value Survey)
AD	Equal to the sum of six subindices at the country level that assess the possibility of proxy voting by mail, blocking shares before a shareholder meeting, cumulative voting, oppressed minority, preemptive rights, and the percentage of share capital required to call an extraordinary shareholder meeting, the measure is standardized to 0 to 1. (Country level, time invariant). (Source: Djankov et al. (2008))
Law	Measures the strength and impartiality of the legal system and of the popular observance of the law (measured at the country level, time invariant), the measure is standardized to 0 to 1. (Source: International Country Risk Guide)
Corrp	A corruption index that measures the level of corruption within a country's political system (Source: International Country Risk Guide)
Pcred	Credit market development, measured as ratio of credit from deposit taking financial institutions to the private sector relative to GDP (Source: IMF International Financial Statistics database).
Stkmkt	Stock market development, measured as market value of listed firms as a percentage of GDP. (Source: World Bank).
GDP	Log of GDP per capita in US \$ (Source: World Bank).
Hierarchy	Based on responses to the WVS question: <i>People have different ideas about following instructions at work. Some say that one should follow one's superior's instructions even when one does not fully agree with them. Others say that one should follow one's superior's instructions only when one is convinced that they are right. With which of these two opinions do you agree?</i> <ol style="list-style-type: none"> 1. Should follow instructions 2. Must be convinced first <p>We recode the response to the above question to 1 if a survey participant agrees with the first opinion and 0 otherwise, and then take the average of the response in each country year. Higher index values correspond to greater hierarchy.</p>
Individualism	Based on responses to the WVS question: <i>How would you place your views on this scale? 1 means you completely agree with statement (1); 10 means you agree completely with statement (2); and if your views fall somewhere in between, you can</i>

	<p><i>choose any number in between.</i></p> <p><i>1. Incomes should be made more equal</i></p> <p><i>2. We need larger income differences as incentives for individual effort</i></p> <p>We rescale the response of each survey participant to this question to be between 0 and 1, with 0 representing completely agreeing with the first statement and 1 representing completely agreeing with the second statement, and then take the average of the response in each country year. Higher index values correspond to more individualism.</p>
MB	Market value of equity divided by book value of equity
Growth	Sales growth, sales of this year minus sales of last year divided by sales of last year
CFVol	Cash flow volatility, standard deviation of cash flow in previous five years
ROA	Return on total assets, net income divided by total assets
NWC	Current assets minus current liabilities minus cash and equivalents
Payer	Indicator variable equal to one if a firm pays dividend, zero otherwise
Capex	Ratio of capital expenditures to total assets
R&D	Ratio of R&D expenditures to total assets
MV	Market value of equity plus book value of debt, divided by book value of total assets

Table 1. Sample distribution

This table presents the year and country distributions of our sample and some main variables. All variables are defined in the Appendix.

Panel A: Year distribution							
Year	N	Year	N	Year	N	Year	N
1995	3,790	1999	5,714	2003	8,038	2007	9,938
1996	4,545	2000	6,284	2004	8,480	2008	10,434
1997	5,129	2001	6,822	2005	9,169	2009	11,705
1998	5,443	2002	7,545	2006	9,304	2010	10,040
Panel B: Country distribution							
Country	N	Cash/Net Assets		Trust			
Low-Trust Countries							
Argentina	47	0.10		0.17			
Brazil	1,272	0.15		0.09			
Chile	926	0.07		0.19			
Czech Republic	70	0.10		0.26			
Egypt, Arab Rep.	45	0.15		0.18			
France	5,338	0.13		0.23			
Greece	704	0.09		0.23			
Hungary	20	0.09		0.21			
India	6,977	0.07		0.28			
Israel	552	0.22		0.23			
Malaysia	2,479	0.13		0.09			
Mexico	415	0.09		0.20			
Morocco	40	0.08		0.19			
Pakistan	625	0.13		0.27			
Peru	43	0.11		0.09			
Philippines	785	0.11		0.09			
Poland	160	0.10		0.28			
Portugal	394	0.06		0.16			
Russian Federation	288	0.09		0.26			
Singapore	2,957	0.18		0.15			
Slovak Republic	26	0.04		0.15			
South Africa	1,588	0.13		0.14			
Turkey	241	0.11		0.11			
	26,107	0.12		0.20			
High-Trust Countries							
Australia	5,626	0.16		0.44			
Austria	670	0.13		0.34			

Belgium	846	0.13	0.31
Canada	3,469	0.15	0.53
China	2,288	0.20	0.53
Denmark	1,222	0.15	0.64
Finland	1,169	0.13	0.60
Germany	541	0.17	0.39
Hong Kong, China	3,590	0.24	0.41
Indonesia	244	0.14	0.43
Ireland	552	0.17	0.39
Italy	1,833	0.13	0.33
Japan	19,363	0.16	0.41
Jordan	47	0.16	0.30
Korea, Rep.	6,236	0.14	0.29
Netherlands	1,637	0.11	0.58
New Zealand	498	0.07	0.50
Norway	1,032	0.17	0.65
Spain	1,064	0.09	0.37
Sweden	1,791	0.15	0.66
Switzerland	363	0.19	0.55
Thailand	928	0.11	0.42
United Kingdom	13,368	0.15	0.34
United States	28,011	0.23	0.51
	97,644	0.18	0.44

Table 2. Summary statistics

This table presents the summary statistics of main variables in our sample. Sample period is 1995-2010. All variables are defined in the Appendix.

	N	Mean	Std	p10	p25	p50	p75	p95
Cash/Assets	122,380	0.165	0.175	0.015	0.042	0.105	0.222	0.557
Trust	122,380	0.392	0.136	0.213	0.289	0.411	0.511	0.574
AD	122,380	0.620	0.154	0.500	0.500	0.583	0.833	0.833
Law	122,380	0.818	0.123	0.670	0.830	0.830	0.920	1.000
Corrp	122,380	-0.923	0.834	-1.711	-1.711	-1.327	-0.558	0.595
Pcred	122,380	1.076	0.372	0.350	0.870	1.070	1.460	1.460
Stkmkt	122,380	1.144	0.800	0.455	0.671	1.048	1.370	2.079
GDP	122,380	9.955	1.076	8.229	9.973	10.364	10.545	10.750
MV	122,380	1.663	1.361	0.774	0.949	1.220	1.799	4.201
Size	122,380	5.724	2.045	3.140	4.333	5.650	7.030	9.357
MB	122,380	2.598	3.500	0.521	0.871	1.547	2.819	8.146
Growth	122,380	0.512	1.671	-0.217	-0.026	0.156	0.451	2.044
CFVol	122,380	0.091	0.153	0.013	0.023	0.044	0.091	0.325
ROA	122,380	0.041	0.170	-0.094	0.018	0.065	0.116	0.229
NWC	122,380	-0.293	0.695	-0.659	-0.458	-0.277	-0.107	0.149
Payer	122,380	0.633	0.482	0.000	0.000	1.000	1.000	1.000
Capex	122,380	0.056	0.058	0.007	0.017	0.038	0.072	0.175
R&D	122,380	0.021	0.052	0.000	0.000	0.000	0.013	0.124

Table 3. Trust and corporate cash holdings

This table presents the estimation results of equation (1) with cash holdings as the dependent variable. In the parentheses below coefficient estimates are robust p-values based on standard errors adjusted for heteroskedasticity and firm-level clustering. All continuous variables are winsorized at the 1st and 99th percentile. *, **, *** denote significance at the 0.1, 0.05, and 0.01 level, respectively. All variables are defined in the Appendix.

	(1)	(2)	(3)
Trust	0.295*** (0.000)	0.228*** (0.000)	0.163*** (0.008)
AD		-0.245*** (0.000)	
Law		-0.389*** (0.000)	
Corrp		-0.008 (0.555)	
Pcred		0.061*** (0.000)	
Stkmkt		0.000*** (0.000)	0.000*** (0.004)
GDP		0.018*** (0.003)	0.092*** (0.000)
Size	-0.028*** (0.000)	-0.035*** (0.000)	-0.038*** (0.000)
MB	0.009*** (0.000)	0.008*** (0.000)	0.008*** (0.000)
Growth	0.021*** (0.000)	0.022*** (0.000)	0.021*** (0.000)
CFVol	0.433*** (0.000)	0.425*** (0.000)	0.422*** (0.000)
ROA	-0.060* (0.084)	-0.060* (0.075)	-0.059* (0.080)
NWC	-0.124 (0.285)	-0.123 (0.288)	-0.123 (0.290)
Payer	-0.039*** (0.000)	-0.008 (0.216)	0.002 (0.750)
Capex	-1.276*** (0.000)	-1.198*** (0.000)	-1.206*** (0.000)
R&D	3.728*** (0.000)	3.643*** (0.000)	3.623*** (0.000)
Constant	0.180*** (0.000)	0.406*** (0.000)	-0.602*** (0.000)
Year Effect	Yes	Yes	Yes
Industry Effect	Yes	Yes	Yes
Country Effect	No	No	Yes
Observations	122,380	122,380	122,380
Adj. R-squared	0.27	0.27	0.28

Table 4. Cross-country variations in the effect of trust on corporate cash holdings

This table presents the estimation results of equations (2a) with cash holdings as the dependent variable. In the parentheses below coefficient estimates are robust p-values based on standard errors adjusted for heteroskedasticity and firm-level clustering. All continuous variables are winsorized at the 1st and 99th percentile. *, **, *** denote significance at the 0.1, 0.05, and 0.01 level, respectively. The definitions of all other variables are in the Appendix.

	(1)	(2)
Trust	0.766*** (0.000)	0.530*** (0.000)
Trust*AD	-0.868*** (0.000)	
Trust*Law		-0.363*** (0.005)
AD	0.075 (0.127)	-0.224*** (0.000)
Law	-0.343*** (0.000)	-0.317*** (0.000)
Corrp	-0.001 (0.955)	-0.013 (0.325)
Pcred	0.041*** (0.004)	0.048*** (0.001)
Stkmkt	0.000*** (0.000)	0.000*** (0.000)
GDP	0.027*** (0.000)	0.021*** (0.001)
Size	-0.036*** (0.000)	-0.035*** (0.000)
MB	0.008*** (0.000)	0.008*** (0.000)
Growth	0.021*** (0.000)	0.022*** (0.000)
CFVol	0.425*** (0.000)	0.425*** (0.000)
ROA	-0.059* (0.078)	-0.059* (0.083)
NWC	-0.123 (0.288)	-0.123 (0.288)
Payer	-0.007 (0.265)	-0.008 (0.206)
Capex	-1.203*** (0.000)	-1.196*** (0.000)
R&D	3.645*** (0.000)	3.643*** (0.000)
Constant	0.099 (0.171)	0.314*** (0.000)
Industry and Year Effects	Included	Included
Observations	122,380	122,380
Adj. R-squared	0.27	0.27

Table 5. Cross-firm variations in the effect of trust on corporate cash holdings

This table presents the estimation results of equation (2b). The dependent variable is corporate cash holdings. In the parentheses below coefficient estimates are robust p-values based on standard errors adjusted for heteroskedasticity and firm-level clustering. All continuous variables are winsorized at the 1st and 99th percentile. *, **, *** denote significance at the 0.1, 0.05, and 0.01 level, respectively. All variables are defined in the Appendix.

	(1)	(2)	(3)	(4)
Trust	0.770*** (0.000)	0.124*** (0.000)	0.162*** (0.000)	0.185*** (0.000)
Trust*Size	-0.099*** (0.000)			
Trust*CFVol		1.256*** (0.000)		
Trust*MB			0.030*** (0.000)	
Trust*HighTech				0.096*** (0.000)
AD	-0.249*** (0.000)	-0.233*** (0.000)	-0.238*** (0.000)	-0.234*** (0.000)
Law	-0.349*** (0.000)	-0.368*** (0.000)	-0.385*** (0.000)	-0.395*** (0.000)
Corrp	-0.010 (0.423)	-0.005 (0.671)	-0.007 (0.592)	-0.008 (0.539)
Pcred	0.080*** (0.000)	0.064*** (0.000)	0.057*** (0.000)	0.061*** (0.000)
Stkmkt	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
GDP	0.008 (0.159)	0.017*** (0.005)	0.019*** (0.002)	0.018*** (0.003)
Size	0.005 (0.235)	-0.035*** (0.000)	-0.035*** (0.000)	-0.035*** (0.000)
MB	0.008*** (0.000)	0.008*** (0.000)	-0.004 (0.232)	0.008*** (0.000)
Growth	0.021*** (0.000)	0.021*** (0.000)	0.021*** (0.000)	-0.019*** (0.000)
CFVol	0.414*** (0.000)	-0.109 (0.317)	0.424*** (0.000)	0.422*** (0.000)
ROA	-0.054 (0.107)	-0.049 (0.146)	-0.057* (0.089)	-0.057* (0.092)
NWC	-0.123 (0.289)	-0.123 (0.290)	-0.123 (0.289)	-0.123 (0.288)
Payer	-0.009 (0.163)	-0.012* (0.069)	-0.008 (0.210)	-0.008 (0.204)
Capex	-1.203*** (0.000)	-1.193*** (0.000)	-1.195*** (0.000)	-1.195*** (0.000)
R&D	3.610*** (0.000)	3.617*** (0.000)	3.633*** (0.000)	3.642*** (0.000)
Constant	0.219***	0.429***	0.416***	0.424***

	(0.000)	(0.000)	(0.000)	(0.000)
Year Effect	Included	Included	Included	Included
Industry Effect	Included	Included	Included	Included
Observations	122,380	122,380	122,380	122,380
Adj. R-squared	0.28	0.27	0.27	0.27

Table 6. Negative shocks to investor confidence in formal institutions and the effect of trust

This table presents the estimation results of an augmented version of equation (1). In particular, we include the interaction term between social trust and a dummy variable, *Post Enron/WorldCom*, as an additional explanatory variable. *Post Enron/WorldCom* is equal to one for firm-years after 2002 and zero otherwise. The dependent variable is a firm's cash-to-assets ratio. In the parentheses below coefficient estimates are robust p-values based on standard errors adjusted for heteroskedasticity and firm-level clustering. All continuous variables are winsorized at the 1st and 99th percentile. *, **, *** denote significance at the 0.1, 0.05, and 0.01 level, respectively. The definitions of all other variables are in the Appendix.

	(1)	(2)
Trust	0.278*** (0.000)	0.217*** (0.000)
Trust*Post Enron/WorldCom		0.107*** (0.006)
Post Enron/WorldCom		-0.015 (0.394)
AD	-0.213*** (0.000)	-0.213*** (0.000)
Law	-0.437*** (0.000)	-0.434*** (0.000)
Corrp	-0.014 (0.389)	-0.014 (0.377)
Pcred	0.058*** (0.000)	0.059*** (0.000)
Stkmkt	0.000*** (0.000)	0.000*** (0.000)
GDP	0.022*** (0.002)	0.021*** (0.003)
Size	-0.035*** (0.000)	-0.035*** (0.000)
MB	0.005** (0.012)	0.005** (0.012)
Growth	0.020*** (0.000)	0.020*** (0.000)
CFVol	0.390*** (0.000)	0.389*** (0.000)
ROA	-0.084** (0.015)	-0.084** (0.014)
NWC	-0.144 (0.289)	-0.144 (0.289)
Payer	-0.025*** (0.001)	-0.025*** (0.001)
Capex	-1.331*** (0.000)	-1.327*** (0.000)
R&D	3.528*** (0.000)	3.528*** (0.000)
Constant	0.356*** (0.000)	0.383*** (0.000)

Industry and Year Effects	Included	Included
Observations	107,530	107,530
Adj. R-squared	0.27	0.27

Table 7. Two-stage least squares (2SLS) regression of corporate cash holdings on trust

This table presents the results of the 2SLS regression of corporate cash holdings on trust. In the first stage, we estimate a regression of trust using a country's ethnic homogeneity as an instrumental variable. In the second stage, we estimate a regression of corporate cash holdings against the instrumented version of trust obtained from the first stage. In the parentheses below coefficient estimates are robust p-values based on standard errors adjusted for heteroskedasticity and firm-level clustering. All continuous variables are winsorized at the 1st and 99th percentile. *, **, *** denote significance at the 0.1, 0.05, and 0.01 level, respectively. All variables are defined in the Appendix.

	1 st stage Dep var: Trust	2 nd stage Dep var: Cash
Trust		0.735*** (0.000)
Ethnic homogeneity	0.047*** (0.000)	
AD	-0.362*** (0.000)	-0.037 (0.620)
Law	0.272*** (0.000)	-0.518*** (0.000)
Corrp	-0.100*** (0.000)	0.038* (0.090)
Pcred	-0.018*** (0.000)	0.059*** (0.000)
Stkmkt	0.000*** (0.000)	0.000*** (0.000)
GDP	-0.041*** (0.000)	0.033*** (0.000)
Size	0.006*** (0.000)	-0.037*** (0.000)
MB	0.000** (0.016)	0.009*** (0.000)
Growth	-0.000*** (0.006)	0.023*** (0.000)
CFVol	0.011*** (0.000)	0.432*** (0.000)
ROA	-0.005* (0.069)	-0.054 (0.115)
NWC	-0.001 (0.205)	-0.125 (0.289)
Payer	-0.004*** (0.002)	-0.011* (0.096)
Capex	-0.011 (0.206)	-1.143*** (0.000)
R&D	0.067*** (0.000)	3.800*** (0.000)
Constant	0.625*** (0.000)	0.066 (0.602)

Year Effect	Included	Included
Industry Effect	Included	Included
Observations	122,380	122,380
Adj. R-squared	0.59	0.27

Table 8. Validity of the trust measure

This table presents regression results that demonstrate the robustness of our findings when the measure of trust is more reflective of the investors who influence corporate cash policy. The dependent variable is corporate cash holdings. In the parentheses below coefficient estimates are robust p-values based on standard errors adjusted for heteroskedasticity and firm-level clustering. All continuous variables are winsorized at the 1st and 99th percentile. *, **, *** denote significance at the .1, 0.05, and 0.01 level, respectively. All variables are defined in the Appendix.

Column (1) presents regression results where trust is measured based on wealthier individuals with above-country-median incomes in a country.

Columns (2) and (3) present regression results in subsamples of countries with higher religious or ethnic homogeneity. The responses of WVS participants to the question about religious denomination and the question about ethnic group are obtained from WVS website. We classify a country as of high religious (ethnic) homogeneity if the country has a dominant religion (ethnicity). A religion or ethnicity is defined as dominant if it accounts for at least 50% of the survey participants in a country.

Column (4) present regression results in the subsample of firms whose foreign institutional ownership is below the median of their corresponding country-year cohort. Institutional ownership data are obtained from FactSet’s LionShares database.

	(1) Trust is based on individuals with Income Above Country Median	(2) Countries with High Religious Homogeneity	(3) Countries with High Ethnic Homogeneity	(4) Firms with Low Foreign Institutional Ownership
Trust	0.231*** (0.000)	0.095*** (0.001)	0.087*** (0.005)	0.245*** (0.000)
AD	-0.245*** (0.000)	0.026 (0.246)	-0.006 (0.855)	-0.192*** (0.000)
Law	-0.394*** (0.000)	-0.239*** (0.000)	-0.058 (0.128)	-0.367*** (0.000)
Corrp	-0.009 (0.501)	-0.044*** (0.000)	0.051*** (0.000)	-0.014 (0.169)
Pcred	0.066*** (0.000)	-0.022* (0.088)	-0.136*** (0.000)	0.025 (0.233)
Stkmkt	0.000***	0.000	0.001***	0.001***

	(0.000)	(0.710)	(0.000)	(0.000)
GDP	0.013**	0.009**	0.050***	0.023***
	(0.034)	(0.021)	(0.000)	(0.000)
Size	-0.036***	-0.029***	-0.037***	-0.040***
	(0.000)	(0.000)	(0.000)	(0.000)
MB	0.008***	-0.008***	-0.003**	0.006***
	(0.000)	(0.000)	(0.012)	(0.001)
Growth	0.021***	0.014***	0.002	0.007**
	(0.000)	(0.000)	(0.471)	(0.018)
CFVol	0.411***	0.413***	0.411***	0.363***
	(0.000)	(0.000)	(0.000)	(0.000)
ROA	-0.060*	0.117***	0.085**	-0.033
	(0.083)	(0.001)	(0.015)	(0.386)
NWC	-0.122	-0.910***	-0.633***	-0.052
	(0.291)	(0.000)	(0.000)	(0.337)
Payer	-0.008	0.031***	0.030***	0.020**
	(0.248)	(0.000)	(0.000)	(0.013)
Capex	-1.217***	-0.637***	-0.907***	-1.110***
	(0.000)	(0.000)	(0.000)	(0.000)
R&D	3.684***	3.116***	3.224***	3.570***
	(0.000)	(0.000)	(0.000)	(0.000)
Constant	0.438***	0.042	-0.110*	0.290***
	(0.000)	(0.398)	(0.052)	(0.000)
Year Effect	Included	Included	Included	Included
Industry Effect	Included	Included	Included	Included
Observations	115,715	73,874	71,142	49,866
Adj. R-squared	0.28	0.35	0.27	0.24

Table 9. Robustness tests

This table presents the results of our robustness tests of the estimation of equation (1). The dependent variable is cash holdings in logarithm form in column (1), level of cash holdings in column (2) to (6), and mean of cash holdings in each country in column (7). Alternative TRUST measures are used in column (2) and (3), where Trust is measured as 100 + (% of participants who respond “most people can be trusted”) – (% of participants who respond “can’t be too careful”) in column (2), and Trust is measured more specifically as people’s confidence in major companies in column (3); more controlled are added to the regressions in column (4) and (5), respectively; US and Japan firms are removed in column (6); and country-year mean regression estimation is shown in column (7), where all firm level variables are converted to their country-year means. Standard errors are clustered at the firm level in columns (1) to (6) and at the country level in column (7). Continuous variables are winsorized at the 1st and 99th percentile. *, **, *** denote significance at the 0.1, 0.05, and 0.01 level, respectively. All variables are defined in the Appendix.

	(1) Ln(Cash)	(2) Time-invariant trust index	(3) Trust in corporations	(4) More culture controls	(5) More culture controls	(6) Exclude US & Japan	(7) Country-year mean
Trust	0.130*** (0.000)	0.108*** (0.000)	0.136** (0.012)	0.270*** (0.000)	0.222*** (0.000)	0.175*** (0.000)	0.063*** (0.000)
Individualism				0.226*** (0.000)	0.017 (0.722)		
Hierarchy				0.013 (0.568)			
Power Distance					0.001*** (0.001)		
Uncertain Avoidance					0.000 (0.121)		
Masculinity					0.000 (0.588)		
AD	-0.134*** (0.000)	-0.268*** (0.000)	-0.379*** (0.000)	-0.214*** (0.000)	-0.216*** (0.000)	-0.041* (0.064)	-0.025** (0.022)
Law	-0.195*** (0.000)	-0.407*** (0.000)	-0.293*** (0.000)	-0.436*** (0.000)	-0.389*** (0.000)	-0.216*** (0.000)	-0.027* (0.088)
Corrp	0.013** (0.047)	-0.016 (0.225)	-0.018 (0.108)	-0.011 (0.397)	-0.026** (0.037)	-0.026*** (0.000)	0.016*** (0.000)
Pcred	0.031*** (0.000)	0.083*** (0.000)	0.056*** (0.000)	0.068*** (0.000)	0.065*** (0.000)	-0.029** (0.031)	-0.000 (0.973)

Stkmkt	0.000*** (0.000)	0.000*** (0.000)	0.001*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
GDP	0.020*** (0.000)	0.013** (0.034)	0.009 (0.101)	0.011* (0.073)	0.019** (0.030)	0.011*** (0.006)	0.007*** (0.006)
Size	-0.019*** (0.000)	-0.035*** (0.000)	-0.037*** (0.000)	-0.036*** (0.000)	-0.037*** (0.000)	-0.033*** (0.000)	-0.005* (0.055)
MB	0.005*** (0.000)	0.008*** (0.000)	0.011*** (0.000)	0.009*** (0.000)	0.010*** (0.000)	-0.009*** (0.000)	-0.002 (0.308)
Growth	0.009*** (0.000)	0.021*** (0.000)	0.023*** (0.000)	0.024*** (0.000)	0.021*** (0.000)	0.007*** (0.001)	0.001 (0.519)
CFVol	0.190*** (0.000)	0.426*** (0.000)	0.414*** (0.000)	0.409*** (0.000)	0.406*** (0.000)	0.384*** (0.000)	0.312*** (0.000)
ROA	0.047*** (0.001)	-0.058* (0.086)	-0.053 (0.152)	-0.080** (0.027)	-0.069** (0.048)	0.086*** (0.006)	0.073 (0.212)
NWC	-0.062 (0.288)	-0.123 (0.288)	-0.106 (0.301)	-0.109 (0.300)	-0.114 (0.297)	-1.005*** (0.000)	-0.228*** (0.000)
Payer	-0.001 (0.832)	-0.011 (0.109)	-0.004 (0.612)	-0.014* (0.056)	-0.017** (0.027)	0.033*** (0.000)	0.010 (0.478)
Capex	-0.570*** (0.000)	-1.198*** (0.000)	-1.252*** (0.000)	-1.239*** (0.000)	-1.243*** (0.000)	-0.670*** (0.000)	-0.171* (0.087)
R&D	1.796*** (0.000)	3.659*** (0.000)	3.707*** (0.000)	3.613*** (0.000)	3.628*** (0.000)	3.089*** (0.000)	1.410*** (0.000)
Constant	0.155*** (0.000)	0.475*** (0.000)	0.528*** (0.000)	0.356*** (0.000)	0.293*** (0.000)	0.009 (0.856)	-0.011 (0.592)
Year Effect	Included	Included	Included	Included	Included	Included	Included
Industry Effect	Included	Included	Included	Included	Included	Included	Included
Observations	122,380	122,380	99,014	100,454	105,472	75,006	549
Adj. R-squared	0.32	0.27	0.28	0.28	0.28	0.35	0.64

Table 10. Trust and the market value of corporate cash holdings

This table summarizes estimation of equation (3) with firm market value as dependent variable. In the parentheses below coefficient estimates are robust p-values based on standard errors adjusted for heteroskedasticity and firm-level clustering. All continuous variables are winsorized at the 1st and 99th percentile. *, **, *** denote significance at the 0.1, 0.05, and 0.01 level, respectively. All variables are defined in the Appendix.

	(1) Firm market value	(2) Firm market value	(3) Firm market value
Trust*Cash	0.242* (0.063)	0.109** (0.029)	0.121*** (0.000)
Trust	0.824*** (0.000)	0.804*** (0.000)	0.202** (0.020)
Cash	0.216*** (0.000)	0.772*** (0.000)	0.389*** (0.001)
AD*Cash		0.667*** (0.000)	0.335*** (0.005)
AD		-0.071 (0.164)	
E	-1.177*** (0.000)	-1.134*** (0.000)	-1.361*** (0.000)
dE _t	0.809*** (0.000)	0.758*** (0.000)	-0.020 (0.547)
dE _{t+1}	-0.076 (0.172)	-0.123** (0.025)	-0.146*** (0.000)
RD	-0.000* (0.069)	-0.000* (0.079)	-0.000 (0.874)
dRD _t	5.919*** (0.000)	5.840*** (0.000)	1.892*** (0.000)
dRD _{t+1}	8.187*** (0.000)	7.910*** (0.000)	4.018*** (0.000)
I	-0.009 (0.982)	1.653*** (0.000)	-10.049*** (0.000)
dI _t	-6.319*** (0.000)	-5.586*** (0.000)	-0.435 (0.179)
dI _{t+1}	-0.722* (0.088)	-0.552 (0.190)	-2.703*** (0.000)
D	-0.024*** (0.000)	-0.020*** (0.000)	-0.011*** (0.000)
dD _t	9.202*** (0.000)	9.018*** (0.000)	3.232*** (0.000)
dD _{t+1}	5.751*** (0.000)	5.602*** (0.000)	2.120*** (0.000)
dNA _t	0.750*** (0.000)	0.666*** (0.000)	0.208*** (0.000)
dNA _{t+1}	0.333*** (0.000)	0.363*** (0.000)	0.152*** (0.000)
dV _{t+1}	0.000 (0.271)	0.000 (0.369)	0.001** (0.026)
Constant	1.147*** (0.000)	0.973*** (0.000)	1.091*** (0.000)

Year Effect	Included	Included	Included
Industry Effect	Included	Included	Included
Country Effect	Not Included	Not Included	Included
Observations	122,380	122,380	122,380
Adj. R-squared	0.30	0.30	0.72
