Investing in Low-Trust Countries: On the Role of Social Trust in the Global Mutual Fund Industry

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Abstract

We hypothesize that social trust, in mitigating contracting incompleteness, may have an important effect on the activeness and effectiveness of delegated portfolio management. Using a complete sample of worldwide open-end mutual funds, we find that trust is positively associated with the activeness of funds and that trust-related active share delivers superior performance (e.g., approximately 2% per year for cross-border investments). Moreover, "trust in the market" and "trust in managers" play important yet different roles for different types of cross-border delegated portfolio management. Our results suggest that trust acts as a fundamental building block for delegated portfolio management.

I.   Introduction

Some 40 years ago, Nobel laureate Kenneth Arrow noted that "[V]irtually every commercial transaction has within itself an element of trust, certainly any

transaction conducted over a period of time" (Arrow (1972)).[1] Such a broad impact of trust is not surprising. Given that the complex nature of a modern economy makes it almost impossible to write complete contracts that encompass all states of nature, trust plays a major role in mitigating such contracting incompleteness (see, e.g., Algan and Cahuc (2014) and Karolyi (2016), for recent surveys).

Contracting incompleteness is particularly important in delegated portfolio management. Take active portfolio management as an example. On the one hand, it represents an implicit contractual commitment in which mutual funds undertake more discretionary actions in exchange for the delivery of a higher return. On the other hand, while it is relatively easy to write a contract that obligates funds to explicitly track their benchmarks, it is almost impossible to write as complete a contract on active management that commits funds to optimally deviate from benchmarks and deliver performance in different states of the economy. Surprisingly, the literature has not yet provided a solid empirical understanding of the impact of trust on such contracting incompleteness.

Our paper aims to bridge this gap by exploring the potential role of trust in active management in the global mutual fund industry. In general, trust mitigates contracting incompleteness because it can reduce the subjective probability that individuals assign to cases of being cheated (Arrow (1972), Gambetta (1988), Putnam, Leonardi, and Nanetti (1993), Williamson (1993), and Fukuyama (1995)). Guiso, Sapienza, and Zingales (2004), (2008) provide an intuitive economic framework to formulate this notion for stock market investors: In making investment decisions, investors assess not only the distribution of returns considered in traditional financial theories but also the subjective probability of being expropriated by the stock market. A higher level of trust means less concern regarding expropriation, which encourages investors to invest more in the market.

In active management, trust can influence investor demand in a similar manner. To see this intuition, consider a case in which investors can invest in an active fund in addition to the market portfolio that promises to deliver some additional return above and beyond market returns (i.e., fund performance), based on its market timing and stock selection abilities. Due to contracting incompleteness (e.g., investors can neither fully observe fund actions nor verify their consequences), investors may worry about (and therefore assign a subjective probability of being cheated as a reduced-form description of the associated risk of) potential expropriation by the fund, which exists in addition to the expropriation risk of the market in which the fund invests.[2] Intuitively, trusting investors should delegate

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[1]Trust, for instance, permeates many areas of economics, from economic growth (Knack and Keefer (1997)) to international trade and investment (Guiso, Sapienza, and Zingales (2009)) and from financial development (Guiso, Sapienza, and Zingales (2004), (2008)) to corporate transactions (Bottazzi, Da Rin, and Hellmann (2016), Duarte, Siegel, and Young (2012), and Ahern, Daminelli, and Fracassi (2015)), firm size (La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997) and Bloom, Sadun, and Reenen (2012)), and information dissemination (Pevzner, Xie, and Xin (2015)).

[2]The mutual fund scandals that occurred in 2003 provide a good example in which retail investors had to worry about the potential expropriation of fund investments (see Houge and Wellman (2005) and Davis, Payne, and McMahan (2007) for more details). In addition to such scandals, mutual funds can also mislead investors and inflate their value by, among other things, window dressing, portfolio pumping, unnecessary portfolio churning, and improper risk taking (e.g., Lakonishok, Shleifer,

more capital to the active fund due to their lower self-assessed probability of being cheated by the fund. This effect can indeed be easily verified if we extend the model of Guiso et al. (2008) to include an active fund (we provide such a theoretical model in the Supplementary Material), which further predicts a positive relationship

Meckling (1976) and Myers and Majluf (1984)) as opposed to mutual trust, which we can refer to as the *breach-of-trust hypothesis.*

Since these competing hypotheses lead to very different normative implications, it is crucial to pin down which one prevails in the real economy. We therefore conduct several steps of analysis to examine these hypotheses based on the complete sample of worldwide open-end mutual funds. We begin by linking social trust to the activeness of domestic equity funds at the country level, whereby the value of trust is taken from the World Values Survey and the European Values Study. We find that the fraction of active funds in the domestic equity mutual fund industry (in terms of total net assets) is in general positively related to the degree of trust in the country. Moreover, the magnitude of this relationship is economically sizable but unlikely to create an overcrowding issue: a 1-standard-deviation increase in trust is linked to 6.2% more active funds in a country.

After sketching the country-level pattern, we move on to fund-level analyses by applying a 2-stage approach to make inferences about both the activeness and the performance of domestic funds across economies with different levels of trust. In the first stage, we explore the relationship between social trust and the degree of fund activeness proxied by "active share" (Cremers and Petajisto (2009)), which is known to play a crucial role in the global mutual fund industry (e.g., Cremers, Ferreira, Matos, and Starks (2016)). In the second stage, we explore the performance of the trust-related active share (i.e., the part of the active share explained by trust in the first stage). The mutual trust hypothesis implies a positive relationship in both stages when funds cater to trusting investors' higher demand for active management and when trusted funds reciprocate with better performance.

Indeed, we find that a higher degree of trust allows domestic funds to be more active and that funds deliver high trust-related performance in return. A 1-standard-deviation increase in trust, for instance, is related to a 3.84% increase in the proportion of the active shares in the panel specification, which further translates into an annual performance of 1.71% rolling alpha and 1.24% in-sample estimated alpha. Given that the mutual fund industry manages trillions of dollars of assets at the country level, the wealth impact of this effect is sizable: unlike fund investors in high-trust countries, those in low-trust countries could lose millions of dollars every year simply due to the lack of trust in the economy.[5] These findings lend initial support to the mutual trust hypothesis instead of the alternative hypotheses.

One limitation of the above analysis is that its focus on domestic funds makes it difficult to further examine the two elements of social trust involved in delegated portfolio management: "trust in managers" (e.g., Gennaioli, Shleifer, and Vishny (2014), (2015)) and "trust in the market" (Guiso et al. (2004), (2008), Georgarakos and Inderst (2014)). These two elements are likely to be different because investors can assign different probabilities to different types of expropriation. However, both are important because a lack of trust in either dimension is

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[5]Another way to interpret this magnitude is to compare this wealth impact to mutual fund fees, which can be explicitly contracted. The average expense ratio charged by the entire exchange-traded fund (ETF) industry and the open-end mutual fund (OEF) industry, for instance, is 37 bps and 1.9%, respectively (Chen, Massa, and Zhang (2019)). Considering the impact of 1.71% as an example, the lack of trust induces a wealth loss equivalent to approximately four times the amount of the average ETF fees and 90% of the average OEF fees.

likely to reduce investors' demand for indirect investment (our model provides a mathematical treatment synchronizing the two properties). The empirical challenge is how to differentiate between the two when they are correlated in a given economy: a more trustworthy market is likely to be built on social norms that also contribute to the trustworthiness of fund managers.

In the second and main step of our analysis, we resort to one important type of management in the global mutual fund industry, *cross-border* delegated portfolio investment, to differentiate the two elements of trust. To see how cross-border delegation can provide a solution, consider the dominating scenario of cross-border capital flows in our sample, in which mutual funds domiciled in a high-trust home country raise capital therein and invest in assets of low-trust target countries. Although investors in general trust fund managers in their home country, investing in less-trustworthy foreign countries requires additional confidence that money will not be easily stolen in these markets. In this case, the more trustworthy a target country is in the investors' view (compared to all potential targets), the willingness of the investors to bear contracting incompleteness and participate in such indirect cross-border investment increases.

The advantage of this setup is that "trust in managers" naturally concentrates in the high-trust home country, while "trust in the market" concentrates in the low-trust target country. Hence, we can still use country-level values of trust to separately proxy for these two mechanisms. This identification strategy, though hardly perfect, allows us to use the previous 2-stage framework to differentiate the influence of "trust in the market" from that of "trust in managers" on cross-border investment. Although bilateral trust (i.e., how people in the home country trust the target country in general) can provide a better proxy for how trustworthy a foreign market is in investors view, this variable is available only for a subsample of countries (e.g., Guiso et al. (2009)). We therefore use country-level trust as our main specification, and we use subsample bilateral trust to further validate the main results.

We find that for funds investing in low-trust countries, "trust in the market" can significantly influence cross-border investment. In particular, funds manage more active shares when the target country has a relatively higher level of trust, and the trust-related active share still delivers higher performance, as predicted by the mutual trust hypothesis. A 1-standard-deviation increase in the trust of the target country is associated with an increase of approximately 10.81% in active shares at the fund level for panel specifications, which further translates into a superior annualized performance of 2.56% rolling alpha using a panel specification and of 2.40% in-sample estimated alpha. Interestingly, this magnitude is higher than that observed for domestic funds, suggesting that trust plays perhaps an even more important role in cross-border investments.

A potential concern is that the influence of "trust in the market" of the target countries can be spuriously related to certain country-level characteristics of the home or target country. Another concern is reverse causality, whereby investors may invest in active funds because of their awareness of superior fund performance, which somehow correlates with social trust. We conduct two tests to address these issues. First, we gauge the cross-border tests on the subsample of funds that raise capital in the United States to invest in countries with a lower level of trust than the United States. This subsample has the advantage that trust (and other

characteristics) of the home country (i.e., United States) is directly controlled for. The impact of trust on both active share and performance in this subsample is on par with that of the whole sample: a 1-standard-deviation increase in trust of a target country generates an increase in active share that translates into an annual performance of 2.35% of rolling alpha and 2.24% of in-sample alpha.

While the U.S. subsample controls for characteristics of the home country, the remaining concern is about those of the target countries. To address this issue, we conduct two endogeneity tests. First, we explore time-series variations in trust based on the Gallup Poll on Americans' attitudes toward foreign countries (e.g., Hwang (2011)). A telling example is the French government's opposition to the Iraq War in 2003, which significantly worsened the attitudes of the U.S. population toward France and therefore shook their trust in the French market. We find that U.S. investors reduced their demand for highly active mutual funds investing in France and that these funds responded reciprocally by reducing fund activeness. In a more general setting, we use *changes* in Americans' attitudes toward other countries as a proxy for plausibly exogenous variations in U.S. investors' trust in these markets. We find that the trust-activeness relationship is enhanced (weakened) when a positive (negative) variation occurs, which also increases (reduces) performance. These results lend support to a causal interpretation of the mutual trust hypothesis.

Since the Gallup Poll scores are only available in the U.S., in the second test, we focus on a subsample of European countries for which we can directly measure bilateral trust in the cross-section, following Guiso et al. (2009). For this subsample, we use country-fixed effects to eliminate the spurious correlation created by time-invariant characteristics of both the home and the target countries. Moreover, by adopting the same generalized method of the moments instrumented variable estimator (GMM-IV) of Guiso et al. (2009), we can further attenuate endogeneity concerns. In particular, Guiso et al. (2009) show that religious similarity and somatic distance (i.e., the average frequency that specific traits such as hair color, height, etc. are present in the population) can help instrument the cultural roots of bilateral trust. These instruments are reasonable for our purpose as well because they are unlikely to directly affect fund activeness (exclusion restriction). We find that, whether instrumented or not, bilateral trust plays a very similar role in active share and performance among European countries. Since the results are unlikely to be driven by reverse causality as well, these two subsample tests mitigate endogeneity concerns.

One interesting finding in the above "investing in low-trust countries" analysis is that "trust in managers" does not seem to exert a significant influence. However, how general is this result? Does it imply that cultural considerations of the market dominate those of the managers in delegated active portfolio management? Or could it be due to a lack of variation in the trust variable among high-trust countries that reduces statistical power?

To gain intuition about these important questions, in our third-step analysis, we consider the reverse "investing in high-trust countries" scenario, in which funds invest in countries that have a higher surveyed value of trust than their home country. Our striking finding is that "trust in managers" now dominates the influence on fund activeness and performance. Although this reverse scenario occurs less frequently in the global mutual fund industry, its economic magnitude is nonetheless sizable. A 1-standard-deviation increase in trust generates an increase

in the active share that translates into an annual performance of 1.34% in terms of rolling alpha and 1.17% in terms of in-sample alpha if we use a panel specification.

Jointly, therefore, the two mechanisms of social trust seem to exert very different influences on the global mutual fund industry: "trust in the market" affects fund activeness and performance mainly in the "investing in low-trust countries" scenario, whereas "trust in managers" dominates the reverse "investing in high-trust countries" scenario. Are these two observations contradictory? We argue that the answer is no and that their difference may reveal a fundamental property of social trust that affects the mutual fund industry: the marginal impact of trust could decrease when the level of trust increases.[6] With a diminishing impact, the influence of trust is high (low) when it is associated with the low-trust (high-trust) side of cross-border transactions. Trust in the market and trust in managers have a significant influence on the two scenarios of investing in low-trust and high-trust countries, respectively, because they represent the low-trust side of these transactions. Additional tests support this *diminishing impact of trust* interpretation.

The diminishing impact of trust is consistent with, if not a part of, the more general notion that there might exist an optimal level of trust in facilitating economic activities (Butler, Giulian, and Guiso (2016)). Exceeding the optimal level can hurt investor payoffs, as observed in household finance (e.g., Butler et al. (2016) and Jiang and Lim (2018)). To determine whether the above diminishing effect could imply overtrust, we zoom in on the low-trust side of cross-border transactions and examine how the influence of trust varies across quintiles of trust values. Interestingly, we find that the active share impact and performance benefit of trust increase across trust quintiles with a diminishing pattern, but they do not reverse (and is also observed for domestic funds). Unlike the case of household finance, therefore, the global mutual fund industry might have achieved a proper reciprocal relationship between trust and trustworthiness, for instance, due to its high level of competitiveness and more repeated interactions between investors and managers.

In the additional analysis reported in the Supplementary Material, we also show that our results are robust to a battery of robustness checks, including the use of trust measured in earlier waves before our testing period, the exclusion of U.S.-domiciled funds, the employment of a different data sample, the use of alternative variable definitions, the adoption of different factor models in computing fund performance, and controlling for a list of additional country characteristics related to financial development, culture, and institutions. We also show that trust significantly affects the activeness and performance of retail funds but not of institutional funds.

To the best of our knowledge, we are the first to examine the role played by trust in affecting both the activeness and efficiency of delegated portfolio management, extending the aforementioned literature on trust to the global mutual fund industry. In doing so, we are particularly linked to the emerging literature exploring how trust may influence delegated portfolio management (e.g., Choi and Kahan (2007), Guiso et al. (2009), Gennaioli et al. (2015), Kostovetsky (2015), and Gurun, Stoffman, and Yonker (2018)). Most empirical evidence has focused on the demand side of delegated portfolio management, showing how (bilateral) trust

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[6]In the extreme case, if a certain level of trust suffices to mitigate major contracting incompleteness, any further enhancement in social trust beyond this level may not lead to observable influences.

helps to promote portfolio flows among European countries (Guiso et al. (2009)) or how disruptions in trust lead to the opposite effect of capital outflows (Choi and Kahan (2007); Kostovetsky (2015); and Gurun et al. (2018)). The positive relationship between trust and active management documented in this paper is consistent with these findings.[7] We further contribute by demonstrating that trust can influence not only investor demand but also fund performance and that different elements of trust play different roles in guiding cross-border portfolio flows. Trust in this regard serves as an important pillar of delegated portfolio management by shaping the behavior of both the principal and the agent.

Our results also show that the practice of active portfolio management in the mutual fund industry can be directly related to trust. In this way, we complement in .5(exisrating1-2

Values Study (EVS). The WVS covers 97 countries in 6 continents, representing more than 88% of the total world population. The survey was conducted in six waves (1981–1984, 1989–1993, 1994–1998, 1999–2004, 2004–2008, and 2010–2014), in which respondents were randomly chosen to be representative across age, sex, occupation, and geographic region. The EVS survey has been implemented in a similar manner, focusing mostly on European countries. The inclusion of the two databases increases country coverage (e.g., Algan and Cahuc (2014)). Later sections will show that our results are robust if we focus only on WVS.

Following the literature (e.g., Pevzner et al. (2015) and Ahern, Daminelli, and Fracassi (2015)), we rely on the most recent survey wave to measure the level of trust. The WVS and EVS databases also provide other culture-related variables, such as individualism. In addition, we collect other country-level variables from various sources. For example, we obtain data on gross domestic product (GDP), market capitalization, Internet penetration, and education from the World Development Indicators and the Quality of Government Index from La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1999).

We obtain mutual fund information, including fund name, domicile, investment style, initial year, benchmark, monthly returns, turnover, and total net assets (TNA) from Morningstar International, which has complete coverage of open-end mutual funds worldwide beginning in the early 1990s. Morningstar is free from survivorship bias because it includes both active and defunct funds. For each fund, we aggregate multiple share classes at the portfolio level.

We then match these data with holding data from LionShares/FactSet, which covers portfolio equity holdings for institutional investors worldwide. The database provides holdings data for over 5,000 institutions on over 35,000 stocks for a total market value of US$18 trillion as of Dec. 2005. We further exclude these benchmark indices followed by fewer than 10 open-end equity mutual funds, and we match our mutual fund databases with trust and other country-level variables. We include only funds that are not registered offshore, have TNA at or greater than US$2 million in the previous year and possess no missing values for performance information. Our results are robust if we use other cutoff points, such as $5 million TNA, to filter out small funds. Our final sample spans from 2002 to 2015, with 42,156 fund-year observations covering 31 countries. Appendix A provides more details about the selection process and the resulting fund sample.

B.   Main Variables

To measure the level of trust in a given country, the literature typically focuses on the following survey questions in the WVS and EVS (e.g., Guiso et al. (2008) and Ahern, Daminelli, and Fracassi (2015)):

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 be 1 if the participant's answer to this question is that 'most people can be trusted', and 0 otherwise. Country-level trust in any given survey wave is then computed as the average score of the responses from all survey

participants in a specific country. This variable is distributed between 0 and 1 and is quite stable over different survey waves.[8]

To highlight the impact of trust, it is important to control for four sets of other country-level variables that could also affect mutual fund investors. The first set involves a country's formal institutions, which can affect the informational effectiveness of the mutual fund industry (Lin, Massa, and Zhang (2014)). We proxy for the formal institutions of a country by the Quality of Government Index of La Porta et al. (1999), which we refer to as QUA_GOV.[9] This variable ranges from 0 to 1, with higher scores implying better government quality. We provide a graphic view of societal trust and the quality of government in Figure 1. The societal trust distribution is similar to that reported by Pevzner et al. (2015). It is easy to see that the degree of trust differs drastically from formal governance at the country level.

Next, the second set of country characteristics for which we explicitly control involves literacy, as the latter may correlate with trust (e.g., Helliwell and Putnam (2007)) and affect investors' attitudes toward risk above and beyond formal institutions. We first obtain the education level of a country from World Development Indicators (WDI) as the gross enrollment rate for primary, secondary, and tertiary schools combined. We then rescale the gross enrollment rate to be distributed between 0 (worst) and 1 (best) and refer to this variable as EDUCATION.
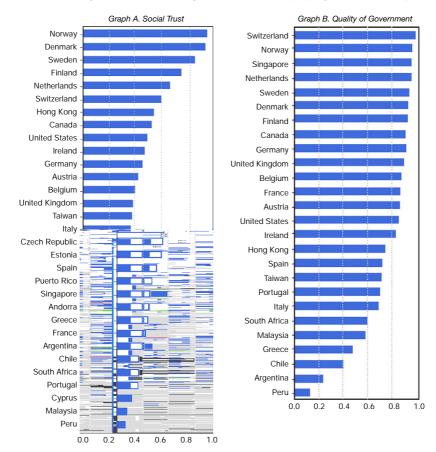
The third set of country characteristics is about information diffusion, which affects the effectiveness of investment decisions. Although public information is relatively more abundant and reliable in countries with good governance (e.g., DeFond, Hung, and Trezevant (2007), Morck, Yeung, and Yu (2000), Jin and Myers (2006), and Bartram, Brown, and Stulz (2012)), the growth of the Internet since the early 2000s has substantially reduced the information cost for investors in all countries. The popularity of Internet-based message boards and social media has both allowed investors to better process information (e.g., Antweiler and Frank (2004) and Chen, De, Hu, and Hwang (2014)) and prompted more firm disclosure, which could reduce the cost of monitoring (one notable example is firms' use of Twitter; see Blankespoor, Miller, and White (2013) and Miller and Skinner (2015)). Both effects can potentially reduce investors' concerns regarding expropriation in a typical principal-agent relationship. To control for this effect, we obtain the number of Internet users per 100 people in a country from the WDI database. We again rescale the variable to range between 0 and 1 (the highest) and refer to this rescaled variable as INFORMATION.

The last set of country characteristics involves financial development, which might also play an important role in affecting the formation of the mutual fund industry (Wurgler (2000)) and be related to trust (Guiso et al. (2004)). Following Wurgler, we obtain the gross domestic product (GDP) and the ratio of market

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[8]In the Supplementary Material, we show that other forms of social capital, such as the degree of individualism and egalitarianism, do not affect the main impact of trust. The construction of these additional variables and their related tests are detailed in Appendix B and in the Supplementary Material.

[9]The index includes the following four dimensions: i) regulation policies related to opening a business and keeping open a business; ii) government corruption; ii) red tape; and iv) facilities for the ease of communication between headquarters and the operation, as well as the quality of transportation. Other variables of formal institutions, such as property rights and contracting institutions (i.e., Acemoglu and Johnson (2005)), lead to similar results, which we report in our Supplementary Material.

FIGURE 1

Trust Index by Country

Figure 1 shows the general social trust and quality of government index (x-axis) by country (y-axis). The general trust in Graph A is based on the World Values Survey and European Values Study, while the quality of government index in Graph B is from La Porta et al. (1999). A larger index value indicates a higher level of trust (or better quality of government) in the sample.

capitalization to GDP (MKTCAP/GDP) from WDI to proxy for the country's size and level of financial development, respectively. We further control for several other indicators of financial development used by La Porta et al. (1997) and Guiso et al. (2004). These additional analyses are tabulated in the Supplementary Material.

We now describe the construction of mutual fund measures. We start with fund-level activeness, which we proxy for using the measure of active shares (Cremers and Petajisto (2009)). The active share of a fund is the share of portfolio holdings that differs from the benchmark index holdings and is computed as follows:

$$\text{ACTIVE\_SHARE} = \frac{1}{2} \sum_{i=1}^{N} \left| w_{\text{fund},i} - w_{\text{benchmark},i} \right|,$$

where $w_{fund,i}$ and $w_{benchmark,i}$ are the portfolio weights of stock i in the fund and its benchmark, respectively, and the sum is taken over the universe of the stock. The benchmark weight is proxied by the average holdings of all the index funds tracking the benchmark.[10] We treat the funds that hold different securities (e.g., common shares and depositary receipts) in the same company as the same ownership stake in the company and sum all holdings as part of the same portfolio holdings.

Using the fund-level measure of activeness, we also proxy for the activeness of the entire *equity* mutual fund industry in a given country. More explicitly, we compute ACTIVE_FUND% as the TNA percentage of active funds among all equity mutual funds in the country, where "active funds" are defined as funds whose active shares are above 0.8. It is important to note that (unreported) results show that using different thresholds to define active funds does not change our results.

To proxy for investors' level of risk tolerance for the mutual fund industry in a given country, we look at the importance of equity funds relative to money market funds in the country. Indeed, equity funds are riskier than bond funds, which are still riskier than money market funds. A higher proportion of equity funds, especially when coupled with a lower proportion of money market funds, implies that investors are willing to take more risk. Accordingly, we compute the TNA percentage of equity and money market mutual funds in the entire mutual fund industry of a country, which we refer to as EQUITY_FUND% and MM_FUND%, respectively.

We differentiate domestic funds from international funds as follows: A fund is defined as "domestic" when more than 80% of the fund assets are invested in the domestic market of a fund (defined as fund sales country or fund domicile country) and as "international" otherwise. In later sections, we also define domestic (international) funds as funds that invest more than (less than) 50% of assets in the domestic market. Our results are robust across these different thresholds.

Fund performance is proxied by the benchmark-adjusted return and the Fama–French–Carhart 4-factor alpha (Carhart (1997)). More specifically, fund alpha is estimated as net-of-risk fund return, where the risk adjustment is based on the fund risk exposure computed either from a 36-month rolling window (i.e., alpha is estimated out of sample[11]) or from the entire sample period (i.e., alpha is estimated in sample[12]). The use of full-sample factor loadings for cross-sectional, risk-adjusted return tests follows Black, Jensen, and Scholes (1972), Fama and French (1992), and Lettau and Ludvigson (2001). Although this performance

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[10]The use of the actual weights of explicitly indexed funds tracking the benchmark has the advantage that some of the weights in the official benchmark include stocks that, in practice, may not be fully investable by mutual funds due to illiquidity or other constraints. See Cremers et al. (2016) for discussions related to the global mutual fund industry.

[11]More specifically, we estimate the factor loadings of funds based on the 36-month period prior to t and then compute the performance of the fund in month t as the difference between the realized fund return in month t (in excess of the risk-free rate) and the realized risk premium in the same month (i.e., the product of the vector of rolling factor loadings times the realized factor return in month t). We then average the monthly performance in a semi-annual period as the performance of the period. Finally, we annualize the performance of funds in each period.

[12]More specifically, we compute fund performance as the difference between the fund returns and the realized risk premium, which is estimated as the realized factor return multiplied by the risk exposure of the funds estimated over the full sample period.

measure is in sample, it has the advantage of obtaining better estimates of the risk coefficients. This in-sample proxy therefore complements the out-of-sample performance measure estimated from rolling windows. We use domestic factors to estimate the fund alpha because these factors are known to significantly affect asset returns, even in the global market (e.g., Griffin (2002) and Fama and French (2012)).

As we will later describe in the robustness section, we also use several alternative ways of defining the factors to control for risk. First, we use the risk factors of the leading investment country of an international fund. Second, we use the holding value (TNA)-weighted average of the local factors of all investing countries. Third, we use a combination of risk factors from both the fund sales country and the leading fund investment country (i.e., 8 factors in total in this case). The results are robust to all these alternative specifications. Therefore, we will focus only on the main one and report the others in the Supplementary Material.

Both the rolling window-based and the whole sample-based alphas are estimated using benchmark-adjusted fund returns. This convention follows Cremers and Petajisto (2009), as otherwise, time-varying investment weights in benchmarks may introduce errors to the alpha estimates. We compute the benchmark-adjusted return as the return of the fund net of the return of its benchmark. Our main tests focus on after-fee returns. Unreported results confirm that using before-fee returns does not change our main results.

We also control for fund-level variables that can be correlated with the activeness and performance of mutual funds. SIZE is the natural logarithm of the TNA in millions of U.S. dollars that the fund reported in the Morningstar. We follow Cremers and Petajisto (2009) and control for the nonlinear effect by including the square of the natural logarithm of TNA, Log(TNA). FLOWS is computed as the percentage growth in TNA in local currency. FUND_AGE is the number of years since the fund initiated. TURNOVER is defined by taking the lesser of purchases or sales (excluding all securities with maturities of less than 1 year) and dividing it by average monthly net assets.

In addition to fund-level control variables, we also control for the benchmark characteristics of a country's fund industry by including the number and level of concentration of the fund benchmark in the domicile country. BENCH_NUMBER is the total number of benchmark indices that mutual funds follow in the country, and BENCH_HHI is measured by the benchmark Herfindahl index of aggregated mutual funds' TNA following this benchmark.

C.   Summary Statistics

Table 1 reports summary statistics for our sample. Panel A tabulates the distribution of the main country-level variables. The last 2 columns list the name of the country with the minimum and maximum values for each variable. Panel B presents the summary statistics for our fund-level variables. On average, the funds in our sample have an active share of 71%, which is comparable to the average level (69%) in Cremers et al. (2016). The mean (median) of fund size is US$ 0.95 (0.16) million, the mean (median) of flows per annum is 0.16 (0.05), the mean (median) of turnover per annum is 0.64 (0.39), and the mean (median) of fund age is 13.54 (11.00). The average fund outperforms its benchmark index by 1.54% per year.

TABLE 1

Summary Statistics

Table 1 reports summary statistics for the data from 2002 to 2015 used in this paper. Panels A and B report the cross-country level and fund-level statistics, respectively, while Panel C reports the correlation coefficient matrix. All of the variables are averaged over the sample period for each country. For the mutual fund activeness variables in Panel A, we present statistics based on both the country of sales (first row) and the country of domicile (second row). Panel C shows the correlation matrix (Pearson's below the diagonal, Spearman's above the diagonal, figures in bold are statistically significant at the 5% level). Variables are defined in Appendix B.

Panel A. Country-Level

Variable							Country/Region Examples	
	N	Mean	Std. Dev.	25%	Median	75%	Minimum	Maximum
TRUST	50	0.389	0.223	0.239	0.352	0.512	Philippines	Norway
QUA_GOV	38	0.672	0.277	0.435	0.739	0.912	Philippines	Switzerland
INFORMATION	47	0.552	0.223	0.368	0.573	0.748	India	Norway
EDUCATION	49	0.458	0.027	0.444	0.454	0.467	India	Belgium
GDP	49	26.738	1.538	26.060	26.662	27.724	Andorra	United States
MKTCAP/GDP	46	0.910	1.266	0.362	0.619	0.975	Argentina	Hong Kong
EQUITY_FUND %	31	0.580	0.166	0.476	0.530	0.702	Spain	Finland
	24	0.538	0.129	0.435	0.535	0.645	Spain	Sweden
MM_FUND %	31	0.079	0.075	0.022	0.052	0.125	Netherlands	France
	24	0.089	0.082	0.025	0.055	0.137	Netherlands	France
ACTIVE_FUND %	31	0.169	0.136	0.081	0.144	0.229	Portugal	Sweden
	24	0.136	0.102	0.043	0.126	0.231	South Africa	Hong Kong
BENCH_NUMBER	31	3.715	1.570	2.201	3.659	4.964	Argentina	Switzerland
	24	4.227	1.247	3.357	4.349	5.261	Andorra	United States
BENCH_HHI	31	0.200	0.146	0.072	0.174	0.261	Switzerland	Argentina
	24	0.159	0.108	0.064	0.158	0.214	Switzerland	Portugal

Panel B. Fund-Level

Variable	*N*	Mean	Std. Dev.	25%	Median	75%
ACTIVE_SHARE	42,156	0.71	0.24	0.59	0.77	0.90
TNA (in billions)	42,156	0.95	4.22	0.04	0.16	0.60
FLOWS (per annum)	42,156	0.16	0.54	−0.17	0.05	0.33
TURNOVER (per annum)	42,156	0.64	0.83	0.08	0.39	0.88
FUND_AGE	42,156	13.54	11.25	6.00	11.00	17.00
BENCH_ADJ_RETURN (%)	42,156	1.54	11.72	−6.37	0.42	8.64
BENCH_ADJ_ROLLING_ALPHA4 (%)	41,606	0.34	14.06	−8.67	−0.95	8.84
BENCH_ADJ_IN_SAMPLE_ALPHA4 (%)	42,156	0.41	14.11	−8.65	−0.88	8.99

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TABLE 1 (continued)

Summary Statistics

Panel C. Correlation Matrix

		1	2	3	4	5	6	7	8	9	10	11
1	TRUST		0.760	0.317	0.706	0.141	0.057	0.320	−0.209	0.443	0.190	−0.220
2	QUA_GOV	0.702		0.426	0.716	0.338	0.053	0.258	−0.112	0.372	0.249	−0.200
3	INFORMATION	0.360	0.414		0.363	0.073	−0.359	−0.061	−0.005	0.228	−0.091	−0.100
4	EDUCATION	0.636	0.701	0.363		0.279	0.038	0.500	−0.343	0.452	0.352	−0.244
5	GDP	0.150	0.326	0.035	0.075		0.029	0.056	−0.214	0.526	0.670	−0.376
6	MKTCAP/GDP	0.085	−0.065	−0.269	0.047	−0.202		0.275	−0.082	−0.161	−0.047	0.241
7	EQUITY_FUND %	0.146	0.151	0.041	0.415	−0.161	0.148		−0.598	0.081	0.044	0.219
8	MM_FUND %	−0.124	−0.167	−0.152	−0.325	−0.020	−0.091	−0.513		−0.121	−0.116	−0.141
9	ACTIVE_FUND %	0.486	0.468	0.110	0.459	0.438	−0.196	0.063	−0.152		0.498	−0.275
10	BENCH_NUMBER	0.218	0.350	0.124	0.340	0.672	−0.152	−0.095	0.100	0.453		−0.697
11	BENCH_HHI	−0.225	−0.203	−0.155	−0.316	−0.345	0.190	0.065	−0.211	−0.299	−0.770	

However, this performance figure is decreased to 0.34% (0.41%) for the rolling (in-sample) 4-factor model estimation.

In Panel C of Table 1, we report the Pearson (lower triangle) and Spearman (upper triangle) correlations of the main variables in Panel A. We find that trust is positively correlated with measures of mutual fund activeness (e.g., EQUITY_FUND% and ACTIVE_FUND%). More active strategies of mutual funds, therefore, correlate with higher levels of societal trust at the country level. However, societal trust itself is positively correlated with QUA_GOV, INFORMATION and EDUCATION. Hence, we must control for these variables in examining the influence of trust on mutual funds.

III.   Trust and Active Investments: Domestic Funds

A.   Trust and the Activeness of the Mutual Fund Industry

In this section, we investigate the general link between trust and the activeness of the mutual fund industry in a market. As can be demonstrated in a simple model extending Guiso et al. (2008), trusting investors have a higher demand for active management. To test this prediction, we begin with a broad country-level analysis in which we regress mutual fund activeness on our proxies of trust and a set of control variables as follows:

$$(1)   \text{MUTUAL\_FUND\_ACTIVENESS}_{j,t} = \alpha + \beta \times \text{TRUST}_{j,t} + \gamma \times M_{j,t} + \varepsilon_{j,t},$$

where $\text{MUTUAL\_FUND\_ACTIVENESS}_{j,t}$ is our proxy of the mutual fund activeness of country j in year t, $\text{TRUST}_{i,t}$ refers to the level of trust observed in the same country, and vector $M_{j,t}$ stacks a list of control variables detailed in Appendix B. We include year fixed effects in all the specifications.

We consider alternative measures to proxy for the market-wide activeness of the domestic mutual fund industry in a given country: the percentage of equity funds and money market funds in terms of TNA out of all available mutual funds in the country and the percentage of active funds out of all existing equity funds, again in terms of TNA. Active funds are defined as funds with active shares exceeding 0.8 (our results are robust to the choice of the threshold).

We report the results in Table 2. In Panel A, the domestic mutual fund industry in a country is defined as the set of mutual funds that raise capital from the same country (i.e., fund sales country as a proxy for the home country), while in Panel B, the domestic mutual fund industry is defined as the set of funds domiciled in the same country. In both cases, the results show a strong and positive relationship between the trust of a country and the degree of activeness of its mutual fund industry. In the case of the fund sales country, for instance, a 1-standard-deviation increase in trust is associated with a 3.2% increase in equity funds in the share of all funds, a 1.2% decrease in money market funds, and, most importantly, a 6.2% increase in actively managed equity funds.[13] All these numbers are highly

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[13]For instance, the regression coefficient of model 1 in Panel A of Table 2 is 0.145. We then estimate the economic magnitude as $0.145 \times 0.223 = 3.2\%$, where 0.223 is the standard deviation of trust across all countries.

TABLE 2

Trust and the Activeness of the Mutual Fund Industry in an Economy

Table 2 reports estimates of the annual country-level regression as follows:

$$\text{MUTUAL\_FUND\_ACTIVENESS}_{j,t} = \alpha + \beta \times \text{TRUST}_{j,t} + \gamma \times M_{j,t} + \varepsilon_{j,t},$$

where **MUTUAL_FUND_ACTIVENESS**$_{j,t}$ are our proxies of mutual fund activeness of country j in year t: equity fund TNA%, money market fund TNA%, benchmark number, benchmark TNA HHI, and active fund TNA% (with active share greater than 0.8). We also use other thresholds to define the ACTIVE_FUND% and report the results in the Supplementary Material. **TRUST**$_{i,t}$ refers to the level of trust observed in the same country, and vector $M_{j,t}$ stacks a list of country-level control variables that are detailed in Appendix B. The sample period is from 2002 to 2015. In Panel A, the unit of observation is the country of sales i in year t, while in Panel B, it is the country of domicile j in year t. Year fixed effects (FE) are included in all of the specifications. Robust t-statistics are reported in parenthesis. *,**, and *** denote significance at the 10%, 5% and 1% levels, respectively.

	EQUITY FUND%	MM FUND%	BENCH NUMBER	BENCH HHI	ACTIVE_FUND%				
	1	2	3	4	5	6	7	8	9
Panel A. By Country of Sales									
TRUST	0.145***	−0.053**	0.586***	−0.110***	0.265***	0.297***	0.269***	0.257***	0.278***
	(5.47)	(−2.36)	(7.86)	(−3.81)	(17.48)	(12.36)	(16.61)	(11.50)	(11.73)
QUA_GOV						−0.080			−0.161**
						(−1.51)			(−1.96)
INFORMATION							0.014		−0.015
							(0.42)		(−0.30)
EDUCATION								−0.035	0.097**
								(−0.76)	(2.03)
log(GDP)	−0.034***	−0.000	0.629***	−0.040***	0.053***	0.055***	0.052***	0.052***	0.055***
	(−6.13)	(−0.08)	(22.61)	(−4.06)	(11.70)	(11.21)	(11.69)	(11.13)	(10.96)
MKTCAP/GDP	0.004	−0.002	−0.050***	0.014***	−0.011***	−0.012***	−0.012***	−0.011***	−0.012***
	(1.14)	(−0.66)	(−3.78)	(4.66)	(−5.58)	(−5.79)	(−5.47)	(−5.55)	(−5.83)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.65	0.36	0.60	0.37	0.66	0.66	0.66	0.66	0.67
N	357	357	357	357	274	274	274	274	274

TABLE 2 (continued)

	EQUITY FUND%	MM FUND%	BENCH NUMBER	BENCH HHI	ACTIVE_FUND%				
	1	2	3	4	5	6	7	8	9
Panel B. By Country of Domicile									
TRUST	0.157***	−0.041**	0.578***	−0.098***	0.262***	0.293***	0.258***	0.251***	0.267***
	(5.64)	(−2.00)	(6.00)	(−3.16)	(16.68)	(12.05)	(15.90)	(11.15)	(10.62)
QUA_GOV						−0.078			−0.160**
						(−1.46)			(−1.99)
INFORMATION							0.019		−0.181
							(0.57)		(−0.83)
EDUCATION								−0.290	0.105**
								(−1.40)	(2.12)
log(GDP)	−0.013***	−0.004	0.566***	−0.027***	0.053***	0.056***	0.053***	0.053***	0.055***
	(−3.93)	(−1.46)	(15.66)	(−3.16)	(11.89)	(11.38)	(11.80)	(11.23)	(11.29)
MKTCAP/GDP	0.010**	−0.003	−0.082***	0.019***	−0.013***	−0.014***	−0.013***	−0.013***	−0.013***
	(2.27)	(−1.12)	(−6.51)	(5.39)	(−3.48)	(−3.63)	(−3.37)	(−3.44)	(−3.71)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.72	0.36	0.60	0.36	0.64	0.65	0.65	0.64	0.65
N	320	320	320	320	272	272	272	272	272

significant both economically and statistically (using the fund domicile country leads to even more significant results). However with this magnitude, social trust is unlikely to create overcrowding or diminishing return to scale on its own.

B.   Trust, Active Shares, and Performance of Domestic Funds

Although the market-wide analysis of fund activeness provides a broad picture of the role of trust in the mutual fund industry, only an analysis at the fund level can help us to understand its performance implication. We therefore shift the focus to the individual fund level and zoom in on the sample of domestic funds to understand the general impact of trust. In later sections, we use the sample of international funds to differentiate the impacts of the two mechanisms of trust.

For the domestic funds, we conduct a 2-stage regression analysis. In the first stage, we explore how investors' trust affects the degree of fund activeness. Fund activeness is proxied by "active share" as defined in Cremers and Petajisto (2009). In the second stage, we explore the performance implications of trust-related active share (i.e., the part of active share explained by trust in the first stage). More explicitly, we estimate the following first-stage specification:

$$(2) \quad \text{ACTIVE\_SHARE}_{i,j,t} = \alpha + \beta \times \text{TRUST}_{j,t} + \gamma \times M_{j,t} + \delta \times \text{MFUND}_{i,j,t} + \varepsilon_{i,j,t},$$

where $\text{ACTIVE\_SHARE}_{i,j,t}$ is the active share for fund i in country j at year t, and the vector $\text{MFUND}_{i,j,t}$ stacks a list of fund-level control variables that are defined in Appendix B.

We report the results for the panel specifications in Panel A of Table 3. For the panel specifications, we control for year fixed effects and cluster the standard errors at the fund and year levels. The results illustrate a similar pattern and display a strong and positive relationship between the level of trust and the activeness of individual funds, as predicted by the *investor-trust hypothesis.* If we focus on the fully fledged specification reported in model 3, we see that a 1-standard-deviation increase in trust is related to a 3.84% increase in the degree of active share for the panel specifications. As a robustness check, we also estimate the Fama–MacBeth specification, and we obtain very similar results: a 1-standard-deviation increase in trust is related to a 3.79% increase in active share. In the interest of space, we tabulate the results for Fama–MacBeth specifications in the Supplementary Material (Table IN3).[14]

When investors trust, the key distinction between the mutual trust hypothesis and the alternative breach-of-trust and diminishing return to scale hypotheses relies on fund performance. In particular, the existence of a reciprocal relationship is an important feature of trust-based collaborative equilibriums (e.g., Algan and Cahuc (2014), Berg et al. (1995), and Baran et al. (2010)). Based on this insight, the mutual

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[14]Among the country characteristics, the impact of the quality of government is less robust: while the impact remains significant in the full-fledged panel regression, as reported in model 3. In the Fama–MacBeth specification with a similar list of control variables (i.e., model 3 of Table IN3) it is absorbed by INFORMATION. Similarly, other country characteristics, such as EDUCATION and financial development (both GDP and MKTCAP/GDP), do not significantly affect active share consistently. In this regard, trust seems to exert a more profound impact than other country characteristics within the mutual fund industry.

TABLE 3

The Impact of Trust on Fund Activeness and Performance of Trust-Related Active Share (Domestic Funds)

Panel A of Table 3 reports estimates of how trust affects the active management of domestic mutual funds from 2002 to 2015:

$$\text{ACTIVE\_SHARE}_{i,j,t} = \alpha + \beta \times \text{TRUST}_{j,t} + \gamma \times M_{j,t} + \delta \times \text{MFUND}_{i,j,t} + \varepsilon_{i,j,t},$$

where $\text{ACTIVE\_SHARE}_{i,j,t}$ is the active share of fund i in country j at year t, defined as the percentage of a fund's portfolio holding that is different from its benchmark. The vector $M_{j,t}$ stacks a list of country-level control variables in the domicile country, while the vector $\text{MFUND}_{i,j,t}$ stacks a list of fund-level control variables. Please refer to Appendix B for control variable definitions. Panel B reports 2-stage estimates of the effect of trust on fund performance via active share. In the first stage, we decompose active share by regressing it on trust and other controls, as in Panel A. In the second stage, we use the decomposed component of active share in the first stage to predict future performance:

$$\text{PERF}_{i,j,t+1} = \alpha + \beta_1 \times \widehat{\text{AS}}(\text{TRUST})_{j,t} + \beta_2 \times \widehat{\text{AS}}(\text{OTHER\_CHAR})_{j,t} + \delta \times \text{MFUND}_{i,j,t} + \varepsilon_{i,j,t+1}.$$

Following Cremers and Petajisto (2009), $\underline{\text{PERF}}_{i,j,t+1}$ refers to the future performance of funds, including benchmark-adjusted return, rolling alpha, and in-sample alpha. $\widehat{\text{AS}}(\text{TRUST})_{j,t}$ refers to trust-projected active share, and $\widehat{\text{AS}}(\text{OTHER\_CHAR})_{j,t}$ refers to the projected value of active share based on other country characteristics. The sample includes open-end active domestic funds in both Morningstar and FactSet from 2002 to 2015, which are defined as those that invest more than 80% of their portfolio in their domicile country. Offshore funds and small funds with TNA less than $2 million are excluded. Year fixed effects are included in the panel regression estimates. Robust t-statistics are reported in parentheses and are based on standard errors clustered by fund and year. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	1	2	3
Panel A. The Impact of Trust on Fund-Level Activeness			
TRUST	0.278***	0.207***	0.172***
	(10.75)	(8.23)	(7.24)
QUA_GOV		−0.331***	−0.644***
		(−8.34)	(−12.32)

trust hypothesis posits that trusted active funds will reciprocate with better perfor-
mance for investors (the Supplementary Material provides a treatment).
In contrast, both diminishing return to scale and breach-of-trust hypotheses would
predict the nonsignificant, if not negative, performance of trusted funds.

   To test these competing hypotheses, we use the projected components of active
share that we can obtain from the first-stage analysis to predict performance:

$$\text{PERF}_{i,j,t+1} = \alpha + \beta_1 \times \widehat{\text{AS}}(\text{TRUST})_{j,t} + \beta_2 \times \widehat{\text{AS}}(\text{OTHER\_CHAR})_{j,t}$$
$$+ \delta \times \text{MFUND}_{i,j,t} + \varepsilon_{i,j,t+1} \quad (3)$$

MacBeth specification.[16] These numbers are highly significant, lending support to the existence of mutual trust in high-trust countries.

The tests in Table 3 focus on the level of trust of the fund sales country. As a robustness check, we reestimate the specifications in Table 3 but replace the fund sales country with the fund domicile country. The results are very similar in terms of both economic and statistical significance. More robustness checks using the fund domicile country are tabulated in the Supplementary Material. Jointly, our 2-stage analysis lends support to the mutual trust hypothesis, confirming that domestic funds in countries with high trust also operate in a more trustworthy manner.

IV.   Trust in Cross-Border Mutual Fund Investments

We now move on to our main analysis, in which we examine the role played by both trust in the market and trust in managers in delegated management by focusing on cross-border investments.

A.   Investing in Low-Trust Countries

We first focus on cross-border investment in low-trust countries, whereby mutual funds domiciled in a high-trust home country raise capital therein and invest in assets of less-trustworthy target countries. We are especially interested in this scenario not only because it allows us to distinguish the two mechanisms of trust but also because it represents the majority of cross-border investment cases and, thus, has important normative and policy implications. We therefore expand the previous 2-stage analysis to incorporate both the trust of the fund sales country (as a proxy for trust in managers) and the trust of the fund-investing country (as a proxy for trust in the market) as follows:

First stage:

$$(4) \quad \text{ACTIVE}_{\text{SHARE}i,j,t} = \alpha + \beta_S \times \text{TRUST\_SALES}_{j,t} + \beta_I \times \text{TRUST\_INV}_{j,t} \\ + \gamma \times M_{j,t} + \delta \times \text{MFUND}_{i,j,t} + \varepsilon_{i,j,t},$$

Second stage:

$$(5) \quad \text{PERF}_{i,j,t+1} = \alpha + \beta_{1S} \times \widehat{\text{AS}}(\text{TRUST\_SALES})_{j,t} + \beta_{1I} \times \widehat{\text{AS}}(\text{TRUST\_INV})_{j,t} \\ + \beta_2 \times \widehat{\text{AS}}(\text{OTHER\_CHAR})_{j,t} + \delta \times \text{MFUND}_{i,j,t} + \varepsilon_{i,j,t+1},$$

where $\text{TRUST\_SALES}_{j,t}$ and $\text{TRUST\_INV}_{j,t}$ refer to the trust of the fund sales country and trust of the fund-investing country, respectively.

Panel A of Table 4 tabulates the results of the first-stage regressions. Models 1 to 3 are for the panel regressions with year fixed effects and fund-year-level clustering. In the interest of brevity, we omit the regression coefficients of

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(2017), such as expense ratio and duration, cultural value could also help to differentiate the outcomes of active management.

[16]The Fama–MacBeth estimation shows that the part of active share related to a 1-standard-deviation increase in trust predicts 0.60% of rolling alpha and 0.70% of in-sample alpha.

TABLE 4

The Impact of Trust on Fund Activeness and Performance of Trust-Related Active Share (International Funds Investing in Low-Trust Countries)

Panel A of Table 4 reports estimates of how trust affects the active management of international mutual funds that invest in countries of lower trust relative to their sales country from 2002 to 2015. The regression is as follows:

$$\text{ACTIVE\_SHARE}_{i,j,t} = \alpha + \beta_S \times \text{TRUST\_SALES}_{j,t} + \beta_1 \times \text{TRUST\_INV}_{j,t} + \gamma \times M_{j,t} + \delta \times \text{MFUND}_{i,j,t} + \varepsilon_{i,j,t},$$

where $\text{ACTIVE\_SHARE}_{i,j,t}$ is the active share for fund i in country j at year t, defined as the percentage of a fund's portfolio holding that is different from its benchmark. $\text{TRUST\_SALES}_{j,t}$ ($\text{TRUST\_INV}_{j,t}$) denotes the level of trust in the fund's sales (investing) country. Panel B reports 2-stage estimates of the effect of trust on the performance of international mutual funds that invest in countries of lower trust relative to their sales country via active share. In the first stage, we decompose active share by regressing it on trust and other controls, as in Panel A. In the second stage, we use the decomposed component of active share in the first stage to predict future performance:

(5) $$\text{PERF}_{i,j,t+1} = \alpha + \beta_{1S} \times \widehat{\text{AS}}(\text{TRUST\_SALES})_{j,t} + \beta_{1I} \times \widehat{\text{AS}}(\text{TRUST\_INV})_{j,t}$$
$$+ \beta_2 \times \widehat{\text{AS}}(\text{OTHER\_CHAR})_{j,t} + \gamma \times M_{j,t} + \delta \times \text{MFUND}_{i,j,t} + \varepsilon_{i,j,t+1}.$$

Following Cremers and Petajisto (2009), $\text{PERF}_{i,j,t+1}$ refers to the future performance of funds, including benchmark-adjusted return, rolling alpha, and in-sample alpha. $\widehat{\text{AS}}(\text{TRUST\_SALES})_{j,t}$ and $\widehat{\text{AS}}(\text{TRUST\_INV})_{j,t}$ refer to trust-projected active share using the level of trust in the fund sales and investing country, respectively, and $\widehat{\text{AS}}(\text{OTHER\_CHAR})_{j,t}$ refers to the projected value of active share based on other country characteristics. QUA_GOV_SALES(_INV), INFORMATION_SALES(_INV), and EDUCATION_SALES(_INV) are defined similarly and represent the quality of government, information and education in the fund sales and investing country. The vector $M_{j,t}$ stacks a list of country-level control variables in the domicile country, while the vector $\text{MFUND}_{i,j,t}$ stacks a list of fund-level control variables. Please refer to Appendix B for control variable definitions. The sample includes open-end active international funds in both Morningstar and FactSet from 2002 to 2015, defined as those that invest more than 20% of their portfolios outside of the domicile country. Offshore funds and funds with TNA less than $2 million are excluded. Year fixed effects are included in the panel regression. Robust t-statistics are reported in parentheses and based on standard errors clustered by fund and year in panel regression estimates. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A. The Impact of Trust on Fund-Level Activeness

	1	2	3
TRUST_SALES	0.013 (1.46)	0.005 (0.77)	0.002 (0.29)
TRUST_INV	0.365*** (7.23)	0.321*** (12.86)	0.485*** (13.76)
QUA_GOV_SALES		0.350*** (5.83)	0.194** (2.09)
QUA_GOV_INV		−0.037*** (−3.98)	−0.027*** (−2.87)
INFORMATION_SALES			0.107* (1.66)
INFORMATION_INV			−0.009 (−1.11)
EDUCATION_SALE			0.006 (0.84)
EDUCATION_INV			0.863*** (8.62)
Control variables	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
No. of obs.	8,983	8,983	8,983
R^2	0.13	0.13	0.14

Panel B. Performance of Trust-Related Active Share (Panel Regressions)

	BENCH_ADJ_RETURN		BENCH_ADJ_ IN_SAMPLE_ALPHA4		BENCH_ADJ_ ROLLING_ALPHA4	
	1	2	3	4	5	6
ACTIVE_SHARE (TRUST_SALES)	0.023 (1.45)	0.022 (1.43)	0.033 (1.58)	0.032 (1.56)	0.029 (1.48)	0.026 (1.51)
ACTIVE_SHARE (TRUST_INV)	0.204*** (6.53)	0.186*** (6.07)	0.247*** (6.45)	0.222*** (5.92)	0.257*** (6.70)	0.237*** (6.29)
ACTIVE_SHARE (QUA_GOV_SALES)	0.110 (0.58)	0.240 (1.29)	0.533** (2.43)	0.681*** (3.17)	0.466** (2.12)	0.601*** (2.78)
ACTIVE_SHARE (QUA_GOV_INV)	0.977*** (5.31)	0.927*** (5.22)	1.209*** (5.23)	1.141*** (5.11)	1.004*** (4.36)	0.942*** (4.22)
ACTIVE_SHARE (INFO_SALES)	−0.187 (−0.71)	−0.354 (−1.39)	−0.529* (−1.70)	−0.738** (−2.44)	−0.464 (−1.48)	−0.663** (−2.18)

(continued on next page)

TABLE 4 (continued)

The Impact of Trust on Fund Activeness and Performance of Trust-Related Active Share
(International Funds Investing in Low-Trust Countries)

Panel B. Performance of Trust-Related Active Share (Panel Regressions) (continued)

	BENCH_ADJ_RETURN		BENCH_ADJ_ IN_SAMPLE_ALPHA4		BENCH_ADJ_ ROLLING_ALPHA4	
	1	2	3	4	5	6
ACTIVE_SHARE (INFO_INV)	1.718*** (4.01)	1.556*** (3.74)	1.056* (1.89)	0.865 (1.59)	0.882 (1.59)	0.697 (1.29)
ACTIVE_SHARE (EDUCATION_SALES)	0.121 (0.22)	0.334 (0.64)	−0.711 (−1.04)	−0.453 (−0.68)	−0.658 (−0.96)	−0.431 (−0.64)
ACTIVE_SHARE (EDUCATION_INV)	0.714*** (12.00)	0.635*** (11.20)	0.935*** (12.09)	0.836*** (11.27)	0.991*** (12.78)	0.895*** (12.01)
Domicile country control variables	Yes	Yes	Yes	Yes	Yes	Yes
Fund control variables	No	Yes	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	8,983	8,983	8,983	8,983	8,716	8,716
R^2	0.26	0.30	0.28	0.32	0.28	0.32

fund-level control variables and refer the reader to the Supplementary Material for details on these coefficients.

The results show that what affects active share is trust in the country of investment. A 1-standard-deviation increase in the trust of the fund-investing country is associated with increases of approximately 10.81% in active share at the fund level for panel specifications in model 3. In contrast, the trust of fund sales countries is generally unrelated to active share. Note that the two variables have similar cross-sectional variations in the sample: the difference between the standard deviations of the two variables is economically small (0.008) and statistically insignificant (with a p-value for the test of equal variances of 0.205). Hence, the lack of influence of the latter variable is not due to its lack of statistical variations and, thus, explanatory power. Instead, the difference between the two variables is due to economic reasons. Section IV.D explores one potential economic ground that could help to explain this asymmetry.

We next conduct the second-stage performance test for panel specifications with year fixed effects and errors clustered at the fund-year level, and we report the results in Panel B of Table 4. The trust of the fund-investing country also predicts fund performance through the active share channel. More specifically, the part of active share related to a 1-standard-deviation increase in the trust of the investing country (which amounts to an increase in active shares of 10.81% for panel specification, as reported in Panel A of Table 4), predicts 2.56% of rolling alpha (from model 6 of Panel B) and 2.40% of in-sample alpha (from model 4 of Panel B), respectively.[17] These results are in general consistent with the mutual trust hypothesis, except that the influence concentrates on the "trust in the market" mechanism of social trust.

A few observations are important. First, in our main analysis, we proxied for trust in managers of the home country by the trust of the fund sales country. As a

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[17]Again, in model 6 of Panel A of Table 4, the regression coefficient of rolling alpha on the trust-related active share is 0.237 per year. When the trust-related active share changes by 10.81%, which is associated with a 1-standard-deviation increase in trust, the performance changes by $0.237 \times 10.81\% = 2.56\%$.

robustness check, we also verified that our results are robust when we use the trust of the fund domicile country. In the interest of brevity, we tabulate the additional related results in the Supplementary Material.

Second, the performance impact of trust on international funds seems to be larger than that on domestic funds. Indeed, the performance impact of trust on international funds can be as high as 2.56%, whereas that on domestic funds is typically approximately 1%. Hence, the effectiveness of cross-border investments could be more sensitive to trust than that of domestic fund investments.

Third, although a full examination of the quality of government goes beyond the scope of this paper, we can see that the quality of government exhibits different patterns with respect to trust. In the first stage, a high quality of government in the fund sales country is positively associated with active share. In the second stage, the part of active share related to the high quality of a government does not consistently deliver better performance. This drastic difference confirms that trust is very different from formal institutions.

Finally, two concerns may arise from the aforementioned results. First, the influence of "trust in the market" of the target countries can be spuriously related to the characteristics of the home country or some sort of reverse causality in which investors allow for more activeness because they are aware of the better performance associated with active share. Second, "trust in managers" does not seem to exert a significant influence in the above tests. Does this imply that market considerations dominate the influence of social norms in the global mutual fund industry? We address these two issues in the following.

B.   Subsample and Instrumental Variable (IV) Tests to Address Endogeneity Concerns

1.   U.S. Funds Investing in Low-Trust Countries

The destination of cross-border investments may be indirectly affected, if not partially determined, by the characteristics of the sales country. If this were the case, trust of the fund-investing country could be spuriously related to the trust of the fund sales country. To address this issue, we design a nested test based on all U.S. funds investing in foreign countries of lower trust (than the United States) to gauge the implication of the above "investing in low-trust countries" scenario. This test allows us to directly control for trust and other characteristics of the sales country, leaving the trust of the investing countries as the only notion of trust to affect fund operations. We use U.S.-based factors to compute the performance of international funds from U.S. investors' perspective.

We perform an analysis similar to that in Table 3 and report the results in Table 5. Panel A reports the impact of trust on active share, as specified previously. Panel B examines the performance impact of the second stage for panel specifications. We find that a 1-standard-deviation increase in the trust of the investing country is associated with a 7.4% increase in active share in the first stage for the panel (model 3 of Panel A), which translates into 2.24% of in-sample alpha (model 4 in Panel B) and 2.35% of rolling alpha (model 6 in Panel B). These results are highly significant and further confirm the previous results from Table 4 regarding how trust affects fund investments from high- to low-trust countries.

TABLE 5

Subsample Tests: U.S. Funds Investing in Low-Trust Countries

Table 5 reports estimates for U.S. funds that invest in foreign countries of lower trust than the United States from 2002 to 2015. Panel A reports the impact of trust on active management, and Panel B shows the performance testing. Panel C presents coefficient estimates from regressions of fund-level activeness on both the change and the level of country popularity (of investment) among Americans, and Panel D displays the performance test. Year fixed effects are included in the panel regression estimation. Robust *t*-statistics are reported in parentheses and are based on standard errors clustered by fund and year in the panel regressions. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A. The Impact of Trust on Fund-Level Activeness

	Dependent Variable: ACTIVE_SHARE		
	1	2	3
TRUST_INV	0.611***	0.623***	0.332***
	(15.43)	(15.20)	(3.87)
QUA_GOV_INV		−0.010	−0.010
		(−1.16)	(−1.24)
INFORMATION_INV			−2.719***
			(−9.42)
EDUCATION_INV			−0.072*
			(−1.93)
Control variables	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
No. of obs.	5,022	5,022	5,022
R^2	0.13	0.13	0.15

Panel B. Performance of Trust-Related Active Share

	BENCH_ADJ_RETURN		BENCH_ADJ_IN_SAMPLE_ALPHA4		BENCH_ADJ_ROLLING_ALPHA4	
	1	2	3	4	5	6
ACTIVE_SHARE(TRUST)	0.354***	0.309***	0.344***	0.302***	0.363***	0.317***
	(6.50)	(6.08)	(6.93)	(6.49)	(6.67)	(6.25)
ACTIVE_SHARE(QUA_GOV)	17.127**	14.948**	14.663**	12.700*	16.134**	13.975*
	(2.13)	(1.96)	(1.98)	(1.82)	(2.01)	(1.84)
ACTIVE_SHARE(INFORMATION)	4.295***	3.830***	3.053**	2.634**	3.859**	3.403**
	(2.82)	(2.64)	(2.20)	(1.99)	(2.53)	(2.34)
ACTIVE_SHARE(EDUCATION)	1.671	2.032	1.477	1.822	1.447	1.817
	(1.04)	(1.32)	(1.00)	(1.29)	(0.90)	(1.18)
Control variables	No	Yes	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	5,022	5,022	5,022	5,022	5,022	5,022
R^2	0.29	0.34	0.29	0.34	0.29	0.34

Panel C. Country Popularity and Fund-Level Activeness

	Dependent Variable: ACTIVE_SHARE					
	1	2	3	4	5	6
TRUST	0.432***	0.623***	0.434***	0.440***	0.442***	0.267**
	(8.21)	(6.06)	(3.43)	(3.48)	(3.50)	(2.13)
TRUST × Δ(CTY_POPULAR)		0.812**	0.895**	0.890**	0.899**	0.782**
		(2.06)	(2.33)	(2.31)	(2.34)	(2.02)
Δ(CTY_POPULAR)		−0.143	−0.137	−0.134	−0.139	0.526
		(−0.80)	(−0.78)	(−0.77)	(−0.80)	(0.95)
CTY_POPULAR	0.094***		0.100***	0.101***	0.101***	0.110*
	(6.14)		(2.97)	(2.99)	(2.99)	(1.87)
CTY_POPULAR × Δ(CTY_POPULAR)						−0.206
						(−0.89)
QUA_GOV				−0.005	−0.005	−0.006
				(−0.44)	(−0.42)	(−0.50)
INFORMATION					−0.005	−0.007**
					(−0.63)	(−2.08)
EDUCATION					−0.003	−0.005
					(−0.51)	(−1.62)

TABLE 5 (continued)

Subsample Tests: U.S. Funds Investing in Low-Trust Countries

Panel C. Country Popularity and Fund-Level Activeness (continued)

	Dependent Variable: ACTIVE_SHARE					
	1	2	3	4	5	6
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	5,022	5,022	5,022	5,022	5,022	5,022
R^2	0.13	0.13	0.14	0.14	0.14	0.14

Panel D. Performance Test: Country Popularity and Fund-Level Activeness

	BENCH_ADJ_RETURN		BENCH_ADJ_IN_SAMPLE_ ALPHA4		BENCH_ADJ_ROLLING_ ALPHA4	
	1	2	3	4	5	6
ACTIVE_SHARE(TRUST)	0.506***	0.317*	0.510***	0.336**	0.538***	0.343**
	(2.93)	(1.95)	(3.28)	(2.31)	(2.92)	(1.98)
ACTIVE_SHARE(TRUST × Δ(CTY_POPULAR))	1.419**	1.277**	1.297**	1.170**	1.451**	1.307**
	(2.13)	(2.14)	(2.00)	(1.98)	(2.11)	(2.13)
ACTIVE_SHARE (Δ(CTY_POPULAR))	−0.776	−0.617	−0.985	−0.824	−0.726	−0.548
	(−0.20)	(−0.18)	(−0.27)	(−0.25)	(−0.18)	(−0.15)
ACTIVE_SHARE (CTY_POPULAR)	0.260***	0.304***	0.240***	0.280***	0.252***	0.297***
	(3.84)	(4.72)	(3.94)	(4.82)	(3.60)	(4.46)
ACTIVE_SHARE (CTY_POPULAR × Δ(CTY_POPULAR))	−1.419	−1.066	−1.311	−0.976	−1.364	−0.994
	(−0.55)	(−0.43)	(−0.56)	(−0.43)	(−0.51)	(−0.39)
ACTIVE_SHARE(QUA_GOV)	3.375*	2.779	2.828*	2.291	3.475*	2.876
	(1.81)	(1.56)	(1.66)	(1.40)	(1.85)	(1.59)
ACTIVE_SHARE (INFORMATION)	4.557***	3.980***	3.264**	2.742*	4.909***	4.331***
	(2.85)	(2.60)	(2.22)	(1.94)	(2.99)	(2.75)
ACTIVE_SHARE (EDUCATION)	0.897	1.135	0.788	1.014	0.699	0.938
	(1.02)	(1.34)	(0.98)	(1.31)	(0.77)	(1.07)
Control variables	No	Yes	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	5,022	5,022	5,022	5,022	5,022	5,022
R^2	0.30	0.36	0.31	0.36	0.29	0.34

2.   Tests Based on Changes in Americans' Attitudes Toward Foreign Countries

While the test based on the U.S. subsample controls for characteristics of the home country, the remaining concern is related to the characteristics of the target countries. To address this issue, we next explore two types of plausibly exogenous variations in trust. The first involves time-series variations in U.S. investors' trust in foreign markets. The second exploits the cross-sectional variation in bilateral trust across different pairs of European countries.
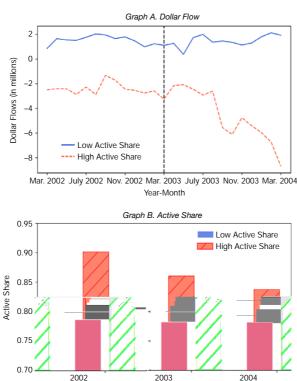
Specifically, we first follow Hwang (2011) to consider the survey conducted by the Gallup Poll, in which U.S. respondents were asked to choose how they view a foreign country (in their overall opinion of the country) from choices of *very favorable*, *mostly favorable*, *mostly unfavorable*, and *very unfavorable*. A critical feature of the survey is that the American people's attitudes toward foreign countries often undergo significant changes due to the occurrence of bilateral political events. Consider, for instance, the French government's opposition to the U.S.-led Iraq War around February and March 2003. This event significantly influenced the attitudes of the American people toward France. The American people's attitudes toward France decreased from above-average (13th of 34 surveyed foreign countries) to among the worst (31st) after the event.

Since such a drastic change reflects a wave of the American people's distrust in France, which could subsequently influence their investments in the French market, we first provide a descriptive illustration of what happened to U.S.-domiciled funds investing in France around this event.[18] Two variables are of particular interest for this purpose (i.e., investor demand and fund policy in terms of activeness) because, upon the occurrence of this distrust event, the mutual trust hypothesis would predict both a decline in U.S. investors' demand for active funds investing in France and a decrease in fund active share as a reciprocal response from fund managers. Moreover, both effects should be more prominent among funds invested in by investors who initially had high trust in France but subsequently changed their view because of the event (i.e., funds with high before-event activeness due to investors' high initial trust), compared to funds dominated by investors who distrusted France throughout the event (i.e., funds with low before-event activeness).

To see how these predictions play out in the data, we sort all these funds into quintiles on the basis of their pre-event (i.e., 2002) active share and calculate proxies of investor demand and fund activeness for the top/bottom quintiles of funds (i.e., funds with the highest or lowest levels of pre-event activeness). Investor demand for a particular fund is proxied by its monthly abnormal flows adjusted for time trends and a general time-varying EU demand.[19] Graph A in Figure 2 plots the abnormal fund flows around the Iraq War. We can see that, while the flows of both groups of funds exhibited a parallel trend before the event, a striking difference occurred afterward. Compared to low-active funds, funds with high before-event activeness indeed experienced substantial abnormal outflows. Graph B further plots the fund policy in terms of active share for both groups of funds around the

FIGURE 2

Evolution of Fund Activeness and Flow Around the Iraq War

Figure 2 plots the time series evolution of dollar flow (12-month moving average, adjusted for all U.S. funds that invest in EU countries, except for France and Germany, Graph A) and fund active share (annual, Graph B) around the Iraq War. The high/low active share sample of funds are defined based on the active share in 2002 of U.S. funds that invest in France and denotes the top/bottom quintile respectively.

have in foreign markets. Built on this property, we can formally investigate how variations in trust embedded in country-score changes (labeled ΔCTY_POPULAR following the terminology of Hwang (2011)) affect the activeness and performance of U.S. funds investing in low-trust countries. More explicitly, we first examine whether the positive relationship between trust and fund activeness can be marginally enhanced (reduced) by the occurrence of such changes as captured by the interaction term TRUST $\times \Delta$CTY_POPULAR. We then study the performance implications of such an influence.

Panel C of Table 5 presents the results of the general test. In column 1, we first show that both trust and country scores are positively associated with fund activeness, although the influence of trust is larger in economic magnitude.[20] This observation supports the interpretation that country scores corroborate bilateral trust linked to the political institutions of foreign countries (e.g., Hwang (2011)).

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[20]The country score has a standard deviation of 0.18. Since the regression coefficient of trust (0.432) is much larger than that of country scores (0.094), its economic magnitude impact is also much larger.

In column 2, we include the interaction of TRUST × ΔCTY_POPULAR. Consistent with Figure 2, we find a significantly positive relationship between active share and the interaction term. In the next few columns, we apply different controls, among which are the interaction between country scores and changes in country scores. Our results remain largely the same.

We then identify fund performance that can be attributed to the active share associated with this interaction term and tabulate this second-stage result in Panel D of Table 5. We can see that the projected active share is positively associated with fund performance. Note that this effect is in addition to the generally positive relationship between performance and trust-projected activeness. Hence, when fund activeness becomes marginally enhanced (reduced) due to the positive (negative) variations in U.S. investors' trust, fund performance also becomes marginally more (less) positive, confirming that fund managers respond in a trustworthy matter.

Overall, variations in trust captured by the Gallup Poll exert a highly robust marginal influence on fund activeness and performance as predicted by the mutual trust hypothesis. To the extent that such variations are plausibly exogenous to delegated portfolio management when triggered by bilateral events between the United States and foreign countries, these results lend initial support to a causal interpretation of the influence of trust on fund activeness and performance.

3. Bilateral Trust and European Funds

We next conduct a second subsample test focusing on European countries, for which we can directly measure bilateral trust following Guiso et al. (2009). Since bilateral trust is obtained from a set of surveys conducted by Eurobarometer from 1970 to 1995 before our sample period, we use the historical average value of these variables. We then apply a similar 2-stage test, except that we now proxy for "trust in the market" by bilateral trust between the home country and target country, and we focus on the subsample of European mutual funds that invest in low-trust countries. The results are tabulated in Table 6.

Panel A of Table 6 reports the impact of trust on active share, with models 1 and 2 for the panel regressions. We use country-fixed effects to eliminate the potentially spurious correlation created by time-invariant characteristics of both the home and the target countries. For this test, we also use two additional proximity variables related to the geographic distance and linguistic/colonial ties between the two countries to control for trading motivations related to cross-border information and familiarity (i.e., GEO_PROXIMITY and LINGUISTIC_PROXIMITY; see Sarkissian and Schill (2004) for more discussions).[21] It is easy to see that bilateral trust plays a similar role in enhancing active share among European countries, just as social trust does in the entire data sample.

Note that the use of historical value works against us in finding a significant influence of trust, if some unobserved, contemporaneous economic conditions are

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[21]In this case, country-level trust will also be absorbed. Also note that Sarkissian and Schill (2004) refer to the second variable as cultural proximity. We rename the variable to reflect its specific cultural

TABLE 6

Subsample Tests: Bilateral Trust and Investing in Low-Trust Countries

Table 6 uses the bilateral trust between European countries in Guiso et al. (2009) and reports estimates for the sample of European funds: i) that invest in other European countries; and ii) for which the trust across individuals in the domestic country toward investing countries is lower than toward local people. Panel A reports the impact of trust on active management, where the panel regression results are shown in columns 1 and 2, while columns 3 and 4 are estimated using the generalized method of moments instrumented variable estimator (GMM-IV) following Guiso et al. (2009). The instruments are religious similarity and somatic distance. A test of over-identifying restriction, Hansen *J*-statistics, is also reported. Panel B shows the performance tests. The proximity measures between domicile and investing countries follow Sarkissian and Schill (2004) and include the following: GEO_PROXIMITY is the great circle distance between the capitals of countries *i* and *j* in megameters taken with a negative sign; and LINGUISTIC_PROXIMITY is set to 1 if countries *i* and *j* share a common major spoken language or if they were part of the same colonial empire, and 0 otherwise. Please refer to Appendix B for all other variable definitions. All of the regressions include the domestic country, investing country and year fixed effects. Robust *t*-statistics are reported in

similarity and somatic distance in the GMM-IV test of bilateral trust. In this regard, reverse causality is unlikely to explain our results.

Jointly, the subsample tests of U.S. and European funds help to mitigate the general concern about endogeneity. These tests also demonstrate the pervasiveness of the influence of social trust in cross-border delegated portfolio management: the influence is highly robust for both the entire sample of international mutual funds and the subsamples of funds that we examine.

C. The Reverse Scenario of Investing in High-Trust Countries

Now we move on to examine the concern that "trust in managers" does not seem to exert a significant influence in the above tests. This concern is economically important because it may appear that market considerations dominate the influence of social norms in the global mutual fund industry. To see whether this is the case, we consider the reverse "investing in high-trust countries" scenario, in which funds invest in countries that have higher trust than their home country.

We reestimate the same 2-stage specification as described in the equation system (4)–(5) and tabulate the results in Table 7. Panel A reports the impact of the two mechanisms of trust on active share, focusing on panel regressions, as specified in Table 4. Panel B examines the performance impact of the second stage. We find that, in the reverse scenario of investing in high-trust countries, trust in managers appears to be positively associated with active share in the first stage: a 1-standard-deviation increase in trust of the investing country is associated with a 3.81% increase in active share in the first stage for the panel specifications (model 3 of Panel A). In the second stage, trust-related active share still predicts positive fund performance: a 1-standard-deviation trust-related active share predicts 1.17% of in-sample alpha (model 4 in Panel B) and 1.34% of rolling alpha (model 6 in Panel B).

These results strongly suggest that trust in managers also matters to the global mutual fund industry when we consider the reverse scenario of investing in high-trust countries. Compared to Table 4, although there are fewer observations in this case, the economic magnitude is comparable.

The puzzling observation here is that adding the scenario of investing-in-low-trust countries, the two mechanisms of social trust appear to exert very different influences on the global mutual fund industry: while "trust in the market" has a dominating influence on fund activeness and performance in the scenario of "investing in low-trust countries," "trust in managers" dominates the reverse scenario of "investing in high-trust countries." Are these two observations contradictory? How can we interpret and reconcile these results? We will try to provide answers to these questions in the next section.

D. Reconciling the Two Cases: A Parsimonious Framework

We argue that the seemingly contradictory observations regarding the two

TABLE 7

The Reverse Scenario of Investing in High-Trust Countries

Table 7 reports the estimates for international mutual funds that invest in countries of higher trust relative to their sales country from 2002 to 2015. Panel A presents the impact of trust on active management, while Panel B reports the performance testing. Offshore funds and funds with TNA less than $2 million are excluded. Please refer to Appendix B for variable definitions. Year fixed effects are included. Robust t-statistics are reported in parentheses and are based on standard errors clustered by fund and year in panel regression estimates. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A. The Impact of Trust on Fund-Level Activeness

	1	2	3
TRUST_SALES	0.119***	0.191***	0.171***
	(4.60)	(6.46)	(5.89)
TRUST_INV	0.008	0.008	0.009
	(1.02)	(0.99)	(1.18)
QUA_GOV_SALES		−0.122***	−0.278***
		(−4.45)	(−6.20)
QUA_GOV_INV		0.019	0.022
		(1.39)	(1.64)
INFORMATION_SALES			0.193***
			(4.41)
INFORMATION_INV			−0.006
			(−0.64)
EDUCATION_SALES			−0.002
			(−0.25)
EDUCATION_INV			−2.110***
			(−8.45)
Control variables	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
No. of obs.	6,675	6,675	6,675
R^2	0.06	0.06	0.07

Panel B. Performance of Trust-Related Active Share

	BENCH_ADJ_RETURN		BENCH_ADJ_IN_SAMPLE_ ALPHA4		BENCH_ADJ_ROLLING_ ALPHA4	
	1	2	3	4	5	6
ACTIVE_SHARE (TRUST_SALES)	0.384***	0.338***	0.387***	0.308**	0.431***	0.352***
	(3.90)	(3.55)	(3.08)	(2.47)	(3.38)	(2.80)
ACTIVE_SHARE (TRUST_INV)	−0.050	−0.082	0.094	0.074	0.278	0.270
	(−0.13)	(−0.22)	(0.19)	(0.16)	(0.57)	(0.57)
ACTIVE_SHARE (QUA_GOV_SALES)	0.022	−0.041	0.041	−0.074	0.100	0.005
	(0.24)	(−0.42)	(0.38)	(−0.66)	(0.86)	(0.04)
ACTIVE_SHARE QUA_GOV_INV	0.041	0.047	−0.292	−0.260	−0.287	−0.249
	(0.16)	(0.18)	(−0.88)	(−0.80)	(−0.86)	(−0.76)
ACTIVE_SHARE (INFORMATION_SALES)	0.191	0.145	0.404***	0.340**	0.449***	0.387***
	(1.63)	(1.30)	(2.87)	(2.47)	(3.08)	(2.75)
ACTIVE_SHARE (INFORMATION_INV)	1.396*	1.201	1.865**	1.606*	1.749*	1.507*
	(1.86)	(1.64)	(2.00)	(1.77)	(1.86)	(1.66)
ACTIVE_SHARE (EDUCATION_SALES)	−1.593	−1.897	−0.555	−0.864	−0.599	−1.007
	(−0.90)	(−1.10)	(−0.25)	(−0.40)	(−0.27)	(−0.47)
ACTIVE_SHARE (EDUCATION_INV)	0.019	0.014	−0.215**	−0.210***	−0.199**	−0.195**
	(0.31)	(0.24)	(−2.56)	(−2.58)	(−2.22)	(−2.24)
Domicile country control variables	Yes	Yes	Yes	Yes	Yes	Yes
Fund control variables	No	Yes	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	6,675	6,675	6,675	6,675	6,520	6,520
R^2	0.26	0.30	0.29	0.32	0.29	0.32

incomplete contracts to such an extent that a certain level of trust suffices to mitigate major incompleteness of contracts in delegated portfolio management. In this case, further enhancement of social trust beyond this level may not lead to further observable influences.

The observations of the two mechanisms of social trust can be reconciled based on this property. With a diminishing impact, the influence of social trust should concentrate on the low-trust-country side of cross-border investments. This intuition helps to explain why "trust in the market" and "trust in managers" appear significant in the scenarios of "investing in low-trust countries" and that of "investing in high-trust countries," respectively, because the two mechanisms represent the low-trust side of cross-border investment in these two scenarios. In contrast, the other (high-trust) side of cross-border investment could have a much smaller or even nonsignificant impact due to the diminishing impact of social trust.

A direct test of the diminishing impact of trust can be conducted based on a parsimonious framework integrating the previous two scenarios of cross-border investment. We can first identify, between the two countries of cross-border investment, the one with high trust (i.e., high-trust country) and the one with low trust (i.e., low-trust country). We can then reestimate the same 2-stage specification of the equation system (4)–(5) but replace the trust of the fund sales country and that of the fund-investing country with the trust of the low-trust country (denoted as TRUST_LOW) and the trust of the high-trust country (denoted as TRUST_HIGH), respectively. By construction, the two trust variables have very similar distributions.[23] However, they should exhibit very different economic influences according to the diminishing impact property: the trust of the low-trust country should matter more to cross-border investment.

We report the results in Panels A and B of Table 8 the first and second stages, respectively.[24] We see that the trust of the low-trust country is in general positively associated with active share in the first stage. In the second stage, active share induced by the trust of the low-trust country predicts fund performance. The magnitude of both the first- and the second-stage impacts is on par with what we observe in Tables 4 and 7. In contrast, the trust of the high-trust country does not have a significant influence. Hence, the results are consistent with the mutual trust hypothesis in general and the interpretation of the diminishing impact of trust in particular.

V.   Additional Analysis and Robustness Checks

A.   Do Mutual Fund Investors Overtrust?

The prior literature has documented an intriguing hump-shaped effect of trust on household financial outcomes, suggesting that the right amount of trust is needed to facilitate economic activities and that overtrust reduces household

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[23]The difference between the standard deviations of the 2 variables is small in magnitude (i.e., 0.005) with an insignificant p-value with the test for equal variances (0.131). Hence, if they affect the activeness and performance of international funds differently, this distinction is more economical than that due to the lack of statistical power. This property further alleviates the concern that the distributional difference between the two trust variables could influence our results reported in Table 4 because TRUST_INV and TRUST_SALES are now nested into the two variables of TRUST_HIGH and TRUST_LOW, respectively, for the whole sample of funds (as opposed to being constructed based on a subsample of funds).

[24]Fama–MacBeth specifications lead to similar results. Table IN3 in the Supplementary Material provides details.

TABLE 8
Reconciling Based on the Diminishing Impact of Trust

Table 8 reports the estimates for international mutual funds by defining countries of high and low trust. Panel A presents estimates of how trust affects active management as follows:

$$\text{ACTIVE}_{\text{SHARE}\,i,j,t} = \alpha + \beta_{\text{H}} \times \text{TRUST\_HIGH}_{j,t} + \beta_{\text{L}} \times \text{TRUST\_LOW}_{j,t} + \theta_{\text{H}} \times \text{CTY\_INSTITUTIONAL\_HIGH}_{j,t}$$
$$+ \theta_{\text{L}} \times \text{CTY\_INSTITUTIONAL\_LOW}_{j,t} + \gamma \times M_{j,t} + \delta \times \text{MFUND}_{i,j,t} + \varepsilon_{i,j,t},$$

where $\text{ACTIVE\_SHARE}_{i,j,t}$ is the active share for fund i in country j at year t, defined as the percentage of a fund's portfolio holding that is different from its benchmark. $\text{TRUST\_HIGH}_{j,t}$ ($\text{TRUST\_LOW}_{j,t}$) denotes the higher (lower) level of trust in the fund sales and investing country. $\text{CTY\_INSTITUTIONAL\_HIGH}_{j,t}$($\text{CTY\_INSTITUTIONAL\_LOW}_{j,t}$) denotes the level of country institutional variables (i.e., QUA_GOV, INFORMATION, and EDUCATION) in the country in which the fund faces a higher (lower) level of trust. The vector $M_{j,t}$ stacks a list of country-level control variables in the domicile country, while the vector $\text{MFUND}_{i,j,t}$ stacks a list of fund-level control variables. Please refer to Appendix B for control variable definitions. Panel B presents the 2-stage estimates of the effect of trust on the performance of international funds via active share. Offshore funds and funds with TNA less than $2 million are excluded. Year fixed effects are included in the panel regressions. Robust t-statistics are reported in parentheses and are based on standard errors clustered by fund and year. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A. The Impact of Trust on Fund-Level Activeness

	1	2	3
TRUST_HIGH	0.009	0.008	0.008
	(1.64)	(1.54)	(1.43)
TRUST_LOW	0.273***	0.292***	0.319***
	(16.09)	(15.74)	(13.95)
QUA_GOV_HIGH		−0.040*	−0.187***
		(−1.85)	(−5.36)
QUA_GOV_LOW		−0.015**	−0.011
		(−1.99)	(−1.48)
INFORMATION_HIGH			0.164***
			(5.52)
INFORMATION_LOW			−0.004
			(−0.58)
EDUCATION_HIGH			0.002
			(0.29)
EDUCATION_LOW			0.214***
			(2.74)
Control variables	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
No. of obs.	15,658	15,658	15,658
R^2	0.09	0.09	0.09

Panel B. Performance of Trust-Related Active Share

	BENCH_ADJ_RETURN		BENCH_ADJ_IN_SAMPLE_ ALPHA4		BENCH_ADJ_ROLLING_ ALPHA4	
	1	2	3	4	5	6
ACTIVE_SHARE(TRUST_HIGH)	−0.145	−0.070	−0.004	0.090	0.197	0.304
	(−0.47)	(−0.23)	(−0.01)	(0.23)	(0.50)	(0.79)
ACTIVE_SHARE(TRUST_LOW)	0.251***	0.218***	0.282***	0.236***	0.297***	0.256***
	(7.31)	(6.45)	(6.34)	(5.27)	(6.77)	(5.83)
ACTIVE_SHARE(GOV_QUA_HIGH)	0.205**	0.113	0.261**	0.139	0.335***	0.227**
	(2.23)	(1.23)	(2.52)	(1.34)	(3.04)	(2.07)
ACTIVE_SHARE(GOV_QUA_LOW)	1.501***	1.393***	1.992***	1.840***	1.706***	1.559***
	(4.25)	(4.06)	(4.54)	(4.30)	(3.98)	(3.72)
ACTIVE_SHARE (INFORMATION_HIGH)	0.222**	0.122	0.318***	0.193*	0.374***	0.254**
	(2.32)	(1.31)	(2.79)	(1.73)	(3.23)	(2.24)
ACTIVE_SHARE(INFORMATION_LOW)	3.519***	3.097***	2.595**	2.074**	2.262**	1.753*
	(4.07)	(3.68)	(2.45)	(2.01)	(2.16)	(1.72)
ACTIVE_SHARE(EDUCATION_HIGH)	0.969	1.613	−1.231	−0.462	−1.090	−0.342
	(0.64)	(1.09)	(−0.64)	(−0.24)	(−0.56)	(−0.18)
ACTIVE_SHARE(EDUCATION_LOW)	2.340***	2.026***	3.266***	2.849***	3.420***	3.009***
	(12.52)	(11.24)	(13.27)	(11.80)	(13.77)	(12.34)
Domicile country control variables	Yes	Yes	Yes	Yes	Yes	Yes
Fund control variables	No	Yes	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	15,658	15,658	15,658	15,658	15,236	15,236
R^2	0.25	0.29	0.27	0.31	0.28	0.31

welfare (e.g., Butler et al. (2016) and Jiang and Lim (2018)). Both properties can apply to delegated portfolio management. For instance, as long as maintaining a high level of trust incurs a high social cost (e.g., the cost of intergenerational transmission of social value), optimal trust can arise due to the aforementioned diminishing impact of trust on the benefit side. At the same time, overtrust can also hurt fund investors because excess trust above its optimal level can trigger breach of trust as opposed to a reciprocal trustworthy response. In other words, although our previous analysis rejects the breach-of-trust hypothesis as an average effect, it might nonetheless occur marginally within certain groups of (high-trusting) investors, creating a hump-shaped effect of trust in delegated portfolio management as well.[25]

To empirically examine this effect, we follow the methodology of Butler et al. (2016) and Jiang and Lim (2018) to classify funds into quintiles on the basis of the level of trust of fund investors. More explicitly, for each year, we sort either domestic funds or the low-trust side of international funds into trust quintiles and create dummy variables indicating the trust quintile of each fund.[26] Quintile 1 funds are associated with the lowest level of trust and quintile 5 with the highest level. We then replace TRUST in Table 3 and TRUST_LOW in Table 8 with these dummy variables, which allow us to zoom in on the more detailed influence of trust among these funds. In particular, for both domestic and international funds, we examine: i) how fund activeness is related to the level of trust as revealed by the quintile ranks of funds; and ii) the performance of funds that can be attributed to the quintile of the trust-related active share. Since the dummy variables of all funds sum up to 1, we let quintile 1 funds absorb the regression constant. In this case, the regression coefficient of a particular quintile dummy captures the marginal effect of trust for funds belonging to this quintile group in excess to that of funds with the lowest level of trust.

The results are tabulated in Panel A of Table 9 for domestic funds and Panel B for international funds. Within Panel A (Panel B), subpanels A1 and A2 (B1 and B2) report the impact of trust on the activeness and the performance implications, respectively. We observe a similar marginal impact of trust on both types of funds. In model 3 of both Panels A1 and B1, for instance, we find that the influence of trust on fund activeness increases from group-2 to group-5 funds. Similarly, in both Panels A2 and B2, we find that fund performance of quintile trust-related active share increases from group-2 to group-5 funds. In other words, high trust does not seem to trigger breach of trust from managers.

Perhaps the most intuitive way to demonstrate the welfare impact of trust is to

the corresponding quintile-rank related active share. Fund performance is measured as either in-sample or rolling alpha, as reported in the last 2 columns of Panel B2. We can see that, when we zoom in on the TRUST_LOW part of cross-border delegated portfolio management, fund performance increases in quintile trust.

TABLE 9

The Effect of Trust Across Trust Quintiles

Table 9 reports the coefficient estimates from regressions of fund-level activeness on dummies for different quintiles of trust, as well as the second-stage estimates of fund performance, which can be attributed to quintile-related active share for the sample of international and domestic funds. For each year, we sort either domestic funds or the low-trust side of international funds into trust quintiles, and we create dummy variables indicating the trust quintile of each fund. Funds in quintile group 1 (5) are associated with the lowest (highest) level of trust. We then replace TRUST in Table 3 and TRUST_LOW in Table 8 with these dummy variables to examine the more detailed influences of trust among these funds. The key independent variable consists of the four higher levels of trust (group = 2,3,4,5), denoting the incremental influence of trust in addition to group 1 funds. Please refer to Appendix B for variable definitions. Year fixed effects are included in the panel regressions. Robust t-statistics are reported in parentheses and are based on standard errors clustered by fund and year. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Domestic Funds

Panel A1. The Impact of Trust on Fund-Level Activeness

	1	2	3
TRUST_GROUP = 2	0.042*** (9.75)	0.055*** (11.11)	0.045*** (9.57)
TRUST_GROUP = 3	0.065*** (14.32)	0.077*** (15.64)	0.078*** (13.42)
TRUST_GROUP = 4	0.079*** (18.79)	0.091*** (19.42)	0.080*** (17.01)
TRUST_GROUP = 5	0.081*** (15.42)	0.095*** (15.96)	0.088*** (12.75)
GOV_QUA		−0.715*** (−15.25)	−1.269*** (−19.37)
INFORMATION			0.652*** (11.59)
EDUCATION			−2.083*** (−4.89)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
No. of obs.	26,498	26,498	26,498
R^2	0.17	0.19	0.20

Panel A2. Performance of Trustworthy Active Shares

	BENCH_ADJ_ RETURN	BENCH_ADJ_ IN_SAMPLE_ALPHA4	BENCH_ADJ_ ROLLING_ALPHA4
ACTIVE_SHARE(TRUST_GROUP=2)	0.114*** (4.94)	0.125*** (5.10)	0.096*** (3.97)
ACTIVE_SHARE(TRUST_GROUP=3)	0.220*** (5.54)	0.252*** (5.79)	0.236*** (5.50)
ACTIVE_SHARE(TRUST_GROUP=4)	0.506*** (16.18)	0.567*** (16.61)	0.550*** (16.36)
ACTIVE_SHARE(TRUST_GROUP=5)	0.620*** (15.12)	0.645*** (14.81)	0.661*** (15.35)
ACTIVE_SHARE(GOV_QUA)	−0.075 (−0.50)	−0.086 (−0.53)	−0.100 (−0.63)
ACTIVE_SHARE(INFORMATION)	1.558 (0.74)	1.549 (0.68)	1.576 (0.69)
ACTIVE_SHARE(EDUCATION)	0.133 (0.18)	0.240 (0.30)	0.216 (0.27)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
No. of obs.	26,498	26,498	26,370
R^2	0.32	0.36	0.37

(continued on next page)

TABLE 9 (continued)

The Effect of Trust Across Trust Quintiles

Panel B. International Funds

Panel B1. The Impact of Trust on Fund-Level Activeness

	1	2	3
TRUST_HIGH	0.006	0.007	0.006
	(1.20)	(1.33)	(1.12)
TRUST_LOW_GROUP = 2	0.037***	0.038***	0.039***
	(6.71)	(6.95)	(6.70)
TRUST_LOW_GROUP = 3	0.051***	0.056***	0.058***
	(6.33)	(6.71)	(6.74)
TRUST_LOW_GROUP = 4	0.103***	0.107***	0.109***
	(17.09)	(17.17)	(15.99)
TRUST_LOW_GROUP = 5	0.134***	0.139***	0.140***
	(17.03)	(17.27)	(16.34)
QUA_GOV_HIGH		−0.044**	−0.150***
		(−2.10)	(−4.42)
QUA_GOV_LOW		−0.010	−0.008
		(−1.37)	(−0.99)
INFORMATION_HIGH			0.002
			(0.34)
INFORMATION_LOW			0.121*
			(1.76)
EDUCATION_HIGH			0.126***
			(4.27)
EDUCATION_LOW			0.003
			(0.46)
Control variables	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
No. of obs.	15,658	15,658	15,658
R^2	0.10	0.10	0.10

Panel B2. Performance of Trust-Related Active Share

	BENCH_ADJ_RETURN		BENCH_ADJ_IN_SAMPLE_ALPHA4		BENCH_ADJ_ROLLING_ALPHA4	
	1	2	3	4	5	6
ACTIVE_SHARE (TRUST_HIGH)	−8.964	−5.234	−7.173	−3.196	−2.366	2.151
	(−0.68)	(−0.41)	(−0.53)	(−0.24)	(−0.17)	(0.16)
ACTIVE_SHARE (TRUST_LOW_GROUP = 2)	0.184***	0.139**	0.218**	0.189***	0.223**	0.213***
	(3.07)	(2.35)	(2.19)	(3.07)	(2.25)	(3.45)
ACTIVE_SHARE (TRUST_LOW_GROUP = 3)	0.195**	0.220**	0.240***	0.242**	0.260***	0.256***
	(2.02)	(2.33)	(3.88)	(2.47)	(4.18)	(2.62)
ACTIVE_SHARE (TRUST_LOW_GROUP = 4)	0.280***	0.246***	0.302***	0.264***	0.308***	0.273***
	(8.40)	(7.66)	(8.67)	(7.87)	(8.80)	(8.11)
ACTIVE_SHARE (TRUST_LOW_GROUP = 5)	0.334***	0.291***	0.321***	0.274***	0.332***	0.290***
	(9.10)	(8.00)	(8.38)	(7.17)	(8.75)	(7.67)
ACTIVE_SHARE (QUA_GOV_HIGH)	0.189*	0.096	0.190*	0.088	0.233**	0.143
	(1.67)	(0.85)	(1.68)	(0.78)	(1.98)	(1.22)
ACTIVE_SHARE (QUA_GOV_LOW)	5.536***	5.161***	6.118***	5.700***	5.337***	4.916***
	(3.94)	(3.78)	(4.21)	(4.04)	(3.74)	(3.55)
ACTIVE_SHARE (INFORMATION_HIGH)	0.211	0.093	0.247*	0.120	0.277**	0.153
	(1.64)	(0.74)	(1.88)	(0.93)	(2.08)	(1.18)
ACTIVE_SHARE (INFORMATION_LOW)	−1.601***	−1.402***	−1.507***	−1.291***	−1.422***	−1.204**
	(−3.33)	(−3.00)	(−3.05)	(−2.70)	(−2.88)	(−2.51)
ACTIVE_SHARE (EDUCATION_HIGH)	0.817	1.328	0.284	0.825	0.291	0.822
	(0.68)	(1.13)	(0.23)	(0.68)	(0.23)	(0.68)
ACTIVE_SHARE (EDUCATION_LOW)	2.343***	2.037***	2.601***	2.268***	2.698***	2.364***
	(13.14)	(11.87)	(14.00)	(12.69)	(14.26)	(13.00)
Domicile country control variables	Yes	Yes	Yes	Yes	Yes	Yes
Fund control variables	No	Yes	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	15,658	15,658	15,658	15,658	15,236	15,236
R^2	0.26	0.29	0.24	0.28	0.24	0.28

Interestingly, the incremental benefits of additional trust decrease over quintiles, revealing a diminishing impact of social trust in terms of performance. The same pattern also graphically demonstrates that the level of trust does not seem to exceed its optimal level to reverse its benefits.

It is interesting to compare the diminishing benefits received by mutual fund investors to the hump-shaped welfare effect of trust faced by households. If anything, quintile 5 of the low-trust side of cross-border investment seems to have roughly the right amount of trust in maximizing investor benefits in Figure 3. By adding this pattern to our previous findings that the high-trust side of cross-border

(i.e., wave 1, 1981–1984). This analysis allows us to assess the long-term influence of social trust on the (much later) development of the global mutual fund industry.

Table 10 implements this empirical strategy and reports the impact of the first-wave trust for both domestic and international funds. We find that the influence of trust on both activeness and performance remains highly significant. To estimate the economic magnitude, we note that the standard deviation of trust from the first wave (0.20) is slightly smaller than that of the main sample that we use. In this case, the rolling alpha for domestic and international funds attributable to a 1-standard-deviation increase in the first-wave trust amounts to 1.08% and 1.57%, respectively. Compared to the influence of trust in our baseline case (1.71% in Table 3 for domestic funds and 2.56% in Table 4 for international funds), the influence of the first-wave trust is close to two-thirds in magnitude.

Note that the reduction in magnitude is reasonable because Table 10 aims to capture the influence of the long-term component of trust uncontaminated by more recent economic conditions and financial development. In this regard, the observation that the long-term component of trust can capture approximately 2/3 of the overall impact is economically essential. It not only suggests that leading social values, such as trust, can have a persistent influence on our financial markets, but it also alleviates the concern that omitted variables related to more recent economic conditions might spuriously contribute to most of the observed influence of trust on delegated portfolio management.

TABLE 10
The Long-Term Influence of Trust Using the First Wave of WVS

Table 10 reports the results of robustness testing for Tables 3 and 8 using trust from the first wave of the World Values Survey. Other specifications in Panel A (domestic funds) and Panel B (international funds) are similar to those in Tables 3 and 8, respectively. Refer to Appendix B for variable definitions.

Panel A. Domestic Funds

Panel A1. The Impact of Trust on Fund-level Activeness

	1	2	3
TRUST	0.382***	0.281***	0.226***
	(14.08)	(11.16)	(9.24)
GOV_QUA		−0.268***	−0.568***
		(−8.41)	(−11.80)
INFORMATION			0.325***
			(7.77)
EDUCATION			−1.689***
			(−6.63)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
No. of obs.	26,498	26,498	26,498
R^2	0.18	0.22	0.22

Panel A2. Performance of Trustworthy Active Shares

	BENCH_ADJ RETURN	BENCH_ADJ IN_SAMPLE_ALPHA4	BENCH_ADJ ROLLING_ALPHA4
ACTIVE_SHARE(TRUST)	0.223***	0.197***	0.239***
	(4.66)	(3.56)	(4.26)
ACTIVE_SHARE(GOV_QUA)	−0.152***	−0.202***	−0.130***
	(−5.53)	(−6.33)	(−4.05)
ACTIVE_SHARE (INFORMATION)	−0.787***	−0.933***	−0.926***
	(−12.55)	(−13.18)	(−12.87)
ACTIVE_SHARE (EDUCATION)	0.795***	1.182***	1.215***
	(10.05)	(12.20)	(11.99)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
No. of obs.	26,498	26,498	26,370
R^2	0.31	0.36	0.36

Panel B. International Funds

Panel B1. The Impact of Trust on Fund-Level Activeness

	1	2	3
TRUST_HIGH	0.005	0.004	0.003
	(0.93)	(0.83)	(0.57)
TRUST_LOW	0.256***	0.248***	0.270***
	(13.99)	(13.30)	(10.85)
QUA_GOV_HIGH		0.039*	−0.080**
		(1.93)	(−2.35)
QUA_GOV_LOW		−0.006	−0.002
		(−0.73)	(−0.23)
INFORMATION_HIGH			0.139***
			(4.65)
INFORMATION_LOW			−0.000
			(−0.01)
EDUCATION_HIGH			0.001
			(0.23)
EDUCATION_LOW			0.182**
			(2.16)
Control variables	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
No. of obs.	15,658	15,658	15,658
R^2	0.08	0.08	0.08

TABLE 10 (continued)

international funds (as reported in Table 8) in Table IN8. Tables IN9 and IN10 report the results of the 2-stage tests for domestic and international funds based on this alternative definition of trust. Finally, Table IN11 replaces the fund sales country with the fund domicile country.

The fourth set of robustness checks involves the use of alternative factor models to compute fund performance. More specifically, we use: i) the risk factors of the leading investment country of an international fund; ii) the holding value (TNA)-weighted average of the local factors of all investing countries; and iii) the combination of risk factors from both the fund sales country and the leading fund investment country (i.e., 8 factors in total in this case). Table IN12 tabulates the second-stage performance tests for both domestic and international funds and shows that our conclusions are robust to this robustness check.

The fifth set of robustness tests conducts an in-depth investigation of the role of financial development, which could be closely linked to the level of social capital, one key outcome of which is trust (Guiso et al. (2004)). Given the importance of financial development, we further control for several alternative indicators of financial development following La Porta et al. (1997) and Guiso et al. (2004), such as EXTERNAL_EQUITY/GNP and DEBT/GNP, as well as the number of domestic firms or IPOs scaled by population (Appendix B provides the definitions). Tables IN13 and IN14 control for these variables for both domestic and international funds.

The sixth set of robustness checks controls for additional country characteristics related to informal culture (religion, individualism, and hierarchy), formal institutions (we consider six important measures as specified in the Supplementary Material), and the distribution of the population. The influences of these variables are examined in Tables IN15, IN16, and IN17.

Finally, the last set of robustness checks examines whether the influence of trust differs when mutual funds serve different types of investors. Given that institutional investors can rely on their professional expertise when making investment decisions, the impact of trust, either in terms of trust in the market or trust in managers, should be higher for funds dominated by retail investors. To explore this intuition, we follow Berk and van Binsbergen (2015) and Pastor et al. (2015) to identify share class type as either institutional or retail/noninstitutional. For both domestic funds (Table IN18) and international funds (Table IN19), we observe that trust significantly affects the activeness and performance of retail funds but not of institutional funds.

Overall, through all these robustness checks, we confirm our main conclusions regarding both the activeness and performance of domestic funds and international funds: trust plays a major role in the global mutual fund industry.

VI.   Conclusion

While the literature has long argued that trust, as one of the most important types of informal institutions, affects the development of economies, scarce evidence has been uncovered regarding how it may affect the principal-agent relationship in active portfolio management. Our paper fills this gap by exploring the impact of trust in general and the role of the two mechanisms of trust in particular (i.e., trust in the market and trust in managers) in the global mutual fund industry.

We find compelling evidence that trust plays an important role in affecting both the activeness and effectiveness of the global mutual fund industry. In particular, trust is positively associated with fund activeness and, through the active share channel, fund performance. In the context of international mutual funds conducting cross-border investments, we further find that "trust in the market" has a dominating influence on fund activeness and performance in the "investing in low-trust countries" scenario, whereas "trust in managers" dominates the reverse scenario of "investing in high-trust countries." In both cases, trust-related active share still delivers a superior performance. These observations could imply a diminishing marginal impact of social trust in facilitating active portfolio management in the global mutual fund industry.

Our results confirm the importance of trust in financial intermediaries such as mutual funds. Its impact on global delegated portfolio investment is heuristic. Our paper calls for more attention from both academic researchers and policymakers to understand how culture affects financial intermediaries and, through these financial intermediaries, the globalization processes of various countries.

Appendix A. Sample Selection

Appendix A shows the procedure for how we construct our final sample from the following main data sets: Morningstar International, FactSet/LionShares, WVS, and EVS. We report the total number of funds for each step.

Procedure	No. of Funds
Open-end equity mutual from Morningstar, merged with mutual fund holding from FactSet/LionShares from 2002 to 2015	15,493
Require funds to follow benchmark indices that have at least 10 open-end equity mutual funds	10,168
Merge with social trust and other cultural values from WVS and EVS	9,768
Other screening procedures: TNA ≥ $2 million, non-offshore funds, non-missing performance value	7,883

Appendix B. Variable Definitions and Sources

Country-Level Variables

TRUST: Based on the responses to the question "Generally speaking, would you say that most people can be trusted or that you cannot be too careful in dealing with people?" we recode the response to be 1 if the participant reports that most people can be trusted and 0 otherwise, and we take the average for each country-year. A higher score indicates more trust. Source: World Values Survey and European Values Study.

TRUST_KNOW: Trust level in the question "How much do you trust people you know personally?" Index ranges from 0 to 1 (a higher score indicates more trust). Source: World Values Survey and European Values Study.

TRUST_FIRST: Trust level in the question "How much do you trust people you meet for the first time?" Index ranges from 0 to 1 (a higher score indicates more trust). Source: World Values Survey and European Values Study.

TRUST_NATIONALITY: Trust level in the question "How much do you trust people of another nationality?" Index ranges from 0 to 1 (a higher score indicates more trust). Source: World Values Survey and European Values Study.

ALTER_TRUST: Sum of TRUST_KNOW, TRUST_FIRST, and TRUST_NATIONALITY, normalized to [0,1]. Source: World Values Survey and European Values Study.

INDIVIDUALISM: Based on responses to the question "How would you place your views on this scale? 1 means completely agreeing with statement (1); 10 means completely agreeing with statement (2); and if your views fall somewhere in between, you can choose any number in between. [(1) Incomes should be made more equal; (2) We need larger income differences as an incentive for individual effort]," we rescale the responses to be between 0 and 1, with 0 representing completely agreeing with statement (1) and 1 representing completely agreeing with statement (2), and then we take the average of the response in each country-year. Higher index values correspond to more individualism. Source: World Values Survey and European Values Study.

ACC_TRANSPARENCY: Accounting transparency measures the extent that a firm's stock return incorporates information about future earnings. For details, please refer to Durnev, Errunza, and Molchanov (2009).

CONTRACTING_INST: Contracting institution refers to the rules and regulations governing contracting between two parties of similar power, such as those between the creditor and debtor. Source: Acemoglu and Johnson (2005).

PROPERTY_RIGHTS: Property rights refers to the rules and regulations protecting market participants against the power of the government (or the elite). Source: Acemoglu and Johnson (2005).

LIFE_EXPECTANCY: Life expectancy indicates the number of years that a newborn infant would live if prevailing patterns of mortality at the time of its birth were to remain the same throughout its life. Source: World Development Indicators.

POP_AGE: Population age is the percentage of the population within the ages of 15–64 and represents the number of people who could potentially be economically active. Source: World Development Indicators.

GDP: The natural logarithm of GDP, log(GDP), in billions of U.S. dollars per country. Source: World Development Indicators.

MKTCAP/GDP: Total market capitalization of listed companies divided by GDP per country. Source: World Development Indicators.

Fund-Level Variables

ACTIVE_SHARE: The percentage of a fund's portfolio holdings that is different from its benchmark.

BENCH_ADJ_RETURN: Difference between the fund's annual net return and its benchmark return.

BENCH_ADJ_ROLLING_ALPHA4:   4-factor annualized alpha estimated using 3 years of past monthly fund excess return in U.S. dollars with country factors.

BENCH_ADJ_IN_SAMPLE_ALPHA4:   4-factor annualized alpha estimated using monthly fund benchmark-adjusted return in U.S. dollars with country factors in the full sample period 2002–2015.

Log(TNA):   The natural logarithm of total net assets in millions of U.S. dollars.

Log(TNA)_SQUARED: Square of log total net assets in millions of U.S. dollars.

TURNOVER: Fund turnover ratio.

FLOWS: Percentage growth in TNA.

FUND_AGE: Number of years since the fund was launched.

Supplementary Material

To view supplementary material for this article, please visit http://dx.doi.org/10.1017/S0022109020000848.

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