Uncertainty Avoidance and Mutual Funds*

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Abstract

We study how culture influences mutual funds around the world. Uncertainty Avoidance (UA), which is related to ambiguity aversion, is negatively associated with flow-performance sensitivity, deviation from the fund benchmark, fund alpha, and the fraction of active management across the 25 countries in our sample. This is true even when controlling for an exhaustive set of fund- and country-level characteristics. We also find that a fund's deviation from its benchmark is not only affected by the UA of its domicile country but also by the UA of its fund family's country of origin. Our results highlight the importance of considering cultural characteristics, and UA in particular, when studying mutual funds across countries.

JEL Classification: G02; G15; G23

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1. Introduction

The literature has shown that mutual funds exhibit systematic differences from country to country. The realized performance of mutual funds shows substantial variation across countries (Ferreira, Keswani, Miguel, and Ramos, 2013) as does the extent to which investors' flows into funds are sensitive to performance (Ferreira, Keswani, Miguel, and Ramos, 2012). There is also considerable cross-country variation in the size of the mutual fund industry relative to the stock market (Khorana, Servaes, and Tufano, 2005). Such differences are economically important, particularly in the dimension of performance, as households use these funds as a savings vehicle for their retirement.[1]

In this paper, we study how culture influences mutual funds around the world. This is different from the existing literature, which has primarily focused on institutional, financial, and macroeconomic influences. We instead argue that cultural influences are likely to be as important. Mutual fund industry outcomes are the result of the intersection of the behaviors of fund managers and investors. Hofstede (2011, p.2) states that "*Culture is the collective programming of the mind that distinguishes the members of one group or category of people from others*" which makes culture a natural proxy for the behavioral characteristics shared within a country. We therefore expect culture to influence the utility that mutual fund investors and managers in a given country derive from their actions.[2]

We focus on a particular cultural dimension namely Hofstede's (1980, 2001) *Uncertainty Avoidance* (UA), and show that it has statistically and economically significant effects on mutual fund conduct in our sample of 25 countries.[3] We focus on UA because of its intuitive appeal as a proxy for *aversion to ambiguity* or *Knightian Uncertainty (*Knight,1921). Hofstede (2011, p. 10) states that *"Uncertainty Avoidance is not the same as risk avoidance; it deals with a society's tolerance for ambiguity."* According to Knight (1921) and Keynes (1921), the difference between risk and ambiguity is that risk has a measurable probability while ambiguity does not. Ambiguity

[1] In the U.S., 91% of mutual fund–owning households indicated that saving for retirement was one of their financial goals, and 74% said it was their primary financial goal (Investment Company Institute, 2015). In the E.U., mutual funds represent 20% of households' retirement savings (EFAMA, 2015). Moreover, the use of mutual funds as a savings vehicle for retirement is expected to increase due to the declining generosity of state pensions (Plantier, 2014).
[2] Li, Griffin, Yue, and Zhao (2013, p.2) highlight *"the growing awareness among finance and accounting scholars that along with formal institutions, informal institutions such as culture also matter in corporate decisions, even when those decisions are made by sophisticated professional managers in a globalized environment."*
[3] After Hofstede's (1980) seminal study, alternative frameworks have been developed on culture values, including Schwartz (1994, 2006), GLOBE (House et al., 2004), and the World Value Survey (Inglehart, 1990, 1997).

aversion is thus a preference for known over unknown risks. This interpretation of UA allows us to derive clear directional priors about its effect on funds across countries. We summarize these priors in two testable hypotheses and find that they are strongly borne out in the data.[4]

Our first hypothesis is about how UA is related to investors' decisions to buy and sell funds in different countries. Specifically, we posit that funds in countries with higher UA should demonstrate lower flow-performance sensitivity. This is because individuals in countries with higher UA display a lower tolerance for ambiguity and a stronger resistance to change (Hofstede 1980, 2001, and House et al., 2004). Investors in such countries should therefore be less reactive to fund performance, since it is difficult to separate skilled managers from lucky ones based on past performance (Fama and French, 2010) and investors treat signals of unknown quality as ambiguous (see, e.g., Epstein and Schneider, 2008). We would therefore expect a negative relation between UA and flow-performance sensitivity across countries. Our tests strongly confirm this prediction even when controlling for an exhaustive list of fund- and country-level characteristics. Furthermore, the effect is also economically significant as a one standard deviation increase in UA across countries is associated with a 51% decrease in the sensitivity of flows to performance.

Our second hypothesis is about how UA is related to fund managers' aversion to deviating from the fund's benchmark. Countries with higher UA exhibit less tolerance to behavior that is novel, unknown, surprising, or different from usual (Hofstede 2011, p. 10). We posit that funds domiciled in countries with higher UA should display smaller deviations from the benchmark because of the higher aversion to the ambiguity associated with a portfolio that is dissimilar to the benchmark. This ambiguity may arise because deviating from the benchmark can add unknown risks (i.e., asset returns with an unknown probability distribution) to the fund's total risk profile. Using the fund active share measure of Cremers and Petajisto (2009) to proxy for its benchmark deviations (based on the absolute sum of a fund's weights minus its target index weights), we find that it is indeed negatively and significantly related to UA. Across the countries in our sample, a one standard-deviation increase in UA is associated with a 4-7% decrease in active share, which is considerable, given that the average active share in our sample is 70%.

[4] The GLOBE framework has two alternative measures of Uncertainty Avoidance; namely, an Uncertainty Avoidance "Values" measure and an Uncertainty Avoidance "Practices" measure. Interestingly, these two measures are significantly negatively correlated. This is inconsistent with one of the key assumptions of the Hofstede framework: the values of people drive their practices, i.e., people should do what they value. As there does not appear to be coherence between the Hofstede and GLOBE measures of Uncertainty Avoidance, they are not clear substitutes for each other.

As an extension of our second hypothesis, we posit that a fund manager's aversion to deviate from the benchmark should not only be affected by the UA of the fund's domicile country but also by the UA of the fund family's country of origin. When a fund's domicile country differs from its country of parentage, the behavior of the fund manager may be affected by any corresponding difference in UA. In particular, we expect the difference between a given fund's active share and its domicile country's average active share to be decreasing in the difference between the domicile country's UA and the parentage country's UA. As a simple example, consider a fund domiciled in the U.S. but run by a French fund management company. Since France (the fund's country of parentage) has a much higher UA compared to the U.S. (the fund's country of domicile), we would expect to see this particular fund's manager deviating less from the benchmark compared to the average U.S. fund manager. This prediction is also strongly borne out in the data, suggesting that the negative relation between UA and active share also holds at the fund-family level even when the domicile country differs from the parentage country.

Since we show that UA is negatively related to active share, and since the empirical relation between deviations from the benchmark and fund alpha is reliably positive (Kacperczyk, Sialm, and Zheng, 2005; Kacperczyk, van Nieuwerburgh and Veldkamp, 2014), it is natural to ask whether UA also has a direct, negative relation to fund alpha. If so, is there also a negative relation to a country's fraction of active management? We find that this is indeed the case: higher UA is negatively and significantly related to funds' four-factor alpha as well as to the fraction of assets under active management across the 25 countries in our sample. The effects are economically large, as a one standard deviation increase in UA is associated with (i) a decrease in annual alpha of 50 basis points (the average alpha in our sample is 191 basis points per year) and (ii) an increase in the fraction of indexed assets by 6% (the average fraction of indexed assets across the countries in our sample is 15%).

While we control for an exhaustive set of fund- and country-level characteristics in all our tests, a valid concern is still whether the role we detect for UA is correctly identified, i.e., whether or not it is an artifact of endogeneity issues. To alleviate this concern, we follow the existing literature and instrument UA using religion and ethnic fractionalization. We find that all our results remain valid when we use these instruments.

Finally, we conduct a battery of tests to document the robustness and generality of our results. First, we extend our flow-performance tests to take into account the influence of distributors' sales commissions, investor pension plan flexibility, manager-level turnover and the extent to which

managers deviate from their benchmark, and, finally, convexity in the flow-performance relationship. We find, in all cases, that our main results are preserved. Second, we demonstrate that our fund-performance findings are unaffected if we measure performance using either alpha net of fees or benchmark adjusted returns. Third, we show that our findings for the effects of UA on fund industry variables are unaffected by controlling for other cultural dimensions. Fourth, using Fama-MacBeth cross-sectional regressions, we show that our main findings are not affected by persistence in UA or in the fund-level outcome variables. Finally, to alleviate concerns that the role we detect for UA is disproportionately driven by a handful of countries with a large number of funds, we show that our main results are robust to using weighted least squares (WLS) where the weights are proportional to the inverse of the number of funds in each country.

Culture has previously been shown to be an important determinant of various forms of financial interactions, including the behavior of firms and mutual funds.[5] Two papers link UA to the behavior of fund managers. Using data for the U.S., Germany, Japan, and Thailand, Beckmann, Menkhoff and Suto (2008) find that fund managers from countries with higher UA do not invest as actively as their allowed tracking error. Anderson, Fedenia, Hirschey and Skiba (2011) find that funds from countries with higher UA display greater home bias in their investment decisions. Both findings are in line with the intuition that UA is a proxy for ambiguity aversion (i.e., a preference for *known* over *unknown* risks). We contribute to this strand of the literature in several ways. First, extending Beckmann et al. (2008), we provide novel evidence that a fund's deviation from its benchmark is not only affected by the UA of its domicile country but also by the UA of its fund family's country of origin across the 25 countries in our sample. Second, we go beyond Anderson et al. (2011) and show that funds from countries with higher UA yield significantly lower alpha and that countries with higher UA display a significantly lower fraction of active management. If culture affects investment due to its effect on investment returns, this may explain the observed association between culture and economic growth (Knack and Keefer, 1997). Finally, while

[5] Chui, Titman, and Wei (2010) demonstrate that culture can explain trading volume, volatility, and momentum profits. Eun, Wang, and Xiao (2015) show that culture explains differences in stock price comovement. Stulz and Williamson (2003) document that cultural differences explain differences in investor rights. Guiso, Sapienza, and Zingales (2008 and 2009) find that culture influences stock market participation as well as foreign direct investment. Li, Griffin, Yue, and Zhao (2013) and Mihet (2013) use culture to explain firm risk-taking while Guiso, Sapienza, and Zingales (2015) and Graham, Harvey, Popadak and Rajgopal (2016) show that there is a link between country culture and firm culture. Pan, Siegel, and Wang (2017) and Nguyen, Hagendorff, and Eshraghi (2018) show that firm performance is affected by the country culture of employees. Ahern, Daminelli, and Fracassi (2015) study the effect of cultural values on cross-border mergers and show that deal volume and synergies gained depend on cultural differences between the firms' countries of origin. Li, Massa, and Zhang (2017) find that trust affects the disposition effect in the Chinese mutual fund market.

Beckmann et al. (2008) and Anderson et al. (2011) focus on the link between UA and the investment decisions of fund *managers*, we show that UA also affects those of fund *investors*, since we find that higher UA is also associated with significantly lower flow-performance sensitivity. Our overall broad contribution is therefore to show that it is not just formal but also informal institutions that affect conduct in the asset management domain.

Our findings have implications for fund regulators, fund families and fund investors notably, in the way they compare funds internationally. Regulators often use international comparisons to gauge whether their country's fund industry is delivering value for money.[6] Likewise, fund families compare fund performance across countries to understand the relative efficiency of the different parts of their business. Finally, investors are free to choose between funds that invest in the same underlying assets but originate from different jurisdictions.[7] Our study shows that differences in UA help explain why fund industries in different countries have significant differences in performance. Fund regulators, fund families and fund investors should therefore pay attention to UA, and culture in general, when doing international comparisons as differences in the actions and performance of funds in different countries may in part reflect cross-country differences in UA.

2. Hypotheses development

Culture is a commonly applied proxy for behavioral characteristics shared within a country. Hofstede (1983, 2011) argues that people have patterns of thinking, feeling, and acting that are learned through their lifetime. Using the analogy of computers, these patterns are like mental programs, and a customary term for such mental programs is culture. The source of peoples' culture lies within the social environment in which they grew up as well as their collective life experiences. This does not mean that a person with a given cultural background will always behave in a certain way, but it does suggest a certain degree of predictability in behavior. Furthermore, culture is always a collective phenomenon, because it is shared by people who grew up in the same

[6] In its 2017 Asset Management Market Study on the value for money delivered by the UK fund industry (FCA, Asset Management Market Study Final Report, Market Study MS15/2.3), the UK fund regulator (the Financial Conduct Authority, or FCA) performed international comparisons to gauge whether UK fund investors face worse performance than fund investors in other countries and to gain insights into which regulatory solutions have proved effective elsewhere.

[7] In Europe for example, UCITs open-end funds are sold across borders and therefore it is commonplace for investors to make international comparisons of fund performance. A French investor can therefore buy a UCITs fund that originates from France, the Netherlands, and Luxembourg (which has one of the largest fund industries in Europe).

environment. Indeed, Hofstede, Hofstede, and Minkov (2010) state that culture is *"the collective programming of the mind that distinguishes the members of one group or category of people from others"* (p.6). As culture influences behavior in general, there is no restriction on whether culture leads to rational or irrational forms of behavior.

As such, we argue that culture is a natural proxy for behavioral forces that influence mutual fund characteristics in a given country. This is because it is ultimately the actions and interactions of mutual fund investors and managers that determine important fund industry characteristics like flows, benchmark deviations, and performance.[8] While Hofstede measures cultural differences across countries using a number of dimensions, we focus in this study on a particular cultural dimension, namely, Uncertainty Avoidance (UA).[9] UA is related to the level of stress and anxiety that individuals face in the event of an unknown situation, and, as such, people in uncertainty-averse cultures have a preference for well-anticipated events. Importantly, Hofstede (2011, p. 10) stresses that *"Uncertainty Avoidance is not the same as risk avoidance; it deals with a society's tolerance for ambiguity."* UA is therefore most naturally seen as a proxy for aversion to *ambiguity* or *Knightian Uncertainty*, as introduced by Knight (1921) and Keynes (1921).

Knight (1921) argues that risk is a "measurable uncertainty" while ambiguity is "true uncertainty" that cannot "by any method be reduced to an objective, quantitatively determined probability" (p. 321). He further elaborates that ambiguity is a result of changes that cannot be predicted by probabilistic rules and whose consequences for market outcomes and payoffs resulting from market participants decisions cannot be fully comprehended.[10] Empirically, ambiguity aversion has been linked to Hofstede's UA index by at least two studies. Sherman (1974) finds a link between UA and a psychometric scale of "intolerance to ambiguity." Rieger and Wang (2012) conduct a large-scale international survey to test whether ambiguity aversion can help explain the equity premium puzzle and find that "uncertainty avoidance as a cultural

[8] Culture has also been shown to have an impact on behavior in the management and psychology literature. See for example Kroeber and Kluckhohn (1952), Hofstede (1980, 2001), Gelfand, Nishii, and Raver (2006), Hofstede, Hofstede, and Minkov (2010), Gelfand et al. (2011), and Norenzayan (2011).

[9] Hofstede's work has identified that country–level culture mainly varies across six dimensions: Power Distance, Uncertainty Avoidance, Long–term Orientation, Individualism, Indulgence, and Masculinity.

[10] Gilboa and Schmeidler (1989) present one of the first models of ambiguity aversion by introducing the so–called *maxmin* or *multiple priors* expected utility. Epstein and Wang (1994) present a discrete–time model of intertemporal asset pricing under Knightian Uncertainty, while Chen and Epstein (2002) present a formulation of utility in continuous–time that incorporates a distinction between risk aversion and ambiguity aversion as well as a further distinction between these and the willingness to substitute intertemporally.

dimension appears to affect the size of the equity premium through ambiguity aversion attitude" (p. 70).

We therefore focus on UA because of its intuitive appeal as a proxy for ambiguity aversion. This allows us to derive clear directional priors regarding how it will affect flow-performance sensitivity, a fund's deviations from its benchmark, fund performance, and the fraction of active management in a country. The remainder of this section develops our hypotheses.

2.1 Uncertainty Avoidance and fund flows

The primary interface between investors and the fund industry is investors' purchases and sales of funds, which determine net flows. The previous literature has highlighted that past performance is one of the main drivers of flows (e.g., Sirri and Tufano, 1998). Building on this, we will now hypothesize how the UA of the fund's country of domicile affects the sensitivity of flows to past performance (i.e., flow-performance sensitivity).

In countries with higher UA, individuals display a lower tolerance for ambiguity (Hofstede, 1980, 2001, 2011) and a stronger resistance to change (House et al., 2004). In such countries, if past performance is an ambiguous signal of future performance, investors should switch funds less often. Hence, assuming there is ambiguity in the relation between past and future fund performance, we should see lower flow-performance sensitivity in countries with higher UA.

There is evidence of ambiguity in the relation between past and future fund performance. Fama and French (2010), for instance, find that while there are some fund managers with enough skill to produce benchmark-adjusted average returns that cover costs, there are far fewer of them than one would expect by chance, and their tracks are hidden in the aggregate by the performance of managers with insufficient skill. Hence, it is difficult to separate truly skilled managers from purely lucky ones ex-post, and, as such, judging the quality of a signal based on past performance can be difficult for the average investor. As argued by Epstein and Schneider (2008), investors treat signals of unknown quality as being ambiguous.

In addition, there are several reasons for why separating skilled from lucky managers may be even more difficult ex-ante, at least for the average investor. First, many observations are required to eliminate the luck-of-the-draw effect from the evaluation process (Bodie, Kane, Marcus, 2014). Second, when fund managers change their portfolios, there is a change in the probability distribution of the fund's returns, making it harder still to predict future performance. Third, the statistical techniques required to separate luck from skill - such as those in Kosowski,

Timmermann, Wermers, and White (2006), and Barras, Scaillet, and Wermers (2010) - are frequently complex and are likely to be beyond the ability of the average retail investor. Fourth, the performance of different fund managers has been shown to depend on market conditions (Kacperczyk, van Nieuwerburgh, and Veldkamp, 2014), which implies that accurately predicting a fund manager's performance entails accurately predicting market conditions. Fifth, because assets-under-management and the extent of returns-to-scale also influence subsequent fund performance (Berk and Green, 2004), accurately predicting fund performance may entail estimating returns-to-scale and forecasting the evolution of fund size, both of which are coupled with considerable difficulty. Perhaps because of this inherent difficulty in separating skilled managers from lucky ones, mutual fund disclosures are regulated (for instance, in the U.S., there is the Investment Company act of 1940) and a considerable number of fund investors around the world use investment advisers (for example, according to the Investment Adviser Association (2019), 34.3 million individual investors used investment advisers in the U.S. during 2019).[11] We thus have our first hypothesis:

Hypothesis 1: Flow-performance sensitivity is negatively related to the UA of the fund's domicile country.

Specifically, in a regression of flows on past performance interacted with UA, Hypothesis 1 suggests that the coefficient on the interaction should be negative.[12]

2.2 Uncertainty Avoidance and deviations from the fund's benchmark

A mutual fund's deviations from its benchmark are dictated by its managers. While managers and investors may know the risks of the index tracked by the fund, deviating from the benchmark can add unknown risks (i.e., asset returns with an unknown probability distribution) to the fund's total risk profile. Hence, because benchmark deviations can be associated with higher ambiguity compared to benchmarking, we posit that funds operating in countries with higher UA should

[11] UA may not only affect fund managers and investors, but also investment advisers. While it might be interesting to investigate whether UA affects flows differently through the advised and unadvised channels, we leave this for future research.

[12] In a related manner, Baumgartner and Steenkamp (1996) argue that since switching a product necessarily entails greater uncertainty, consumers should be switching less from, and be more loyal to, a current product in societies exhibiting greater UA. Confirming this, Ndubisi et al. (2012) provide empirical evidence showing that there is indeed less product switching in countries with higher UA.

deviate less from their benchmarks. Empirically, our main proxy for benchmark deviations is a fund's active share, which measures the extent to which a fund's portfolio composition differs from the portfolio composition of the fund's benchmark. We would thus expect to see a negative association between UA and active share across countries.

Extending this, we hypothesize that active share should also be affected by any difference in UA between the fund's domicile country and fund family's country of origin. Suppose that a fund operates in a country with low relatively UA but that its fund family is from a country with relatively high UA. As a result of the higher UA of the fund family's country of origin, we would, all else equal, expect the fund's benchmark deviations to be lower than the average level of benchmark deviations in the fund's domicile country. It should be recognized that the influence of the fund family's UA on benchmark deviations is a within-country effect, as it implies that a fund's benchmark deviations differ from the average level of benchmark deviations dictated by the domicile country.[13] We therefore have the following hypothesis:

Hypothesis 2

a) Active share is negatively related to the UA of the fund's domicile country.

b) The difference between a fund's active share and the average active share in the fund's domicile country is negatively related to the difference between the UA of the fund family's country of origin and the fund's domicile country.

3. Data and variable definitions

3.1 Sample

We use data on equity mutual funds from the Lipper Hindsight database, which is survivorship-bias free. The same data is employed in Ferreira, Keswani, Miguel, and Ramos (2012, 2013), Banegas, Gillen, Timmermann, and Wermers (2013), Cremers, Ferreira, Matos, and Starks (2016), Ferreira, Massa, and Matos (2017) and Ferreira, Matos and Pires (2018). Because the Lipper Hindsight database lists multiple share classes as separate funds, we follow Cremers, Ferreira, Matos, and Starks (2016), and Ferreira, Massa, and Matos (2017) and aggregate over fund classes. Our initial sample covers a total of 47,961 equity funds that invest both domestically and internationally.

[13] Similarly, Mihet (2013) shows that the risk–taking of international firms is affected by the UA of their country of origin.

To demonstrate the high coverage of our initial sample, we compare it with aggregate statistics on mutual funds from the Investment Company Institute (ICI). At the end of 2010, our initial sample consists of 26,861 equity funds, or 97% of the 27,754 funds included in ICI statistics. At the same time, our initial sample's total net assets (TNA) of equity funds (across all share classes) is $9 trillion, while ICI reports $10.2 trillion. This means that our initial sample covers 88% of the total net assets of worldwide equity mutual funds.

Starting from our initial sample, we apply several filters to arrive at our final sample. First, we restrict the sample to actively managed equity funds and exclude index funds and exchange-traded funds (ETFs), closed-end funds and funds-of-funds.[14] Second, we want the funds sold in each country to be sold primarily to the investors from that country, as we wish to study the effects of country-level cultural dimensions. We therefore exclude funds registered for sale in offshore centers such as Luxembourg, Dublin, and the Cayman Islands. Third, we keep only those funds that have holdings data available in the Lionshares database as we require data on funds' active share. Fourth, we exclude institutional funds as we would expect culture to be less telling for institutional investors compared to retail investors. Finally, to make our results more meaningful, we also require a minimum of 10 funds at the beginning of each year in each country. This leads to a final sample of 16,120 open-ended, actively managed equity funds from 25 countries spanning the period from 2000 to 2010. The time frame we consider thus includes (i) the stock market run-ups observed across countries in 2003 and 2009 and (ii) the 2007-2008 global financial crisis and is therefore a representative time window including global bull and bear markets.

As a simple way to summarize our sample, columns 2-3 of Table 1 show the number of funds and the amount of TNA in each country at the end of our sample period. We see considerable differences in the number of funds and their associated TNA across the countries in our sample. The last four columns of Table 1 show the same statistics, but for funds with a foreign parent.[15]

3.2 Hofstede's Uncertainty Avoidance index

Hofstede's UA index for different countries is presented in Table IA3 in the Internet Appendix. By construction, the index lies on a scale from 0 to 100. In all our regressions below, we normalize

[14] When we study the fraction of passively managed assets in each country in Section 4.5, we reintroduce passive equity funds into the sample.

[15] For completeness, Table IA1 in the appendix shows the same summary statistics split according to domestic and international funds. This is done using Lipper data on the fund domicile country and fund geographic investment style.

the scores for the UA index for each country by first subtracting its cross-country mean and then dividing the results by its cross-country standard deviation.

The UA index consists of one observation per country and there is no variation across time. This raises the issue of the validity using UA values observed at a single point in time to explain the behavior of the fund industry over our broad observation window between 2000 and 2010. Hofstede et al. (2010) suggest that this approach is sound because cultural values, and, UA in particular, only change very slowly. Beugelsdijk, Maseland, and Van Hoorn (2015) also validate this view empirically as they compare answers to the same questions designed to elicit cultural viewpoints by two successive generations 30 years apart and find no significant changes in the relative position of countries. We thus argue that using UA values from prior generations is a valid methodology for a comparative study like ours. Furthermore, because the data used to determine the UA index are measured prior to the start of our sample, we can safely rule out potential problems of endogeneity involving mutual fund conduct affecting the UA index.

3.3 Measuring fund performance and fees

Our main proxy for fund performance is gross risk-adjusted returns (i.e., alphas). The calculation of total returns assumes that dividends are immediately reinvested. We later show that our main results are robust to using net risk-adjusted returns, gross benchmark-adjusted returns and net benchmark-adjusted returns.

Risk-adjusted performance is calculated using Carhart's (1997) four-factor model that includes market, size, value, and momentum factors. Using the approach of Ferreira, Keswani, Miguel, and Ramos (2013), we calculate net four-factor alpha in different ways for domestic and international funds. For domestic funds, we construct monthly benchmark factors for each individual country using all stocks included in the Datastream/Worldscope database. The market return is computed using the value-weighted average return in local currency of all stocks in each country in each month. To construct size, book-to-market, and momentum factors for each country in each month, we follow the procedures in Fama and French (1992) and Carhart (1997) (see Ferreira, Keswani, Miguel, and Ramos (2013) for the details on how we construct our factors). For domestic funds, four-factor alpha is calculated annually using 36 months of fund returns and country specific factors. For international funds, we calculate alphas in the manner of Bekaert, Hodrick, and Zhang (2009) and Cremers, Ferreira, Matos, and Starks (2016), using the investment region market, size, value and momentum factors in the regressions. The fund investment region is based on the Lipper

geographic focus field, which can be a single country or a geographic region, or it can be global. Gross four-factor alpha is calculated by adding back the total expense ratio to net four-factor alpha.

To measure fees, we use the total shareholder cost variable of Khorana, Servaes, and Tufano (2009), which reflects not only the costs of buying and selling a fund but also the annual costs of holding a fund. It is defined as the sum of the total expense ratio plus annualized loads. Table 2 Panel A presents summary statistics for the fund-level characteristics we use in our tests, including the measures of performance and fees. Panel B shows the corresponding summary statistics for the country-level characteristics that we employ.[16] For completeness, Tables IA1 and IA2 in the Appendix show the means by country for all the variables used.

4. Empirical results

This section provides details of our empirical tests and their results. While we use different regression specifications to test our hypotheses, the main message of our tests is easy to summarize: we find evidence consistent with both of our hypotheses regarding the effects of UA on flow-performance sensitivity and active share.

4.1 Testing Hypothesis 1: Uncertainty Avoidance and flow-performance sensitivity

Our first hypothesis states that UA is negatively related to the sensitivity of flows to past performance. To test this, we employ the following panel (fund-country-year) regression,

$$\text{Flows}_{i,c,t} = a + \beta\,(\text{Performance}_{i,c,t-1} \times \text{UA}_c) + \delta\,\text{Performance}_{i,c,t-1} + \lambda\,\text{UA}_c + \boldsymbol{\theta}'\boldsymbol{X}_{t-1} + \varepsilon_t. \quad (1)$$

That is, we regress the flows of fund *i* in country *c* in year *t* on the interaction of UA with past performance. The regression also includes the non-interacted values of past performance and UA. In addition, we include a number of lagged country- and fund-level controls (in the vector $\boldsymbol{X}_{t-1}$). The main parameter of interest is the coefficient on the interaction, i.e., the parameter β, which measures the additional effect of UA on the sensitivity of flows to past performance.

[16] To ensure that multicollinearity among these variables is not driving our results, we have in unreported tests calculated a full pairwise correlation matrix between all the variables employed in our tests. We find that correlation coefficients are generally quite low, suggesting multicollinearity is not an issue.

Since flows are known to be positively related to past performance (i.e., $\delta > 0$), Hypothesis 1 states that β should be negative. To isolate the effects of UA, the regression in Equation (1) includes an exhaustive set of country- and fund-level control variables ($\boldsymbol{X}_{t-1}$). Table 2 shows summary statistics for these variables, while Appendix 2 contains exact definitions. The country-level variables can be divided into the following categories: macroeconomic state variables (e.g., GDP per capita and inflation), fund industry state variables (e.g., fund industry size, age, and average fund switching costs), financial market state variables (e.g., stock market returns and average trading costs), and institutional quality variables (e.g., common law and political stability).[17] Ferreira, Keswani, Miguel, and Ramos (2012) and Cremers, Ferreira, Matos, and Starks (2016) highlight the importance of including these institutional quality country-level variables in explaining fund flows. We also control for a number of lagged fund-specific variables identified by the previous literature, including fund size, fees, fund family size, age, style, number of investment alternatives, active share and flows.

We measure fund style as the loadings of the fund's return on the country specific size (SMB) and value (HML) factors. For any given fund, we measure the number of available investment alternatives as the number of funds with similar styles based on their SMB- and HML loadings, i.e., the number of funds with similar size- and value tilts. To calculate this each year, we double sort funds into three groups based on SMB loadings (low, medium, and high) and, independently, into three groups based on HML loadings. We then define a given fund's *number of investment alternatives* in a given year as the total number of funds in the same SMB/HML group. If certain funds deviate less from the benchmark, then it might be argued that these funds will demonstrate less flow-performance sensitivity, and we therefore use active share as a control variable in out tests. Chevalier and Ellison (1997) and Sirri and Tufano (1998) document a nonlinearity in the relation between flows and performance. We therefore follow Del Guercio and Reuter (2014) and include a low relative performance dummy (if fund performance is in the bottom quintile of funds in the country year) as well as a high relative performance dummy (if fund performance is in the top quintile of funds in the country year) as part of our set of controls. Finally, similar to Cremers, Ferreira, Matos, and Starks (2016), we also include time, investment region, benchmark, and fund

[17] Since investors pay back-end fees when cashing out of funds and front-end fees when buying into new funds, we measure the total average costs of switching funds in a given country-year as the simple average of (i) the weighted average front-end fee and (ii) the weighted average back-end fee, where the weights are determined by a fund's assets under management relative to the country's total assets under management in a given year. We label this country-level variable *switching costs* and include this variable in all our flow-performance regressions.

type (domestic, foreign, regional and global) fixed effects as part of the controls, and we calculate robust t-statistics that are double-clustered by country and year (Petersen, 2009).

Table 3 present the results of estimating Equation (1). Column (i) shows the results when only controlling for performance including the top/bottom performance dummies that take nonlinearities into account; column (ii) shows the results with all the fund-level controls; column (iii) shows the results with fund- and listed country-level controls; and column (iv) shows the results with fund- and all the country-level controls in Table 2 Panel B. For all specifications, UA has a statistically significant negative effect on flow-performance sensitivity (as measured by the coefficient on the interaction), which is consistent with Hypothesis 1. Furthermore, the effect of UA on the flow-performance sensitivity is also economically significant. Based on our estimates in column (iii), increasing UA by one standard deviation decreases flow-performance sensitivity by 51%.[18]

A concern is whether our results are driven by the correlation between UA and other country-level variables. To alleviate this, we repeat the regression in Equation (1) including all fund level controls, but with UA purged of all the country-level variables in Table 2 Panel B. Specifically, we replace UA by its residual from a cross-sectional regression on the time-series averages of the country-level variables. Column (v) shows the results. If anything, we see that purging UA of the exhaustive list of country-level variables strengthens its effect on flow-performance sensitivity since the coefficient estimate as well as its test-statistic are larger (in absolute values) compared to when using the raw UA values in columns (i)-(iv).

4.2 Testing Hypotheses 2: Uncertainty Avoidance and benchmark deviations

Our second hypothesis postulates a negative relation between UA and funds' benchmark deviations, which we measure through active share.[19] Furthermore, it also postulates that the difference between a fund's active and the average level of active share in the fund's domicile country is negatively related to the difference between the UA of the fund family's country of origin and the fund's domicile country. This subsection presents evidence consistent with this

[18] This percentage increase is relative to flow–performance sensitivity estimated using Equation (1) without UA.

[19] We follow Cremers and Petjisto (2009) and define active share as $\frac{1}{2}\sum_{i=1}^{n}\left|w_{i,fund}-w_{i,index}\right|$, where $w_{i,fund}$ and $w_{i,index}$ are the portfolio weights of asset i in the fund and in the index respectively, and the sum is taken over all the different assets in the fund. Our data on active share is from Cremers, Ferreira, Matos and Starks (2016). We thank Miguel Ferreira for providing us with this data.

hypothesis.

We test Hypothesis 2a) using the following panel regression:

$$\text{Active share}_{i,c,t} = a + \beta \text{UA}_c + \boldsymbol{\gamma}' \boldsymbol{X}_{t-1} + \varepsilon_t, \quad (2)$$

where the dependent variable is the active share for fund i in country c and year t.[20]

The regression includes a number of lagged controls known to influence fund risk-taking. First, we control for convexity in the relation between flows and performance, since risk-taking has been shown to depend upon such convexities (Chevalier and Ellison, 1997).[21] Second, Christoffersen and Sarkissian (2009) show that fund manager risk-taking increases as fund manager tenure gets shorter. We therefore control for the average fund manager tenure in each country. We also control for all the remaining country- and fund-level variables, including fixed effects, as in Equation (1), except that we do not include the top quintile and bottom quintile performance dummies since we already control for convexity and we calculate robust t-statistics that are double-clustered by country and year (Petersen, 2009).

Table 4 shows the results of estimating Equation (2). Similar to our previous tests in Table 3, we consider specifications with and without controls as well as specifications where UA is purged of the country-level variables. The most demanding specification is in column (v), where we purge UA of all country-level variables and control for all fund-level variables. For this specification, we find that UA has a statistically significant negative effect on active share, just as predicted by Hypothesis 2a. The effect is also economically significant. For example, based on column (v), a one standard deviation increase in UA is associated with 7.29% decrease in active share, which is considerable, given that the average level of active share across funds in our sample is 70%.

We test Hypothesis 2b) using the following regression,

[20] We focus on active share because it is the most direct measure of deviations taken by the fund manager relative to the fund's benchmark. While tracking error is another commonly employed proxy for benchmark deviations, we refrain from using it in our tests because it conflates benchmark deviations as an action by the fund manager with the impact of such deviations on subsequent performance. Furthermore, the empirical relation between tracking error and performance is ambiguous, as demonstrated by, e.g., Cremers, Ferreira, Matos and Starks (2016).

[21] To calculate convexity, we start by regressing flows on performance (and control variables) using a piecewise–linear specification in the manner of Sirri and Tufano (1998) and others, which allows for different flow–performance sensitivities at different levels of performance. We allow slopes to differ for the lowest quintile, middle three quintiles, and the top quintile. The slopes are estimated separately for the bottom quintile (*Low*), the three middle quintiles (*Mid*), and the top quintile (*High*) of the fractional fund performance ranks. We then estimate convexity as the difference between the coefficients on *High* and *Low* in each country year.

$$\text{Active share}_{i,c,t} - \text{Average active share}_{c,t} = a + \beta\left(\text{UA}_{c(\text{family})} - \text{UA}_c\right) + \boldsymbol{\gamma}'\boldsymbol{X}_{t-1} + \varepsilon_t, \quad (3)$$

where $\text{UA}_{c(\text{family})} - \text{UA}_c$ is the UA of the fund family's country of origin minus the UA of the fund's country of domicile. We use the same controls ($\boldsymbol{X}_{t-1}$) and fixed effects as in Equation (2), and compute t-statistics double-clustering by country and year (Petersen, 2009).

According to the hypothesis, we should find $\beta < 0$. Consistent with this, Table 5 shows that, in all specifications, $\text{UA}_{c(\text{family})} - \text{UA}_c$ has a statistically significant negative effect on the difference between funds' active share and the average active share in their domicile country. These results therefore confirm that active share is determined by both the culture of a fund's domicile country and its fund family's culture.

5. The effects on fund alpha and active investing

In this section, we explore the implications of our results for (i) fund alpha and (ii) the fraction of indexed assets in a country.

Kacperczyk, Sialm, and Zheng (2005) and Kacperczyk, van Nieuwerburgh and Veldkamp (2014) document a positive relation between funds' benchmark deviations and their alphas. Since we have shown that UA is negatively related to benchmark deviations, it is natural to ask whether there is direct negative relationship between UA and fund alpha. To test this, we use the following regression:

$$\text{Alpha}_{i,c,t} = a + \beta\ \text{UA}_c + \boldsymbol{\gamma}'\boldsymbol{X}_{t-1} + \varepsilon_t, \quad (4)$$

where the dependent variable is the four-factor alpha of fund i in country c and year t measured gross of fees. The vector of controls, $\boldsymbol{X}_{t-1}$, contains the same country- and fund-level variables, including fixed effects, as in Equation (1), and robust t-statistics are double-clustered by country and year (Petersen, 2009). According to our priors, we would expect $\beta < 0$.

Table 6 shows the results of estimating Equation (4). We see that UA has a statistically significant negative effect on fund alpha with or without controls and whether we use raw UA values or UA values purged of country-level variables. Furthermore, we find that a one standard deviation increase in UA is associated with a decrease in annualized gross alpha between 48 and 70 basis points. This is economically material since the average gross four-factor alpha is 1.91%

per annum in our sample. Table IA10 in the Internet Appendix shows that these results also carry through using gross benchmark-adjusted returns, calculated as the difference between the gross raw return and its benchmark return.

The negative relation between UA and fund alpha suggests that higher UA decreases the returns to active management, and, therefore, increases the incentive to index assets. A natural question is therefore whether there is a direct positive relationship between UA and the fraction of indexed assets in a country. To test this, we estimate the following panel (country-year) regression,

$$\text{Indexed Fraction}_{c,t} = a + \beta \text{UA}_c + \boldsymbol{\gamma}' \boldsymbol{X}_{t-1} + \varepsilon_t, \quad (6)$$

where the dependent variable is the fraction of indexed assets by country-year. The controls are the country-level variables employed in previous tests as well as time fixed effects, and we compute robust t-statistics double-clustered by country and year (Petersen, 2009). According to our priors, we would expect $\beta > 0$ in this regression.

Table 7 shows the results of estimating Equation (6). UA has a statistically significant positive effect on the fraction of indexed assets across all specifications, which is consistent with our priors. In addition, the effect is economically significant. A one standard deviation increase in UA is associated with an increase in the fraction of indexed assets between 4.9% and 8.0%, which is large given that the average fraction of indexed funds across the countries in our sample is 15%.

6. Endogeneity concerns

A valid concern is whether our results are driven by omitted variables that affect both UA and fund industry characteristics. If this were the case, UA would be correlated with the error terms in our regression, causing an endogeneity issue and a possibly spurious relation between UA and fund industry characteristics. In this subsection, we show that endogeneity is unlikely to be driving our main results.

To alleviate endogeneity concerns, we repeat our analysis using the instrumental variable two-stage least squares (2SLS) method. Hofstede (2001) lists religion and demographic factors as determinants of culture. Hence, following Kwok and Tadesse (2006), we use religion and ethnic heterogeneity of fractionalization as exogenous determinants of culture. As our proxy for religion, we employ the percentage of people in the Protestant, Roman Catholic and Muslim religions in 1980 from La Porta et al. (1998). We use the measure of ethnic fractionalization taken from

Alesina et al. (2003). We use 2SLS to investigate the relation between UA and each of flow-performance sensitivity, benchmark deviations, and fund alpha.

When we perform our tests for flow-performance sensitivity, we need to instrument both for the level of UA and its interaction with performance. According to Wooldridge (2002, p.236), we therefore need to run two separate first stage models: first, we regress UA on our instruments and our instruments interacted with performance, and, second, we regress UA interacted with performance on our instruments and our instruments interacted with performance.[22]

Table 8, Panel A shows the effect of UA on flow-performance sensitivity estimated using 2SLS. Column (i) shows that when we instrument UA in the first stage, there is a significant effect of religion and ethnic fractionalization on UA. Column (ii) then shows that when we instrument the UA-performance interaction in the first stage, there is a significant effect of the religion-performance interaction and the ethnic fractionalization-performance interaction on the UA-performance interaction. We also calculate F-statistics for the validity of our first stage instruments and we find that both are above the critical value and we also use the methods proposed by Stock and Watson (2010) and Hall and Peixe (2003) to test the validity of our instruments and ensure that the relevance condition is satisfied. Column (iii) shows that in the second stage, the instrumented UA is still negatively related to flow-performance sensitivity. The second-stage estimate for the endogenous variables in the 2SLS regression are not substantially inflated, unlike many papers in the literature that use the instrumental variable approach (Jiang, 2017). This suggests that the test is unlikely to suffer from a weak instrument problem.

We also conduct similar 2SLS tests for benchmark deviations (i.e., active share) and fund alpha. The results, shown in Table 8 Panels B-D, confirm the validity of our first stage regressions and they show that instrumented UA has a statistically significant negative effect on active share and fund alpha. Overall, our instrumental variables tests confirm that our results are unlikely to be driven by endogeneity.

7. Additional robustness tests

This section briefly discusses our additional robustness tests. The tables for these tests are presented in the Internet Appendix.

[22] A similar approach is employed by Gopalan and Xie (2011) in their study of conglomerates and industry distress. They instrument for conglomerate and (conglomerate x distress) separately in the first stage models.

Sales commissions (e.g., trailer fees) to distributors or advisers could lead to them making biased recommendations due to a conflict of interest as fund advisors have less incentive to make investors aware of poor fund performance which may affect our results regarding the importance of culture on flow-performance sensitivity.[23] As we do not have disaggregated data on sales commissions, we address this concern in three different ways. First, we have data on other fee variables, e.g. front-end charges, and to the extent that these correlate with sales commissions, we test whether allowing our fee variables to interact with past performance affects our results. Second, institutional investors should be less prey to the recommendations of fund advisers. We perform flow-performance tests separating out funds into those that cater to and do not cater to institutional investors which allows us to see whether there is a culture effect on flow-performance sensitivity even for investors who are less likely to be affected by sales commissions. Third, we study the effect on the flow-performance relationship of taking into account an alternative conflict of interest that arises due to bank ownership of mutual funds.[24] Table IA4 shows that when we make any of these three changes that our main investor level result that UA reduces flow-performance sensitivity is preserved.

Pension plan flexibility might be expected to influence the flow-performance sensitivity and hence we re-do our flow-performance regressions with controls for pension plan flexibility. We measure the latter in two ways. The first is based on the year of passage of pension reforms regulation. The second is based on the KPMG (2011) classification of the development of the pension market in a country.[25] During our sample period, a number of countries passed pension reforms legislation with the objective of increasing the flexibility of workplace pensions. The aim of these changes was to assist in the shift of pension schemes within a country from defined benefit towards defined contribution systems and these changes often aimed to increase market competition. KPMG (2011) classifies the development of the defined contribution pension market in a country. Cremers, Ferreira, Matos and Starks (2016) use this KPMG study to define a variable,

[23] Cumming, Johan and Zhang (2019) show that funds with higher sales commissions have lower flow-performance sensitivity as fund advisors have less incentive to make investors aware of poor fund performance. They conclude that sales commissions paid to fund advisers or distributors may bias their fund recommendations thereby creating an agency problem.

[24] Ferreira, Matos and Pires (2018) study the conflicts of interest faced by mutual funds that are owned by banking groups. They show that these mutual funds may not always invest in a way that maximises investor returns but rather choose to invest in a way that benefits the banking group that they are owned by. This then results in bank owned mutual funds significantly underperforming non-bank owned mutual funds. We thank Pedro Pires for provide us with the data.

[25] Both ways of measuring pension plan flexibility are used by Cremers, Ferreira, Matos and Starks (2016) to study the effect of pension plan arrangements on index investing.

DC pension market, that takes a value one if a country's DC market is "developed," a value of one-half if the market is "nascent," and a value of zero if there is no market. A more developed pension system generates more flexibility to investors (Cremers, Ferreira, Matos, and Starks, 2016).

Table IA5 presents the results of using these two methods to control for the impact of pension plan flexibility on the performance-flow relation. In column (i), we add in a passage of pension acts year dummy variable (both its level and its interaction with performance) that takes the value of one after the year of a country's pension act. In column (ii), we add in the *DC pension market variable,* both by itself and interacted with performance, and in column (iii) we add in both variables and their interactions with performance. While the passage of pension fund acts dummies are insignificant, the DC pension market variables are significant and indicate, as conjectured, that more pension scheme development and flexibility leads to higher flow-performance sensitivity. Most importantly, however, even after controlling for pension fund flexibility in these two ways, we still find a significant effect of UA on flow-performance sensitivity.

The more that a fund manager changes their portfolio, the more difficult it becomes for fund investors to understand whether he or she is genuinely skillful or just lucky, and fund performance becomes a noisier measure of manager skill. If this is the case, fund investors should react more to performance changes if fund turnover is low rather than high as for investors in these funds fund performance data is less noisy resulting in a negative relationship between flow-performance sensitivity and fund turnover. To investigate this, we follow Pastor, Stambaugh, and Taylor (2017) and measure fund turnover using the minimum of a fund's total purchases and sales over a year scaled by the average fund NAV over the same period. We obtain data on fund purchases and sales from the FactSet/LionShares database. Unfortunately, when we match our turnover data to our existing sample, we find that turnover data is missing for one quarter of our observations. Instead of using turnover for our main analysis, which would mean losing one quarter of our observations, we therefore test the role of turnover solely in the robustness section.

In Table IA6 we present regressions where we augment our flow-performance regressions in two ways. First, we interact fund performance with the level of turnover. Second, we interact fund performance with a dummy variable that is set to one if the fund's turnover is above the median level of turnover in a given country-year. We find that controlling for turnover makes little difference to our flow-performance sensitivity results.

If funds deviate less from the benchmark, then these funds might demonstrate lower flow-performance sensitivity. To test this idea, we interact active share with past performance to see if it influences flow-performance sensitivity. For completeness, we also include the level of active share as a control. We measure active share in two ways in these tests: using the variable itself and using a dummy variable which equals one if a fund's active share in a given year is above the domicile country's median level for that year. Table IA7 presents the findings. It shows, as we would predict, that greater active share is associated with greater flow-performance sensitivity. More importantly, however, the table also shows that the inclusion of active share in our flow-performance regressions does not change our inference regarding the role of UA, which still has a statistically significant negative effect on flow-performance sensitivity.

An interesting question is whether UA affects the degree of convexity in the flow-performance relationship. To investigate this, we interact UA with fund performance at different points in the performance scale (in the manner of Sirri and Tufano, 1998). We use two specifications. In the first specification, we divide up funds in each country year into top 50% and bottom 50% depending on their four factor alpha. In the second specification, we divide up funds in each country into the bottom 20% of funds, the mid 60% of funds and the top 20% of funds depending on their four-factor alpha in each country year. The results of doing so are presented in Table IA8. We find that UA lowers flow-performance sensitivity both at the top and the bottom of the performance scale. However, when we conduct a Wald test to see whether there is a difference between the effect of UA on flow-performance sensitivity at the top and bottom of the performance scale, we find that there is no significant difference. This tells us that UA lowers the flow-performance sensitivity across the whole performance scale but does not affect the convexity of the flow-performance relationship.

It is interesting to study how much of the negative relation between UA and flow-performance sensitivity is due to UA itself (i.e., the *aversion* to ambiguity) and how much is due to the *level* of ambiguity in the relation between past and future fund performance. As discussed in Section 2.1, the difficulty of separating skilled managers from purely lucky ones is a primary reason for the ambiguity in the relation between past and future fund performance. However, looking at *persistence* in fund performance is a common solution to this problem because skill should be more likely to persist compared to pure luck (e.g., Grinblatt and Titman, 1992; Carhart 1997). As such, we employ measures of persistence in fund performance as proxies for the *lack* of ambiguity. Following Busse, Goyal, and Wahal (2010), we regress annual four-factor fund alpha on its one-

year lag and fund level controls and use the persistence coefficient (on lagged performance) as well as the R-squared as proxies for the lack of ambiguity in the relation between past and future performance. To avoid a mechanical relation between lagged performance and our proxies for lack of ambiguity, we measure the lack-of-ambiguity proxies using the two years of data *prior* to the year in which we measure performance. Table IA9 shows the results from regressions of flows on past performance, UA, and the proxies for lack of ambiguity. Column (i) shows our baseline specification with UA interacted with past performance. Columns (ii) and (iii) add the persistence coefficient and its interaction with performance as controls. Columns (iv) and (v) do the same for the R-squared. We see that the inclusion of the lack-of-ambiguity proxies does little to affect the negative and significant link between UA and flow-performance sensitivity.

In our main tests we use alpha measured gross of fees. To test whether our results are affected by the presence of fees, we now re-run our main regressions using net alpha. Our results are presented in the robustness section in Table IA10. We find that all our main results are preserved and that this makes little difference to our conclusions. Table IA11 presents the results of re-running our tests in Table 6 using gross or net benchmark-adjusted returns and the results confirm that UA decreases significantly performance.

Countries may differ in cultural dimensions other than UA, and this may in turn have an effect on the fund industry outcomes we study. For instance, Beckman et al. (2008) show that two other cultural dimensions namely, individualism and masculinity affect herding behavior and the amounts of assets under management. To check for the role of other cultural variables, we include the remaining Hofstede variables (individualism, masculinity, power distance, indulgence and long termism) as controls in our main tests. In Table IA12 we show that the inclusion of these other cultural variables does not affect our main results: UA still has a negative effect on flow-performance sensitivity, active share, and fund performance.

Because UA is time-constant, and because some fund-outcome variables (like fees or the fraction of indexed assets) are persistent, a concern is whether our results are driven by any such persistence. Table IA13, column (i), alleviates any such concerns by showing that all our main results are robust to employing annual Fama-MacBeth cross-sectional regressions. The explanatory power of UA is not reduced in these regressions and is in some cases even stronger compared to our main tests. This suggests that the explanatory power of UA does not stem from its persistence or any persistence in the fund-level variables we seek to explain.

Table IA13 also shows that our results are not disproportionately affected by (i) countries with a large number of funds, (ii) U.S. funds, or (iii) funds who invest abroad. The number of funds varies substantially across the countries in our sample. This may raise the concern that some countries are overinfluential in the OLS panel regressions we use in our main tests. In column (ii) of Table IA13, we show that all our main results remain unchanged when we employ weighted least squares (WLS) panel regressions where the weighting is by the inverse of the number of funds in each country. The U.S. is by far the country in our sample with the largest number funds. To alleviate any concerns that our results are disproportionality driven by U.S. funds, we re-do our main tests without the U.S. in our sample. Column (iii) shows that this has no effect on our main findings. Column (iv) shows that we get very similar results when we exclude funds that invest abroad, i.e., when we restrict the sample to funds that only invest domestically which shows that our results are not disproportionately driven by funds that invest abroad. Lastly, in column (v), we shown that our results also remain valid when we run our tests for international funds only.

8. Conclusion

Mutual funds are influenced by the culture of their domicile country. We employ Hofstede's Uncertainty Avoidance (UA) index as a proxy for a country's aversion to ambiguity or Knightian Uncertainty and develop two main hypotheses regarding the effects of UA on mutual fund characteristics across countries. Consistent with our hypotheses, we find that funds domiciled in countries with higher UA are characterized by significantly lower flow-performance sensitivity, benchmark deviations, and alpha. We also find that a fund's deviation from its benchmark is not only affected by the UA of its domicile country but also by the UA of its fund family's country of origin. Finally, we document that countries with higher UA are characterized by significantly lower assets under active management.

We show that the effects of UA on mutual fund conduct are not only statistically but also economically significant; that they are true even when controlling for an exhaustive set of fund- and country-level characteristics; that they are unlikely to suffer from endogeneity issues, and that they are robust to using different estimation methodologies.

Our results highlight the importance of considering cultural characteristics, and UA in particular, when studying mutual funds around the world.

References

Ahern, K., D. Daminelli, and C. Fracassi, 2015, Lost in translation? The effect of cultural values on mergers around the world, *Journal of Financial Economics* 117, 165–189.

Alesina, A., A. Devleeschauwer, W. Easterly, S. Kurlat, and R. Wacziarg, 2003, Fractionalization, *Journal of Economic Growth* 8, 155–194.

Anderson, C., M. Fedenia, M. Hirschey, and H. Skiba, 2011, Cultural influences on home bias and international diversification by institutional investors, *Journal of Banking and Finance* 35, 916–934.

Banegas, A., B. Gillen, A. Timmermann, and R. Wermers, 2013, The cross section of conditional mutual fund performance in European stock markets, *Journal Financial Economics* 108, 699–726.

Barber, B., T. Odean, and L. Zheng, 2005, Out of sight, out of mind: The effects of expenses on mutual fund flows, *Journal of Business* 78, 2095–2119.

Barras, L., O. Scaillet, and R. Wermers, 2010, False discoveries in mutual fund performance: measuring luck in estimated alphas, *Journal of Finance*, 65, 179–216.

Baumgartner, H. and J. Steenkamp, 1996, Exploratory consumer buying behavior: conceptualization and measurement, *International Journal of Research in Marketing* 13, 121–137.

Beckmann, D., L. Menkhoff, and M. Suto, 2008, *Journal of Economic Behavior and Organization* 67, 624–643.

Bekaert, G., R. Hodrick, and X. Zhang, 2009, International Stock Return Comovements, *Journal of Finance* 64, 2591–2626.

Berk J., and R. Green, 2004, Mutual fund flows and performance in rational markets, *Journal of Political Economy* 112, 1269–1295.

Beugelsdijk, S., R. Maseland, and A. van Hoorn, 2015, Are scores on Hofstede's dimensions of national culture stable over time? A cohort analysis, Global Strategy Journal 5, 223–240.

Bodie, Z, A. Kane, and A. Marcus, 2014, Investments, 10th edition McGraw–Hill.

Busse, J., A. Goyal, and S. Wahal, 2010, Performance and persistence in institutional investment management, Journal of Finance 65, 765-790.

Carhart, M., 1997, On persistence in mutual fund performance, Journal of Finance 52, 57–82.

Chen, Z., and L. Epstein, 2002. Ambiguity, risk, and asset returns in continuous time. *Econometrica*, 70, 1403–1443.

Chevalier, J., and G. Ellison, 1997, Risk taking by mutual funds as a response to incentives, *Journal of Political Economy* 105, 1167–1200.

Christoffersen, S., and S. Sarkissian, 2009, City size and fund performance, *Journal of Financial Economics* 92, 252–275.

Chui, A., and C. Kwok, 2008, National culture and life insurance consumption. *Journal of International Business Studies* 39, 88–101.

Chui, A., S. Titman, and K. Wei, 2010, Individualism and momentum around the world, *Journal of Finance* 65, 361–392.

Cornell, B., 2009, Luck, Skill, and Investment Performance, *Journal of Portfolio Management,* 35, 131–134.

Cumming, D., S. Johan, and Y. Zhang, 2019, A dissection of mutual fund fees, flows, and performance, Working paper.

Cremers, M., M. Ferreira, P. Matos, and L. Starks, 2016, Indexing and active fund management: International evidence, *Journal of Financial Economics* 120, 539–560.

Cremers, M., and A. Petajisto, 2009, How active is your fund manager? A new measure that predicts performance, *Review of Financial Studies* 22, 3329–3365.

Daniell, K., 2014, The role of national culture in shaping public policy: A review of the literature. HC Coombs Policy Forum Discussion Paper, The Australian National University, Canberra.

De Mooij, M. and G. Hofstede, 2011. Cross–cultural consumer behavior: A review of research findings, *Journal of International Consumer Marketing* 23, 181–192.

Del Guercio, D., and J. Reuter, 2014, Mutual fund performance and the incentive to generate alpha, *Journal of Finance* 69, 1673–1704.

Elton, E., and M. Gruber, 2013, Mutual Funds, Vol. 2 of Handbook of the Economics of Finance, Elsevier, 1011–1061.

Epstein, L., and T. Wang, 1994, Intertemporal asset pricing under Knightian uncertainty. *Econometrica* 62, 283–322.

Epstein, L., and M. Schneider, 2008, Ambiguity, information quality, and asset pricing, *Journal of Finance* 63, 197–228.

Eun, C., L. Wang, and S. Xiao, 2015, Culture and R2, *Journal of Financial Economics* 115, 283–303.

European Fund and Asset Management Association, 2015, Asset management in Europe – 8th Annual review, facts and figures.

Fama, E., and J. MacBeth, 1973, Risk, return and equilibrium: Empirical tests, *Journal of Political Economy*, 81, 607–636.

Fama, E., and K. French, 1992, The cross–section of expected stock returns, *Journal of Finance* 47, 427–465.

Fama, E., and K. French, 2010, Luck versus skill in the cross–section of mutual fund returns, *Journal of Finance* 65, 1915–1947.

FCA, 2017, Asset Management Market Study Final Report, Market Study MS15/2.3

Ferreira M., A. Keswani, A. Miguel, and S. Ramos, 2012, The flow–performance relationship around the world, *Journal of Banking and Finance* 36, 1759–1780.

Ferreira, M., A. Keswani, A. Miguel, and S. Ramos, 2013, The determinants of mutual fund performance, *Review of Finance* 17, 483–525.

Ferreira, M., M. Massa, P. Matos, 2017, Investor–stock decoupling in mutual funds, *Management Science 64*, 2144–2163.

Ferreira, M., P. Matos, and P. Pires, 2018, Asset Management within Commercial Banking Groups: International Evidence, *Journal of Finance* 73, 2181–2227.

Gelfand, M., L. Nishii, and J. Raver, 2006, On the nature and importance of cultural tightness–looseness, *Journal of Applied Psychology* 91, 1225–1244.

Gelfand, M., J. Raver, L. Nishii, L. Leslie, J. Lun, 2011, et al., Differences between tight and loose societies: A 33–nation study, *Science* 33, 1100–1104.

Gentry, R., C. Dibrell, and J. Kim, 2016, Long–Term Orientation in Publicly Traded Family Businesses: Evidence of a Dominant Logic, *Entrepreneurship Theory and Practice* 40, 733–757.

Gilboa, I., and D. Schmeidler, 1989. Maxmin expected utility with non–unique prior. *Journal of Mathematical Economics*, 18, 141– 153.

Gil–Bazo, J., and P. Ruiz–Verdú, 2009, The relation between price and performance in the mutual fund industry, *Journal of Finance* 64, 2153–2183.

Gopalan, R., and K. Xie, 2011, Conglomerates and industry distress, *Review of Financial Studies* 24, 3642–3687.

Graham, J., C. Harvey, J. Popadak, and S. Rajgopal, 2016, Corporate culture: Evidence from the field. NBER Working Paper.

Grinblatt, M. and S. Titman,1992, The persistence of mutual fund performance, *Journal of Finance,* 47, 1977-1984.

Grout, P., W. Megginson, and A. Zalewska, 2009, One half–billion shareholders and counting: Determinants of individual share ownership around the world, University of Bath working paper.

Guiso, L., P. Sapienza, and L. Zingales, 2008, Trusting the stock market, *Journal of Finance* 63, 2557–2600.

Guiso, L., P. Sapienza, and L. Zingales, 2009, Cultural biases in economic exchange? *The Quarterly Journal of Economics* 124, 1095–1131.

Guiso, L., P. Sapienza, and L. Zingales, 2015, The Value of Corporate Culture, *Journal of Financial Economics* 117, 60–76.

Hall, A., and F. Peixe, 2003, A consistent method for the selection of relevant instruments. *Econometric Reviews* 22, 269–287.

Hofstede, G., 1980, Culture's Consequences: International differences in work–related values, Sage, Thousand Oaks, CA.

Hofstede, G., 1983. The cultural relativity of organizational practices and theories. *Journal of International Business Studies* 14, 75–79.

Hofstede, G., 2001, Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations (2nd edition), Thousand Oaks, CA: Sage Publications.

Hofstede, G., G. J. Hofstede, and M. Minkov, 2010, Cultures and organizations: Software of the mind (3rd edition), McGraw–Hill.

Hofstede, G., 2011, Dimensionalizing Cultures: The Hofstede Model in Context, International Association for cross–cultural psychology.

House, R., P. Hanges, M. Javidan, P. Dorfman, and V. Gupta (Eds.), 2004, Culture, leadership, and organizations: The GLOBE study of 62 societies, Thousand Oaks, CA: Sage Publications.

Huang, J., K. Wei, and H. Yan, 2012, Investor learning and mutual fund flows, Working paper.

Inglehart R., 1990, Culture shift in advanced industrial society, Princeton University Press: Princeton, NJ.

Inglehart, R., 1997, Modernization and postmodernization: Cultural economic and political change in 43 societies, Princeton, NJ: Princeton University Press.

Investment Company Institute, 2015, Mutual Fund Fact Book.

International Monetary Fund, 2008, Globalization: A brief overview.

Investment Adviser Association, 2019, Evolution Revolution: A Profile of the Investment Adviser Profession

Jiang, W. (2017), Have instrumental variables brought us closer to the truth, *The Review of Corporate Finance Studies* 6, 127–140.

Kacperczyk, M., S. Van Nieuwerburgh, and L. Veldkamp, 2014, Time–varying fund manager skill, *Journal of Finance* 69, 1455–1484.

Kacperczyk, M., C. Sialm, and L. Zheng, 2005, On industry concentration of actively managed equity mutual funds, *Journal of Finance* 60, 1983–2011.

Kaufmann, D., A. Kraay, and M. Mastruzzi, 2010, The worldwide governance indicators: Methodology and analytical issues, World Bank Policy Research, working paper No. 5430

Keynes, J., 1921, Treatise on Probability, London: Macmillan & Co.

Khorana, A., H. Servaes, and P. Tufano, 2005, Explaining the size of the mutual fund industry around the world, *Journal of Financial Economics* 78, 145–185.

Khorana, A., H. Servaes, and P. Tufano, 2009, Mutual fund fees around the world, *Review of Financial Studies* 22, 1279–1310.

Klapper, L., A. Lusardi, and P. Oudheusden, 2015, Financial literacy around the world: Insights from the Standard & Poor's ratings services global financial literacy survey, World Bank working paper.

Knack, S., and P. Keefer, 1997, Does social capital have an economic payoff? A cross-country investigation, *Quarterly Journal of Economics* 112, 251–1288.

Knight, F., 1921, Risk, Uncertainty, and Profit. Hart, Schaffner, and Marx Prize Essays, No. 31. Houghton Mifflin, Boston and New York.

Kosowski, R., A. Timmermann, R. Wermers, and H. White, 2006, Can Mutual Fund "Stars" Really Pick Stocks? New Evidence from a Bootstrap Analysis, *Journal of Finance* 61, 2551–2595.

Kroeber, A., and C. Kluckhohn, 1952, Culture: A critical review of concepts and definitions, Harvard University Peabody Museum of American Archeology and Ethnology Papers 47.

Kwok, C. and S. Tadesse, 2006, National culture and financial systems, *Journal of International Business Studies* 37, 227–247.

La Porta, F. Lopez–de–Silanes, and A. Shleifer, 1998, Law and finance, *Journal of Political Economy* 106, 1113–1155.

Lehmberg, D., and M. Davison, 2018, The impact of power distance and uncertainty avoidance on real options exercise: Potential for suboptimal time delays and value destruction, *Journal of Behavioral Finance* 19, 62–72.

Lemaster, P., and J. Strough, 2014, Beyond Mars and Venus: Understanding gender differences in financial risk tolerance, *Journal of Economic Psychology* 42, 148–160.

Li, J., M. Massa, and H. Zhang, 2017, Culture vs. bias: Can social trust mitigate the disposition effect? INSEAD Working Paper.

Li, K., D. Griffin, H. Yue, and L. Zhao, 2013, How does culture influence corporate risk taking, *Journal of Corporate Finance* 23, 1–22.

Markus, H., and S. Kitayama,1991, Culture and the self: Implications for cognition, emotion, and motivation, *Psychological Review* 98, 224–253.

Meier–Pesti, K., and E. Penz, 2008, Sex or gender? Expanding the sex–based view by introducing masculinity and femininity as predictors of financial risk taking, *Journal of Economic Psychology* 29, 180–196.

Mihet, R., 2013, Effects of culture on firm risk–taking: A cross–country and cross–industry analysis, Journal of Cultural Economics 37, 109–151.

Minkov, M., 2007, What makes us different and similar? A new interpretation of the World Values Survey and other cross–cultural data, Klasika y Stil Publishing House.

Norenzayan, A., 2011, Explaining human behavioral diversity, *Science* 332, 1041–1042.

Ndubisi, O., N. Malhotra, D. Ulas, and G. Ndubisi, 2012, Examining uncertainty avoidance, relationship quality, and customer loyalty in two cultures, *Review of Marketing Research* 10, 63–96.

Pastor, L., R. Stambaugh, and L. Taylor, 2017, Do funds make more when they trade more? *Journal of Finance* 72, 1483–1528

Petersen, M., 2009, Estimating standard errors in finance panel data sets: Comparing approaches, *Review of Financial Studies* 22, 435–480.

Plantier, L., 2014, Globalisation and the global growth of long–term mutual funds.' *ICI Global Research Perspective* 1, No.1.

Rieger, M, and M. Wang., 2012, Can ambiguity aversion solve the equity premium puzzle? Survey evidence from international data, *Finance Research Letters* 9, 63–72.

Schwartz, S., 1994, Beyond individualism/collectivism: New cultural dimensions of values. In: Uichol, K., H. Triandis, C. Kagitcibasi, Sang–Chin Choi, and G. Yoon (Eds.), Individualism and collectivism: Theory, method, and applications, Sage, Thousand Oaks, CA.

Schwartz, S., 2006, A theory of cultural value orientations: Explication and applications. In: Yilmaz, E., T. Pettersson, (Eds.), Measuring and mapping cultures: 25 years of comparative value surveys, Brill Academic Publishers, Leiden.

Sherman, R., 1974, The psychological difference between ambiguity and risk. *Quarterly Journal of Economics* 88, 166–169.

Sirri, E., and P. Tufano, 1998, Costly search and mutual fund flows, *Journal of Finance* 53, 1589–1622.

Steenkamp, J., and S. Burgess, 2002, Optimum stimulation level and exploratory consumer behavior in an emerging consumer market, *International Journal of Research in Marketing* 19, 131–150.

Stewart, E. C., 1985, Culture and decision–making, in: Gudykuntz, W., L. Stewart, and S. Ping–Toomey, Communication, culture amid organizational processes, Sage, Beverly Hills, 177–213.

Stock, J., Watson, M., 2010, Dynamic factor models. Working paper, Princeton University.

Stulz, R., and R. Williamson, 2003, Culture, openness, and finance, *Journal of Financial Economics* 70, 313–349.

Thompson, J, W. Scott, and M. Zald, 2009, Organizations in action: Social science bases of administrative theory. Transaction Publishers, New Jersey, USA.

Tse, D., K. Lee, I. Vertinsky, and D. Wehrung, 1988, Does culture matter? A cross–cultural study of executives' choice, decisiveness, and risk adjustment in international marketing, *Journal of Marketing* 52, 81–95.

Wooldridge, J., 2002, Econometric Analysis of Cross Section and Panel Data, MIT Press.

Zhang, Y., K. Winterich, and V. Mittal, 2010, Power distance belief and impulsive buying, *Journal of Marketing Research* 47, 945–954.

Table 1 – Number and size of mutual funds by country

This table presents the number of funds and total net assets (TNA) under management (sum of all share classes in U.S. dollars millions) of the sample of funds by country where the funds are legally domiciled at the end of 2010. Funds are classified as having a foreign parent if the domicile country of the fund management company differs from the domicile country of the fund. The sample is restricted to open-end and actively managed equity funds drawn from the Lipper database for which holdings are available in LionShares from 2000 to 2010. Off-shore funds and institutional funds are excluded.

	All funds		Funds with foreign parent			
	Number of	TNA	Number of funds		TNA ($ million)	
Country	Funds	($ million)	Total	(%)	Total	(%)
Austria	120	13,058	39	32.50	4,557	34.90
Belgium	108	12,538	19	17.59	1,188	9.48
Canada	687	280,633	140	20.38	51,197	18.24
Denmark	166	28,588	46	27.71	9,958	34.83
Finland	113	23,084	29	25.66	9,577	41.49
France	344	94,148	65	18.90	15,970	16.96
Germany	243	112,582	40	16.46	3,391	3.01
Hong Kong	28	6,194	27	96.43	6,180	99.78
India	161	29,559	59	36.65	9,401	31.80
Italy	117	31,223	21	17.95	4,649	14.89
Japan	151	11,739	37	24.50	1,726	14.70
Malaysia	71	2,048	20	28.17	439	21.43
Netherlands	57	28,945	15	26.32	10,059	34.75
Norway	100	37,437	23	23.00	3,048	8.14
Poland	33	6,358	19	57.58	3,911	61.51
Portugal	49	1,955	12	24.49	294	15.04
Singapore	57	5,711	27	47.37	3,628	63.53
South Africa	67	15,836	15	22.39	4,089	25.82
Spain	202	11,037	23	11.39	575	5.21
Sweden	202	98,802	12	5.94	2,577	2.61
Switzerland	145	27,291	21	14.48	1,736	6.36
Taiwan	127	10,788	62	48.82	6,434	59.64
Thailand	82	3,418	17	20.73	485	14.19
UK	743	419,527	258	34.72	187,718	44.75
US	2,306	3,682,986	269	11.67	335,128	9.10
All countries	6,479	4,995,487	1,315	20.30	677,915	13.57

Table 2 – Mutual fund and additional country characteristics

This table reports mean, median, standard deviation, minimum, maximum, and number of observations of fund characteristics in Panel A and country characteristics in Panel B. Tables IA2 and IA3 in the Internet Appendix present detailed means by country for fund characteristics and country characteristics respectively. See Appendix 2 for variable definitions.

Variable	Mean	Median	Standard deviation	Minimum	Maximum	Observations
Panel A – Fund characteristics						
Gross raw return (% year)	13.19	15.90	29.53	–56.28	101.46	41,805
Gross benchmark–adjusted returns (%year)	2.01	1.13	8.55	–29.55	42.29	41,176
Gross four–factor alpha (% year)	1.91	0.84	12.51	–33.70	57.17	41,805
TNA ($ million)	932	165	4,104	0.02	193,453	41,805
TNA family ($ million)	28,617	5,354	89,671	0.17	832,483	41,805
Flows (% quarter)	8.16	–4.46	54.46	–69.66	329.78	41,805
Age (years)	13.75	10.83	10.38	2.00	86.42	41,805
Fees (%)	1.96	2.00	0.78	0.39	4.14	41,805
SMB	0.07	0.03	0.34	–1.09	1.28	41,805
HML	0.01	0.00	0.39	–1.45	1.22	41,805
Standard deviation (%)	20.40	19.45	8.21	7.48	49.16	41,805
Active share (%)	70.48	74.36	21.65	15.23	99.76	41,805
Management tenure (years)	6.15	6.41	1.38	2.09	17.15	41,805
Number of investment alternatives	104.65	75.00	94.45	3.00	387.00	41,805
Panel B – Country characteristics						
Macroeconomic						
GDP per Capita ($)	39,924	40,468	10,967	563	93,587	41,805
GDP growth (%)	1.65	2.36	2.65	–8.27	15.24	41,805
Unemployment (%)	6.61	5.80	2.65	1.04	24.69	41,805
Inflation (%)	2.19	2.17	1.52	–1.35	11.99	41,805
Industrial production growth (%)	0.55	1.29	5.07	–18.13	25.22	41,805
Education (years)	15.54	16.00	1.25	6.00	17.00	41,805
Internet (%)	67.35	71.00	15.64	2.00	92.00	41,805
Mutual fund industry						
Fund industry equity size (% mkt cap)	0.21	0.23	0.09	0.02	0.52	41,805
Fund industry age as of 2010 (years)	48.28	50.00	20.79	15.00	86.00	41,805
Fund industry Herfindahl	0.08	0.05	0.06	0.02	0.37	41,805
Switching costs (%)	2.87	1.88	1.63	0.61	6.81	41,805
Financial markets						
Stock market index return (%)	0.00	0.01	0.02	–0.07	0.06	41,805
Stock market index stdev (%)	0.05	0.05	0.02	0.02	0.13	41,805
Trading costs (bps)	30.82	29.30	11.33	19.15	72.86	41,805
Emerging	0.04	0.00	0.21	0.00	1.00	41,805
Financial literacy (%)	57.95	57.00	9.78	24.00	71.00	41,805
Population owning shares (%)	14.06	12.60	8.82	0.69	37.52	41,805
Institution quality						
Political stability	0.53	0.49	0.51	–1.53	1.66	41,805
Common law	0.66	1.00	0.47	0.00	1.00	41,805
Judicial	46.38	47.61	3.66	29.67	49.96	41,805

Table 3 – Testing hypothesis 1: Uncertainty Avoidance and Flow–Performance Sensitivity

This table presents results from panel regressions of funds' yearly net flows on Uncertainty Avoidance (UA) interacted with performance, as given in Equation (1). Fund performance is measured using four-factor alpha. UA is normalized by first subtracting its cross-country mean and then dividing the result by its cross-country standard deviation. Lagged fund level controls are included in all specifications apart from column (i) and include fund size, fund family size, age, fees (measured using total shareholder costs plus annualized loads), style, foreign parent (dummy variable that takes the value of one if the domicile country of the fund management company differs from the domicile country of the fund), switching costs (measured by asset weighted average front-end and back-end loads in each country-year), the number of investment opportunities (measured as the number of funds with similar styles based on their SMB and HML loadings), four-factor alpha, flows, and active share, as well as bottom and top performance dummies (equal to one if fund performance is in the bottom or in the top performance quintile, respectively, in the country year). The lagged country-level controls are the ones in Panel B of Table 2. See Appendix 2 for variable definitions. Regressions also include time, investment region, benchmark, and fund type fixed effects. Robust t-statistics double-clustered by country and year are reported in parentheses. *,**, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

	No controls	Fund controls	Fund controls + listed country controls	Fund controls + all country controls	Fund controls + UA purged of all country controls
	(i)	(ii)	(iii)	(iv)	(v)
Performance x Uncertainty avoidance	-0.1132***	-0.0897***	-0.0896***	-0.1041***	-0.1284***
	(-3.08)	(-3.20)	(-3.59)	(-3.28)	(-3.69)
Performance	0.1174	0.0773	0.0868	0.0565	0.0131
	(1.24)	(0.76)	(0.90)	(0.63)	(0.23)
Bottom performance dummy	-4.9822***	-6.6208***	-6.5527***	-7.0177***	-6.2207***
	(-3.66)	(-5.16)	(-5.07)	(-5.81)	(-4.30)
Top performance dummy	7.5550***	5.5760***	5.3329***	5.6513***	4.7718***
	(4.96)	(3.23)	(3.27)	(3.49)	(2.72)
Uncertainty avoidance	-1.7932	-2.6530**	-1.2972	-2.6130***	-4.6642**
	(-1.23)	(-2.31)	(-0.78)	(-2.60)	(-2.47)
TNA (log)		-6.9061***	-6.9851***	-7.0045***	-6.9461***
		(-8.46)	(-8.47)	(-8.36)	(-8.29)
TNA family (log)		1.7275***	1.7609***	1.7660***	1.8052***
		(3.99)	(4.04)	(4.19)	(4.23)
Age (log)		-2.8681***	-2.8969***	-2.8586***	-2.6969***
		(-4.99)	(-5.09)	(-4.62)	(-4.44)
Fees		-1.8939***	-1.4874***	-1.3930***	-1.8014**
		(-2.85)	(-3.14)	(-3.14)	(-2.57)
Flow		0.1778***	0.1765***	0.1757***	0.1792***
		(3.52)	(3.47)	(3.42)	(3.57)
Active share		0.0945***	0.0980***	0.1005***	0.1037***
		(2.83)	(2.98)	(2.90)	(3.03)
SMB		-0.8999	-1.1108	-0.9418	-0.6311
		(-0.31)	(-0.39)	(-0.31)	(-0.21)
HML		6.4746**	6.1712**	6.4621**	6.6297**
		(2.25)	(2.10)	(2.22)	(2.29)
Foreign parent		0.2806	-0.0455	0.2365	0.7958
		(0.29)	(-0.05)	(0.31)	(0.69)
Number of investment alternatives (log)		1.4934	0.7624	0.3056	2.0731*
		(1.53)	(0.80)	(0.24)	(1.81)
Switching costs			-0.6479	-0.2613	
			(-0.63)	(-0.30)	
Judicial			-0.5059*	-0.2788	
			(-1.66)	(-0.30)	
Fund industry equity size (% mkt cap)			0.3944***	0.3346***	
			(3.94)	(3.09)	
Trading costs			0.3824***	0.3605*	
			(2.76)	(1.91)	
GDP per Capita (log)			7.7166**	16.0187***	
			(2.19)	(3.10)	
Adjusted R-squared	0.037	0.118	0.120	0.122	0.118
Number of observations	41,805	41,805	41,805	41,805	41,805

Table 4 – Testing hypothesis 2a: Uncertainty Avoidance and benchmark deviations

This table presents results from panel regressions of funds' active share on Uncertainty Avoidance, as given in Equation (2). Active share is measured following Cremers and Petjisto (2009) as the percentage of a fund's portfolio holdings that differ from its benchmark index holdings at the end of each year. UA is normalized by first subtracting its cross-country mean and then dividing the result by its cross-country standard deviation. Lagged fund level controls are included in all specifications apart from column (i) and they include fund size, fund family size, age, fees, style, foreign parent (dummy variable that takes the value of one if the domicile country of the fund management company differs from the domicile country of the fund), four-factor alpha and flows. The lagged country-level controls are the ones in Table 3 as well as lagged country-level convexity and average fund manager tenure within the country. See Appendix 2 for variable definitions. Regressions also include time, investment region, benchmark, and fund type fixed effects. Robust t-statistics double-clustered by country and year are reported in parentheses. *,**, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

	No controls	Fund controls	Fund controls + listed country controls	Fund controls + all country controls	Fund controls + UA purged of all country controls
	(i)	(ii)	(iii)	(iv)	(v)
Uncertainty avoidance	–3.9563***	–4.6236***	–5.6501***	–4.8324***	–7.2798***
	(–3.91)	(–4.49)	(–4.93)	(4.27)	(–5.27)
TNA (log)		–0.6767***	–0.6301***	–0.5825***	–0.5974***
		(–3.49)	(–3.57)	(–4.00)	(–3.47)
TNA family (log)		–0.6620***	–0.7069***	–0.7757***	–0.7358***
		(–2.97)	(–3.49)	(–4.35)	(–3.73)
Age (log)		–0.9558	–0.9743	–1.0238	–0.9623
		(–1.37)	(–1.39)	(–1.44)	(–1.40)
Fees		3.8100***	3.6937***	3.3511***	3.5909***
		(5.37)	(5.23)	(5.00)	(5.34)
Flow		0.0067***	0.0066***	0.0062***	0.0066***
		(6.60)	(7.15)	(12.58)	(6.72)
Performance		0.0623**	0.0632**	0.0600**	0.0632**
		(2.32)	(2.42)	(2.34)	(2.34)
SMB		13.9324***	13.5586***	13.4620***	13.6203***
		(6.03)	(6.08)	(5.96)	(5.93)
HML		4.4577***	4.4676***	4.0341***	4.3505***
		(4.83)	(4.81)	(4.38)	(4.80)
Foreign parent		–0.4365	–0.7687	–1.0879**	–0.6932
		(–0.77)	(–1.55)	(–2.35)	(–1.31)
Flow–performance convexity		–0.0171	0.0175	–0.0225	–0.0126
		(–0.31)	(0.36)	(–0.52)	(–0.17)
Manager tenure		0.0767	0.2483	–0.1495	0.1463
		(0.23)	(0.48)	(–0.64)	(0.36)
Judicial			0.6161**	1.3954***	
			(2.36)	(4.35)	
Fund industry equity size (% mkt cap)			–0.0864	–0.1228***	
			(–1.14)	(–2.91)	
Trading costs			0.1750***	0.0123	
			(2.66)	(0.22)	
GDP per Capita (log)			–3.0660	–5.7329**	
			(–1.39)	(–2.03)	
Adjusted R–squared	0.537	0.601	0.603	0.608	0.603
Number of observations	41,805	41,805	41,805	41,805	41,805

Table 5 – Testing hypothesis 2b: Uncertainty Avoidance and benchmark deviations; fund family effects

This table presents results from panel regressions of funds' demeaned active share on Uncertainty Avoidance (UA), as presented in Equation (3). Specifically, the dependent variable is the difference between a fund's active share and the average active share in the country of fund domicile, whereas the main independent variable is the difference between the UA of the country of the fund's family and the UA of the country of fund domicile. UA is normalized by first subtracting its cross-country mean and then dividing the result by its cross-country standard deviation. Lagged fund level controls are included in all specifications apart from column (i) and they include fund size, fund family size, age, style, foreign parent (dummy variable that takes the value of one if the domicile country of the fund management company differs from the domicile country of the fund), four-factor alpha, fees, and flows. The lagged country-level controls are the ones in Table 3 as well as lagged country-level convexity and average fund manager tenure within the country. See Appendix 2 for variable definitions. Regressions also include time, investment region, benchmark, and fund type fixed effects. Robust t-statistics double-clustered by country and year are reported in parentheses. *,**, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

	No controls	Fund controls	Fund controls + listed country controls	Fund controls + all country controls	Fund controls + UA purged of all country controls
	(i)	(ii)	(iii)	(iv)	(v)
Uncertainty avoidance (difference)	–0.7037**	–0.6575***	–0.5017*	–0.5828*	–0.9595**
	(–2.31)	(–2.61)	(–1.88)	(–1.74)	(–2.03)
TNA (log)		–0.6717***	–0.6708***	–0.5934***	–0.6676***
		(–4.35)	(–4.13)	(–4.11)	(–4.19)
TNA family (log)		–0.8799***	–0.7997***	–0.7726***	–0.8824***
		(–6.64)	(–5.30)	(–4.37)	(–6.63)
Age (log)		–1.0169	–0.9439	–0.9646	–1.0197
		(–1.55)	(–1.46)	(–1.39)	(–1.54)
Fees		2.8221***	2.7365***	3.4364***	2.8798***
		(5.35)	(5.11)	(5.11)	(5.32)
Flow		0.0062***	0.0066***	0.0057***	0.0063***
		(5.53)	(5.59)	(5.79)	(5.65)
Performance		0.0569***	0.0585***	0.0559***	0.0559***
		(2.92)	(2.91)	(2.64)	(2.92)
SMB		12.5673***	12.7229***	12.9914***	12.5531***
		(6.11)	(5.86)	(5.95)	(6.06)
HML		3.1290***	3.3065***	3.5245***	3.1054***
		(3.94)	(4.07)	(4.46)	(3.85)
Foreign parent		–1.8595***	–1.6383***	–1.2778***	–1.8186***
		(–3.44)	(–3.02)	(–2.77)	(–3.54)
Flow–performance convexity		0.0186	–0.0025	–0.0088	0.0050
		(0.44)	(–0.05)	(–0.46)	(0.10)
Manager tenure		0.0099	–0.1309	0.3068	–0.0975
		(0.03)	(–0.40)	(1.09)	(–0.30)
Judicial			0.4910	0.8652**	
			(1.30)	(2.24)	
Fund industry equity size (% mkt cap)			–0.0296	0.0325	
			(–0.45)	(0.46)	
Trading costs			0.0603	0.1572**	
			(1.25)	(2.23)	
GDP per Capita (log)			–1.8425	–1.7665	
			(–0.78)	(–0.67)	
Adjusted R–squared	0.430	0.499	0.503	0.513	0.503
Number of observations	41,805	41,805	41,805	41,805	41,805

Table 6 – Uncertainty Avoidance and fund alpha

This table presents results from panel regressions of funds' four-factor alpha on Uncertainty Avoidance (UA), as given in Equation (4). Four-factor alpha is measured gross of fees. UA is normalized by first subtracting its cross-country mean and then dividing the result by its cross-country standard deviation. Lagged fund level controls are included in all specifications apart from column (i) and they include fund size, fund family size, age, style, foreign parent (dummy variable that takes the value of one if the domicile country of the fund management company differs from the domicile country of the fund), four-factor alpha, fees, and flows. The lagged country-level controls are the ones in Table 3. See Appendix 2 for variable definitions. Regressions also include time, investment region, benchmark, and fund type fixed effects. Robust t-statistics double-clustered by country and year are reported in parentheses. *,**, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

	No controls	Fund controls	Fund controls + listed country controls	Fund controls + all country controls	Fund controls + UA purged of all country controls
	(i)	(ii)	(iii)	(iv)	(v)
Uncertainty avoidance	–0.5918***	–0.5863***	–0.4984***	–0.4771***	–0.6981**
	(–5.98)	(5.96)	(–3.08)	(–2.75)	(2.42)
TNA (log)		–0.2295***	–0.2202***	–0.2063**	–0.2292**
		(–2.68)	(–2.61)	(–2.27)	(–2.55)
TNA family (log)		0.1195**	0.1109**	0.0965*	0.1336**
		(2.16)	(1.99)	(1.76)	(2.38)
Age (log)		–0.2332	–0.2484*	–0.2053**	–0.2070
		(–1.55)	(–1.67)	(–1.97)	(–1.46)
Fees		0.4607***	0.5329***	0.5709***	0.4712***
		(4.90)	(5.14)	(4.16)	(5.14)
Flow		0.0017	0.0016	0.0012	0.0018
		(1.06)	(1.04)	(1.01)	(1.13)
Performance		–0.0771	–0.0781	–0.0727	–0.0767
		(–1.27)	(–1.29)	(–1.19)	(–1.27)
SMB		–0.4533	–0.4628	–0.5089	–0.3893
		(–0.23)	(–0.24)	(–0.26)	(–0.20)
HML		–6.7784***	–6.7594***	–6.7991***	–6.7604***
		(–3.33)	(–3.40)	(–3.50)	(–3.33)
Foreign parent		–0.0490	–0.0375	0.0425	0.0280
		(–0.38)	(–0.25)	(0.25)	(0.21)
Judicial			0.0360	0.1437	
			(0.38)	(0.32)	
Fund industry equity size (% mkt cap)			0.0639**	0.0704*	
			(2.46)	(1.89)	
Trading costs			–0.0429	–0.1039	
			(–0.86)	(–1.50)	
GDP per Capita (log)			–1.2101	–4.3819	
			(–0.60)	(–1.52)	
Adjusted R–squared	0.214	0.248	0.249	0.255	0.247
Number of observations	41,805	41,805	41,805	41,805	41,805

Table 7 – Uncertainty Avoidance and the fraction of indexed assets

This table presents results from panel regressions of countries' percentages of indexed funds on Uncertainty Avoidance (UA). The percentage of indexed funds (including index funds and exchange-traded-funds) is calculated using the indexed TNA in a country based on the Lipper database at the end of 2010. UA is normalized by first subtracting its cross-country mean and then dividing the result by its cross-country standard deviation. The regressions include lagged controls at the country-level, as given in Panel B of Table 2. See Appendix 2 for variable definitions. Regressions also include time fixed effects. Robust t-statistics double-clustered by country and year are reported in parentheses. *,**, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

	No controls	Listed country controls	All country controls	UA purged of all country controls
	(i)	(ii)	(iii)	(iv)
Uncertainty avoidance	0.0488**	0.0509***	0.0796***	0.0564**
	(2.43)	(3.21)	(3.46)	(2.23)
Judicial		–0.0019	–0.0011	
		(–0.90)	(–0.74)	
Fund industry equity size (% mkt cap)		0.3656**	0.3023***	
		(2.38)	(2.64)	
Trading costs		–0.2227	-0.3824***	
		(–1.47)	(-3.15)	
GDP per Capita (log)		0.0234	0.0247	
		(1.30)	(0.81)	
Adjusted R–squared	0.025	0.138	0.374	0.041
Number of observations	238	238	238	238

Table 8 – Endogeneity tests

This table presents the results of running panel regressions to estimate the effect of Uncertainty Avoidance (UA) on mutual fund characteristics when UA is instrumented using religion, ethnical fractionalization, and geography. We use two-stage least squares (2SLS) to estimate the effects. The regressions in Panel A use the same specification as column (iii) in Table 3; the regressions in Panel B use the same specification as column (iii) in Table 4; the regressions in Panel C use the same specification as column (iii) in Table 5; and, finally, the regressions in Panel D use the same specification as column (iii) in Table 6. Robust t-statistics double-clustered by country and year are reported in parentheses. *,**, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

Panel A – UA and flow-performance sensitivity using 2SLS

	First stage (1) Dependent variable: Uncertainty avoidance	First stage (2) Dependent variable: Uncertainty avoidance x Performance	Second stage Dependent variable: Flows
	(i)	(ii)	(iii)
Performance x Uncertainty avoidance			–0.1156***
			(–2.83)
Uncertainty avoidance			–2.5287
			(–0.96)
Catholic	0.0155***	0.0554***	
	(3.92)	(2.61)	
Catholic x Performance	0.0000*	0.0179***	
	(1.71)	(4.35)	
Muslim	–0.0544***	0.0754	
	(–3.29)	(0.70)	
Muslim x Performance	0.0002	–0.0234**	
	(0.81)	(–1.99)	
Protestant	–0.0089**	0.0468**	
	(–2.32)	(2.26)	
Protestant x Performance	0.0000	–0.0063*	
	(1.53)	(–1.94)	
Ethnic fractionalization	–0.7655**	–0.1373	
	(–2.28)	(–0.10)	
Ethnic fractionalization x Performance	0.0025	–0.8798***	
	(1.35)	(–2.91)	
Performance	–0.0062***	–0.6273	0.0263
	(–3.54)	(–1.50)	(0.44)
Bottom performance dummy	–0.0389***	0.8267	–6.5213***
	(–2.83)	(1.47)	(–4.68)
Top performance dummy	0.0635***	–0.7093	5.2814***
	(3.03)	(–1.28)	(5.08)
TNA (log)	–0.0134**	0.0709	–6.9941***
	(–2.13)	(1.24)	(–14.62)
TNA family (log)	0.0128**	–0.0116	1.7649***
	(2.21)	(–0.38)	(6.41)
Age (log)	–0.0231*	0.0728	–2.8983***
	(–1.77)	(1.08)	(–5.24)
Fees	–0.0137*	0.0469	–1.4923***
	(–1.66)	(0.70)	(–3.89)
Flow	0.0000	0.0001	0.1765***
	(0.25)	(0.07)	(3.67)
Active share	0.0012**	0.0073	0.0982***
	(2.35)	(1.53)	(3.18)
SMB	0.0143	–0.5248	0.0936
	(0.86)	(–1.28)	(0.05)
HML	0.0285**	–0.0047	6.2138***
	(2.28)	(–0.01)	(3.95)

Table 8 (continued)

Foreign parent	0.0156	–0.2011	–0.0189
	(0.65)	(–1.48)	(–0.02)
Switching costs	0.0206	–0.1537	–0.6193
	(0.49)	(–1.07)	(–1.19)
Number of investment alternatives (log)	–0.0989*	0.6710**	0.6996
	(–1.93)	(2.19)	(0.87)
Judicial	0.0241	0.1066	–0.5576
	(0.62)	(0.70)	(–1.41)
Fund industry equity size (% mkt cap)	–0.0133***	0.0080	0.3956***
	(–2.78)	(0.27)	(4.12)
Trading costs	–0.0327***	0.0846*	0.3694**
	(–4.38)	(1.69)	(2.46)
GDP per Capita (log)	–0.5570**	–0.7530	7.7886**
	(–2.48)	(–0.53)	(2.45)
Adjusted R–squared	0.863	0.785	0.120
Number of observations	41,805	41,805	41,805
Instruments F–statistic	23.32	35.21	
p–value	(0.00)	(0.00)	
Hansen J–statistic			1,834
p–value			(0.53)

Panel B – UA and benchmark deviations using 2SLS

	First stage (1) Dependent variable: UA	First stage (2) Dependent variable: Active share
	(i)	(ii)
Uncertainty avoidance		–4.0693**
		(–2.51)
Catholic	0.0157***	
	(2.64)	
Muslim	–0.0443**	
	(–2.34)	
Protestant	–0.0087***	
	(–2.93)	
Ethnic fractionalization	–0.8461**	
	(–2.35)	
TNA (log)	–0.0152*	–0.6545***
	(–1.86)	(–3.72)
TNA family (log)	0.0099	–0.6886***
	(1.58)	(–3.44)
Age (log)	–0.0277	–0.9960
	(–1.48)	(–1.44)
Fees	–0.0067	3.7292***
	(–0.33)	(5.40)
Flow	0.0000	0.0066***
	(0.66)	(8.97)
Performance	–0.0007**	0.0622**
	(–2.11)	(2.52)
SMB	0.0386*	13.6575***
	(1.82)	(6.24)
HML	0.0348***	4.5192***
	(3.45)	(5.02)
Foreign parent	0.0197	–0.6860
	(0.66)	(–1.45)
Flow–performance convexity	–0.0072***	–0.0050
	(–3.27)	(–0.11)
Manager tenure	–0.0448	0.0922
	(–0.90)	(0.23)
Judicial	0.0230	0.3927
	(0.51)	(1.34)
Fund industry equity size (% mkt cap)	–0.0174***	–0.0914
	(–2.59)	(–1.16)
Trading costs	–0.0361***	0.0945
	(–3.06)	(1.44)
GDP per Capita (log)	–0.5691**	–3.0479
	(–2.01)	(–1.40)
Adjusted R–squared	0.860	0.602
Number of observations	41,805	41,805
Instruments F–statistic	24.14	
p–value	(0.00)	
Hansen J–statistic		1.722
p–value		(0.53)

Panel C – UA and benchmark deviations using 2SLS; Fund family effects

	First stage (1) Dependent variable: UA	First stage (2) Dependent variable: Demeaned Active share
	(i)	(ii)
Uncertainty avoidance		–1.3318**
		(–2.27)
Catholic	0.0239***	
	(3.73)	
Muslim	–0.0815**	
	(–2.26)	
Protestant	–0.0128*	
	(–1.94)	
Ethnic fractionalization	–0.7112**	
	(–2.15)	
TNA (log)	0.0004	–0.6710***
	(0.12)	(–4.28)
TNA family (log)	0.0008	–0.7986***
	(0.19)	(–5.44)
Age (log)	0.0173	–0.9343
	(1.58)	(–1.49)
Fees	0.0049	2.7375***
	(0.41)	(5.27)
Flow	–0.0000	0.0066***
	(–0.80)	(6.08)
Performance	0.0003	0.0588***
	(1.61)	(3.03)
SMB	0.0172	12.7357***
	(1.04)	(6.01)
HML	–0.0008	3.3007***
	(–0.15)	(4.25)
Foreign parent	–0.0392	–1.6263***
	(–0.30)	(–2.80)
Flow–performance convexity	0.0025	0.0004
	(0.97)	(0.01)
Manager tenure	0.0312	–0.1100
	(1.36)	(–0.35)
Judicial	–0.0193**	–0.4933
	(–2.39)	(–1.33)
Fund industry equity size (% mkt cap)	0.0075***	–0.0294
	(2.67)	(–0.46)
Trading costs	0.0028	–0.0544
	(0.50)	(–1.18)
GDP per Capita (log)	0.1516***	–1.7584
	(2.87)	(–0.75)
Adjusted R–squared	0.504	0.503
Number of observations	41,805	41,805
Instruments F–statistic	24.87	
p–value	(0.00)	
Hansen J–statistic		2.535
p–value		(0.25)

Panel D – UA and fund alpha using 2SLS

	First stage (1) Dependent variable: UA	First stage (2) Dependent variable: Four-factor alpha
	(i)	(ii)
Uncertainty avoidance		–0.9926***
		(–3.21)
Catholic	0.0167***	
	(2.74)	
Muslim	–0.0498**	
	(–2.31)	
Protestant	–0.0085***	
	(–2.92)	
Ethnic fractionalization	–0.8632**	
	(–2.42)	
TNA (log)	–0.0147*	–0.2274***
	(–1.84)	(–2.94)
TNA family (log)	0.0104	0.1177**
	(1.59)	(1.98)
Age (log)	–0.0298	–0.2391*
	(–1.50)	(–1.77)
Fees	–0.0067	0.5459***
	(–0.32)	(5.22)
Flow	0.0000	0.0016
	(0.32)	(1.15)
Performance	–0.0008**	–0.0764
	(–2.18)	(–1.33)
SMB	0.0406*	–0.4941
	(1.84)	(–0.28)
HML	0.0320***	–6.7669***
	(3.28)	(–3.59)
Foreign parent	0.0179	–0.0147
	(0.58)	(–0.09)
Judicial	0.0345	0.0225
	(0.77)	(0.13)
Fund industry equity size (% mkt cap)	–0.0166**	0.0630***
	(–2.40)	(3.01)
Trading costs	–0.0339***	–0.0454
	(–2.75)	(–1.58)
GDP per Capita (log)	–0.6341**	–1.1633
	(–2.26)	(–0.66)
Adjusted R–squared	0.856	0.247
Number of observations	41,805	41,805
Instruments F–statistic	22.32	
p–value	(0.00)	
Hansen J–statistic		1.815
p–value		(0.61)

Appendix 1: Hofstede's Uncertainty Avoidance index

Uncertainty avoidance

The index is a weighted sum of the following one question and three statements, with the first two items given positive weights and the last two items given negative weights:

1) How often do you feel nervous or tense at work?
2) One can be a good manager without having precise answers to most questions that subordinates may raise about their work.
3) Competition between employees usually does more harm than good.
4) A company's or organization's rules should not be broken—not even when the employee thinks it is in the company's best interest.

High uncertainty avoidance is indicated by answering "always" to the first question and ratings of "strongly disagree" to item (2) and ratings of "strongly agree" to items (3) and (4). Uncertainty avoidance captures the degree to which the members of a society feel uncomfortable with uncertainty and ambiguity. This feeling leads them to beliefs promising certainty and to maintaining institutions protecting conformity. Strong uncertainty avoidance societies maintain rigid codes of belief and behavior and are intolerant towards deviant persons and ideas. Weak uncertainty avoidance societies maintain a more relaxed atmosphere in which practice counts more than principles, and deviance is more easily tolerated.

Appendix 2: Variable definitions

Variable	Definition
Panel A: Fund characteristics	
Gross raw return	Fund gross return in local currency (percentage per year), calculated by adding back fund expense ratio to net raw return.
Gross benchmark-adjusted return	Difference between the fund gross return and its benchmark return (percentage per year).
Gross four-factor alpha	Net four-factor alpha (percentage per year) is estimated with three years of past monthly fund excess returns in local currency. We use local factors (fund domicile) for domestic funds, regional factors for regional funds, and world factors for global funds. Regional factors include Asia-Pacific, Europe, North America, and Emerging Markets, and the classification is based on the fund′s investment region using data on fund's domicile country and fund's geographic investment style provided by the Lipper database. Gross four-factor alpha is calculated by adding fund expense ratio to net four-factor alpha.
TNA	Total net assets in millions of U.S. dollars (Lipper).
TNA family	Family total net assets in millions of U.S. dollars of other equity funds in the same management company excluding the own fund TNA (Lipper).
Age	Number of years since the fund launch date (Lipper).
Fees	Total shareholder charges estimated as total expense ratio plus one-fifth of loads (Lipper).
Flows	Percentage growth in TNA (in local currency) in a quarter, net of internal growth (assuming reinvestment of dividends and distributions).
Active share	Percentage of fund's portfolio holdings that differ from its benchmark index holdings calculated as in Cremers and Petjisto (2009). Data is from Cremers, Ferreira, Matos, and Starks (2016).
Standard deviation	The annualized standard deviation estimated with three-year of past monthly returns.

Management tenure	The average management tenure across funds in the country (Lipper).
SMB	Loadings on the small minus big size factor (SMB) from four-factor alpha regressions. For domestic funds, we use the domestic SMB from the domestic four-factor alpha regressions, for regional funds we use the regional SMB from the four-factor alpha calculated using the region specific factors, and for global funds we use the SMB from the four-factor alpha calculated using global factors.
HML	Loadings on the high minus low factor (HML) from four-factor alpha regressions. For domestic funds, we use the domestic HML from the domestic four-factor alpha regressions, for regional funds we use the regional HML from the four-factor alpha calculated using the region specific factors, and for global funds we use the HML from the four-factor alpha calculated using global factors.
Foreign parent	Dummy variable that takes the value of one if the domicile country of the fund management company differs from the domicile country of the fund.
Switching costs	The costs of switching funds in a given country-year. We first calculate the weighted average back-end loads and the weighted average front-end loads, where the weights are determined by a fund's assets under management relative to the country's total assets under management in a given year. We then average these to magnitudes in a given country-year.
Number of investment alternatives	The number of investment alternatives in a given country-year. We measure investment alternatives to a given fund as funds that have similar styles, i.e., have similar SMB and HML characteristics. We first divide funds in each country-year into low, medium, and high SMB loading funds, and low, medium, and high HML loading funds. The *number of investment alternatives* in the country-year concerned is the number of funds in that fund's bucket in that year.
Panel B: Country characteristics	
Cultural variables	
Uncertainty avoidance	Hofstede's *uncertainty avoidance index* (http://geert-hofstede.com/dimensions.html).
Uncertainty avoidance (difference)	Difference between Hofstede's *uncertainty avoidance index* for the country of the fund management company and the country where the fund is domiciled.

Macroeconomic variables	
GDP per capita	Gross domestic product per capita in U.S. dollars (World Development Indicators).
GDP growth	Gross domestic product annual percentage growth (World Development Indicators).
Unemployment	Total unemployment as a percentage of total labor force (World Development Indicators).
Inflation	Inflation, annual percentage, measured by the consumer price index (World Development Indicators).
Industrial production growth	Annual growth rate for industrial value added based on constant local currency (World Development Indicators).
Education	Average number of years of education averaged for men and women (World Development Indicators).
Internet	Ratio between number of internet users and the population (World Development Indicators).
Mutual fund industry variables	
MF equity size (% mkt cap)	The size of the mutual fund equity industry (from ICI) as a percentage of the stock market capitalization (from World Development Indicators).
Fund industry age	The age of the mutual fund industry, in years, as of 2010 (Khorana, Servaes, and Tufano, 2005).
Fund industry Herfindahl	Sum of squared market shares of fund management companies for mutual funds in the fund's country.
Financial markets variables	
Stock market index return	The annual return of the stock market index.
Stock market index stdev	The standard deviation of the stock market index return estimated with 12 past monthly returns.
Trading costs	The annual average stock market transaction costs in basis points (Global Universe Data-ElkinsMcSherry).

Emerging	Dummy variable that takes the value of one if the country is an emerging market as defined by MSCI and zero otherwise
Financial literacy	Percentage of adults who are financially literate (Klapper, Lusardi, and Oudheusden, 2015).
Population owning shares	Percentage of population owning shares (Grout, Megginson, and Zalewska, 2009).
Institutional quality	
Political stability	Political stability and absence of violence/terrorism captures perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism. A higher value indicates higher political stability (Kaufmann, Kraay, and Mastruzzi, 2010).
Common law	Dummy variable which is one if a country is of common law legal, and zero otherwise (La Porta, Lopez-de-Silanes, and Shleifer,1998).
Judicial	Judicial system quality defined as the sum of five variables (all variables are scaled between 0 and 10): the efficiency of the judicial system, rule of law, corruption, risk of expropriation and risk of contract repudiation (La Porta, Lopez-de-Silanes, and Shleifer,1998).
Other variables	
Religion	The percentages of people in the Protestant, Roman Catholic, and Muslim religious faiths in 1980 (La Porta, Lopez-de-Silanes, and Shleifer,1998).
Ethnical fractionalization	The probability that two randomly selected individuals from a population belong to different ethnic groups (Alesina, Devleeschauwer, Easterly, Kurlat, and Wacziarg 2003).

Internet Appendix to
Uncertainty Avoidance and Mutual Funds

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This appendix contains tables that supplement the analysis in the paper "*Uncertainty Avoidance and Mutual Funds*"

Table IA1 – Number and size of mutual funds by country

This table presents the number of funds and total net assets (TNA) under management (sum of all share classes in U.S. dollars millions) of the sample of funds by country where the funds are legally domiciled at the end of 2010. Funds are classified as domestic or international if the geographical focus of the investment is equal or not to the fund domicile country, respectively. The sample is restricted to open-end and actively managed equity funds drawn from the Lipper database for which holdings are available in LionShares from 2000 to 2010. Off-shore funds and institutional funds are excluded.

	All Funds		Domestic Funds		International Funds	
Country	Number of funds	TNA ($ million)	Number of funds	TNA ($ million)	Number of funds	TNA ($ million)
Austria	120	13,058	12	1,375	108	11,683
Belgium	108	12,538	13	1,406	95	11,132
Canada	687	280,633	283	172,786	404	107,847
Denmark	166	28,588	21	3,115	145	25,473
Finland	113	23,084	26	5,269	87	17,815
France	344	94,148	72	21,960	272	72,188
Germany	243	112,582	40	33,309	203	79,274
Hong Kong	28	6,194	3	795	25	5,399
India	161	29,559	161	29,559		
Italy	117	31,223	22	4,218	95	27,005
Japan	151	11,739	115	9,157	36	2,582
Malaysia	71	2,048	57	1,839	14	209
Netherlands	57	28,945	14	4,570	43	24,375
Norway	100	37,437	51	14,257	49	23,180
Poland	33	6,358	27	5,825	6	533
Portugal	49	1,955	18	506	31	1,448
Singapore	57	5,711	9	1,522	48	4,190
South Africa	67	15,836	62	15,722	5	114
Spain	202	11,037	68	2,399	134	8,637
Sweden	202	98,802	86	55,466	116	43,336
Switzerland	145	27,291	40	11,889	105	15,402
Taiwan	127	10,788	94	7,007	33	3,780
Thailand	82	3,418	81	3,408	1	10
UK	743	419,527	322	195,058	421	224,469
US	2,306	3,682,986	1,751	2,523,883	555	1,159,103
All countries	6,479	4,995,487	3,448	3,126,301	3,031	1,869,185

Table IA2 – Mutual fund characteristics

This table reports means of fund characteristics by country. At the bottom of the table, means are presented for all countries. The sample is restricted to open-end and actively managed equity funds drawn from the Lipper database for which holdings are available in LionShares from 2000 to 2010. Off-shore funds and institutional funds are excluded. See Appendix 2 for variable definitions.

Country	N	Gross raw return (% year)	Gross benchmark–adjusted returns (%year)	Gross four–factor alpha (% year)	TNA ($ million)	TNA family ($ million)	Flows (% quarter)	Age (years)	Fees (%)	SMB	HML	Active share (%)	Standard deviation (%)	Management tenure (years)	Number of investment alternatives
Austria	742	14.91	1.72	–0.40	124	1,541	5.66	11.53	2.59	0.118	0.066	65.93	21.92	4.28	11.48
Belgium	726	12.78	1.27	–0.99	130	11,399	10.17	10.15	1.92	0.001	0.021	60.39	20.51	3.57	10.39
Canada	3,426	14.43	2.03	1.14	411	13,077	10.06	13.62	2.82	0.170	0.011	73.65	20.56	6.61	82.76
Denmark	929	16.93	2.86	2.27	147	1,956	15.31	11.67	1.90	0.020	–0.076	62.40	22.21	5.86	14.64
Finland	623	19.25	3.57	5.43	162	2,711	19.99	8.75	1.94	0.174	0.045	66.29	24.00	5.49	10.00
France	2,218	10.57	1.68	–0.93	304	8,295	9.03	13.77	2.17	–0.045	–0.018	62.28	20.20	6.34	32.85
Germany	1,732	12.05	1.53	–0.54	507	13,073	1.69	15.64	2.30	–0.016	–0.028	61.77	20.73	5.20	23.85
Hong Kong	92	18.40	6.89	6.23	217	4,915	18.04	14.70	2.31	–0.140	–0.117	60.72	24.03	5.13	3.09
India	670	29.33	2.55	1.77	145	1,675	12.41	8.38	1.34	–0.367	0.405	70.11	34.57	2.97	12.65
Italy	897	9.12	0.36	–0.25	352	3,833	0.16	11.12	2.43	–0.059	–0.074	59.68	16.84	5.48	12.50
Japan	835	10.69	3.57	2.32	85	8,723	–12.50	10.05	1.98	0.055	0.114	75.47	19.96	5.59	15.47
Malaysia	291	19.42	2.17	2.08	27	273	–9.83	9.09	2.89	–0.018	0.453	66.45	18.14	4.15	6.33
Netherlands	339	14.01	3.46	1.21	521	4,122	0.86	15.96	1.42	0.077	0.014	69.08	21.87	5.82	5.67
Norway	715	25.19	3.43	6.70	220	2,367	14.55	11.36	2.05	0.280	0.056	61.07	25.94	7.72	12.63
Poland	163	23.15	0.51	–0.13	211	524	49.78	8.02	4.00	–0.408	–0.071	48.97	29.83	4.54	3.07
Portugal	340	11.78	1.56	0.78	52	366	4.54	10.52	2.03	0.183	–0.132	55.11	20.64	17.15	5.58
Singapore	380	22.82	2.50	2.08	66	874	7.81	10.78	2.67	0.063	–0.076	71.30	22.10	11.10	6.13
South Africa	187	21.17	1.21	0.61	199	1,588	9.11	10.91	2.14	–0.234	–0.173	63.47	30.27	8.12	6.26
Spain	1,315	13.29	1.60	–0.81	78	1,254	4.17	10.02	2.11	–0.188	0.006	51.20	20.45	5.57	20.34
Sweden	1,511	18.19	2.80	2.27	387	11,968	8.12	13.44	1.50	–0.073	–0.165	52.37	23.06	6.52	21.36
Switzerland	805	14.38	1.01	2.18	244	9,574	0.32	15.40	2.25	–0.015	–0.041	53.34	20.61	5.77	12.10
Taiwan	241	24.44	3.55	1.42	84	1,105	–7.27	12.18	3.31	–0.046	0.623	80.33	33.06	2.09	13.97
Thailand	293	31.16	5.17	5.62	28	423	–7.68	9.18	1.59	–0.025	0.041	40.10	28.96	5.88	10.06
UK	4,919	14.53	1.81	1.74	539	11,650	6.13	17.26	2.33	0.224	–0.020	68.30	19.39	5.70	69.41
US	17,416	9.64	2.48	1.46	1,782	57,197	10.30	14.31	1.56	0.082	0.019	79.18	18.96	6.41	199.44
All countries	41,805	13.19	2.01	1.91	932	28,617	8.16	13.75	1.96	0.066	0.011	70.48	20.40	6.15	104.65

Table IA3 – Country characteristics

This table reports means of country characteristics by country: Uncertainty Avoidance, in Panel A; macroeconomic and mutual fund industry variables, in Panel B; and financial markets and institutional quality variables, in Panel C; and, in Panel D, the percentage of indexed funds (including index funds and exchange-traded-funds). At the bottom of each Panel, means are presented for all countries. See Appendix 2 for variable definitions.

Panel A – Culture - Uncertainty avoidance

Country	
Austria	70
Belgium	94
Canada	48
Denmark	23
Finland	59
France	86
Germany	65
Hong Kong	29
India	40
Italy	75
Japan	92
Malaysia	36
Netherlands	53
Norway	50
Poland	93
Portugal	99
Singapore	8
South Africa	49
Spain	86
Sweden	29
Switzerland	58
Taiwan	69
Thailand	64
UK	35
US	46
All countries	58.2

Panel B – Macroeconomic and mutual fund industry variables

	Macroeconomic variables							Mutual fund industry variables			
Country	GDP per Capita ($)	GDP growth (%)	Unemployment (%)	Inflation (%)	Industrial production growth (%)	Education (years)	Internet (%)	Fund industry equity size (% mkt cap)	Fund industry age as of 2010 (years)	Fund industry Herfindahl	Switching costs (%)
stria	41,186	1.36	5.01	1.84	0.50	15	63.67	22.85	54	0.13	4.41
Belgium	39,573	1.67	7.78	2.08	1.51	16	65.23	26.65	63	0.32	4.13
Canada	41,757	1.40	7.01	1.76	–1.46	15	74.15	13.88	78	0.05	6.67
Denmark	52,463	0.50	5.10	2.04	–1.75	16	82.48	16.77	48	0.10	2.76
Finland	42,070	1.18	8.20	1.51	1.24	17	78.97	13.83	23	0.16	2.13
France	37,548	1.02	8.73	1.64	–0.19	16	56.15	23.04	46	0.05	3.03
Germany	36,694	0.99	8.93	1.50	1.35	15	70.36	10.65	61	0.15	4.27
Hong Kong	30,337	3.68	4.43	2.14	1.10	11	60.57	52.40	50	0.17	4.65
India	1,097	8.50	3.92	8.39	8.50	11	4.07	2.45	46	0.09	0.77
Italy	32,259	0.07	7.58	2.05	–0.71	15	39.58	11.35	27	0.10	2.69
Japan	37,572	0.53	4.52	–0.14	0.73	14	72.37	12.50	45	0.10	2.61
Malaysia	7,102	4.28	3.43	2.41	0.87	12	53.71	3.71	51	0.24	5.93
Netherlands	44,338	1.24	3.70	1.65	0.35	16	82.98	7.74	81	0.13	1.00
Norway	72,028	1.40	3.47	1.98	–0.87	17	84.52	13.77	17	0.17	2.78
Poland	10,410	4.40	11.89	2.76	6.37	15	48.20	4.78	18	0.11	4.82
Portugal	19,986	0.62	7.96	2.05	–1.44	16	39.45	3.22	24	0.18	2.26
Singapore	34,457	7.12	4.56	2.00	8.21	16	65.99	6.42	51	0.06	4.66
South Africa	6,297	2.27	23.53	7.09	0.84	6	8.84	3.37	45	0.09	2.77
Spain	29,241	1.68	12.55	2.57	–0.83	16	52.49	8.54	52	0.09	0.79
Sweden	43,662	2.11	6.93	1.38	2.67	16	84.64	23.07	52	0.16	0.70
Switzerland	56,768	1.95	4.00	0.83	1.83	16	68.31	5.58	72	0.21	4.85
Taiwan	17,201	3.86	4.58	1.28	7.78	11	69.71	2.69	26	0.06	2.88
Thailand	4,062	3.38	1.22	2.60	4.25	11	23.82	2.16	15	0.11	1.21
UK	37,989	1.18	5.85	2.36	–0.70	17	73.21	15.52	76	0.03	4.23
US	42,919	1.65	6.25	2.38	0.51	16	69.05	29.57	86	0.05	1.81
All Countries	39,924	1.65	6.61	2.19	0.55	15.54	67.35	20.72	48.28	0.08	2.87

Panel C – Financial markets and institutional quality variables

	Financial markets						Institutional quality		
Country	Stock market index return (%)	Stock market index stdev (%)	Trading costs (bps)	Emerging	Financial literacy (%)	Population owning shares (%)	Political stability	Common law	Judicial
Austria	0.78	5.63	30.47	0	53	2.96	1.16	0	47
Belgium	0.31	4.33	29.87	0	55	7.23	0.79	0	47
Canada	0.60	4.40	32.51	0	68	37.52	0.97	1	48
Denmark	0.73	4.73	33.44	0	71	13.39	1.07	0	49
Finland	0.36	6.45	41.08	0	63	13.73	1.49	0	49
France	0.22	4.42	25.99	0	52	10.97	0.51	0	45
Germany	0.42	4.67	25.08	0	66	4.32	0.84	0	47
Hong Kong	1.11	6.22	41.71	0	43	29.14	0.98	1	44
India	1.64	8.02	67.47	1	24	0.69	–1.19	1	31
Italy	–0.09	4.71	30.89	0	37	2.39	0.46	0	40
Japan	0.05	4.84	21.20	0	43	30.75	0.94	0	47
Malaysia	0.97	3.79	53.75	1	36	6.27	0.14	1	39
Netherlands	0.34	4.85	27.16	0	66	17.05	0.92	0	49
Norway	0.87	5.96	32.24	0	71	7.30	1.25	0	50
Poland	0.73	6.35	72.86	1	42	2.70	0.66	0	31
Portugal	0.23	4.81	32.35	0	26	1.50	0.92	0	39
Singapore	1.32	4.99	40.20	0	59	11.97	1.14	1	45
South Africa	0.31	5.06	51.30	1	42	2.63	0.01	1	32
Spain	0.49	4.74	28.50	0	49	2.22	–0.22	0	39
Sweden	0.72	5.37	29.96	0	71	19.70	1.22	0	49
Switzerland	0.35	3.71	29.63	0	57	16.24	1.25	0	50
Taiwan	3.11	6.93	47.86	1	37	34.78	0.69	0	40
Thailand	1.25	6.82	59.10	1	27	5.30	–1.34	1	30
UK	0.42	4.11	50.24	0	67	15.09	0.35	1	47
US	0.18	4.43	23.11	0	57	12.60	0.37	1	48
All Countries	0.39	4.64	30.82		57.95	14.06	0.53		43.23

Panel D – Indexed assets by country of domicile

Country	Indexed assets (% of the TNA)
Austria	0.25
Belgium	28.22
Canada	8.23
Denmark	1.38
Finland	2.61
France	31.76
Germany	33.00
Hong Kong	53.03
India	5.77
Italy	0.03
Japan	24.71
Malaysia	4.12
Netherlands	1.09
Norway	8.33
Poland	0.09
Portugal	0.11
Singapore	8.69
South Africa	13.80
Spain	10.80
Sweden	8.62
Switzerland	54.17
Taiwan	11.19
Thailand	11.72
UK	9.62
US	28.58
All countries	15.00

Table IA4 – Uncertainty Avoidance and Flow–Performance Sensitivity –The effect of conflicts of interest

In this table we run the identical analysis to Table 3, column (iii), except that in Panel A, we estimate the regression model controlling for fees (total shareholder costs plus annualized loads), front-end and back-end loads, and total expense ratio and their interaction with performance. In Panel B, we estimate the regression model controlling for fees (total shareholder costs plus annualized loads), front-end and back-end loads, and management fees and their interaction with performance. In Panel C, we estimate the regression model controlling for funds that cater to both retail and institutional investors (i.e., funds with at least one institutional share class), and controlling for bank-affiliated funds. *, ** and *** indicate significance at the 10%, 5% and 1% level, respectively. See Appendix 2 for variable definitions.

Panel A – Controlling for fees, front-end and back-end ratio, and total expense ratio

	(i)	(ii)	(iii)	(iv)	(v)
Performance x Uncertainty avoidance	–0.0900***	–0.0904***	–0.0910***	–0.0909***	–0.0907***
	(–3.66)	(–3.58)	(–3.69)	(–3.21)	(–3.13)
Performance x Fees	0.0022				
	(0.06)				
Fees	–1.4888***				
	(–3.18)				
Performance x Front–end loads		0.0003			0.0001
		(0.03)			(0.01)
Front–end loads		0.0695	0.0672	0.0692	0.0673
		(0.19)	(0.18)	(0.19)	(0.18)
Performance x Back–end loads			0.0080		0.0084
			(0.56)		(0.42)
Back–end loads		0.8515***	0.8497***	0.8518***	0.8495***
		(2.75)	(2.70)	(2.74)	(2.82)
Performance x Total expense ratio				0.0029	–0.0023
				(0.05)	(–0.03)
Total expense ratio		–2.8612**	–2.8624**	–2.8627**	–2.8613**
		(–2.37)	(–2.38)	(–2.39)	(–2.40)
Performance	0.0818	0.0853	0.0789	0.0798	0.0831
	(0.80)	(0.85)	(0.87)	(0.63)	(0.67)
Bottom performance dummy	–6.5550***	–6.5211***	–6.5211***	–6.5249***	–6.5182***
	(–5.13)	(–5.29)	(–5.29)	(–5.39)	(–5.34)
Top performance dummy	5.3375***	5.3948***	5.3982***	5.4006***	5.3936***
	(3.29)	(3.25)	(3.25)	(3.28)	(3.30)
Uncertainty avoidance	–1.2984	–1.3062	–1.3124	–1.3076	–1.3116
	(–0.78)	(–0.79)	(–0.79)	(–0.79)	(–0.79)
TNA (log)	–6.9850***	–7.0218***	–7.0218***	–7.0217***	–7.0219***
	(–8.48)	(–8.61)	(–8.61)	(–8.61)	(–8.61)
TNA family (log)	1.7609***	1.6947***	1.6946***	1.6947***	1.6946***
	(4.04)	(3.93)	(3.93)	(3.94)	(3.93)
Age (log)	–2.8967***	–2.9318***	–2.9327***	–2.9318***	–2.9328***
	(–5.06)	(–4.58)	(–4.60)	(–4.59)	(–4.59)
Flow	0.1765***	0.1762***	0.1762***	0.1762***	0.1762***
	(3.47)	(3.46)	(3.46)	(3.46)	(3.46)
Active share	0.0980***	0.0974***	0.0975***	0.0974***	0.0974***
	(3.00)	(2.87)	(2.87)	(2.88)	(2.88)
SMB	–1.1126	–0.9222	–0.9408	–0.9240	–0.9402
	(–0.40)	(–0.33)	(–0.33)	(–0.33)	(–0.33)
HML	6.1724**	6.1597**	6.1706**	6.1603**	6.1705**
	(2.10)	(2.10)	(2.10)	(2.10)	(2.10)
Foreign parent	–0.0454	–0.1864	–0.1857	–0.1864	–0.1857
	(–0.05)	(–0.20)	(–0.20)	(–0.20)	(–0.20)
Number of investment alternatives	0.7626	0.7910	0.7927	0.7912	0.7926
	(0.80)	(0.81)	(0.80)	(0.80)	(0.80)
Switching costs	–0.6473	–1.0614	–1.0526	–1.0609	–1.0526
	(–0.63)	(–0.93)	(–0.92)	(–0.92)	(–0.92)
Judicial	–0.5060*	–0.5950*	–0.5965*	–0.5958*	–0.5960*
	(–1.67)	(–1.87)	(–1.86)	(–1.89)	(–1.90)
Fund industry equity size (% mkt cap)	0.3945***	0.3914***	0.3915***	0.3914***	0.3915***
	(3.94)	(3.82)	(3.83)	(3.83)	(3.82)
Trading costs	0.3823***	0.3881***	0.3879***	0.3881***	0.3879***
	(2.74)	(2.74)	(2.74)	(2.75)	(2.74)
GDP per Capita (log)	7.7134**	8.2704**	8.2645**	8.2730**	8.2628**
	(2.16)	(2.13)	(2.16)	(2.19)	(2.17)
Adjusted R–squared	0.120	0.120	0.120	0.120	0.120
Number of observations	41,805	41,805	41,805	41,805	41,805

Panel B – Controlling for fees, front–end and back-end ratio, and management fees

	(i)	(ii)	(iii)	(iv)	(v)
Performance x Uncertainty avoidance	–0.0616***	–0.0902***	–0.0909***	–0.0637**	–0.0619**

	(–2.95)	(–3.64)	(–3.75)	(–2.27)	(–2.37)
Performance x Fees	0.0883**				
	(2.49)				
Fees	–1.5588***				
	(–4.50)				
Performance x Front–end loads		0.0007			0.0091
		(0.07)			(0.82)
Front–end loads		–0.0563	–0.0586	–0.0508	–0.0613
		(–0.21)	(–0.22)	(–0.19)	(–0.23)
Performance x Back–end loads			0.0095		0.0241*
			(0.70)		(1.86)
Back–end loads		0.6596**	0.6580**	0.6598**	0.6475**
		(2.16)	(2.11)	(2.18)	(2.20)
Performance x Annual fees	–0.1702***			–0.1069**	–0.1245**
	(–3.56)			(–2.21)	(–2.38)
Annual fees	–0.0111	–1.4007*	–1.4040*	–1.4053*	–1.4018*
	(–0.01)	(–1.72)	(–1.71)	(–1.70)	(–1.70)
Performance	0.1472	0.0780	0.0721	0.2466**	0.2349**
	(1.46)	(0.81)	(0.82)	(2.42)	(2.54)
Bottom performance dummy	–6.2485***	–6.6618***	–6.6618***	–6.4004***	–6.3557***
	(–4.52)	(–5.03)	(–5.02)	(–4.90)	(–4.76)
Top performance dummy	5.0424***	5.4893***	5.4920***	5.1446***	5.1120***
	(3.05)	(3.28)	(3.28)	(3.04)	(3.06)
Uncertainty avoidance	–1.4018	–1.2368	–1.2435	–1.2162	–1.2360
	(–0.84)	(–0.76)	(–0.76)	(–0.75)	(–0.75)
TNA (log)	–7.1279***	–7.0027***	–7.0026***	–7.0067***	–7.0073***
	(–8.78)	(–8.51)	(–8.52)	(–8.55)	(–8.56)
TNA family (log)	1.7723***	1.7276***	1.7273***	1.7192***	1.7185***
	(3.95)	(3.86)	(3.85)	(3.87)	(3.85)
Age (log)	–2.8687***	–2.9352***	–2.9365***	–2.9201***	–2.9172***
	(–5.15)	(–4.85)	(–4.87)	(–4.85)	(–4.84)
Flow	0.1758***	0.1758***	0.1758***	0.1755***	0.1754***
	(3.45)	(3.44)	(3.44)	(3.44)	(3.44)
Active share	0.0973***	0.0889***	0.0890***	0.0884***	0.0886***
	(2.93)	(2.73)	(2.73)	(2.68)	(2.68)
SMB	–1.0168	–1.0535	–1.0750	–0.9848	–1.0367
	(–0.37)	(–0.37)	(–0.37)	(–0.34)	(–0.36)
HML	5.9400**	6.1332**	6.1451**	5.9732**	5.9929**
	(2.03)	(2.09)	(2.08)	(2.01)	(2.02)
Foreign parent	–0.1139	–0.3951	–0.3946	–0.4061	–0.4040
	(–0.12)	(–0.41)	(–0.40)	(–0.41)	(–0.41)
Number of investment alternatives	0.8328	0.6908	0.6926	0.7000	0.7070
	(0.90)	(0.70)	(0.70)	(0.72)	(0.72)
Switching costs	–0.6464	–1.1332	–1.1232	–1.1467	–1.1158
	(–0.63)	(–1.02)	(–1.01)	(–1.03)	(–1.00)
Judicial	–0.4838	–0.4579	–0.4604	–0.4309	–0.4213
	(–1.54)	(–1.35)	(–1.34)	(–1.28)	(–1.25)
Fund industry equity size (% mkt cap)	0.4023***	0.4101***	0.4102***	0.4099***	0.4105***
	(4.02)	(3.99)	(4.00)	(4.03)	(4.03)
Trading costs	0.3657***	0.3962***	0.3961***	0.3922***	0.3889***
	(2.70)	(2.91)	(2.92)	(2.92)	(2.89)
GDP per Capita (log)	7.4582**	7.6520*	7.6539*	7.4999*	7.3486*
	(2.04)	(1.93)	(1.96)	(1.91)	(1.85)
Adjusted R–squared	0.121	0.121	0.121	0.121	0.121
Number of observations	41,805	41,805	41,805	41,805	41,805

Panel C – Controlling for institutional share class and bank-affiliated funds

	(i)	(ii)
Performance x Uncertainty avoidance	–0.0877***	–0.0862***

	(–3.55)	(–2.96)
Performance x Institutional share class	0.1279*	
	(1.77)	
Institutional share class	0.3810	
	(0.50)	
Performance x Bank-affiliated		–0.0540
		(–0.84)
Bank-affiliated		–2.3197**
		(–2.08)
Bottom performance dummy	–6.5022***	–6.4864***
	(–5.10)	(–5.06)
Top performance dummy	5.2722***	5.2680***
	(3.21)	(3.17)
Performance	0.0818	0.1118
	(0.85)	(1.02)
Uncertainty avoidance	–1.3085	–1.1776
	(–0.79)	(–0.73)
TNA (log)	–6.9806***	–7.0444***
	(–8.46)	(–8.58)
TNA family (log)	1.7612***	1.8139***
	(4.04)	(4.23)
Age (log)	–2.8780***	–2.8204***
	(–5.31)	(–4.96)
Flow	0.1765***	0.1763***
	(3.46)	(3.47)
Active share	0.0986***	0.0908***
	(3.00)	(2.76)
SMB	–1.1146	–1.1825
	(–0.40)	(–0.42)
HML	6.1610**	6.1560**
	(2.10)	(2.08)
Foreign parent	–0.0740	0.0953
	(–0.08)	(0.10)
Number of investment alternatives	0.7456	0.5637
	(0.80)	(0.61)
Switching costs	–0.6577	–0.7437
	(–0.64)	(–0.73)
Judicial	–0.5011	–0.4699
	(–1.65)	(–1.64)
Fund industry equity size (% mkt cap)	0.3940***	0.3932***
	(3.93)	(3.98)
Trading costs	0.3803***	0.3805***
	(2.76)	(2.69)
GDP per Capita (log)	7.6566**	7.6532**
	(2.18)	(2.17)
Adjusted R–squared	0.120	0.120
Number of observations	41,805	41,805

Table IA5 – The effect of pension fund flexibility on flow-performance sensitivity

In this table we run the identical analysis to Table 3, column (iii), except that we estimate the regression model controlling for the effect on the flow-performance sensitivity of changes in pension reforms legislation in countries in our sample In column (i), we use the passage of Pension acts year to define a dummy variable that takes the value of one after the year of a country's Pension Act passage. In column (ii), we measure the impact of the development of the defined contribution (DC) pension market in a country. DC pension market, takes the value of one if a country's DC market is "developed", the value of one-half if the market is "nascent", and zero if there is no market, according to the KPMG (2011) classification. Data on DC pension market and Pension act year is collected from Cremers, Ferreira, Matos and Starks (2016). *, ** and *** indicate significance at the 10%, 5% and 1% level, respectively. See Appendix 2 for variable definitions.

	(i)	(ii)	(iii)
Performance x Uncertainty avoidance	–0.0954***	–0.0707**	–0.0778***
	(–3.62)	(–2.26)	(–2.82)
Performance x Pension act	0.0775		0.0828
	(0.78)		(0.89)
Pension act	–4.4676		–3.3455
	(–0.91)		(–0.66)
Performance x DC pension market		0.1690***	0.1622***
		(3.44)	(2.81)
DC pension market		4.9522**	4.2603*
		(2.21)	(1.82)
Performance	0.0296	–0.0014	–0.0608
	(0.25)	(–0.01)	(–0.46)
Bottom performance dummy	–6.3716***	–6.7634***	–6.5882***
	(–4.84)	(–6.17)	(–5.47)
Top performance dummy	5.0920***	5.2300***	4.9974***
	(2.89)	(3.31)	(2.91)
Uncertainty avoidance	–0.7428	–1.4011	–1.6871
	(–0.47)	(–0.76)	(–0.89)
TNA (log)	–6.9831***	–7.2167***	–7.2130***
	(–8.51)	(–8.38)	(–8.43)
TNA family (log)	1.7784***	1.9190***	1.9281***
	(4.03)	(4.62)	(4.59)
Age (log)	–2.8898***	–2.7890***	–2.7941***
	(–5.20)	(–4.90)	(–5.00)
Fees	–1.4624***	–1.4087***	–1.3880***
	(–3.07)	(–2.88)	(–2.80)
Flow	0.1766***	0.1748***	0.1748***
	(3.47)	(3.40)	(3.39)
Active share	0.0998***	0.1005***	0.1022***
	(2.99)	(3.09)	(3.11)
SMB	–1.0759	–0.6444	–0.6259
	(–0.39)	(–0.23)	(–0.22)
HML	6.2207**	6.1974**	6.2705**
	(2.11)	(2.20)	(2.20)
Foreign parent	–0.1186	0.1779	0.1280
	(–0.14)	(0.19)	(0.15)
Number of investment alternatives	1.1667	0.7733	1.0315
	(1.37)	(0.97)	(1.47)
Switching costs	–0.7434	–1.1496	–1.1856
	(–0.73)	(–1.07)	(–1.09)
Judicial	–0.5158	0.2512	0.2061
	(–1.56)	(0.81)	(0.63)
Fund industry equity size (% mkt cap)	0.3945***	0.3167***	0.3117***
	(4.00)	(3.84)	(4.09)
Trading costs	0.3952***	0.4982***	0.4932***
	(2.97)	(4.04)	(4.09)
GDP per Capita (log)	9.2391**	4.6147	5.9658
	(2.25)	(1.55)	(1.59)
Adjusted R–squared	0.120	0.120	0.120
Number of observations	41,805	41,805	41,805

Table IA6 –The effect of fund turnover on flow–performance sensitivity

In this table we run the identical analysis to Table 3, column (iii), except that we estimate the regression model controlling for fund turnover. We compute turnover using the methodology of Pastor, Stambaugh, Taylor (2017). In column (i), we include turnover and past performance interacted with turnover, while in column (ii), we include turnover and interact past performance with a dummy variable that takes the value of one if the fund turnover is above-median in the country-year concerned. *, ** and *** indicate significance at the 10%, 5% and 1% level, respectively. See Appendix 2 for variable definitions.

	(i)	(ii)
Performance x Uncertainty avoidance	–0.0394***	–0.0477**
	(–3.07)	(–2.86)
Performance x Turnover	–0.0040***	
	(–3.89)	
Performance x Dummy turnover		–0.3270***
		(–3.90)
Turnover	–0.2605***	–0.2600***
	(–7.42)	(–7.22)
Performance	0.3598**	0.2554**
	(2.27)	(2.03)
Bottom performance dummy	–5.3960***	–5.4737***
	(–5.10)	(–5.44)
Top performance dummy	5.7968***	5.8531***
	(4.13)	(4.20)
Uncertainty avoidance	–0.9785	–0.9583
	(–0.53)	(–0.52)
TNA (log)	–6.9061***	–6.9111***
	(–9.77)	(–9.77)
TNA family (log)	2.4835***	2.4824***
	(4.63)	(4.62)
Age (log)	–2.5953***	–2.6153***
	(–4.04)	(–4.00)
Fees	–1.3123***	–1.3092***
	(–2.73)	(–2.74)
Flow	0.1574***	0.1574***
	(3.27)	(3.27)
Active share	0.0358	0.0341
	(1.13)	(1.06)
SMB	0.6055	0.8234
	(0.21)	(0.28)
HML	5.0776	5.0651
	(1.45)	(1.42)
Foreign parent	0.5234	0.5092
	(0.33)	(0.32)
Number of investment alternatives (log)	0.8419	0.8419
	(1.24)	(1.24)
Switching costs	–1.4019*	–1.4019*
	(–1.78)	(–1.78)
Judicial	–0.6119**	–0.6356**
	(–2.17)	(-2.19)
Fund industry equity size (% mkt cap)	0.3438***	0.3394***
	(5.10)	(4.81)
Trading costs	0.3258*	0.3293**
	(1.95)	(1.99)
GDP per Capita (log)	7.3194*	7.7293*
	(1.75)	(1.84)
Adjusted R–squared	0.161	0.161
Number of observations	30,884	30,884

Table IA7–The effect of active share on flow-performance sensitivity

In this table we run the identical analysis to Table 3, column (iii), except that we estimate the regression model controlling for the impact of active share in the flow-performance sensitivity. In column (i), we include active share and past performance interacted with active share, while in column (ii), we include active share and past performance interacted with a dummy variable that takes the value of one if the fund's active share is above the median active share in the country-year concerned. *, ** and *** indicate significance at the 10%, 5% and 1% level, respectively. See Appendix 2 for variable definitions.

	(i)	(ii)
Performance x Uncertainty avoidance	–0.0775***	–0.0914***
	(–6.45)	(–4.04)
Performance x Active share	0.0075***	
	(4.17)	
Performance x Dummy Active share		0.2529***
		(3.06)
Active share	0.0968***	0.0970***
	(3.00)	(3.06)
Performance	–0.4201***	–0.0474
	(–2.70)	(–0.47)
Bottom performance dummy	–6.1417***	–6.4401***
	(–4.95)	(–4.87)
Top performance dummy	4.8044***	5.1615***
	(3.00)	(3.20)
Uncertainty avoidance	–1.2039	–1.2156
	(–0.74)	(–0.74)
TNA (log)	–6.9844***	–6.9800***
	(–8.43)	(–8.46)
TNA family (log)	1.7628***	1.7638***
	(4.10)	(4.07)
Age (log)	–2.9119***	–2.9033***
	(–5.29)	(–5.24)
Fees	–1.5000***	–1.4945***
	(–3.11)	(–3.15)
Flow	0.1754***	0.1760***
	(3.48)	(3.48)
SMB	–0.7997	–0.9745
	(–0.28)	(–0.35)
HML	6.1240**	6.1360**
	(2.06)	(2.07)
Foreign parent	–0.0368	–0.0170
	(–0.04)	(–0.02)
Number of investment alternatives	0.8646	0.8253
	(0.91)	(0.87)
Switching costs	–0.6283	–0.6399
	(–0.61)	(–0.63)
Judicial	–0.5048	–0.5250*
	(–1.65)	(–1.73)
Fund industry equity size (% mkt cap)	0.3944***	0.3933***
	(3.91)	(3.91)
Trading costs	0.3811***	0.3859***
	(2.77)	(2.78)
GDP per Capita (log)	7.7443**	7.8248**
	(2.12)	(2.19)
Adjusted R–squared	0.121	0.121
Number of observations	41,805	41,805

Table IA8 – Uncertainty Avoidance and Flow-Performance Sensitivity – Piecewise-linear specification

In this table we run the identical analysis to Table 3, column (iii), except that we use a piecewise-linear specification that accounts for the convexity in the flow-sensitivity. We regress fund flows on piecewise past performance and piecewise past performance interacted with Uncertainty Avoidance. A fund's performance ranks ranging from zero (poorest performance) to one (best performance) are assigned in each country, year, and investment region on the basis of its performance in the prior year as measured by four-factor alpha. We use a piecewise-linear specification allowing for different flow-performance sensitivities at different levels of performance in the manner of Sirri and Tufano (1998). In Column (i), the piecewise-linear segments are *Low Rank = min*(0.5, *Rank*) and *High Rank= Rank – Low Rank.* In Column (ii), we allow slopes to differ for the lowest quintile [*Low=min(0.2, Rank)*], middle three–quintiles *[Mid=min(0.6, Rank–Low)]*, and the top quintile *[High=Rank – (Low+Mid)]* of the fractional fund performance rank (e.g., Sirri and Tufano, 1998). The coefficients on these piecewise decompositions of fractional ranks represent the marginal fund-flow response to performance. We report the change in convexity due to differences in UA (*High–Mid* and *High–Low*) and p-values from a *Wald test* testing its significance. *, ** and *** indicate significance at the 10%, 5% and 1% level, respectively. See Appendix 2 for variable definitions.

	(i)	(ii)
Low	0.1948***	0.4186***
	(4.74)	(8.36)
Low x Uncertainty avoidance	–0.0756**	–0.1264**
	(–1.97)	(–2.51)
Mid		0.2093***
		(4.93)
Mid x Uncertainty avoidance		–0.0963**
		(–2.05)
High	0.4556***	1.1481***
	(5.67)	(5.74)
High x Uncertainty avoidance	–0.1823**	–0.3812**
	(–2.41)	(–1.98)
Uncertainty avoidance	–1.2336	–2.0746
	(–0.38)	(–0.79)
TNA (log)	–6.7571***	–6.7510***
	(–8.32)	(–8.32)
TNA family (log)	1.6280***	1.6390***
	(4.06)	(4.13)
Age (log)	–2.9085***	–2.8650***
	(–5.00)	(–5.00)
Switching costs	–1.3783***	–1.4176***
	(–2.68)	(–2.80)
Number of investment alternatives	0.1847***	0.1845***
	(3.47)	(3.47)
Active share	0.0659***	0.0647**
	(2.73)	(2.54)
SMB	–0.2068	–0.2507
	(–0.07)	(–0.08)
HML	7.7725**	8.2500**
	(2.17)	(2.20)
Foreign parent	–0.1596	–0.1458
	(–0.16)	(–0.15)
Number of investment alternatives (log)	0.3591	0.3034
	(0.41)	(0.36)
Switching costs	–0.8178	–0.8460
	(–0.81)	(–0.84)
Judicial	–0.2100	–0.1845
	(–0.52)	(–0.45)
Fund industry equity size (% mkt cap)	0.3738***	0.3756***
	(4.58)	(4.46)
Trading costs	0.3647**	0.3720***
	(2.57)	(2.68)
GDP per Capita (log)	5.0188	4.5954
	(0.90)	(0.80)
Change in Convexity (High–Low)	–0.1067	–0.2548
Wald test (p–value)	(0.39)	(0.41)
Change in Convexity (High–Mid)		–0.2849
Wald test (p–value)		(0.29)
Adjusted R–squared	0.133	0.135
Number of observations	41,805	41,805

Table IA9 –The effect of ambiguity on flow–performance sensitivity

In this table we run the identical analysis to Table 3, column (iii), except that we estimate the regression model controlling for both country-level performance ambiguity and its interaction with lagged performance. We use the two years preceding the year in which we measure lagged performance to measure ambiguity. We regress annual fund four factor alpha on prior year four factor alpha and lagged fund level controls and take the persistence coefficient (on lagged performance) and the R-squared as our proxies for the *lack* of ambiguity. The lagged fund level controls that we use are fund size, fund family size, flows, age, expense ratio, loads, and fund style, measured as the loadings of the fund's return on the country specific size (SMB) and value (HML) factors. In column (i) we run the identical analysis to Table 3 column (iii) except that we use the data sample excluding the time window necessary to estimate the lack-of-ambiguity proxies. In the remaining columns, we repeat this regression except that we include either the level of lack-of-ambiguity or both the level of the lack-of-ambiguity and its interaction with performance. *, ** and *** indicate significance at the 10%, 5% and 1% level, respectively. See Appendix 2 for variable definitions.

	(i)	(ii)	(iii)	(iv)	(v)
Performance x Uncertainty avoidance	-0.1059***	-0.1122***	-0.1027***	-0.1109***	-0.1115***
	(-4.19)	(-5.90)	(-3.89)	(-3.21)	(-3.41)
Lack of ambiguity (Persistence Coefficient)		1.8841	0.7744		
		(1.11)	(0.30)		
Performance x (Lack of Ambiguity-Persistence Coefficient)			0.1046		
			(0.99)		
Lack of ambiguity (R-squared)				-16.6576	-16.6914
				(-1.52)	(-1.51)
Performance x (Lack of Ambiguity-R-squared)					-0.2936
					(-1.46)
Performance	0.0198	0.0061	0.0147	0.0180	0.0207
	(0.20)	(0.07)	(0.14)	(0.19)	(0.23)
Bottom performance dummy	-6.4388***	-6.4975***	-6.4099***	-6.4842***	-6.3346***
	(-3.93)	(-4.06)	(-4.07)	(-3.99)	(-3.76)
Top performance dummy	6.3869***	6.5329***	6.4200***	6.3196***	6.1489***
	(5.15)	(5.30)	(5.21)	(5.42)	(5.05)
Uncertainty avoidance	-2.6825	-2.4272	-2.4835	-2.7205	-2.7421
	(-1.01)	(-0.98)	(-0.98)	(-1.12)	(-1.12)
TNA (log)	-7.4366***	-7.4367***	-7.4356***	-7.4465***	-7.4442***
	(-9.03)	(-9.10)	(-9.13)	(-9.05)	(-9.04)
TNA family (log)	2.0235***	2.0277***	2.0195***	2.0144***	2.0143***
	(4.41)	(4.43)	(4.46)	(4.43)	(4.43)
Age (log)	-2.9135***	-2.9641***	-2.9406***	-2.9275***	-2.9178***
	(-5.37)	(-5.50)	(-5.56)	(-5.30)	(-5.26)
Fees	-2.3515***	-2.3317***	-2.3363***	-2.3292***	-2.3370***
	(-3.03)	(-2.97)	(-3.00)	(-3.05)	(-3.07)
Flow	0.1799***	0.1789***	0.1792***	0.1800***	0.1800***
	(3.09)	(3.07)	(3.08)	(3.10)	(3.10)
Active share	0.0854***	0.0849***	0.0839***	0.0825***	0.0825***
	(3.34)	(3.25)	(3.33)	(3.30)	(3.28)
SMB	-0.7602	-0.8079	-0.7532	-0.6658	-0.5197
	(-0.31)	(-0.34)	(-0.32)	(-0.28)	(-0.22)
HML	6.2448	6.3518	6.3543	6.4194	6.2548
	(1.39)	(1.42)	(1.41)	(1.43)	(1.39)
Foreign parent	-0.9848	-1.0449	-1.0388	-0.9637	-0.9672
	(-0.95)	(-1.02)	(-1.01)	(-0.94)	(-0.95)
Number of investment alternatives (log)	-1.0727	-0.8357	-0.7867	-1.7190**	-1.7213**
	(-1.39)	(-1.13)	(-1.16)	(-2.11)	(-2.11)
Switching costs	0.1553	0.0743	0.0145	-0.0057	-0.0093
	(0.09)	(0.05)	(0.01)	(-0.00)	(-0.01)
Judicial	-0.5724*	-0.4947*	-0.4878*	-0.4638	-0.4642
	(-1.74)	(-1.77)	(-1.74)	(-1.52)	(-1.53)
Fund industry equity size (% mkt cap)	0.6131***	0.5540***	0.5609***	0.6567***	0.6564***
	(3.65)	(4.24)	(4.26)	(4.50)	(4.48)
Trading costs	0.3515	0.3691*	0.3559	0.4166*	0.4142*
	(1.60)	(1.68)	(1.59)	(1.81)	(1.80)
GDP per Capita (log)	7.3565*	7.3516	6.9881	9.1252*	9.0602*
	(1.72)	(1.58)	(1.55)	(1.98)	(1.95)
Adjusted R-squared	0.125	0.124	0.124	0.125	0.125
Number of observations	30,183	30,183	30,183	30,183	30,183

Table IA10 – Uncertainty Avoidance and net fund alpha

In this table we run the identical analysis to Table 6, except that four-factor alpha is measured net of fees. *, ** and *** indicate significance at the 10%, 5% and 1% level, respectively. See Appendix 2 for variable definitions.

	No controls	Fund controls	Fund controls + listed country controls	Fund controls + all country controls	Fund controls + UA purged of all country controls
	(i)	(ii)	(iii)	(iv)	(v)
Uncertainty avoidance	–0.6734***	–0.6368***	–0.5391***	–0.5250***	–0.7395**
	(–6.41)	(6.38)	(–3.41)	(–3.03)	(–2.55)
TNA (log)		–0.2039**	–0.1916**	–0.1842**	–0.1997**
		(–2.42)	(–2.29)	(–2.09)	(–2.22)
TNA family (log)		0.1412**	0.1266**	0.1171**	0.1526***
		(2.50)	(2.25)	(2.13)	(2.70)
Age (log)		–0.2096	–0.2274	–0.1889*	–0.1816
		(–1.33)	(–1.46)	(–1.67)	(–1.23)
Fees		–0.1879**	–0.1115	–0.0655	–0.1873**
		(–2.16)	(–1.25)	(–0.58)	(–2.31)
Flow		0.0017	0.0017	0.0013	0.0018
		(1.12)	(1.10)	(1.10)	(1.21)
Performance		–0.0770	–0.0781	–0.0723	–0.0764
		(–1.26)	(–1.28)	(–1.18)	(–1.26)
SMB		–0.4505	–0.4824	–0.5528	–0.3970
		(–0.23)	(–0.25)	(–0.28)	(–0.20)
HML		–6.7736***	–6.7611***	–6.7957***	–6.7584***
		(–3.34)	(–3.41)	(–3.51)	(–3.34)
Foreign parent		–0.0150	–0.0230	0.0602	0.0554
		(–0.12)	(–0.16)	(0.35)	(0.44)
Judicial			0.0840	0.2514	
			(0.94)	(0.56)	
Fund industry equity size (% mkt cap)			0.0682**	0.0709*	
			(2.56)	(1.91)	
Trading costs			–0.0360	–0.0956	
			(–0.69)	(–1.35)	
GDP per Capita (log)			–1.3310	–4.5665	
			(–0.67)	(–1.57)	
Adjusted R–squared	0.212	0.246	0.247	0.253	0.245
Number of observations	41,805	41,805	41,805	41,805	41,805

Table IA11 – Uncertainty Avoidance and benchmark–adjusted returns

In this table we run the identical analysis to Table 6, except that fund performance is measured using benchmark-adjusted returns gross of fees, in Panel A, and benchmark-adjusted returns net of fees in Panel B. *, ** and *** indicate significance at the 10%, 5% and 1% level, respectively. See Appendix 2 for variable definitions.

Panel A – Benchmark-adjusted return gross of fees

	No controls	Fund controls	Fund controls + listed country controls	Fund controls + all country controls	Fund controls + UA purged of all country controls
	(i)	(ii)	(iii)	(iv)	(v)
Uncertainty avoidance	–0.3390**	–0.3641***	–0.3770**	–0.4113**	–0.7762**
	(–2.05)	(–3.08)	(–2.31)	(–2.02)	(–2.17)
TNA (log)		–0.2726***	–0.2629***	–0.2480**	–0.2602**
		(–2.98)	(–2.72)	(–2.39)	(–2.60)
TNA family (log)		0.0669	0.0574	0.0466	0.0636
		(1.01)	(1.20)	(1.03)	(1.08)
Age (log)		0.1169	0.1161	0.0999	0.1306
		(1.01)	(1.04)	(0.82)	(1.12)
Fees		0.2148***	0.2063***	0.2115***	0.1848***
		(5.36)	(3.96)	(2.72)	(4.60)
Flow		–0.0019	–0.0019	–0.0020	–0.0018
		(–0.77)	(–0.76)	(–0.83)	(–0.74)
Performance		–0.0054	–0.0058	–0.0075	–0.0055
		(–0.06)	(–0.06)	(–0.08)	(–0.06)
SMB		2.1279	2.0888	1.9683	2.1183
		(1.15)	(1.16)	(1.05)	(1.15)
HML		1.2310	1.2410	1.2533	1.2199
		(1.39)	(1.41)	(1.41)	(1.38)
Foreign parent		–0.0395	–0.0606	–0.0645	–0.0321
		(–0.32)	(–0.50)	(–0.60)	(–0.25)
Judicial			0.1247	0.2351*	
			(1.02)	(1.92)	
Fund industry equity size (% mkt cap)			–0.0222**	–0.0323***	
			(–2.12)	(–3.08)	
Trading costs			0.0024	–0.0311	
			(0.23)	(–1.33)	
GDP per Capita (log)			–0.5938	–1.4250**	
			(–0.66)	(–2.23)	
Adjusted R–squared	0.062	0.072	0.072	0.073	0.071
Number of observations	41,176	41,176	41,176	41,176	41,176

Panel B – Benchmark–adjusted return net of fees

	No controls	Fund controls	Fund controls + listed country controls	Fund controls + all country controls	Fund controls + UA purged of all country controls
	(i)	(ii)	(iii)	(iv)	(v)
Uncertainty avoidance	–0.4259**	–0.4623***	–0.5102***	–0.4988**	–0.8432**
	(–2.39)	(–3.31)	(–2.59)	(–2.23)	(–2.41)
TNA (log)		–0.2491***	–0.2365**	–0.2274**	–0.2328**
		(–2.79)	(–2.49)	(–2.26)	(–2.33)
TNA family (log)		0.0872	0.0722	0.0660	0.0814
		(1.32)	(1.55)	(1.48)	(1.40)
Age (log)		0.1396	0.1364	0.1155	0.1547
		(1.15)	(1.15)	(0.90)	(1.27)
Fees		–0.3873***	–0.3917***	–0.3832***	–0.4274***
		(–7.16)	(–6.44)	(–4.31)	(–6.38)
Flow		–0.0018	–0.0018	–0.0019	–0.0018
		(–0.74)	(–0.74)	(–0.79)	(–0.71)
Performance		–0.0049	–0.0054	–0.0071	–0.0050
		(–0.05)	(–0.06)	(–0.07)	(–0.05)
SMB		2.1275	2.0677	1.9239	2.1082
		(1.14)	(1.14)	(1.03)	(1.14)
HML		1.2331	1.2379	1.2515	1.2174
		(1.39)	(1.40)	(1.40)	(1.37)
Foreign parent		–0.0092	–0.0483	–0.0488	–0.0076
		(–0.07)	(–0.42)	(–0.48)	(–0.06)
Judicial			0.1702	0.3371***	
			(1.39)	(2.85)	
Fund industry equity size (% mkt cap)			–0.0184**	–0.0321***	
			(–2.01)	(–2.92)	
Trading costs			0.0089	–0.0236	
			(0.60)	(–0.91)	
GDP per Capita (log)			–0.7051	–1.6033**	
			(–0.77)	(–2.45)	
Adjusted R–squared	0.066	0.075	0.076	0.076	0.075
Number of observations	41,176	41,176	41,176	41,176	41,176

Table IA12 – Uncertainty Avoidance and mutual fund characteristics – Controlling for other cultural dimensions

This table presents results of estimating the effects of Uncertainty Avoidance on mutual fund characteristics, controlling for additional Hofstede's cultural dimensions, including Power Distance, Long-term Orientation, Masculinity, Individualism, and Indulgence. The regressions in Panel A use the same specification as columns (iii and iv) in Table 3. The regressions in Panel B use the same specification as columns (iii and iv) in Table 4. The regressions in Panel C use the same specification as columns (iii and iv) in Table 5 and the regressions in Panel D use the same specification as columns (iii and iv) in Table 6. *,**, and *** indicate significance at the 10%, 5%, and 1% level, respectively. See Appendix 2 for variable definitions.

Panel A: Culture and flow–performance sensitivity

	(i)	(ii)
Performance x Uncertainty avoidance	–0.0862**	–0.0852**
	(–2.26)	(–2.44)
Performance x Power distance	–0.0771*	–0.0757*
	(–1.95)	(–1.92)
Performance x Long-term orientation	–0.0653	–0.0611
	(–1.25)	(–1.20)
Performance x Masculinity	0.0757**	0.0713**
	(2.30)	(2.18)
Performance x Individualism	0.0818**	0.0793**
	(2.07)	(1.98)
Performance x Indulgence	0.0145	0.0132
	(0.20)	(0.15)
Performance	–0.0005	–0.0254
	(–0.00)	(–0.27)
Bottom performance dummy	–6.3376***	–6.5891***
	(–5.32)	(–5.55)
Top performance dummy	4.9583**	5.2905***
	(2.34)	(3.03)
Uncertainty avoidance	–0.2089	–0.5747
	(–0.13)	(–0.35)
Power distance	0.7051	1.1215
	(0.42)	(1.00)
Long-term orientation	–2.5831**	–1.2849
	(–1.99)	(–0.78)
Masculinity	–3.2755	–3.5420*
	(–1.53)	(–1.83)
Individualism	0.8298	0.1723
	(0.25)	(0.06)
Indulgence	–4.4569*	–4.7768**
	(–1.86)	(–2.02)
TNA (log)	–7.0441***	–7.0791***
	(–8.53)	(–8.34)
TNA family (log)	1.7177***	1.8076***
	(3.68)	(4.15)
Age (log)	–2.7880***	–2.9568***
	(–4.96)	(–4.92)
Fees	–1.7546***	–1.5220***
	(–3.39)	(–3.41)
Flow	0.1733***	0.1728***
	(3.35)	(3.34)
Active share	0.0951***	0.1037***
	(2.83)	(3.13)
SMB	–0.4871	–0.6620
	(–0.18)	(–0.23)
HML	5.6219*	5.8379**
	(1.93)	(1.98)
Foreign parent	–0.0062	0.1756
	(–0.01)	(0.18)

Table IA11 (continued)

Number of investment alternatives (log)	1.5984	1.1480
	(1.11)	(0.90)
Switching costs	–0.4061	–0.1595
	(–0.62)	(–0.25)
Judicial	–0.1354	–0.0417
	(–0.35)	(–0.04)
Fund industry equity size (% mkt cap)	0.3929***	0.2996***
	(3.48)	(3.91)
Trading costs	0.4234*	0.4371***
	(1.72)	(2.68)
GDP per Capita (log)	5.9662	12.4187**
	(1.05)	(2.01)
Adjusted R–squared	0.122	0.125
Number of observations	41,805	41,805

Panel B – Culture and active share

	(i)	(ii)
Uncertainty avoidance	–4.7107***	–3.3024***
	(–3.83)	(–3.86)
Power distance	–4.0404***	–3.0913***
	(–3.51)	(–3.63)
Long-term orientation	–2.0720**	–1.9369**
	(–2.24)	(–2.01)
Masculinity	1.7194	1.5408
	(1.47)	(1.53)
Individualism	1.5917	1.6756*
	(1.55)	(1.76)
Indulgence	3.3406**	4.4219***
	(2.36)	(2.95)
TNA (log)	–0.6567***	–0.6146***
	(–3.71)	(–4.02)
TNA family (log)	–0.7450***	–0.7784***
	(–4.05)	(–4.52)
Age (log)	–0.8828	–0.9767
	(–1.34)	(–1.40)
Fees	3.6116***	3.4063***
	(4.96)	(4.94)
Flow	0.0054***	0.0058***
	(4.38)	(7.94)
Performance	0.0595**	0.0584**
	(2.35)	(2.31)
SMB	13.4706***	13.4267***
	(6.03)	(5.91)
HML	4.3767***	4.1458***
	(4.55)	(4.38)
Foreign parent	–0.6109	–0.9719**
	(–1.14)	(–2.09)
Flow–performance convexity	0.0132	–0.0200
	(0.32)	(–0.48)
Manager tenure	–0.4671	–0.3216
	(–1.10)	(–1.63)
Judicial	1.3191***	1.2672***
	(5.16)	(3.40)
Fund industry equity size (% mkt cap)	–0.1935***	–0.1357***
	(–3.06)	(–4.38)
Trading costs	0.1995***	0.1193*
	(2.93)	(1.82)
GDP per Capita (log)	–3.4143*	–4.1531
	(–1.83)	(–1.53)
Adjusted R–squared	0.605	0.609
Number of observations	41,805	41,805

Panel C – Culture and benchmark deviations; fund family effects

	(i)	(ii)
Uncertainty avoidance (difference)	–0.6013**	–0.6869**
	(–2.26)	(–2.15)
Power distance (difference)	–0.8301**	–0.7466**
	(–2.33)	(–2.25)
Long-term orientation (difference)	–0.9667**	–0.9996**
	(–2.43)	(–2.50)
Masculinity (difference)	0.4980	0.5115
	(1.50)	(1.52)
Individualism (difference)	0.8162*	0.7376
	(1.71)	(1.62)
Indulgence (difference)	0.5656	0.5015
	(1.09)	(1.18)
TNA (log)	–0.7110***	–0.6036***
	(–4.04)	(–4.13)
TNA family (log)	–0.8063***	–0.7786***
	(–5.48)	(–4.52)
Age (log)	–0.9096	–0.9627
	(–1.45)	(–1.39)
Fees	2.8016***	3.5070***
	(5.06)	(5.12)
Flow	0.0060***	0.0058***
	(4.55)	(5.36)
Performance	0.0550***	0.0551**
	(2.71)	(2.54)
SMB	12.5469***	12.8705***
	(5.81)	(5.99)
HML	3.4154***	3.6728***
	(4.03)	(4.50)
Foreign parent	–1.2520	–1.1851*
	(–1.60)	(–1.83)
Flow–performance convexity	–0.0650	–0.0520
	(–1.60)	(–0.88)
Manager tenure	–0.3368	0.0989
	(–1.14)	(0.39)
Judicial	0.6406*	1.3351***
	(1.69)	(4.04)
Fund industry equity size (% mkt cap)	–0.0426	0.0523
	(–0.69)	(0.80)
Trading costs	0.0150	0.1676***
	(0.21)	(2.61)
GDP per Capita (log)	–0.0013	–1.9167
	(–0.00)	(–0.71)
Adjusted R–squared	0.503	0.516
	41,805	41,805

Panel D – Culture and fund performance (gross four-factor alpha)

	(i)	(ii)
Uncertainty avoidance	–0.3745***	–0.3589***
	(–3.94)	(–3.83)
Power distance	–0.3325***	–0.3155**
	(–2.67)	(–2.54)
Long-term orientation	0.2120*	0.1820
	(1.69)	(1.55)
Masculinity	0.1995	0.1746
	(1.61)	(1.58)
Individualism	0.2468*	0.2240*
	(1.94)	(1.90)
Indulgence	0.6509**	0.5913*
	(1.96)	(1.91)
TNA (log)	–0.1870*	–0.1811*
	(–1.86)	(–1.71)
TNA family (log)	0.1005	0.0687
	(1.54)	(1.30)
Age (log)	–0.3151*	–0.2376**
	(–1.90)	(–2.22)
Fees	0.6876***	0.5933***
	(3.54)	(3.37)
Flow	0.0024	0.0023
	(1.16)	(1.34)
Performance	–0.0715	–0.0668
	(–1.20)	(–1.12)
SMB	–0.7816	–0.7322
	(–0.41)	(–0.36)
HML	–6.7143***	–6.8223***
	(–3.32)	(–3.52)
Foreign parent	–0.1629	–0.1173
	(–0.78)	(–0.61)
Judicial	–0.0046	–0.1435
	(–0.03)	(–0.29)
Fund industry equity size (% mkt cap)	0.0639**	0.1868**
	(2.46)	(2.33)
Trading costs	–0.0031	–0.0503
	(–0.04)	(–0.58)
GDP per Capita (log)	–1.6537	–1.0863
	(–0.66)	(–0.32)
Adjusted R–squared	0.268	0.275
Number of observations	41,805	41,805

Table IA13 – Uncertainty Avoidance and mutual fund characteristics; Alternative estimation techniques and/or subsamples

This table presents results of estimating the effects of Uncertainty Avoidance (UA) on mutual fund characteristics using different estimation techniques and/or subsamples. The regressions in Panel A use the same specification as column (iii) in Table 3; the regressions in Panel B use the same specification as column (iii) in Table 4; the regressions in Panel C use the same specification as column (iii) in Table 5; the regressions in Panel D use the same specification as column (iii) in Table 6; and, finally, the regressions in Panel E use the same specification as column (iii) in Table 8. Column (i) uses Fama-Macbeth cross-sectional regressions; in column (ii), the results are estimated by weighted least squares (WLS) where the weighting is by the inverse of the number of funds in each country-year; column (iii) includes a sub-sample that excludes U.S. funds; column (iv) includes a sub-sample of domestic funds; and, finally, column (v) includes a sub-sample of only international funds. *,**, and *** indicate significance at the 10%, 5%, and 1% level, respectively. See Appendix 2 for variable definitions.

Panel A: UA and flow-performance sensitivity

	Fama–Macbeth	Weighted least squares	Non–U.S.	Domestic funds	International funds
	(i)	(ii)	(iii)	(iv)	(v)
Performance x Uncertainty avoidance	–0.1343**	–0.1394***	–0.0809***	–0.1217**	–0.0726**
	(–2.82)	(–3.05)	(–2.65)	(–2.32)	(–2.24)
Performance	0.7058***	–0.0050	0.0331	0.0080	0.1513*
	(4.46)	(–0.03)	(0.40)	(0.07)	(1.87)
Bottom performance dummy	–4.0006***	–4.1146*	–3.9736***	–8.2081***	–5.1971***
	(–3.95)	(–1.66)	(–5.98)	(–6.83)	(–7.42)
Top performance dummy	1.5586	6.1911**	5.3203**	7.8814***	2.0481
	(0.98)	(2.04)	(2.31)	(3.27)	(1.48)
Uncertainty avoidance	–1.0190	0.5488	–1.1271	–4.8022	–0.2580
	(–0.74)	(0.37)	(–0.71)	(–0.48)	(–0.17)
TNA (log)	–7.0698***	–9.0451***	–7.3970***	–6.4382***	–7.8610***
	(–11.21)	(–11.35)	(–6.37)	(–10.87)	(–6.37)
TNA family (log)	1.8184***	1.0007	1.3140*	1.7608***	1.6574**
	(5.83)	(1.41)	(1.78)	(4.98)	(2.57)
Age (log)	–2.7457***	–1.3927	–1.8290**	–3.1355***	–2.4930***
	(–6.02)	(–1.30)	(–2.45)	(–5.61)	(–3.78)
Fees	–0.6425	–0.0113	–1.1960**	–0.8209	–2.2032**
	(–0.82)	(–0.01)	(–2.03)	(–1.25)	(–2.23)
Flow	0.1911***	0.1083***	0.0975***	0.2083***	0.1392***
	(6.51)	(6.99)	(3.78)	(4.39)	(3.18)
Active share	0.0873**	0.0177	0.0812*	0.0387	0.1562***
	(2.72)	(0.37)	(1.83)	(0.94)	(3.72)
SMB	–3.1689	–4.0503	–0.2189	0.9126	–1.2462
	(–0.57)	(–1.00)	(–0.07)	(0.21)	(–0.37)
HML	15.9157**	2.9310	2.8671	5.5434	7.2343***
	(2.43)	(0.93)	(1.03)	(1.39)	(3.37)
Foreign parent	0.3838	–1.2167	0.0784	–1.7983**	1.7598
	(0.47)	(–0.68)	(0.05)	(–2.27)	(1.26)
Number of investment alternatives	1.3538	1.2595	0.0515	1.6658	–0.0682
	(0.93)	(1.17)	(0.04)	(0.68)	(–0.06)
Switching costs	–0.3694	–2.2592***	–0.3487	–4.7050*	–0.2459
	(–0.43)	(–2.77)	(–0.33)	(–1.67)	(–0.23)
Judicial	–0.5597	0.4247	–0.2776	–1.5047	–0.7006**
	(–1.68)	(0.59)	(–0.73)	(–0.33)	(–2.16)
Fund industry equity size (% mkt cap)	0.3526	0.3889***	0.4337***	0.2263*	0.3820***
	(1.78)	(3.17)	(3.55)	(1.70)	(3.40)
Trading costs	0.1767	0.8849***	0.4060***	0.9832***	0.3879***
	(1.72)	(4.37)	(3.34)	(4.80)	(4.03)
GDP per Capita (log)	7.2321**	5.4194	5.0719	9.1544	14.3591**
	(2.32)	(0.78)	(1.19)	(0.77)	(1.99)
Adjusted R–squared	0.215	0.127	0.082	0.145	0.104
Number of observations	41,805	41,805	24,389	22,661	19,144

Panel B – Active share

	Fama–Macbeth	Weighted least squares	Non–U.S.	Domestic funds	International funds
	(i)	(ii)	(iii)	(iv)	(v)
Uncertainty avoidance	–4.8311***	–4.8774***	–5.0489***	–7.5413***	–4.5896***
	(–5.00)	(–3.42)	(–4.31)	(–4.61)	(–2.75)
TNA (log)	–0.6993***	–0.8185***	–0.9170***	–0.5245**	–0.7875***
	(–8.34)	(–6.02)	(–5.06)	(–2.53)	(–2.89)
TNA family (log)	–0.6838***	–0.5760***	–0.3977	–0.7552***	–0.7135***
	(–10.17)	(–4.29)	(–1.53)	(–3.84)	(–2.66)
Age (log)	–0.6779***	–2.2381***	–2.2981***	–0.7108	–1.6321***
	(–2.65)	(–5.92)	(–4.94)	(–0.81)	(–3.66)
Fees	3.1341***	4.0322***	4.6122***	3.2386***	4.2712***
	(13.22)	(12.91)	(8.39)	(5.25)	(5.70)
Flow	0.0042***	0.0044	0.0074***	0.0016	0.0103***
	(3.75)	(1.52)	(4.24)	(0.93)	(4.66)
Performance	0.1325***	0.1020***	0.0896**	0.0711**	0.0622**
	(4.53)	(4.23)	(2.37)	(2.33)	(2.33)
SMB	19.0819***	14.7860***	16.2956***	14.9304***	12.4147***
	(13.22)	(14.31)	(10.85)	(4.00)	(9.16)
HML	5.4734***	6.1065***	5.2758***	5.6241***	2.7684***
	(5.27)	(9.72)	(4.72)	(4.15)	(2.85)
Foreign parent	–0.8246***	0.3198	–0.4983	–1.3986**	–0.3324
	(–8.41)	(0.64)	(–0.82)	(–2.24)	(–0.44)
Flow–performance convexity	0.1579	0.0536	0.0115	0.0285	0.0096
	(1.61)	(0.99)	(0.19)	(0.28)	(0.33)
Manager tenure	0.3672***	–0.0217	0.2234	–3.0260	0.3233
	(3.03)	(–0.17)	(0.49)	(–0.69)	(0.64)
Judicial	0.5597***	0.7000***	0.7007***	1.4659	0.6481***
	(4.55)	(5.84)	(3.18)	(0.51)	(2.76)
Fund industry equity size (% mkt cap)	0.0156	–0.1171***	–0.0559	–0.4331***	–0.0261
	(0.88)	(–4.56)	(–0.68)	(–3.60)	(–0.30)
Trading costs	0.0841***	0.0328	0.1008*	0.0256	0.1650***
	(3.82)	(0.64)	(1.81)	(0.19)	(2.76)
GDP per Capita (log)	–5.3272***	–4.6558***	–5.4711***	1.3398	–1.9646
	(–4.86)	(–3.79)	(–3.96)	(0.22)	(–0.83)
Adjusted R–squared	0.630	0.557	0.572	0.685	0.494
Number of observations	41,805	41,805	24,389	22,661	19,144

Panel C – UA and benchmark deviations; fund family effects

	Fama–Macbeth	Weighted least squares	Non–U.S.	Domestic funds	International funds
	(i)	(ii)	(iii)	(iv)	(v)
Uncertainty avoidance (difference)	–0.6101***	–0.5778**	–0.5414**	–0.6251***	–0.4197*
	(–3.46)	(–2.55)	(–2.39)	(–2.69)	(–1.83)
TNA (log)	–0.7487***	–0.9455***	–0.8671***	–0.5354**	–0.7231**
	(–9.89)	(–7.01)	(–4.32)	(–2.48)	(–2.52)
TNA family (log)	–0.7382***	–0.6836***	–0.5799**	–0.7436***	–0.9048***
	(–13.80)	(–5.41)	(–2.29)	(–3.60)	(–4.21)
Age (log)	–0.5828**	–1.8874***	–2.1224***	–0.7410	–1.5091***
	(–2.43)	(–5.11)	(–5.48)	(–0.83)	(–3.72)
Fees	2.5484***	2.8639***	2.9807***	3.2238***	2.4877***
	(19.45)	(8.50)	(3.79)	(5.19)	(2.93)
Flow	0.0050***	0.0067***	0.0087***	0.0017	0.0109***
	(3.64)	(2.77)	(3.90)	(1.20)	(4.05)
Performance	0.1293***	0.0872***	0.0760**	0.0631**	0.0576**
	(4.52)	(4.71)	(2.32)	(2.50)	(2.43)
SMB	17.9871***	12.9413***	15.2137***	15.1886***	10.9413***
	(13.18)	(12.11)	(8.86)	(4.00)	(6.83)
HML	4.6674***	4.7169***	4.3352***	5.3720***	1.7135*
	(4.25)	(7.53)	(3.80)	(4.39)	(1.70)
Foreign parent	–1.4801***	–1.3600***	–1.8191**	–1.4342**	–1.5850*
	(–10.24)	(–2.79)	(–2.49)	(–2.36)	(–1.76)
Flow–performance convexity	–0.1411	–0.0354	–0.0368	–0.0315	0.0182
	(–1.14)	(–0.88)	(–0.64)	(–0.41)	(0.29)
Manager tenure	–0.1336	–0.2469*	–0.0220	–1.5796	0.1928
	(–0.96)	(–1.96)	(–0.06)	(–0.49)	(0.63)
Judicial	0.3141***	0.4063***	0.6642	0.2461	0.7038*
	(3.64)	(2.97)	(1.56)	(0.14)	(1.68)
Fund industry equity size (% mkt cap)	–0.0753**	–0.0666***	0.0272	–0.1644*	0.0827
	(–2.05)	(–3.00)	(0.29)	(–1.91)	(1.00)
Trading costs	–0.1050**	0.0077	–0.0640	–0.2848**	–0.1146**
	(–2.29)	(0.22)	(–1.08)	(–2.06)	(–2.07)
GDP per Capita (log)	–2.6589***	–1.0377	0.9339	3.1357	5.3769
	(–2.86)	(–1.02)	(0.36)	(0.74)	(1.56)
Adjusted R–squared	0.548	0.467	0.500	0.539	0.441
Number of observations	41,805	41,805	24,389	22,661	19,144

Panel D – UA and fund performance (gross four–factor alpha)

	Fama–Macbeth	Weighted least squares	Non–U.S.	Domestic funds	International funds
	(i)	(ii)	(iii)	(iv)	(v)
Uncertainty avoidance	–0.4244***	–0.9378**	–0.7460***	–0.5232***	–0.6466***
	(–2.81)	(–2.08)	(–2.74)	(–3.27)	(–4.13)
TNA (log)	–0.2561***	–0.4722***	–0.1320	–0.2206**	–0.1676
	(–3.01)	(–2.85)	(–1.37)	(–2.55)	(–1.29)
TNA family (log)	0.0960*	0.0415	0.1275	0.0841**	0.1214*
	(1.79)	(0.38)	(1.12)	(2.44)	(1.78)
Age (log)	–0.1130	–0.4196	–0.4339*	–0.1329	–0.3820***
	(–1.20)	(–1.44)	(–1.89)	(–0.68)	(–4.57)
Fees	0.3989***	1.1080***	0.6670***	0.2697***	0.7424***
	(4.14)	(3.28)	(4.93)	(3.38)	(7.41)
Flow	–0.0007	0.0054	0.0025*	0.0027**	0.0013
	(–0.42)	(0.81)	(1.85)	(2.26)	(0.69)
Performance	0.1017**	–0.0744	–0.1247*	–0.0798	–0.0782
	(2.80)	(–1.45)	(–1.88)	(–1.32)	(–0.92)
SMB	–1.0852	–3.4235*	–0.1198	–0.5158	–0.0800
	(–0.38)	(–1.96)	(–0.06)	(–0.25)	(–0.04)
HML	–6.0363***	–9.3750***	–6.4924**	–6.0970**	–7.0482***
	(–2.72)	(–5.37)	(–2.28)	(–2.48)	(–4.15)
Foreign parent	–0.1261	0.0391	–0.1751	–0.0447	–0.1306
	(–0.61)	(0.11)	(–0.92)	(–0.33)	(–0.52)
Judicial		0.0039	–0.0150	–2.7634	0.0378
		(0.02)	(–0.10)	(–0.57)	(0.78)
Fund industry equity size (% mkt cap)		0.0249	0.0633***	0.2676	0.0268*
		(0.57)	(9.76)	(0.72)	(1.92)
Trading costs		–0.1266	–0.0179	–0.6035	–0.0023
		(–1.18)	(–1.42)	(–1.36)	(–0.20)
GDP per Capita (log)		–1.1723	–0.2646	5.8199	–0.4049
		(–0.38)	(–0.11)	(0.35)	(–0.40)
Adjusted R–squared	0.678	0.240	0.228	0.264	0.260
Number of observations	41,805	41,805	24,389	22,661	19,144