

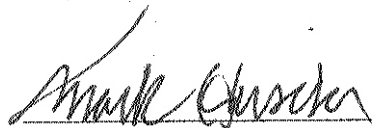
ESSAYS IN INTERNATIONAL FINANCE

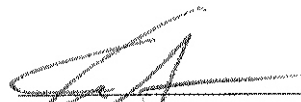
By

Hilla Rantala

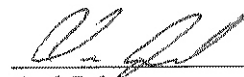
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Abstract

The two essays in this dissertation are concerned with investors' decision making in the global environment. Finance literature has established that investors do not allocate their investments in mean variance efficient portfolios. Instead, variables such as economic development and familiarity impact the portfolio allocation at home and abroad. In my first essay, I investigate determinants of foreign diversification by more than thirty thousand institutions worldwide. Survey-based country-specific variables on cross-cultural behavior help to explain both home bias and diversification among foreign equities. In particular, investment funds from countries characterized by higher uncertainty avoidance behavior display greater home bias and are less diversified in their foreign holdings. Investors from countries with higher levels of individualism and masculinity display lower levels of home bias and are more diversified abroad. In my second essay, I examine 3,487 non-US institutions' portfolio allocations in US securities. International funds from geographically distant countries invest less in the US and in a narrower set of securities than institutions from geographically nearby countries. However the significance from geographical distance reduces, when I control for the time zone differential between the investor country and the US. This shows that information flow at least partially explains the familiarity based explanation of international diversification. I also show that cultural uncertainty avoidance impacts portfolio allocation, so that funds from countries with high uncertainty avoidance tend to underweight the US market, but overweight a small set of US benchmark portfolios with the amount they invest in the US.

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Chris has taught me so much about how to develop as a researcher and how to find great ideas. He has taught me that a great idea cannot be successful unless it is

marketed in the right package. I truly admire his talent in idea generation and taking work to the next level and selling it to the journals. I am still humbled every day by his ability and talent and how he makes me realize how much there is still to learn. Because of Mark and Chris I am confident that I am ready to stand on my own when I leave Kansas, and I believe we will have many more projects to work on in the years to come.

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CHAPTER 1

THERE'S NO PLACE LIKE HOME:

Cultural Influences on International Diversification by
Institutional Investors

Abstract

We investigate determinants of foreign diversification by more than thirty thousand institutions worldwide. Survey-based country-specific variables on cross-cultural behavior help to explain both home bias and diversification among foreign equities. In particular, investment funds from countries characterized by higher uncertainty avoidance behavior display greater home bias and are less diversified in their foreign holdings. Investors from countries with higher levels of individualism and masculinity display lower levels of home bias and are more diversified abroad. The economic significance of cultural variables is high and comparable in magnitude to geographical distance, a consistent influence on foreign diversification in prior studies.

1. Introduction

Home bias in portfolio investment decisions refers to the overweighting of domestic securities and the underweighting of foreign securities in global investment portfolios. Home bias and its determinants have been widely studied in the finance literature since seminal work by French and Poterba (1991). For example, Chan, Covrig, and Ng (2005) show that international portfolio allocations by mutual funds are influenced by variables based on stock market development and investor familiarity with various foreign markets as suggested by common language, bilateral trade flows, and geographic proximity between investor and target countries.

We investigate how cross-cultural psychology affects investment decisions by money managers from around the world and the observed degree of home bias and international diversification in their portfolios. Specifically, we examine the global equity holdings of institutional portfolios and analyze how these allocations are influenced by country-specific variables derived from survey-based research in cross-cultural psychology. Our study contributes to the existing literature in several ways. First, our database is one of the broadest in scope and size relative to those analyzed in previous studies. We examine detailed equity holdings for more than twenty five thousand institutions located in over 60 countries that have ownership in securities from over 80 countries. For this sample we confirm a tendency toward home bias and great dispersion in the extent of diversification across foreign equity securities. Second, we examine how cultural variables affect institutional investment decisions in foreign equities. Prior literature examines the effects of culture on financial

decisions using a country's predominant language or religion as indicators of culture. In contrast, we integrate country-specific measures of culture obtained from comprehensive survey-based research in cross-cultural psychology into the analysis. These cultural variables distinguish countries based on concepts such as uncertainty avoidance behavior, individuality versus collectivism, masculinity versus femininity, attitudes toward power, and long-term versus short-term orientations (Hofstede, 1980, 2001). We hypothesize that such measures affect investor and portfolio manager appetites for domestic versus foreign securities and influence how international portfolio allocations are distributed among alternative foreign markets.

Our results indicate that country-level uncertainty avoidance is related to the degree of home bias in the cross-section of institutional portfolios after controlling for macroeconomic and familiarity variables previously investigated in the literature. Specifically, institutional portfolios from countries that display high levels of uncertainty avoidance have significantly more home bias in their portfolios and exhibit a lower probability of investing in any given foreign country. Also, the proportion of institutional portfolios that is allocated abroad by funds from high uncertainty avoidance countries tends to be less diversified and underweights a greater proportion of foreign markets compared to funds from low uncertainty avoidance countries. Investors from countries that display high levels of cultural individualism and masculinity have significantly less home bias in their portfolios, and the share of such portfolios that is allocated abroad tends to be more diversified.

The consideration of cultural variables increases the explanatory power of empirical models for both home bias and foreign diversification by a significant amount that is larger than familiarity variables such as language and distance. We also show that cultural behaviors affect diversification decisions in developed market and emerging markets. In addition, we find that a common language influences investment decisions by US funds and in emerging markets, but common language has no impact on investments made by institutional investors from European Union countries. Distance always appears as a significant determinant of foreign investment decisions, where nearby and presumably more familiar markets tend to be preferred by global institutional investors.

The paper is organized as follows. Section 2 reviews the literature on international diversification and discusses how measured differences in culture across countries may affect investment decision making. Section 3 details the data and methods used in the study. Section 4 provides the results on the global sample of funds. Section 6 provides a summary and offers implications for future research.

2. Home bias, international diversification, and the effects of culture

2.1. International diversification and home bias

Home bias has been widely documented in finance literature since seminal work by French and Poterba (1991). Home bias refers to the overweighting of domestic securities and underweighting of foreign securities in investment portfolios. Several studies attempt to explain biases in portfolio allocations by investors in a

particular market. For example, Kang and Stulz (1997) investigate the determinants of foreign shareholdings of Japanese equities, and Dahlquist and Robertsson (2001) investigate foreign ownership of Swedish equities. Coval and Moskowitz (1999) show that even within the United States money managers show a preference for securities of firms located nearby. Similarly, Grinblatt and Keloharju (2001) show that distance and shared ethnicity with top management help to explain portfolio allocations by Finnish investors.

Recent research focuses on how investor-specific, investor-country-specific, target-country-specific, and security-specific factors affect levels of home bias and international diversification on a global basis. Amadi (2004) examines foreign diversification of more than thirty countries around the world, and he finds that the small levels of foreign investment are not well diversified across international equity markets. Amadi's empirical analysis shows that familiarity factors such as common language, trade, and immigration links affect foreign investment. Chan, Covrig, and Ng (2005) show that under- or over-weighting of various world equity markets by mutual funds is conditioned by factors such as economic development, capital controls, stock market development, familiarity, and levels of investor protection.¹

¹ Economic development variables include: GDP per capita, real GDP, trade flows, direct investment, and country credit rating. Capital control variable is the capital flow restriction of the target country. Stock market development is measured with market capitalization, turnover, transaction cost, and emerging market indicator variable. Familiarity variables are common language, distance between capital cities, and bilateral trade flows between an investor and a target. Investor protection variables include accounting standard index, minority investor protection index, risk of expropriation, efficiency of judicial system, and legal system variable. Lastly, some other included control variables include past return to the target country's major index, correlation between the investor's home market and the target's markets, and finally the amount of tax withheld from foreign investors.

Leuz, Lins, and Warnock (2005) report that quality of corporate governance practices at the firm level influence foreign shareholdings by US investors. Ferreira and Matos (2006) utilize a similar dataset to the one used in our study on institutional investors' stock holdings and investigate US, non-US foreign, and domestic managers' preferences for country- and firm-level characteristics. All three groups of institutions reveal a strong preference for large and liquid stocks with good governance practices. Non-US investors, however, overweight stocks that are cross-listed in the US, are members of MSCI indexes, and firms that are globally visible through foreign sales or analyst coverage, whereas domestic investors seem to underweight the same stocks.

2.2. Culturally rooted behaviors and financial decision making

Financial decision making by individuals appears to vary by identifiable social or behavioral traits. For example, Barber and Odean (2001) show that an investor's sex helps to predict self-attribution biases and trading activity. Even professional money managers in the US appear to show a bias toward local stocks, perhaps indicative of limited attention spans or over-fixation on familiar companies (Coval and Moskowitz, 1999). More directly relevant to the home bias puzzle, Graham, Harvey, and Huang (2006) show that individual investors who describe themselves as competent – perhaps overconfidently – have more internationally diversified portfolios.

Culture is often defined as a system of shared values, beliefs, and attitudes that influences individual perceptions and behaviors. The effect of culture has been a topic in many recent studies in the field of financial economics, but frequently culture has been defined or measured in order to help explain variation in institutions or legal practices rather than individual investor behavior.² In contrast, a recent series of papers by Guiso, Sapienza, and Zingales (2004, 2005, 2006, 2007) show that cross-cultural differences in trust in others, and especially of foreigners, helps explain stock market participation and other facets of portfolio investment. Similarly, Chui, Titman, and Wei (2005) suggest that cross-cultural differences in terms of individualism versus collectivism are related to prevalence of self-attribution biases, levels of trading activity, and the magnitude of momentum affects in security pricing across countries.

In this study we investigate how cross-cultural differences in behavior affect international portfolio allocations. We link a well-known study by social psychologist Geert Hofstede on cross-cultural psychology to the international diversification literature. Hofstede's *Culture Consequences* (1980, 2001) is one of the most influential works in cross-cultural psychology, one of the most cited studies in the entire *Social Science Citation Index*, and has been widely cited in academic research in marketing and international business. The study identifies primary dimensions of culture and differences in thinking, values, and social behaviors among

² For example, see Stulz and Williamson (2003), who study how a country's principal religion helps to explain variation in the nature and enforcement of creditor rights around the world. In contrast, see the previously cited study by Grinblatt and Keloharju (2001), who measure culture in Finland as Finnish or Finnish-Swedish ethnic heritage; investors in Finland tend to invest more in companies headed by CEOs who share their heritage.

people from more than 50 nations. Hofstede's survey-based evidence shows that countries' cultural attributes can be measured in five primary dimensions (from Geert Hofstede's website: <http://www.Geert-Hofstede.com> and from *Culture Consequences*, 2001, 2nd edition, pages xix-xx):

1. **Uncertainty avoidance index (UAI)** deals with a society's tolerance for uncertainty and ambiguity. It indicates to what extent a culture programs its members to feel either uncomfortable or comfortable in unstructured situations. Unstructured situations are novel, unknown, surprising, different from usual. Uncertainty avoiding cultures try to minimize the possibility of such situations by strict laws and rules, safety and security measures, and uncertainty avoiding countries are also more emotional, and motivated by inner nervous energy.
2. **Individualism (IDV)** on the one side versus its opposite, collectivism, is the degree to which individuals are integrated into groups. On the individualist side we find societies in which the ties between individuals are loose: everyone is expected to look after him/herself and his/her immediate family. On the collectivist side, we find societies in which people from birth onwards are integrated into strong, cohesive groups.
3. **Power distance index (PDI)** is the extent to which the less powerful members of organizations and institutions accept and expect that power is distributed unequally. It suggests that a society's level of inequality is endorsed by the followers as much as by the leaders. Power and inequality are extremely fundamental facts of any society and that all societies are unequal, but some are more unequal than others.
4. **Masculinity (MAS)** versus femininity refers to the distribution of roles between the genders. The survey studies reveal that (a) women's values differ less among societies than men's values; (b) men's values from one country to another contain a dimension from very assertive and competitive and maximally different from women's values on the one side, to modest and caring and similar to women's values on the other. The assertive pole has been called 'masculine' and the modest, caring pole 'feminine'. The women in feminine countries have the same modest, caring values as the men; in the masculine countries they are somewhat assertive and competitive, but not as much as the men, so that these countries show a gap between men's values and women's values.

5. **Long-Term Orientation (LTO)** versus short-term orientation: this fifth dimension was found in a study among students in 23 countries around the world. Values associated with Long-Term Orientation are thrift and perseverance.

Hofstede scores for all available countries are presented in Table 1 which ranks the countries in order from the lowest to highest based on uncertainty avoidance behavior. It is not immediately apparent that uncertainty avoidance would be correlated with another country characteristic, for example with GDP per capita. Lowest uncertainty avoidance countries include both wealthy and developing countries from all continents.

In this study we focus on the uncertainty avoidance, individualism, and masculinity dimensions of investor countries. Hofstede's uncertainty avoidance measure has not been studied before in international diversification literature. However, a few papers have considered uncertainty avoidance in the international economics literature. For example, Huang (2004) finds that countries characterized by high uncertainty avoidance grow disproportionately more slowly in industry sectors where information is less available. As noted earlier, individualism has been studied previously in finance by Chui, Titman, and Wei (2005) in terms of its effect on self-attribution biases, trading activity, and momentum patterns in stock returns. To our knowledge Hofstede's measure for masculinity has not been studied before in finance literature.

2.3. Testable hypotheses

Culture's relation to home bias or international diversification has not been established in international finance literature. We investigate how cross-cultural differences in behaviors as measured by Hofstede affect portfolio allocation decisions by investment funds from around the world. We focus in particular on how uncertainty avoidance, individualism, and masculinity affect international diversification. We examine two aspects of international diversification, home bias and, in addition, the extent to which the international investments are diversified across foreign markets.

Conventional portfolio theory would predict that investors diversify across imperfectly correlated domestic and foreign markets to maximize portfolio efficiency (Markowitz, 1952; Levy and Sarnat, 1970). Home bias is the extent to which home-country portfolio allocations exceed benchmark weights based on market capitalization relative to global market capitalization, sometimes adjusted for investability or effective float. We hypothesize that funds from countries which rank high on the uncertainty avoidance dimension prefer safe and familiar investments. Therefore, we expect to observe that funds from high uncertainty avoidance countries prefer investments at home and experience higher home bias than funds from relatively low uncertainty avoidance countries. More formally:

H1: Funds from countries characterized by high uncertainty avoidance display more home bias in their portfolio allocations.

We use the phrase *foreign diversification* to refer to the extent that a fund's international portfolio allocation is diversified across foreign markets relative to benchmark weights based on market capitalization or float-adjusted capitalization. Again, traditional portfolio theory recommends that international allocations be diversified across foreign markets. Merton (1987), however, argues that information imperfections prompt investors to focus on familiar opportunities. A focus on the known or the familiar is sometimes referred to as a habitat effect (Barberis, Shleifer, and Wurgler, 2005). Empirical literature has shown that familiarity and/or perceived informational advantages may lead to unbalanced portfolios so that prominent or familiar firms are preferred (Coval and Moskowitz (1999, 2001), Kacperczyk, Siam, and Zheng (2005)). Extant empirical literature provides support for Merton's argument in international setting, where investments by investors in foreign markets are typically allocated to large, less risky, and prominently visible firms (Kang and Stulz (1997), Dahlquist and Robertsson (2001), Ferreira and Matos (2006)) We predict that funds from countries characterized by high uncertainty avoidance will have foreign diversification concentrated in few large and visible firms from major foreign markets and disproportionately less diversification to smaller riskier firms in the majority of the target countries. In other words, we hypothesize that investors from high uncertainty avoidance countries allocate their investments in few familiar target countries and that low uncertainty avoidance countries allocate capital in more target countries. Formally:

H 2: Funds from countries characterized by high uncertainty avoidance will display less diversification among foreign markets.

The Hofstede measure for individualism distinguishes countries based on whether their residents display individualistic versus collectivist behavioral tendencies. Chui, Titman, and Wei (2005) suggest that investors from countries with higher individualism scores may suffer from higher degree of overconfidence or similar self-attribution biases, which in turn translates to higher trading volume. Graham, Harvey, and Huang (2006) show that individual US investors who perceive themselves as competent – perhaps overconfidently – have lower home bias in their portfolios. We predict that funds from countries characterized by higher individualism will display more dispersion among foreign markets in their portfolio allocations. We argue that countries with higher individualism scores and possibly higher degrees of overconfidence may on average think that they possess more information than investors from other countries or that they interpret information from variety of foreign markets better. The perceived information advantage by investors from high individualism countries would then also lead to a higher number of securities in foreign countries and more foreign diversification on average. Thus we investigate two additional hypotheses:

H 3: Funds from countries characterized by high individualism have more ownership abroad and therefore lower home bias than countries with low individualism scores.

H4: Funds from countries characterized by high individualism have more dispersed portfolio allocations among foreign markets.

The third Hofstede measure for masculinity distinguishes countries based on whether their residents display masculine versus feminine behavioral tendencies. Barber and Odean (2001) suggest that male investors may suffer from higher degree of overconfidence or similar self-attribution biases, which in turn translates to higher trading volume in individual portfolios. Investors who perceive themselves as competent may have lower home bias in their portfolios, so we predict that funds from countries characterized by higher masculinity will display more dispersion among foreign markets in their portfolio allocations. We argue that countries with higher masculinity scores and possibly higher degrees of overconfidence may on average think that they possess more information than investors from other countries or that they interpret information from variety of foreign markets better. The perceived information advantage by investors from high masculinity countries would then also lead to a higher number of securities in foreign countries and more foreign diversification on average. Thus we investigate the hypotheses:

H 5: Funds from countries characterized by high masculinity have more ownership abroad and therefore lower home bias than countries with low masculinity scores.

H 6: Funds from countries characterized by high masculinity have more dispersed portfolio allocations among foreign markets.

3. Data and methods

3.1. Data

The data are collected from several different sources of public filings. Table 3 summarizes the data sources of holdings data, fund types, and styles. Altogether the

initial data include fund holdings for more than 37,000 investment institutions from over 60 countries that in turn hold securities from more than 100 countries. The total number of distinct securities held by sample funds exceeds twenty thousand. Each of the institutions in the dataset is identified by a unique identifier, and the portfolio data include information on each security held in a fund's portfolio at year-end 2006 as a percentage of the fund's total portfolio. Data also include the funds' domiciles, descriptions of style of the fund, turnover, and identifiers for each of the securities held. We merge the portfolio holdings data to a securities database that consists of information collected from CRSP, DataStream, and WorldScope. For each security we have information on market value, industry, exchange, closing prices, company name, shares outstanding, and the home country. We have multiple observations for cross-listed firms because companies with multiple listings appear with different identifiers in the data. We treat both an investment in cross-listed and direct investment as an investment in the firm's home country. The world capitalization and bias measures we describe below incorporate the market values from both cross-listed and home market stocks.

We merge the institutions' descriptive data to holdings data using the unique holder's identifier. This allows us to define each fund's home country, and we drop all those funds from the sample that do not report a country code. Altogether this reduces the number of institutions from 37,346 to 36,580. We also delete those holding observations that do not have the percentage portfolio available or if a security is missing its unique identifier. We drop 75 funds from the sample whose

holdings that do not add up to 100%. Also, roughly 1.59% (or 94,410) of all the observations are missing the name of security's home country. These securities are mostly minor holdings, but in some instances they consist of a large proportion of funds' holdings because cash, bonds, options, and short positions appear without a country identifier. We delete all those funds whose non-stock positions consist of more than 50% of their holdings, Funds with zero percent invested abroad are not included in the calculations. Also funds from countries without GDP per capita, Hofstede dimensions, and language and distance data are excluded and 25,430 equity funds remain.

Some of the securities in many countries appear difficult or impossible for foreign investors to obtain either because of legal restrictions or because of ownership by large block holders. For each security we therefore calculate the investable float as the percentage (and market value) of shares that are not held by large block holders as reported by WorldScope.

Other country-specific variables are collected from several different sources. GDP, GDP per capita, projected GDP growth, exchange rate data, and inflation data for investor countries are obtained from United States Department of Agriculture.³ Hofstede scores for the primary dimensions of culture are obtained from Geert Hofstede's website.⁴ Corporate governance as well as corruption and transparency indexes for the target countries come from Maplecroft.⁵ Bilateral trade flows are from

³United States Department of Agriculture: <http://www.usda.gov/wps/portal/usdahome>

⁴Geert Hofstede's dimensions of culture: <http://www.geert-hofstede.com/>

⁵Global Risk Scores: <http://maps.maplecroft.com>

the NBER world trade database maintained by Feenstra.⁶ Familiarity variables such as language, border and distance are from Jon Haveman's international trade data source and are completed with information obtained from CIA World Factbook.⁷ Transaction costs and taxes are from Chen, Covrig, and Ng (2005).

3.2. *Measuring home bias*

We calculate the portfolio allocation for each of the funds and investor countries similarly to Chan, Covrig, and Ng (2005). We use the institutional holdings across securities to calculate the percentage allocated to each country J by each fund i as

$$p_{i,J} = \sum_{j \in J} p_{i,j} \quad (1)$$

where $p_{i,j}$ is the portfolio weight by fund i for security j from target country J. The under/overweighting of each of the target countries is calculated as the actual allocation by each fund in each target country less the expected allocation to each country by each fund, when the expected allocation is the percentage of a target country's capitalization relative to the world:

$$\text{bias}_{i,J} = p_{i,J} - \frac{MV_J}{\sum_J MV_J} \quad (2)$$

⁶NBER World trade database: <http://www.econ.ucdavis.edu/faculty/fzfeens/>

⁷ Jon Haveman's International Trade data source: <http://www.haveman.org/>. CIA World Factbook: <https://www.cia.gov/library/publications/the-world-factbook/>.

where MV_J is the market value of all equity securities in country J and the denominator is the total of all the countries' market capitalizations, and $p_{i,J}$ is the amount of portfolio allocated to target country J by sample fund i. When country J is firm i's home market the equation (2) provides a measure of home bias. When country J is a foreign market equation (2) provides a measure of what Chan, Covrick, and Ng (2005) refer to as foreign bias, i.e., dispersion from the allocation benchmark for target country J. We provide a detailed derivation of home bias and foreign bias in Appendix 2. Table 2 shows the average home bias and median home bias in each of the investor countries as well as the number of investment funds in the sample. Table 2 also reports summary statistics for a limited sample of funds that also report fund size information. Size information is available for 13,556 funds. Table also includes a value weighted average measure for home bias in this limited sample. The weighted average measures used throughout the paper may provide a more accurate approximation for investor countries' behavior compared to equally weighted country averages or fund level analysis. Fund managers have objectives and style restrictions. For example, a US fund tracking the performance of S&P 500 will have home bias equal to the S&P 500's US weight. The use of country weighted average reduces this problem because the investors in the funds will allocate their capital into those funds whose investment objectives they prefer. Because of this the funds that the underlying investors prefer are the largest and have more weight in the analysis.

Figures 7a and 7b show the distribution of home bias in our sample of 25,430 funds. The expected investment is calculated in figure 7a as an investor country's

share of the world market capitalization of all companies' shares, and in figure 7b as the share of world's market capitalization of all companies' investable shares or the float.

Benchmark capitalization weights for target countries are shown in Figures 1 and 2. In Figure 1 the United States is on top of the list with 24.8% of the world's market capitalization, followed by United Kingdom with 9.6%, and Japan with 8.2%. Altogether the sample has information for 113 countries' market capitalizations, and 52 of them have market capitalizations over 0.5% of the total. Alternatively, we measure the investable or float-adjusted benchmark weights for each country as the sum of the capitalization for non-closely held shares as reported by WorldScope. Figure 2 shows capitalization-based weights across target countries adjusted for investability as measured by this WorldScope measure. The major change relative to the weights reported in Figure 1 in the capitalization percentages appears for the United States which now has 32.4% of the world's float capitalization. The United Kingdom's float percentage increases, while China's drops considerably. Overall, developed market capitalizations increase and emerging market capitalizations decrease when benchmark weights are adjusted for investability.

We also measure dispersion in target country portfolio allocations with an implicit adjustment for home bias. Specifically, instead of measuring the non-home country allocations relative to the entire portfolio we measure the percentage allocation relative to the value of all foreign investments for that portfolio, excluding home market investments explicitly. Similarly, the benchmark weights are calculated

with the investor's home market excluded from world market capitalization. Consequently, each fund's benchmark weight for a country is specifically adjusted for that fund's measured home bias. The resulting bias measure automatically controls for the home bias in a fund's portfolio and focuses on the under/overweighting of target markets with the amount that is devoted to foreign investment. Formally, the foreign diversification bias with respect to country J by fund i is calculated as follows:

$$\text{adj.bias}_{i,J} = \frac{p_{i,J}}{\sum_{J \neq I} p_{i,J}} - \frac{MV_J}{\sum_{J \neq I} MV_J} \quad (3)$$

When we test for the determinants of foreign diversification in developed and emerging markets, we use alternative developed and emerging market adjusted biases, so that the actual investment only considers the percentage allocated to each developed (emerging) market as a percentage of a fund's total developed (emerging) market investment and the expected investment includes the market value of developed (emerging) target market as a percentage of the total market value of all developed (emerging) markets.

We also calculate an average under/overweighting for each target market (including the home market) across all funds domiciled in each investor country. This measure is calculated as follows:

$$\text{bias}_{i,J} = \frac{1}{I} \sum_{i=1}^I p_{i,J} - \frac{MV_J}{\sum_J MV_J} \quad (4)$$

where $bias_{i,j}$ is the amount of under/overweighting that investor country I makes in target country J on average. Target country weights are calculated controlling for either WorldScope's measure of closely held shares or based on capitalization of all securities for a country held by sample funds. For each investor country I we similarly calculate the average adjusted bias across all funds from that country. Figures 3, 4, 5, and 6 show the expected and actual average investment for all the US based funds using the alternative ways to calculate bias from above. In Figure 3 with unadjusted measures US average investment is always below the expected investment in all countries except in the US. The largest average amount of investment by the US funds is in United Kingdom (roughly 3%), when the expected investment is 12.6%. Figure 3 also shows the home bias present in average fund's portfolio with actual average investment in the US totaling 80% of the total portfolio versus the expected investment of 32.4%.

Figures 4, 5, and 6 show the adjusted investments abroad. Of all the non-offshore foreign developed market investments, US funds overweight Canadian and Swiss firms and underweight the Japanese firms the most. Of the emerging markets US funds overweight Israeli, Mexican, and Brazilian firms and underweight all Asian markets and South Africa.

Finally, we also calculate an alternative measure of dispersion or concentration for funds' holdings in their international investments.

$$DISPERSION_i = \sum_J \sqrt{\frac{\left(\frac{P_{i,J}}{\sum_{J \neq i} P_{i,J}} - \frac{MV_J}{\sum_{J \neq i} MV_J} \right)^2}{J^2}} \quad (5)$$

where $DISPERSION_i$ is calculated as the squared adjusted bias in each of the target countries divided by the total number of target countries. For an investment fund whose foreign allocations are made exactly in line with benchmark weights this measure will be zero. In contrast, the measure will be close to one for a fund whose foreign investments are highly concentrated in a single small-cap foreign market.

Figures 8a and 8b show the distribution of dispersion of ownership in our sample of 25,430 funds. The expected investment is calculated in figure 8a as each target country's share of the world market capitalization of all companies' shares, and in figure 8b as the share of world's market capitalization of all companies' investable shares or the float. Funds with zero percent invested abroad are not included in the calculations.

4. Results

4.1 Determinants of home bias

We begin by testing hypotheses 1, 3, and 5 that address questions about determinants of home bias. According to hypothesis 1, we expect to observe that

investor countries with high uncertainty avoidance exhibit a higher degree of home bias in their portfolios after controlling for other known determinants of home bias (e.g., as per Chan, Covrig, and Ng (2005)). According to hypotheses 3 and 5, we expect funds from countries with high individualism and masculinity scores to have less home bias than countries with low individualism and masculinity scores.

OLS regression estimates at fund level are used to test for the determinants of home bias in funds' portfolio allocations. Foreign securities used in the estimations consist only of investable securities (float). The dependent variable is the amount of home bias in each fund's portfolio calculated as the sum of percentages owned in securities that have the same home country as the investor does, less the home market's capitalization relative to the world. The first set of independent variables is cultural variables. Cultural variables are Hofstede's primary dimensions of culture for investor countries. The second set of explanatory variables comprises the familiarity variables averaged over all of the target countries of each fund. Common *Language* is a dummy equal to one if the countries share a common language. This dummy variable only takes a value of one if the official language(s) of the country pairs is (are) the same. We expect the aggregated common language to take on a negative sign, so that investors that have on average more targets with the same official languages are more prone to invest outside the home country and have less home bias. Also, a common border between two countries should be expected to have an effect on investment because usually countries with common borders have more special relationships than just nearby countries. Common *Border* is a dummy variable

equal to one if the country pair shares a common border. In home bias regressions we expect this aggregated dummy variable to take on a negative sign so that investor countries have less home bias in their investment portfolios if they have on average more neighbors. *Distance* controls for the geographical proximity of a target country to an investor country. Distance is calculated as the logarithm of distance in miles between capital cities of country pairs. We expect *distance* to have a positive sign because if an investor country's targets are farther away on average, the amount of home bias in funds' portfolios should be large. Scaled *Trade* is calculated as the sum of all imports and exports between a target and an investor and it is scaled by the target's GDP similarly to Chan, Covrig, and Ng (2005). We expect *Trade* to carry a negative sign, so that the more the investor's country has trade with others on average the more familiarity they have with target countries.

The third set of explanatory variables is the legal and regulatory variables that are obtained from Chan, Covrig and Ng (2005). These variables are also averaged across all the target countries. First is the percentage tax withheld from non-residents' investments, *Tax*, which we expect to carry a positive sign. *Transaction* is the average transaction cost in the target country, which we also expect to have a positive sign so that investors whose target countries have on average higher transaction cost will allocate more capital at home.

The last set of control variables includes macroeconomic variables for funds' home countries. The signs of some of the variables are not necessarily clear, and some of them are merely included to make sure that our other independent variables

are not correlated with an omitted macroeconomic characteristic of a country. These macroeconomic variables include *Real GDP per capita*, *Predicted GDP Growth* until 2017, and *Exchange rate Volatility*.⁸

The results for home bias regressions are displayed in Panel A of Table 4. The first and fourth specifications repeat the findings from the previous literature, and the the rest of the specifications introduce the cultural variables. The first three specifications of Table 4's panel A include fund level data for the limited sample that reports fund size, and specifications four to six are for all the funds in our sample. Uncertainty avoidance has a positive and significant sign in specification three and six supporting hypothesis 1, that investor countries with higher uncertainty avoidance show increasing preference for domestic stocks and thus exhibit higher amount of home bias. A ten point increase in uncertainty avoidance (measured as an index number between 0 and 120) leads to roughly 2.0 to 2.4% increase in the observed home bias.

Individualism also has a positive and significant sign contradicting hypotheses 3. A ten point increase in individualism leads to 4.2 to 4.4% increase in home bias. Masculinity is negative and significant; a ten point increase in masculinity corresponds to 1.4 to 3.4% decrease in the level of observed home bias consistent with hypothesis 5. The other independent variables are mostly consistent with past literature's findings. Language and trade, in contrast, have opposite signs to what we

⁸ Regressions are also run with the cultural variable long-term orientation but because the variable is not available for all the countries in the sample, we show the results without this Cultural variable. The results are similar to the ones reported in Table 4.

expected, when cultural variables are included in the analysis. Panel's B and C repeat the analysis at country level. In panel B for equally weighted country averages and in panel C for value weighted country averages. Again, masculinity and uncertainty avoidance have their expected signs and are statistically significant. The economic significance is also large. At the fund level, one standard deviation increase in uncertainty avoidance leads to a 3.3% increase in home bias, and a one standard deviation increase in masculinity leads to 4.4% decrease in home bias. As a comparison, a one standard deviation increase in distance, that has been shown to matter the most in home bias literature, corresponds to 8.5% increase in home bias. At the country level the economic significances of uncertainty avoidance and masculinity are almost as large as that of distance, and combined the economic significance of the cultural variables is greater than distance's economic significance. A one standard deviation increase in uncertainty avoidance, masculinity, and distance correspond to an 8.9% increase, an 8.3% decrease, and a 10.3% increase in home bias, respectively.

Table 5 repeats the analysis from Table 4 for selected investor groups at fund level. These groups include all funds excluding the US funds, developed countries' funds, European Union funds, all funds except for the largest ten investor countries, and emerging market funds. The results are mainly consistent and similar in magnitude for the investor groups. Uncertainty avoidance is positive and significant in all investor groups and smallest in developed countries funds and largest in emerging market funds. Masculinity and Individualism are negatively related to he

amount of home bias in all investor groups except for the European Union funds and emerging market funds.

4.2. Determinants of foreign investment and concentration

Next, we turn our focus to hypotheses 2, 4, and 6 and test for the determinants of foreign diversification by funds to see which factors contribute to concentration of funds' and countries' international holdings. We introduce a measure for diversification from equation 5. This measure shows the overall dispersion that each fund has from the expected allocation in each of the target countries' market capitalizations. The dependent variable is the level of concentration in each fund's portfolio (equally weighted or value weighted average of funds' portfolios at country level), that is calculated as the squared sum of all the funds adjusted biases in target countries over the number of target countries the fund is invested in. The higher the dependent variable the higher the fund concentration is. According to hypothesis 2, 4, and 6 we expect countries and funds from countries with high uncertainty avoidance to display high levels of concentration in their portfolios, and countries and funds from countries with high levels of masculinity and individualism to display lower levels of concentration. The independent variables are the same from Tables 4 and 5.

In Table 6's panel A the results for funds are not significant or consistent with hypothesis 2, 4, and 6 at fund level, but are consistent when we use the country level equally and value weighted averages that may be more appropriate measures for country level behavior. The country level regressions are displayed on panels B and

C. The results show that higher levels of uncertainty avoidance correspond to lower levels of dispersion in foreign portfolio allocations in addition to high home bias. The results also show that higher levels of masculinity correspond to higher levels of dispersion in foreign holdings consistent with hypothesis 6. Results for individualism are also consistent with hypothesis 4 and the over confidence story. These results are especially significant in value weighted country analysis, but lose significance when we control for macroeconomic and familiarity variables. The economic significance of the three cultural variables is similar to distance alone so that a one standard deviation increase in individualism, masculinity, uncertainty avoidance, and distance lead to 6.8 point increase (check these), 1.0 point decrease, 1.7 point increase, and 7.7 point increase in the concentration measure.

Table 7 repeats the analysis from Table 6 Panel A for selected investor groups at fund level. Like in Table 5, the groups of funds include all funds excluding the US funds, developed countries' funds, European Union funds, all funds except for the largest ten investor countries, and emerging market funds. Results support hypothesis 2 for uncertainty avoidance for all countries excluding the US, European Union countries, all but the big ten investor countries, and emerging markets, so that funds from countries with high levels of uncertainty avoidance display higher levels of concentration in their portfolios. Results for masculinity are consistent with hypothesis 6 for European Union funds and all but big ten funds, so that countries with higher levels of masculinity have higher dispersion in their foreign holdings. Results for individualism are not consistent with hypothesis 4.

4.3. Determinants of foreign diversification

In this last section we run alternative tests for the determinants of foreign diversification using a the entire cross-section of country pairs. We test for underweighting and overweighting of international markets with bias and adjusted bias (from equations 2 and 3) as the dependent variable. Bias is calculated as the difference between capital allocated to target country J less the expected amount of capital allocated in country J, where the expected amount is country J's share of the world market capitalization of investable float. Positive bias indicates overweighting of the target market, and negative bias indicates underweighting of the target market. Adjusted bias' under/overweighting is calculated as a percentage of the total foreign investment by a fund in country j rather than percentage of investment in country j as a total the funds' portfolio. In addition to independent variables from previous tables, we include target countries withholding tax, average transaction cost, emerging market indicator, level of corporate governance and corruption and transparency. We are interested in explaining under/overweighting of foreign markets with the capital that is left for foreign investment after controlling for home bias, so the first independent variable therefore is the amount of home bias in each fund.

According to hypothesis 2, uncertainty avoidance is expected to take on a negative sign (more underweighting of the foreign markets on average) if investors from countries with high uncertainty avoidance prefer to allocate their foreign investments in few familiar target markets. According to hypotheses 4 and 6,

individualism and masculinity, are expected to have positive signs (less underweighting), so that countries with high individualism and masculinity scores allocate their portfolio in more foreign markets on average, and that funds with high individualism and masculinity scores have more dispersed ownership abroad than countries with low individualism and masculinity scores. All of the primary dimensions of culture are included in the regressions for investor and target countries.

Familiarity variables, except for distance are expected to have positive signs, so that common language, common border, and a higher amount of trade increase, and greater distance decreases the capital allocated to a target. Of the legal and regulatory variables, target countries' withholding tax and average transaction cost are expected to have negative signs, and targets' corporate governance and corruption/transparency are expected to have positive signs consistent with Chan, Covrig, and Ng (2005) among others.⁹

The results for the fund level foreign diversification regressions are reported in Table 8's panel A and panel B. Panel B includes a larger sample of funds where the target markets' historical returns are excluded. The first three specifications' dependent variable is bias and specification 4-6's dependent variable is the adjusted bias. Table 8 confirms prior literatures' findings in specifications 1-2 and 4-5 and specifications 3 and 6 include the cultural variables. Specifications 1-3's dependent variable is bias (equation 2) and specification 3-6's dependent variable is the adjusted to the home bias (equation 3). In In both panels of table 8 investor's uncertainty

⁹ Both Indexes take on values between 0 -10, so that countries with high levels of corporate governance and low levels of corruption take on high values.

avoidance is negative and significant supporting hypothesis 2, so that investors from countries with high uncertainty avoidance prefer to diversify less abroad and underweight the foreign markets more on average. A ten point increase in uncertainty avoidance (measured between 0 and 120) leads to an average difference between the actual and expected allocation of -0.02% to -0.07% when the average expected allocation is 0.95% and median 0.02%. Similar to Merton's (1987) argument, extent empirical literature in international finance has shown that in international setting investments by investors in foreign markets are typically allocated to large, less risky, and prominently visible firms. Our results suggest that this concentrated allocation is done more so when the investor countries are those with high uncertainty avoidance behavior consistent with familiarity and information based explanations. Recall that countries with high uncertainty avoidance countries have also higher amount of home bias in their portfolios. Masculinity has its expected sign when the bias measure is not adjusted to home bias. A ten point increase in masculinity corresponds to 0.02 to 0.03% increase in the average allocation to non-home markets when the average expected allocation is 0.95% and median 0.02%, consistent with hypothesis 6. Individualism does not have its expected sign in panel A indicating that high individualism countries diversify less abroad, which is the opposite what hypothesis 4 suggests. However, in Panel B when the regressions are repeated for a larger sample of funds without the target market historical return controls, individualism has its expected sign and is significant so that a ten point increase correspond to 0.02 to 0.04% increase in average allocation to non-home markets..

In Table 9 the analysis is repeated for several groups of investors including all investor countries, all but the US, developed countries, developed excluding the US, European Union, all but the largest ten investor countries, and emerging market country funds. Results for uncertainty avoidance are consistent with hypothesis 2 for all groups of investors except for EU and emerging markets. Individualism takes on an opposite sign as expected, contradicting hypothesis 4 in all specifications. Masculinity is positive and significant in most specifications consistent with hypothesis 6.

In Tables 10 and 11, we repeat the regression analysis from Table 9, but this time for a focused sample of target countries. Table 10 shows results for international diversification by several investor groups in developed markets, and Table 11 shows results for investments in emerging markets. The results in Table 10 are similar to Table 9 for uncertainty avoidance. Uncertainty avoidance is significant and negative for the whole sample with and without the US and for non-big ten countries. Individualism has a positive sign and is significant for non-big ten countries and emerging markets consistent with hypothesis 4. Masculinity is positive and significant for all investor groups except for European Union and emerging market funds. Also, fund home bias remains negative and significant in some of the specifications even though the dependent variable is adjusted for home bias and to the funds' proportional investment to the developed markets. This result suggests that those funds with larger amounts of home bias diversify less when they do invest abroad.

In Table 11 results for emerging markets are positive and significant for individualism in all but non-big ten countries and emerging market specifications supporting hypothesis 4. Uncertainty avoidance is negative and significant in all but emerging markets. Masculinity is positive in only the specification including the non-big ten countries.

Lastly, we test for the probability of an investor country investing anything in a given target country. Table 12 shows the logistic regressions for investor country – target country pairs where the dependent variable is equal to one if any of the investor countries' funds are invested in target country *i* and zero otherwise. Specifications 1, 2, 4, and 5 include control variables from the prior literature and specifications 3 and 6 include the cultural variables. Uncertainty avoidance is negative and significant, so that high uncertainty avoidance behavior countries are less likely to invest in any give non-home market consistent with hypothesis 2. The coefficient for individualism is positive and significant, suggesting that countries with higher levels of individualism are more likely to invest in any given non-home country, supporting hypothesis 4.

5. Conclusion

This paper investigates home bias and the determinants of foreign diversification in portfolio allocations made by more than twenty five thousand institutions from more than 60 countries in more than twenty thousand investable securities across more than 100 countries. Foreign market under/overweighting is measured as the deviation from allocation benchmarks based upon market

capitalization weights adjusted for investability. According to traditional portfolio theory we should expect to observe portfolio allocation decisions made according to the investable market capitalization of various global markets.

At the fund level for various groups of institutional investors, we confirm that home bias exists across broad samples of institutional portfolios invested in a wide range of global markets. Previous literature has shown that legal, regulatory, familiarity, and macroeconomic variables combine to help explain the cross-sectional variation in home bias and foreign diversification. We extend prior research by showing how previously studied familiarity variables affect home bias and foreign diversification by institutional investors based in developed markets, European Union countries, and emerging markets. Of previously studied influences, only the geographical distance between the target country and the investor country has a consistently negative, large, and statistically significant impact on investment decisions. Institutional investors routinely favor “close:” as opposed to “distant” investment opportunities.

We show that cross-cultural variables provide additional perspective on foreign asset allocation decisions made by institutional investors that is on a par with geographic distance in terms of economic importance. Specifically, we show that dimensions of cultural differences among countries drawn from the field of social psychology by Hofstede (1980, 2001) help explain cross-sectional variation in home bias and foreign diversification among institutional portfolios. Uncertainty avoidance, which measures the extent to which agents in a given culture feel uncomfortable in

uncertain situations, appears to strongly influence the allocation of institutional portfolios among foreign markets after controlling for other known foreign portfolio allocation variables. Uncertainty avoidance is also related to home bias in that institutional investors based in countries with high uncertainty avoidance prefer to invest at home, and when they do invest abroad they are less diversified in their holdings.

We also find evidence that institutional investors from countries with higher levels of individualism and masculinity display less home bias in their investment portfolios. Moreover, when such institutional investors invest abroad, their portfolios display relatively high levels of dispersion. Institutional investors from countries with high individualism and masculinity scores may be prone to overconfidence and believe that they have better information about foreign markets, or are able to better process information about foreign markets, than institutional investors from other countries. Specifically, we document high levels of foreign diversification for portfolios run by institutional investors from countries with high levels of masculinity, and for portfolios run by institutional investors from countries with high levels of individualism.

On an overall basis, our findings suggest that country-specific, survey-based measures of culturally distinct behaviors measured by social psychologists can help explain differences in the portfolio allocation decisions made by institutional investors from around the globe. In so doing, we make a meaningful contribution to the emerging literature on the geography of finance. In future research, it will

become interesting to learn whether differences in culture among investors conditions the performance of their international portfolio allocations.

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Appendix A. Deriving Home Bias

Consider a fund i . By definition, its total investments must be in either “home” securities or “non home” securities and these securities must add up to 100%:

$$100\% = \frac{\text{home}}{\text{total}} + \frac{\text{foreign}}{\text{total}} \quad (1)$$

By multiplying the second right-hand side term by (foreign/foreign), equation 1 becomes:

$$100\% = \frac{\text{home}}{\text{total}} + \frac{\text{foreign}}{\text{foreign}} * \frac{\text{foreign}}{\text{total}} \quad (2)$$

And the allocation of the foreign investments across all target countries $j \neq i$:

$$100\% = \frac{\text{home}}{\text{total}} + \frac{\sum_{j \neq i}^J \text{foreign}_j}{\text{foreign}} * \frac{\text{foreign}}{\text{total}} \quad (3)$$

Equation (3) is the “actual” portfolio allocation of fund i investments. We can rewrite this equation in terms of “expected” portfolio allocations as follows:

$$100\% = \frac{E(\text{home})}{\text{total}} + \frac{\sum_{j \neq i}^J E(\text{foreign}_j)}{\text{foreign}} * \frac{\text{foreign}}{\text{total}} \quad (4)$$

Where $E(\cdot)$ is the expected value operator assuming no home country bias and no cultural bias. Subtracting (4) from (3) yields an expression:

$$0\% = \text{home bias} + \sum_{j \neq i}^J \text{foreign bias}_j * \frac{\text{foreign}}{\text{total}} \quad (5)$$

Note that the first right-hand side term is the measure of *home bias*. If this term is positive, then home bias exists. If this term is negative, then “home avoidance” exists. Another term for home avoidance is *foreign bias*, the second additive term in (5). By definition, home bias + foreign bias = 0. Foreign bias is composed of two terms, (a) the sum of the *foreign biases* between investor fund i and foreign target countries j , and (b) a foreign share multiplier. When home bias = 0, the foreign biases must sum to zero as well. But if home bias $\neq 0$, then the sum of the foreign biases must take the opposite sign of the home bias.

Figure 1. World's Market Capitalization for All Securities

Figure 1 shows the World market capitalization for the all the securities in the sample and shows the breakdown of the sample countries and their market capitalizations as the percentage of the total World market capitalization. All the stock market capitalizations are calculated from market values based on closing prices in December of 2006, and they are converted to US dollars. United States is on top of the list with 24.8% of the World's market capitalization, followed by United Kingdom with 9.6%, and Japan with 8.2%. Altogether the sample has information for 112 countries market capitalizations and 29 of them have market capitalizations over 0.5% of the total.

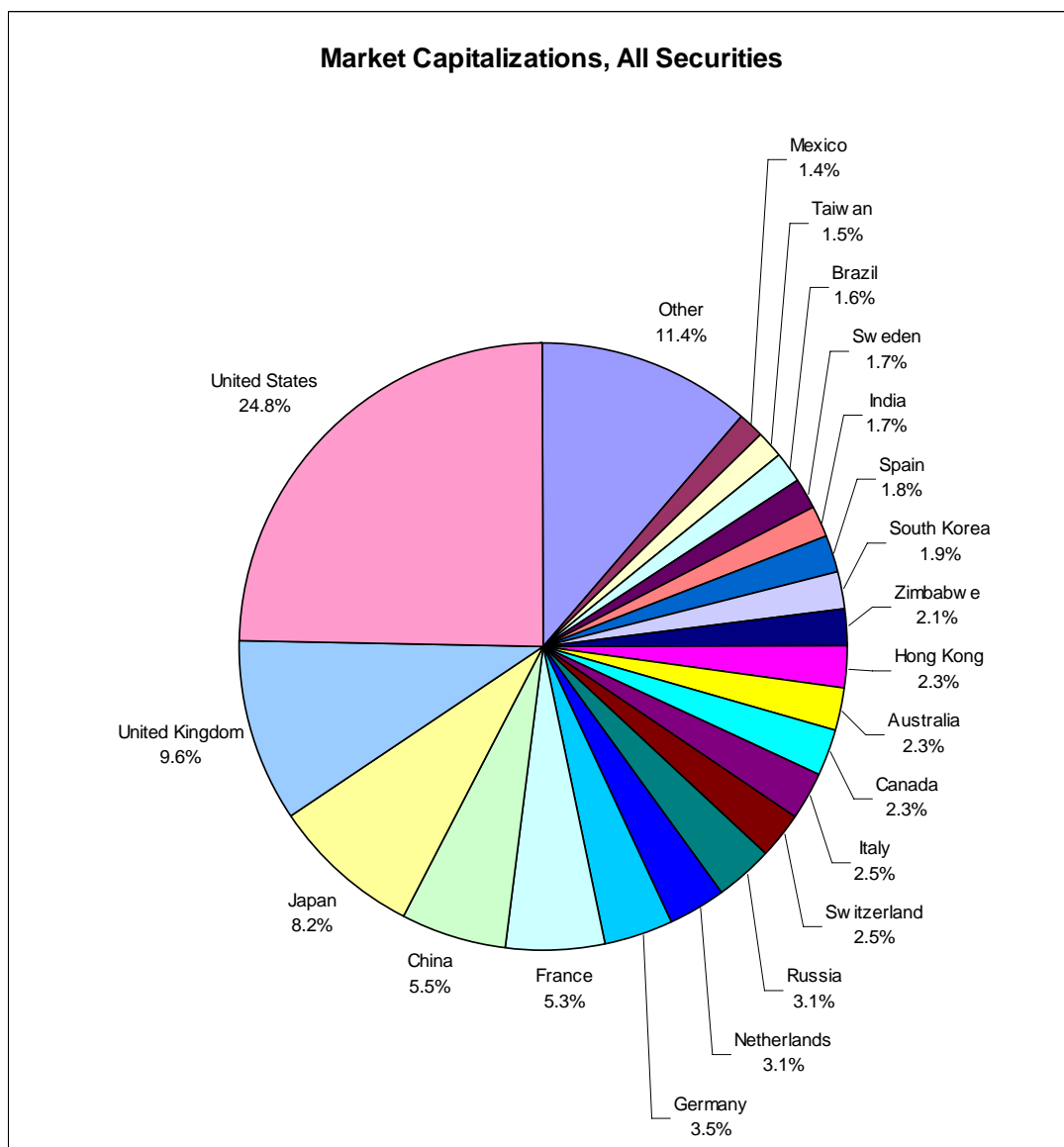
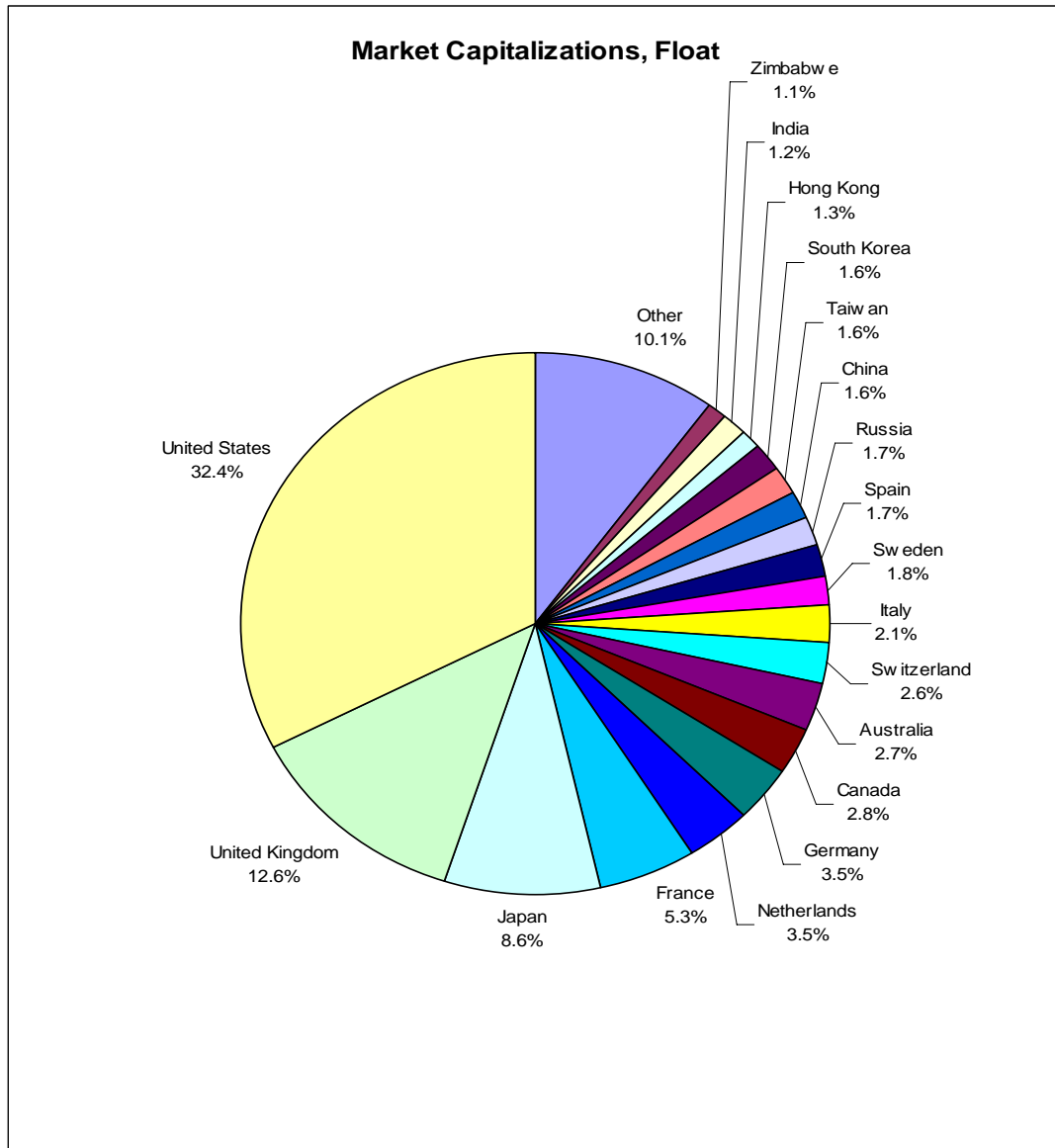


Figure 2. World's Market Capitalization for Float

Figure 2 shows the World market capitalization float. Float is calculated based on the percentage of securities that are actively traded and defined by WorldScope as widely held. The major change in the capitalization percentages appears for the United States that has 32.4% of the World's float capitalization. Also, United Kingdom's float percentage increases, while China's drops considerably. Overall, developed market's capitalizations increase and emerging market's capitalizations decrease. This may occur because of legal restrictions to the ownership.



Figures 3, 4, 5 and 6. US funds' average investments abroad

Figure 3 shows the expected investment as a percentage of world's float capitalization and the actual average of US funds' portfolio allocated in the top 27 target countries. Figure 4. Shows the expected and actual allocation adjusted to the percentage of funds' total foreign allocation. Expected allocation is the average expected amount based on funds' foreign investment and the actual adjusted allocation is the percentage of portfolio allocated in each target country as a percentage of funds' total foreign investment. Figures 5 and 6 are also adjusted expected and adjusted actual investments by the US funds in both developed and emerging markets adjusted to funds' developed and emerging market investments.

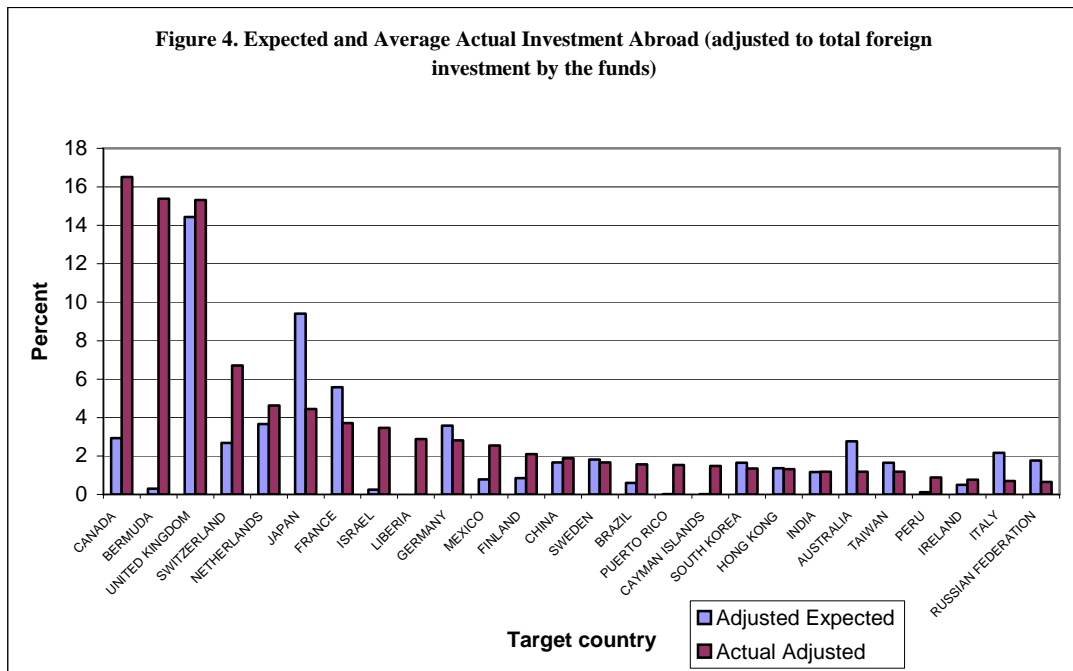
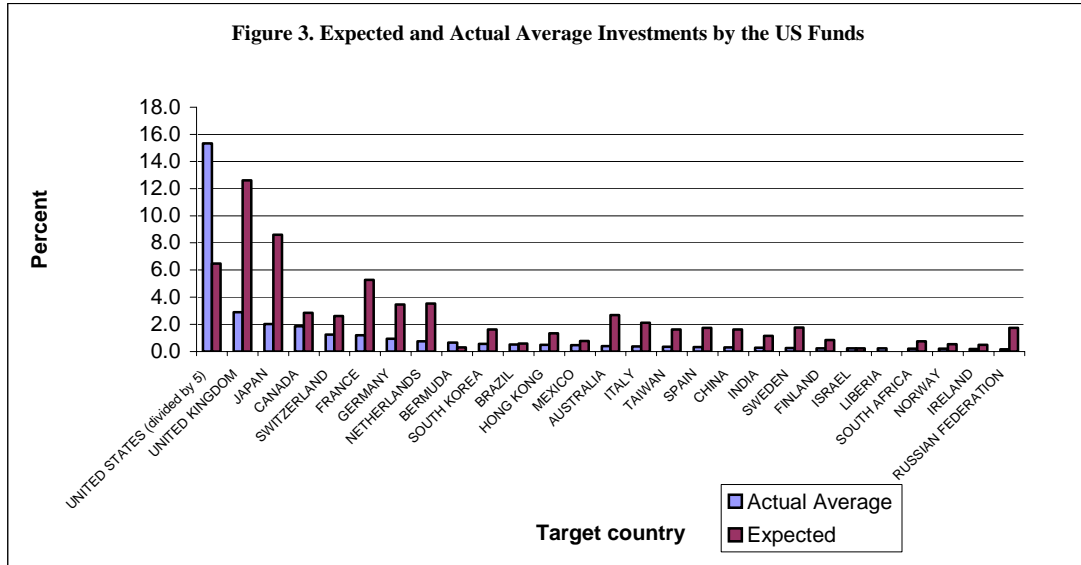


Figure 5. Expected and Actual Average Investments by the US funds in Developed Markets Adjusted to total developed market investment by the funds

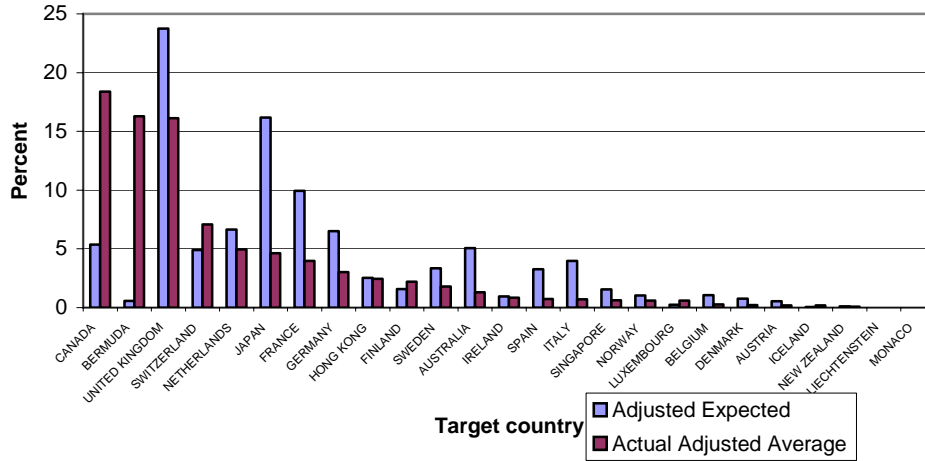
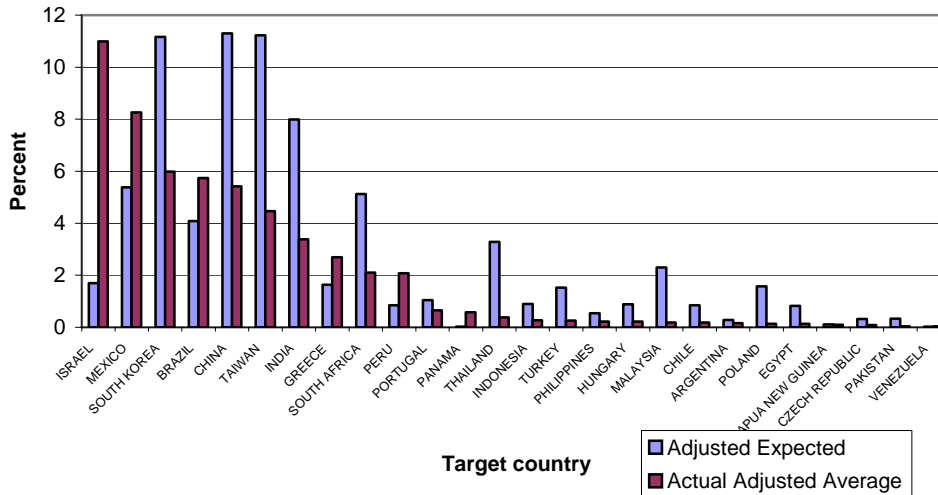


Figure 6. Average Actual and Expected Investment by the US funds in Emerging Markets (adjusted to total emerging market investment by the funds)



Figures 7a and 7b: Distribution of Home Bias

Figures 7a and 7b show the distribution of home bias in our sample of 25,430 funds. The home bias measure is calculated as the actual investment by a fund at home as a percentage of a fund's portfolio minus the expected investment in a fund's home country. The expected investment is calculated in figure 7a as an investor country's share of the world market capitalization of all companies' shares, and in figure 7b as the share of world's market capitalization of all companies' investable shares or the float. Funds with zero percent invested abroad are not included in the calculations. Also funds from countries without GDP per capita, Hofstede dimensions, and language and distance data are excluded.

Figure 7a

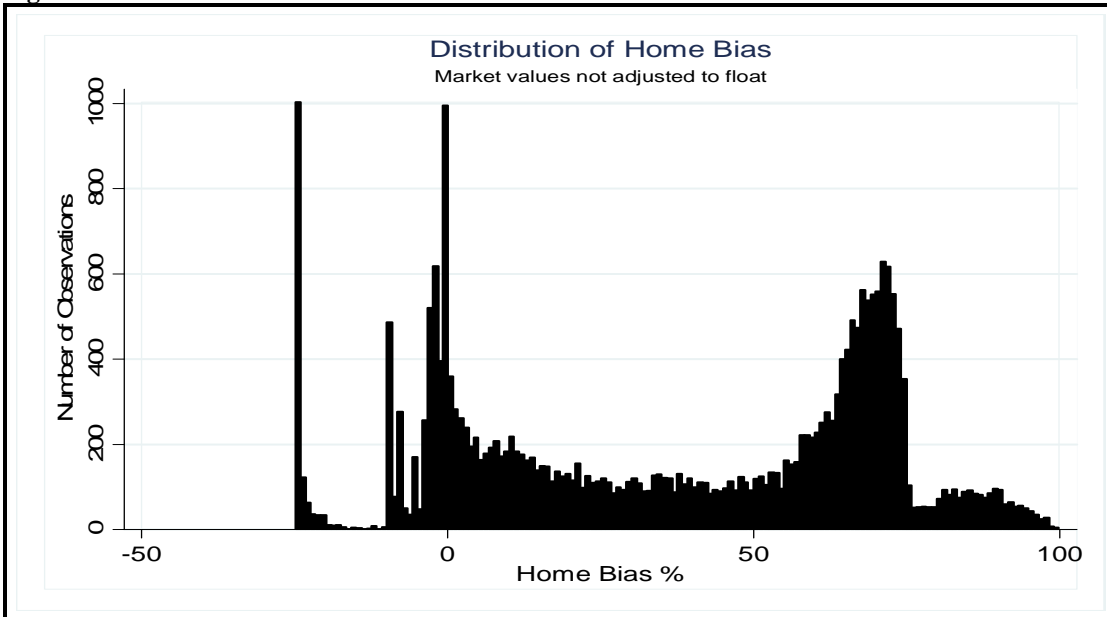
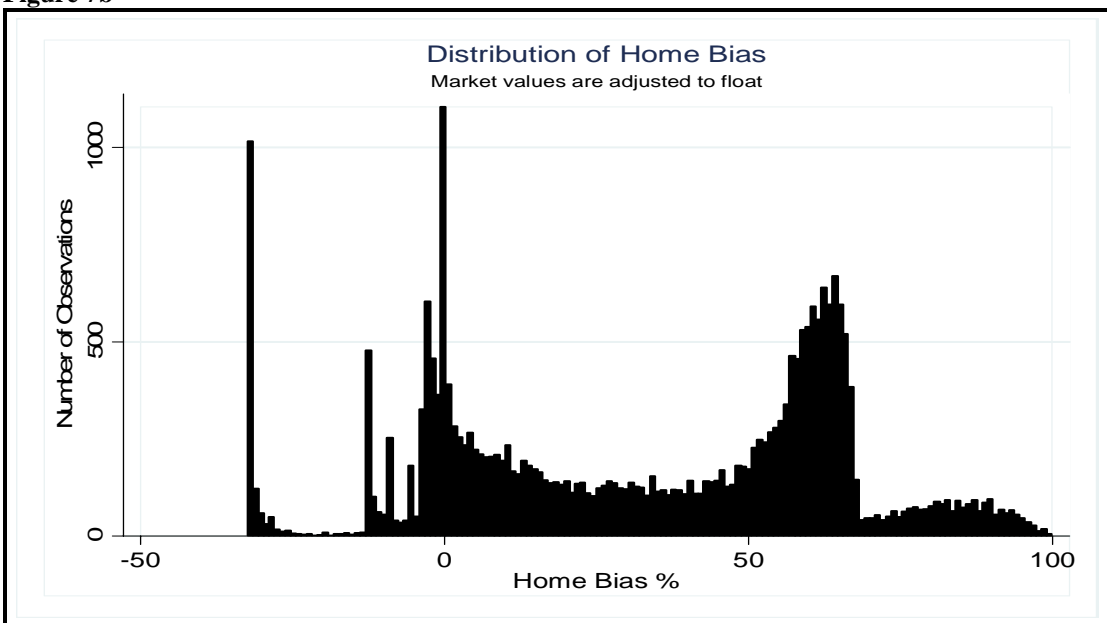


Figure 7b



Figures 8a and 8b: Distribution of Dispersion

Figures 8a and 8b show the distribution of dispersion of ownership in our sample of 25,430 funds. The dispersion measure is calculated as the deviation from actual investment in each target country that a fund is invested in scaled by the number of target countries. The actual investment is calculated as the percent allocated to each target country as the percent of a fund's total investment abroad. The expected investment is calculated in figure 8a as each target country's share of the world market capitalization of all companies' shares, and in figure 8b as the share of world's market capitalization of all companies' investable shares or the float. Funds with zero percent invested abroad are not included in the calculations. Also funds from countries without GDP per capita, Hofstede dimensions, and language and distance data are excluded.

Figure 8a

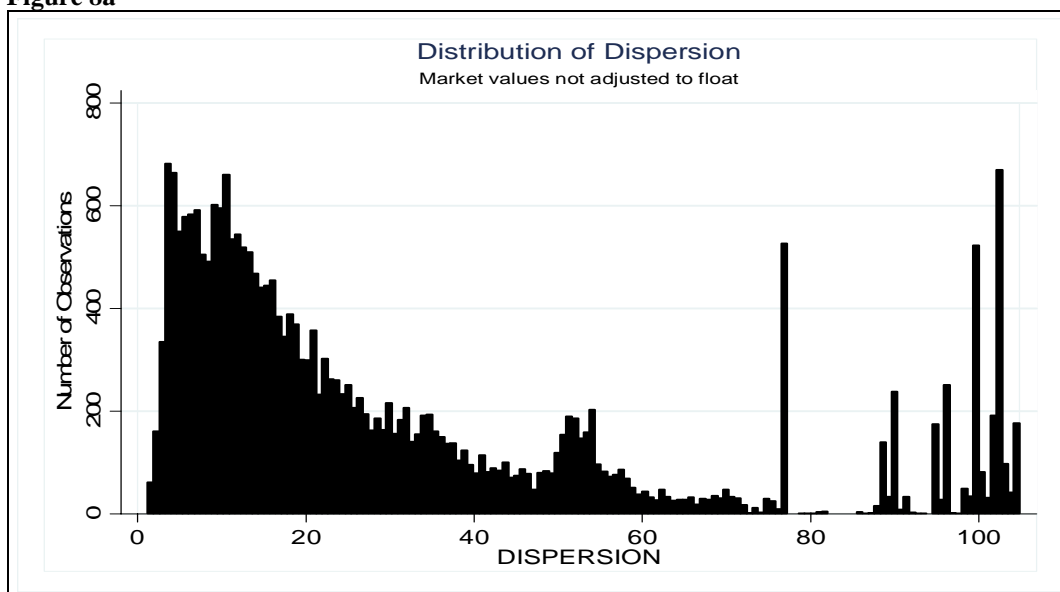
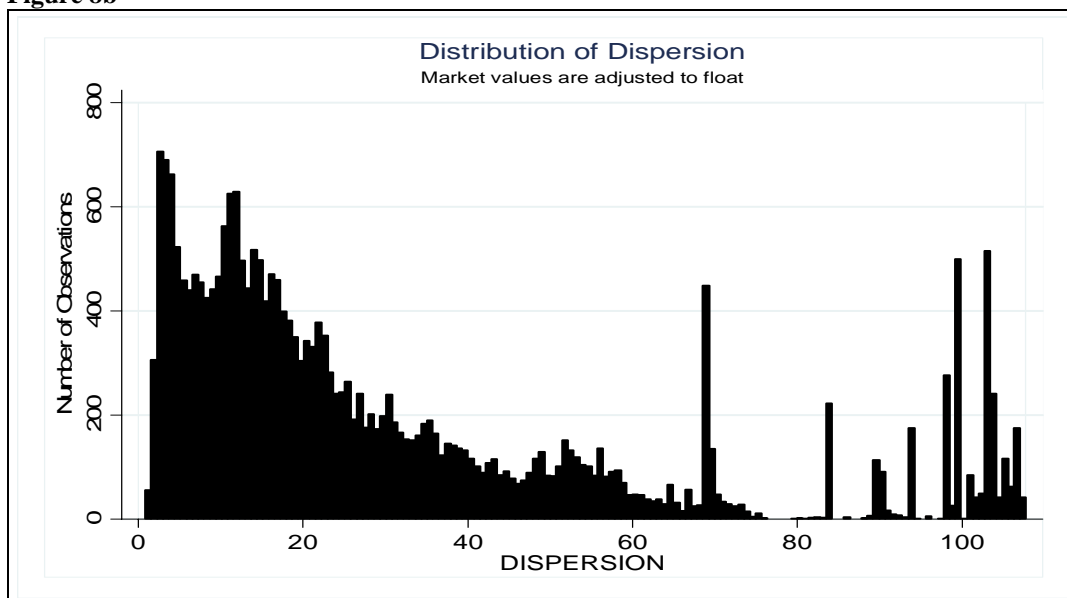


Figure 8b



Figures 8a and 8b: Dispersion with alternative measure where the denominator is N^2

Figures 8a and 8b show the distribution of dispersion of ownership in our sample of 25,430 funds. The dispersion measure is calculated as the deviation from actual investment in each target country that a fund is invested in scaled by the number of target countries. The actual investment is calculated as the percent allocated to each target country as the percent of a fund's total investment abroad. The expected investment is calculated in figure 8a as each target country's share of the world market capitalization of all companies' shares, and in figure 8b as the share of world's market capitalization of all companies' investable shares or the float. Funds with zero percent invested abroad are not included in the calculations. Also funds from countries without GDP per capita, Hofstede dimensions, and language and distance data are excluded.

Figure 8a

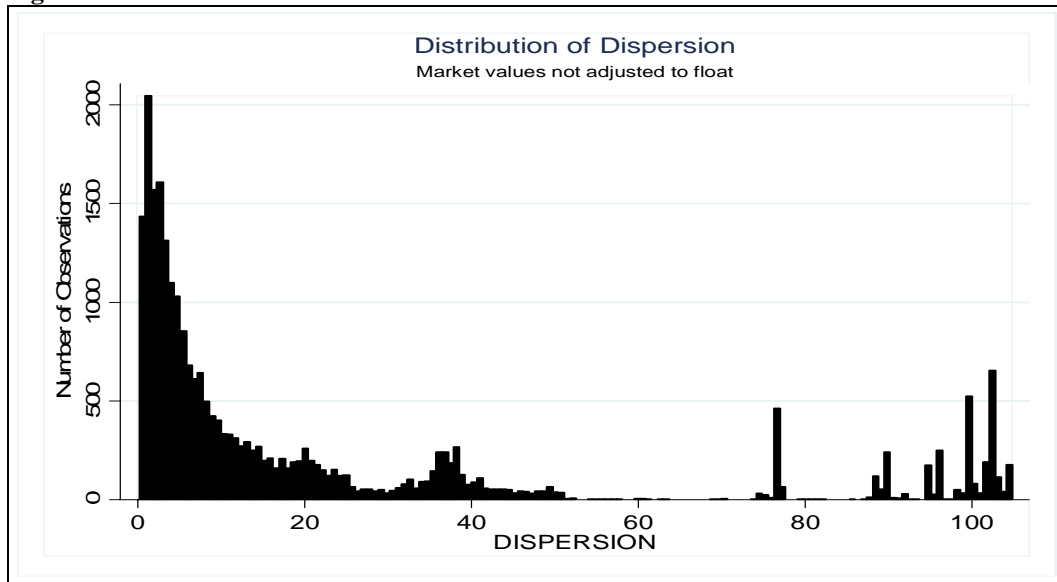


Figure 8b

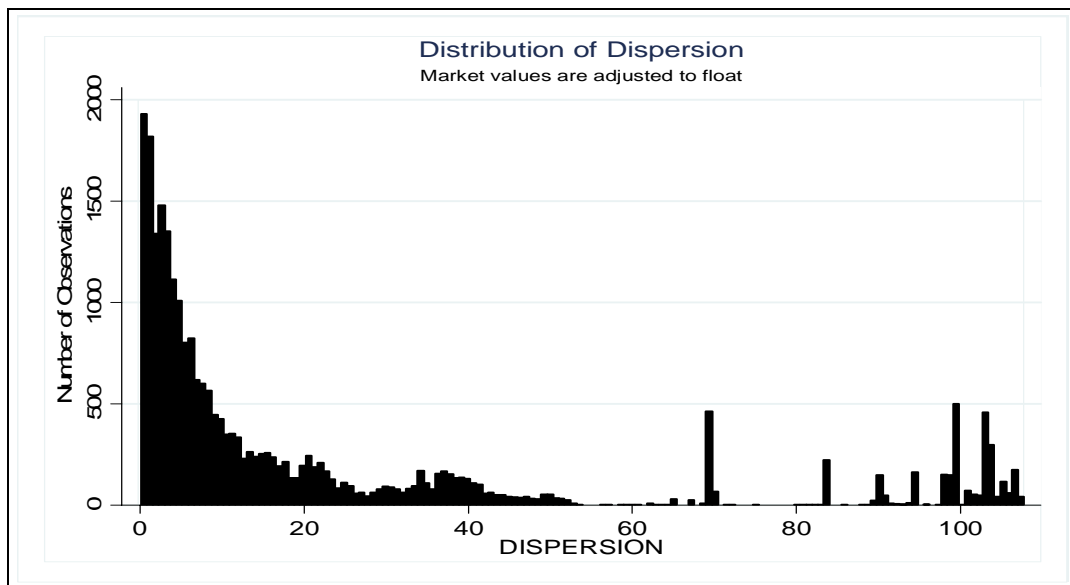


Table 1. Hofstede Scores for Five Dimensions of Culture

Cultural dimensions are from Geert Hofstede’s Culture Consequences (1980, 2001), which is one of the most cited studies in the entire SSCI and one of the most influential researches in cross-cultural psychology. The “IBM study” on dimensions of culture and differences in thinking, values, and social actions among people from more than 50 nations describes the five underlying factors of culture. PDI is the measure of power-distance index, which describes the extent to which less powerful agents accept unequal distribution of power in a society. IDV measures individualism/collectivism or the extent to which individuals look after themselves or remain integrated. MAS measures masculinity, or tough versus tender societies. UAI measures uncertainty avoidance, which describes the extent to which members feel uncomfortable or comfortable in unstructured situations. LTO measures long-term versus short-term orientation, or the extent to which members are willing to accept delayed gratification. Countries on this table are ranked based on the uncertainty avoidance score from lowest uncertainty avoidance to the highest.

UAI Rank	COUNTRY	PDI	IDV	MAS	UAI	LTO
1	SINGAPORE	74	20	48	8	48
2	JAMAICA	45	39	68	13	n/a
3	DENMARK	18	74	16	23	n/a
4	HONG KONG	68	25	57	29	96
5	SWEDEN	31	71	5	29	33
6	CHINA	80	20	66	30	118
7	VIETNAM	70	20	40	30	80
8	IRELAND	28	70	68	35	n/a
9	UNITED KINGDOM	35	89	66	35	25
10	MALAYSIA	104	26	50	36	n/a
11	INDIA	77	48	56	40	61
12	PHILIPPINES	94	32	64	44	19
13	UNITED STATES	40	91	62	46	29
14	CANADA	39	80	52	48	23
15	INDONESIA	78	14	46	48	n/a
16	NEW ZEALAND	22	79	58	49	30
17	SOUTH AFRICA	49	65	63	49	n/a
18	NORWAY	31	69	8	50	20
19	AUSTRALIA	36	90	61	51	31
20	SLOVAKIA	104	52	110	51	38
21	EAST AFRICA	64	27	41	52	25
22	NETHERLANDS	38	80	14	53	44
23	WEST AFRICA	77	20	46	54	16
24	TRINIDAD	47	16	58	55	n/a
25	SWITZERLAND	34	68	70	58	n/a
26	FINLAND	33	63	26	59	n/a
27	IRAN	58	41	43	59	n/a
28	BANGLADESH	80	20	55	60	40
29	ESTONIA	40	60	30	60	n/a
30	THAILAND	64	20	34	64	56

31	GERMANY	35	67	66	65	31
32	ECUADOR	78	8	63	67	n/a
33	ARAB WORLD	80	38	52	68	n/a
34	MOROCCO	70	46	53	68	n/a
35	TAIWAN	58	17	45	69	87
36	AUSTRIA	11	55	79	70	n/a
37	LUXEMBOURG	40	60	50	70	n/a
38	PAKISTAN	55	14	50	70	0
39	CZECH REPUBLIC	57	58	57	74	13
40	ITALY	50	76	70	75	n/a
41	BRAZIL	69	38	49	76	65
42	VENEZUELA	81	12	73	76	n/a
43	COLOMBIA	67	13	64	80	n/a
44	ISRAEL	13	54	47	81	n/a
45	HUNGARY	46	80	88	82	50
46	MEXICO	81	30	69	82	n/a
47	BULGARIA	70	30	40	85	n/a
48	SOUTH KOREA	60	18	39	85	75
49	TURKEY	66	37	45	85	n/a
50	ARGENTINA	49	46	56	86	n/a
51	CHILE	63	23	28	86	n/a
52	COSTA RICA	35	15	21	86	n/a
53	FRANCE	68	71	43	86	n/a
54	PANAMA	95	11	44	86	n/a
55	SPAIN	57	51	42	86	n/a
56	PERU	64	16	42	87	n/a
57	ROMANIA	90	30	42	90	n/a
58	JAPAN	54	46	95	92	80
59	SURINAM	85	47	37	92	n/a
60	POLAND	68	60	64	93	32
61	BELGIUM	65	75	54	94	n/a
62	EL SALVADOR	66	19	40	94	n/a
63	RUSSIAN FEDERATION	93	39	36	95	n/a
64	MALTA	56	59	47	96	n/a
65	URUGUAY	61	36	38	100	n/a
66	GUATEMALA	95	6	37	101	n/a
67	PORTUGAL	63	27	31	104	n/a
68	GREECE	60	35	57	112	n/a

Table 2. Distribution of Home Bias and Dispersion in Investor Countries

Home bias for each of the countries is calculated as the average percent invested at funds' home market relative to the home country's market capitalization. Dispersion is calculated as the squared adjusted bias that a fund has in its portfolio allocation to each of the target countries, scaled by the number of countries a funds is invested in (equation 4). For the countries in aggregate, home bias and dispersion are calculated either as funds' equally weighted averages or value weighted averages. Value weighted averages are only available for 53% of the sample and are calculated with each funds' total market value of equity. Table also displays averages and medians for the limited sample. Market capitalizations are the float capitalizations for all the securities. Altogether we have data for 25,430 funds. Funds with zero percent invested abroad are not included in the table. Also funds from countries without GDP per capita, Hofstede dimensions, and language and distance data are excluded.

Countries A-L

Country	All countries, equally weighted fund averages				
	Average Home Bias	Average Dispersion	Median Home Bias	Median Dispersion	Number of Funds
ARGENTINA	77	106.6	75.6	106.6	7
AUSTRALIA	51.7	49.8	54.1	35	143
AUSTRIA	5.8	11.5	0.3	3.8	172
BELGIUM	10.9	15.1	1.4	4.1	398
BRAZIL	55.7	17.5	56.3	17.5	4
CANADA	47.1	33.2	56.7	24.7	1,209
CHINA	42.5	35.4	34.7	19.1	9
CZECH REPUBLIC	14.6	7.9	5.9	7	19
DENMARK	12.4	17.9	0.6	4.2	334
ESTONIA	6.2	11.7	1.6	8.7	11
FINLAND	27.4	25.2	10.4	5.1	170
FRANCE	32.4	19.2	25.5	6.6	1,033
GERMANY	16.4	9.8	10.9	4.6	1,931
GREECE	12.2	10.8	0.6	4.2	87
HONG KONG	21.7	30.7	17.3	12.2	290
HUNGARY	28.7	14.8	26.3	5.2	20
INDIA	85.4	70.9	91	69.8	45
IRELAND	4	21.7	-0.5	4.6	133
ISRAEL	88.3	40.3	88.3	40.3	1
ITALY	16.6	15.5	3.3	4.6	455
JAPAN	14.8	21.8	-8.6	4.8	380
KUWAIT	4.4	45.7	-0.1	35	3
LUXEMBOURG	1.9	15.3	-0.1	4.2	382

Countries M-Z

MALAYSIA	66	52.3	75.2	28.7	25
MEXICO	65.5	45.7	91.3	46.6	5
NETHERLANDS	9.9	18.3	1.3	3.4	216
NEW ZEALAND	74.3	60.7	76.2	46.7	8
NORWAY	45.6	17.7	43.8	11.1	170
POLAND	72.1	31.6	82.3	23.2	49
PORTUGAL	20	24.7	3.8	5.9	63
ROMANIA	77.3	98.8	80.6	106.5	9
RUSSIAN FEDERATION	87.5	103.5	87.5	103.5	2
SAUDI ARABIA	-0.2	44.1	-0.2	44.1	1
SINGAPORE	11.2	25	5.9	7.2	273
SLOVAKIA	9.4	21.4	0	21.3	11
SOUTH AFRICA	65.6	46	72.7	38.5	189
SOUTH KOREA	73.9	80.4	96.6	94.2	5
SPAIN	32.6	12.8	30.2	5.3	1,846
SWEDEN	41.4	16.7	39.6	8.4	445
SWITZERLAND	10.5	16.1	0.8	4.6	742
TAIWAN	31.5	67.5	-1.6	94.2	3
THAILAND	-0.5	51.7	-0.5	51.7	1
TURKEY	98.4	39.1	98.4	39.1	2
UNITED ARAB EMIRATES	-0.1	8.9	-0.1	8.9	1
UNITED KINGDOM	20.7	20.7	6.2	4.2	2,115
UNITED STATES	42.2	25.8	57	11.7	12,013
Average	35.5	34.3	32.6	27	
Total					25,430

Countries A-L

Countries with funds that have size information available							
Country	Average		VW		Median		Number of Funds
	Home Bias	Average Dispersion	Home Bias	Average Dispersion	Home Bias	Median Dispersion	
ARGENTINA	82.7	106.6	77	106.6	81.4	106.6	4
AUSTRALIA	54.9	50.1	77.5	26.3	65.1	35	116
AUSTRIA	6.6	9.6	11.1	3.7	1.7	3	67
BELGIUM	12.4	9.6	8.9	3.5	2.3	3.4	121
BRAZIL	56.8	17.5	56.7	15.7	56.8	17.5	2
CANADA	48.2	33.5	54.9	11.2	57.7	25.2	1,155
CHINA	55.9	52.3	64.1	48.5	53.5	25.6	5
CZECH REPUBLIC	13.5	7.9	21.9	9	5.4	6.9	18
DENMARK	10.2	16.1	14.8	7.1	0.5	3.9	232
ESTONIA	6.2	11.7	2.4	6.6	1.6	8.7	11
FINLAND	27.3	24.9	36.1	11.3	10.5	5.3	137
FRANCE	38.6	16.4	38.1	4.5	35.2	6	244
GERMANY	18.5	8.1	24.2	2.1	12.8	4.1	732
GREECE	10.8	11.4	29.1	16.9	0.4	3.2	57
HONG KONG	23.2	30.6	21	12.4	19.2	11.1	182
HUNGARY	30.2	15.4	27.5	8.9	27.2	6	19
INDIA	87	73.5	94.9	54.7	91	69.8	41
IRELAND	6.6	21.9	7.7	3.9	0	3.3	77
ISRAEL	88.3	40.3	88.3	40.3	88.3	40.3	1
ITALY	18.3	10.3	21.3	1.5	12.3	2.7	96
JAPAN	14.1	19.9	55	6.7	-8.6	4.5	332
KUWAIT	4.4	45.7	0.8	9.9	-0.1	35	3
LUXEMBOURG	2.3	15.8	1.8	4.7	-0.1	4.8	231

Countries M-Z

MALAYSIA	68.2	50.6	95.9	100	75.9	27.2	24
MEXICO	79	36.4	92.1	31.5	92.1	31.3	3
NETHERLANDS	9.7	20.1	13.6	3	1.3	3.2	118
NEW ZEALAND	74.3	60.7	88.2	66.1	76.2	46.7	8
NORWAY	46.7	18.2	21.2	3.8	46.3	11.1	137
POLAND	72.1	31.6	79.5	20.9	82.3	23.2	49
PORTUGAL	20.3	23	51.5	16.6	4.7	5	58
ROMANIA	77.8	97.9	84.5	86.5	88.3	106.3	8
RUSSIAN FEDERATION	87.5	103.5	87	103.5	87.5	103.5	2
SAUDI ARABIA	-0.2	44.1	-0.2	44.1	-0.2	44.1	1
SINGAPORE	12.7	25	33.6	8.5	6.6	7.2	192
SLOVAKIA	9.4	21.4	0.1	3.5	0	21.3	11
SOUTH AFRICA							
SOUTH KOREA	92.8	88.2	96.6	56.1	96.7	98.8	4
SPAIN	43	11.6	47	2.4	42.5	3	167
SWEDEN	41.4	16.8	45.3	9.9	40	8.4	406
SWITZERLAND	12.6	16.5	17.9	4.6	2.4	5	377
TAIWAN	31.5	67.5	89.1	87.5	-1.6	94.2	3
THAILAND							
TURKEY	98.4	39.1	98.4	39.1	98.4	39.1	1
UNITED ARAB EMIRATES	-0.1	8.9	-0.1	8.9	-0.1	8.9	1
UNITED KINGDOM	25.7	22.6	44.7	7.7	10.4	4.5	1,229
UNITED STATES	43.7	25.8	44.6	7.5	57.6	11.6	6,874
Average	37.8	33.6	44.7	25.6	34.6	25.8	
Total							13,556

Table 3. Fund Characteristics

Table 3 summarizes fund characteristics for all those funds that have information available in our sample for the year ending 2006. The information is available for roughly half of the total sample including each fund's source data, fund type, and style.

Data Source	% of the sample	Style	% of the sample
13F Combined	0.51%	Large Cap	65.14%
13F Form	14.51%	Mid Cap	8.05%
13F Subfiler	0.91%	Multi Cap	10.79%
Non-US portfolio	40.98%	Small Cap	16.02%
Sum of Funds	13.93%		
US fund (N-30D)	29.16%		

Fund Type	% of the sample	Style	% of the sample
Closed-End Fund	8.77%	Aggressive Growth	1.25%
Exchange Traded Fund	0.38%	Alternative	4.40%
Hedge Fund	0.40%	Broker/Dealer	0.94%
Insurance - Diversified	0.04%	Core Value	4.44%
Insurance - Life/Health	0.03%	Deep Value	0.30%
Insurance - P & C	0.02%	GARP	12.31%
Investment Management Co	0.03%	Generalist	0.52%
Offshore Fund	11.05%	Growth	32.50%
Open-End Fund	64.48%	Hedge Fund	13.94%
Pension Fund	0.99%	Income	1.37%
Private Portfolio	0.26%	Index	1.95%
Unit Investment Trust	0.12%	Private Equity	0.07%
Variable Annuity Fund	13.42%	Specialty	7.28%
		Value	18.73%

Table 4. Determinants of Home Bias

OLS regression estimates are used to test for the determinants of home bias in funds' and countries' portfolio allocations. The securities used in the estimations consist only of investable securities calculated as the float of the market capitalization defined by WorldScope. The funds that are included in the regressions are only those that have less than 99% home bias in their portfolios. The dependent variable is home bias in each fund's portfolio (equally weighted or value weighted average of funds' portfolios at country level), calculated as the difference in the sum of percentages owned in securities that have the same home country as the investor does and the investors' home market capitalization. The first set of independent variables is Hofstede's cultural variables. The rest of the independent variables are grouped in familiarity and investor specific macroeconomic variables. The first three specifications of each panel include the fund size control that is available for limited sample of 53% of the observations. Panel A's analysis is at fund level, Panel B for equally weighted country averages, and Panel C for value weighted country averages. T-statistics are reported in parentheses below the coefficient. (* significant at 10% level, ** significant at 5% level, ***significant at 1% level).

Panel A: Fund Level Regressions

	1	2	3	4	5	6
MV of Equity	1.3147*** (9.67)	1.5437*** (11.3)	1.1427*** (8.50)			
Cultural Variables	Individualism	0.4210*** (22.5)	0.4368*** (12.9)		0.4302*** (30.2)	0.4356*** (16.1)
	Masculinity	-0.1441*** (-7.59)	-0.3379*** (-10.5)		-0.1970*** (-13.3)	-0.3296*** (-15.3)
	Uncertainty	0.0177 (0.91)	0.2483*** (8.74)		-0.0070 (-0.56)	0.2051*** (11.7)
Familiarity	Language	-15.31*** (-3.62)		11.88* (1.92)	-13.97*** (-4.29)	8.5597* (1.93)
	Distance	34.8728*** (19.5)		20.3543*** (9.45)	36.6233*** (27.3)	24.8717*** (16.9)
	Trade	-0.5121 (-0.047)		11.5634 (0.86)	29.5343*** (3.63)	38.9998*** (4.03)
Macroeconomic	Real Exchange Diff.	-0.4245*** (-14.5)		-0.0368 (-0.93)	-0.3889*** (-16.3)	-0.0317 (-1.09)
	Predicted Growth	-2.2890*** (-3.40)		3.5282*** (4.10)	-1.2499** (-2.29)	2.6417*** (3.79)
	Real GDP per cap	-16.0*** (-13.9)		-11.6*** (-8.28)	-14.1*** (-17.5)	-10.7*** (-10.5)
	3 y. mkt growth	-0.5918*** (-5.76)		0.2130* (1.93)	-0.3898*** (-5.68)	0.4055*** (5.24)
Constant	-104.6*** (-7.18)	-19.7*** (-6.33)	-87.4*** (-4.50)	-125.0*** (-11.4)	11.05*** (6.92)	-115.96*** (-7.98)
Observations	13,280	13,544	13,280	25,006	25,422	25,006
Adj R-squared	10.2%	5.9%	13.0%	11.1%	4.6%	13.7%

Panel B: Country Level, Equally Weighted Average

	1	2	3	4	5	6
MV of Equity	-3.8401 (-1.12)	-3.6177 (-1.19)	-4.0561 (-1.32)			
Cultural Variables	Individualism	-0.1941 (-0.95)	0.2574 (1.49)		-0.1011 (-0.49)	0.3141 (1.69)
	Masculinity	-0.2561 (-1.21)	-0.5711*** (-3.14)		-0.1575 (-0.74)	-0.4850** (-2.42)
	Uncertainty	0.1539 (0.81)	0.3541** (2.47)		0.1873 (0.99)	0.4365*** (2.82)
Familiarity	Language	34.15 (1.27)	64.49** (2.61)	49.91* (1.86)		76.55*** (2.90)
	Distance	15.42 (1.53)	21.70** (2.39)	6.3853 (0.62)		14.86 (1.51)
	Trade	-56.78 (-0.31)	22.43 (0.14)	-123.67 (-0.64)		-64.24 (-0.37)
Macroeconomics	Real Exchange Diff.	-0.1371 (-0.52)	0.1058 (0.42)	-0.0147 (-0.053)		0.1521 (0.56)
	Real GDP per cap	-16.27*** (-3.08)	-18.55*** (-3.91)	-10.10* (-2.01)		-11.90** (-2.55)
	3 y. mkt growth	-0.0590 (-0.13)	0.1642 (0.40)	0.5351 (1.23)		0.7547* (1.94)
Constant	131.1 (1.19)	115.8* (1.82)	83.6 (0.78)	61.8 (0.57)	36.7* (1.81)	-24.8 (-0.24)
Observations	37	44	37	39	46	39
Adj R-squared	51.0%	10.9%	68.3%	41.9%	4.3%	59.2%

Panel C: Country Level, Value Weighted Average

	1	2	3	4	5	6
MV of Equity	-4.0851 (-1.21)	-1.9118 (-0.57)	-3.5255 (-1.11)			
Cultural Variables	Individualism	-0.4349* (-1.92)	-0.1063 (-0.60)		-0.3536 (-1.57)	-0.1091 (-0.45)
	Masculinity	-0.1156 (-0.49)	-0.4769** (-2.54)		-0.0679 (-0.29)	-0.3702 (-1.42)
	Uncertainty	0.1328 (0.63)	0.3136** (2.12)		0.1903 (0.92)	0.4258** (2.11)
Familiarity	Language	23.35 (0.88)	54.45** (2.13)	25.70 (0.80)		60.15* (1.75)
	Distance	28.15*** (2.83)	28.42*** (3.03)	17.96 (1.45)		19.18 (1.50)
	Trade	12.41 (0.069)	131.59 (0.79)	-49.26 (-0.21)		67.13 (0.29)
Macroeconomic	Real Exchange Diff.	0.1878 (0.72)	0.3210 (1.24)	0.3037 (0.91)		0.3591 (1.01)
	Real GDP per cap	-19.30*** (-3.72)	-19.95*** (-4.08)	-8.2875 (-1.37)		-7.4812 (-1.23)
	3 y. mkt growth	-0.2728 (-0.59)	-0.2465 (-0.58)	0.4978 (0.95)		0.5896 (1.16)
Constant	70.23 (0.65)	99.15 (1.41)	66.47 (0.60)	-44.46 (-0.34)	51.37** (2.31)	-74.26 (-0.54)
Observations	37	44	37	39	46	39
Adj R-squared	58.6%	12.2%	70.5%	31.0%	8.9%	42.8%

Table 5. Determinants of Home Bias for Selected Investor groups

Table 5 repeats the analysis from Table 4 Panel A for selected investor groups at fund level. The dependent variable is home bias in each fund's portfolio. The first set of independent variables is Hofstede's cultural variables. The rest of the independent variables are grouped in familiarity and investor specific macroeconomic variables. Only funds with less than 99% home bias are included in the analysis. T-statistics are reported in parentheses below the coefficient (* significant at 10% level, ** significant at 5% level, ***significant at 1% level).

		Investor Countries Included:						
		All	All ex. US Developed	EU	all ex Big 10 Emerging	Big 10		
Cultural Variables	Individualism	0.436*** (16.1)	0.451*** (15.6)	0.327*** (8.70)	0.1710 (1.60)	0.482*** (14.1)	-0.0617 (-0.21)	-0.912*** (-5.88)
	Masculinity	-0.330*** (-15.3)	-0.328*** (-15.6)	-0.394*** (-15.5)	0.0150 (0.35)	-0.373*** (-8.72)	-0.2157 (-0.72)	-0.927*** (-14.4)
	Uncertainty	0.205*** (11.7)	0.215*** (11.5)	0.225*** (11.9)	0.386*** (10.6)	0.332*** (8.65)	1.162*** (5.26)	-0.205*** (-5.39)
Familiarity	Language	8.56* (1.93)	6.42 (1.38)	25.2*** (4.71)	-78.3*** (-6.43)	-14.9 (-1.46)	55.0** (2.49)	100.9*** (7.89)
	Distance	24.9*** (16.9)	26.2*** (14.8)	22.8*** (14.6)	151.7*** (9.88)	23.5*** (8.61)	20.5 (1.33)	29.5*** (15.3)
	Trade	39.0*** (4.03)	50.5*** (3.84)	37.3*** (3.73)	185.1*** (7.63)	-632.6*** (-9.68)	773.6 (1.13)	182.7*** (8.98)
Macroeconomics	Real Exchange Diff.	-0.0317 (-1.09)	-0.0530 (-1.60)	-0.0183 (-0.60)	-8.53*** (-13.7)	-1.56*** (-4.51)	-1.54*** (-3.02)	0.0687 (1.63)
	Predicted Growth	2.642*** (3.79)	3.102*** (4.01)	-0.5444 (-0.57)	8.687*** (2.73)	7.465*** (7.53)	6.6819 (1.02)	-21.61*** (-7.75)
	Real GDP per cap	-10.68*** (-10.5)	-10.03*** (-8.90)	-5.20*** (-3.47)	23.79*** (4.02)	-9.15*** (-7.48)	-26.97*** (-4.53)	-16.74*** (-8.16)
	3 y. mkt growth	0.406*** (5.24)	0.387*** (5.02)	0.408*** (4.64)	-0.0895 (-0.67)	0.0773 (0.54)	-1.603*** (-5.41)	-1.168*** (-5.32)
Constant	-116.0*** (-7.98)	-135.9*** (-6.40)	-140.3*** (-8.59)	-1,505*** (-8.52)	-127.5*** (-4.87)	53.99 (0.29)	121.5*** (3.56)	
Observations	25,006	12,993	24,623	9,397	2,439	383	22,567	
Adj R-squared	13.7%	14.6%	12.7%	8.5%	36.0%	28.0%	12.3%	

Table 6. Determinants of Investment Concentration

OLS regression estimates are used to test for the determinants of concentration in the international markets by funds and countries. The securities used in the estimations consist only of investable securities calculated as the float of the market capitalization defined by WorldScope. The dependent variable is the level of concentration in each fund's portfolio (equally weighted or value weighted average of funds' portfolios at country level) calculated as the squared sum of all the funds adjusted biases in target countries over the number of target countries (from equation 5). The higher the dependent variable the higher the fund concentration is. The first set of independent variables is Hofstede's cultural variables. The rest of the independent variables are grouped in familiarity and investor specific macroeconomic variables. Panel A's regressions are at fund level, Panel B reports results for country equally weighted averages, and Panel C reports the country value weighted averages. The first three specifications in each panel include the fund size. T-statistics are reported below the coefficients in parentheses (* significant at 10% level, ** significant at 5% level, ***significant at 1% level).

Panel A: Fund Level Regressions

	1	2	3	4	5	6
MV of Equity	-0.128*** (-29.9)	-0.121*** (-28.4)	-0.130*** (-30.4)			
Cultural Variables	Individualism	0.0036*** (6.15)	0.0059*** (5.46)		0.0006 (1.38)	0.0028*** (3.18)
	Masculinity	0.0032*** (5.36)	-0.0006 (-0.56)		0.0008* (1.65)	0.0001 (0.17)
	Uncertainty	-0.007*** (-11.4)	-0.0009 (-0.97)		-0.004*** (-9.95)	-0.0002 (-0.38)
Familiarity	Language	0.4938*** (3.75)		0.2438 (1.25)	0.2576** (2.44)	0.0619 (0.42)
	Distance	0.4134*** (7.41)		0.4281*** (6.32)	0.4553*** (10.5)	0.4665*** (9.65)
	Trade	-0.4286 (-1.25)		-0.7401* (-1.73)	-1.0509*** (-3.96)	-1.3469*** (-4.21)
Macroeconomic	Real Exchange Diff.	-0.002** (-2.55)		-0.0002 (-0.12)	-0.003*** (-3.18)	-0.002** (-2.08)
	Predicted Growth	0.0974*** (4.62)		0.1390*** (5.09)	0.0324* (1.82)	0.0586** (2.55)
	Real GDP per cap	-0.133*** (-3.72)		-0.144*** (-3.24)	-0.228*** (-8.66)	-0.221*** (-6.56)
	3 y. mkt growth	0.0011 (0.34)		0.0064* (1.84)	-0.0002 (-0.077)	0.0021 (0.83)
Constant	2.8062*** (6.16)	5.1937*** (53.6)	2.3385*** (3.79)	1.3029*** (3.65)	3.112*** (61.2)	0.8865* (1.85)
Observations	13,264	13,530	13,264	24,978	25,396	24,978
Adj R-squared	10.5%	6.3%	10.8%	3.7%	0.6%	3.8%

Panel B: Country Level, Equally Weighted Average

	1	2	3	4	5	6
MV of Equity	-0.0506 (-0.74)	0.0118 (0.19)	-0.0257 (-0.40)			
Cultural Variables	Individualism	-0.0148*** (-3.51)	-0.0002 (-0.054)		-0.0151*** (-3.74)	-0.0005 (-0.13)
	Masculinity		-0.0016 (-0.37)	-0.0089** (-2.35)	-0.0016 (-0.38)	-0.0088** (-2.47)
	Uncertainty		0.0015 (0.39)	0.0089** (2.55)	0.0009 (0.23)	0.0092*** (2.89)
Familiarity	Language	0.5754 (0.96)		0.9200 (1.62)	0.3764 (0.72)	0.8549 (1.69)
	Distance	0.7242*** (3.56)		0.7413*** (3.94)	0.7164*** (3.81)	0.7316*** (4.24)
	Trade	-3.6181 (-0.99)		-1.3378 (-0.40)	-4.1554 (-1.21)	-1.5723 (-0.51)
Macroeconomic	Real Exchange Diff.	-0.0031 (-0.58)		-0.0021 (-0.41)	-0.0041 (-0.81)	-0.0027 (-0.57)
	Predicted Growth	0.0167 (0.19)		0.1142 (1.21)	0.0281 (0.35)	0.1203 (1.36)
	Real GDP per cap	-0.2830** (-2.24)		-0.2011 (-1.59)	-0.2814** (-2.43)	-0.1933* (-1.72)
	3 y. mkt growth	-0.0003 (-0.029)		-0.0032 (-0.35)	-0.0031 (-0.36)	-0.0042 (-0.57)
Constant	0.6872 (0.30)	3.9276*** (2.99)	-1.1548 (-0.45)	-0.1245 (-0.062)	4.2309*** (10.6)	-1.6185 (-0.74)
Observations	37	44	37	39	46	39
Adj R-squared	66.0%	25.9%	76.4%	67.4%	26.6%	77.9%

Panel C: Country Level, Value Weighted Average

	1	2	3	4	5	6
MV of Equity	-0.1134*	0.0006	-0.0853			
	(-1.88)	(0.0095)	(-1.56)			
Cultural Variables	Individualism	-0.0225***	-0.0012		-0.0225***	-0.0015
		(-4.19)	(-0.36)		(-4.28)	(-0.47)
	Masculinity	-0.0032	-0.0097**		-0.0032	-0.0090**
		(-0.66)	(-2.24)		(-0.68)	(-2.12)
Uncertainty		0.0018	0.0094**		0.0018	0.0105**
		(0.37)	(2.26)		(0.38)	(2.54)
Familiarity	Language	-0.2558	0.1548	-0.3503		0.0732
		(-0.24)	(0.17)	(-0.32)		(0.083)
	Distance	0.9601***	0.9655***	0.8977***		0.9198***
	(3.68)	(4.18)	(3.18)		(3.79)	
Trade	-6.9030**	-4.3111	-8.4010**		-5.3613*	
	(-2.11)	(-1.40)	(-2.43)		(-1.73)	
Macroeconomic	Real Exchange Diff.	-0.0037	-0.0027	-0.0043		-0.0040
		(-0.82)	(-0.58)	(-0.92)		(-0.82)
	Predicted Growth	0.1563	0.2533***	0.1544		0.2626***
		(1.58)	(2.80)	(1.46)		(2.78)
Real GDP per cap	-0.3629**	-0.2790*	-0.3639**		-0.2577	
	(-2.19)	(-1.81)	(-2.15)		(-1.62)	
3 y. mkt growth	-0.0119	-0.0151	-0.0125		-0.0160	
	(-1.05)	(-1.49)	(-1.01)		(-1.45)	
Constant	0.3775	4.4100***	-1.3950	-1.1020	4.4227***	-2.8404
	(0.12)	(2.94)	(-0.51)	(-0.34)	(9.03)	(-0.98)
Observations	37	44	37	37	44	37
Adj R-squared	73.4%	33.3%	80.2%	71.6%	33.3%	79.3%

Table 7. Determinants of Concentration for Selected Investor groups

Table 7 repeats the analysis from Table 6 Panel A for selected investor groups at fund level. The dependent variable is the concentration of holdings in each fund's portfolio. The first set of independent variables is Hofstede's cultural variables. The rest of the independent variables are grouped in familiarity and investor specific macroeconomic variables. T-statistics are reported in parentheses below the coefficient (* significant at 10% level, ** significant at 5% level, ***significant at 1% level).

		Investor Countries Included:					
		All	All ex. US	Developed	EU	all ex Big 10	Emerging
Cultural Variables	Individualism	0.0028*** (3.18)	0.0061*** (6.78)	0.0004 (0.36)	-0.0086** (-2.52)	0.0052*** (4.31)	0.0034 (0.43)
	Masculinity	0.0001 (0.17)	0.0004 (0.67)	-0.0011 (-1.32)	-0.0038*** (-2.70)	-0.0043*** (-2.90)	-0.0132 (-1.61)
	Uncertainty	-0.0002 (-0.38)	0.0019*** (3.20)	0.0004 (0.60)	0.0065*** (5.55)	0.0034** (2.55)	0.0274*** (4.61)
Familiarity	Language	0.0619 (0.42)	-0.3980*** (-2.76)	0.3577** (2.02)	1.1798*** (3.03)	-0.1538 (-0.44)	0.7757 (1.29)
	Distance	0.4665*** (9.65)	0.7475*** (13.6)	0.4086*** (7.90)	2.3830*** (4.85)	0.6615*** (7.01)	1.4045*** (3.37)
	Trade	-1.3469*** (-4.21)	1.1551*** (2.81)	-1.4848*** (-4.48)	0.0722 (0.093)	-9.0290*** (-3.95)	-10.5318 (-0.57)
Macroeconomic	Real Exchange Diff.	-0.0020** (-2.08)	-0.0066*** (-6.40)	-0.0020** (-1.98)	-0.0372* (-1.88)	-0.0293** (-2.42)	-0.0019 (-0.14)
	Predicted Growth	0.0586** (2.55)	0.1587*** (6.58)	-0.0016 (-0.051)	-0.4039*** (-3.96)	0.1629*** (4.71)	0.3823** (2.16)
	Real GDP per cap	-0.2206*** (-6.56)	-0.0773** (-2.20)	-0.0718 (-1.44)	1.1375*** (6.01)	-0.1611*** (-3.78)	-0.1882 (-1.16)
	3 y. mkt growth	0.0021 (0.83)	-0.0019 (-0.79)	0.0003 (0.11)	-0.0109** (-2.55)	-0.0070 (-1.42)	-0.0215*** (-2.69)
	Constant	0.8865* (1.85)	-3.4229*** (-5.17)	0.1776 (0.33)	-26.9151*** (-4.76)	-1.4545 (-1.59)	-9.3192* (-1.82)
	Observations	24,978	12,982	24,592	9,397	2,445	386
	Adj R-squared	3.8%	7.3%	2.8%	1.6%	18.8%	26.3%

Table 8. Determinants of Foreign Investment

OLS regression estimates at fund level are used to test for the determinants of foreign diversification in funds' portfolios. Foreign securities used in these estimations consist only of investable securities or the float of the market capitalization defined by WorldScope. The dependent variable *bias* in specifications 1-3 is calculated as the sum of percentages owned in each target country *i* less the expected allocation in that country based on World float capitalization. The dependent variable *adjusted bias* calculated as the sum of percentages of foreign investment in each country *i* relative to a fund's total foreign investment less the expected allocation in that country based on world float capitalization. The first independent variable, fund home bias, controls for the home bias that funds from all countries have. The next set of independent variables is Hofstede's cultural variables for investors. The rest of the independent variables are either common variables between an investor country and a target country or target and investor country specific variables. Target countries include all countries that have investable float available and not just the countries a fund chooses to invest in. Panel A includes target markets' historical returns as independent variables and Panel B repeats the analysis without the historical returns. Specifications 1, 2, 4 and 5 repeat past literature's findings and specifications 3 and 6 include the new variables. Only those funds with less than 95% home bias and more than 5 % investment abroad are included in the analysis. All errors are adjusted for heteroscedasticity. Analysis is also repeated in unreported tables with country clustered errors. The coefficients are the same, and the main results remain similar, although the significance level reduces. (* significant at 10% level, ** significant at 5% level. ***significant at 1% level)

Panel A

		Bias			Adjusted Bias		
		1	2	3	4	5	6
	Fund Home Bias	-0.0178***	-0.0213***	-0.0214***	0.0003	-0.0003	-0.0002
Cultural	Individualism			-0.0025***			-0.0018*
	Masculinity			0.0017***			-0.0049***
	Uncertainty			-0.0030***			-0.0067***
Familiarity	Language	-0.4005***	-0.4261***	-0.5049***	0.1611***	-0.0778***	-0.1541***
	Distance	-0.5684***	-0.5392***	-0.5676***	-1.2413***	-1.3056***	-1.3221***
	Trade	3.150***	2.908***	2.823***	6.891***	7.111***	7.350***
Legal Regulatory	Tax		0.1439***	0.1377***		0.0522***	0.0709***
	Transaction		-0.0109***	-0.0101***		-0.0022***	-0.0032***
	Emerging dummy		-2.1554***	-2.2242***		-1.4741***	-1.4215***
	Corporate Gov.		-0.1873***	-0.1736***		-0.1046***	-0.1089***
	Corruption/Transp.		-0.1199***	-0.1379***		0.0677***	0.0892***
Macro: Investor	Real GDP per cap	0.2578***	0.2077***	0.0894***	-0.0874***	-0.2129***	-0.4440***
	3 year mkt growth			-0.0147***			-0.0163***
	Real Exchange Diff.			-0.0073***			0.0114***
Macro: Target	Stock Market Cap	0.9955***	1.4662***	1.5221***	0.4783***	0.6563***	0.6042***
	Real GDP per cap	0.0454***	-0.4257***	-0.4324***	-0.0114*	-0.5872***	-0.5887***
	1 year market growth	0.0048***	-0.0174***	-0.0166***	0.0128***	0.0041***	0.0021***
	3 year market growth	0.0313***	0.0313***	0.0333***	0.0044***	0.0100***	0.0096***
	Constant	-25.62***	-31.24***	-30.62***	-1.87***	1.1066*	5.77***
	Observations	943,635	766,944	745,704	943,635	766,944	745,704
	Adj R-squared	8.1%	10.3%	10.8%	3.9%	4.6%	4.8%

Panel B: Without Target Market Historical Returns

		Bias			Adjusted Bias		
		1	2	3	4	5	6
	Fund Home Bias	-0.0091***	-0.0199***	-0.0200***	0.0021***	0.0015***	0.0015***
Cultural	Individualism			0.0017**			0.0038***
	Masculinity			0.0035***			-0.0009
	Uncertainty			-0.0021***			-0.0051***
Familiarity	Language	-0.2379***	-0.0958***	-0.1732***	0.3257***	0.3513***	0.2595***
	Distance	-0.4107***	-0.5377***	-0.5681***	-0.8946***	-1.3227***	-1.3586***
	Trade	0.6538***	-0.1683***	-0.2653***	0.9763***	0.9497***	0.8988***
Legal Regulatory	Tax		-0.0372***	-0.0359***		-0.0377***	-0.0328***
	Transaction		-0.0064***	-0.0062***		-0.0018***	-0.0017***
	Emerging dummy		-0.9154***	-0.9541***		-0.5304***	-0.4334***
	Corporate Gov. Corruption/Transp.		-0.1406***	-0.1280***		-0.0142**	-0.0096
Macro: Investor	Real GDP per capita	0.2805***	0.3543***	0.2231***	0.2240***	0.1150***	-0.1116**
	3 year market growth			-0.0072***			-0.0085***
	Real Exchange Diff.			-0.0049***			0.0127***
Macro: Target	Stock Market Cap	0.3167***	1.1484***	1.1819***	0.1443***	0.5112***	0.4528***
	Real GDP per capita	-0.1629***	-0.6351***	-0.6560***	-0.0458***	-0.7614***	-0.7350***
	Constant	-6.8313***	-20.8686***	-20.0221***	1.5691***	4.0885***	7.9827***
	Observations	1,748,674	805,853	783,938	1,748,674	805,853	783,938
	Adj R-squared	4.3%	8.8%	9.2%	2.3%	3.7%	3.9%

Table 9. Determinants of Foreign Investment for Selected Investors

Regression estimates repeat specification 6 from Table 5 for several groups of investor countries. The dependent variable is the foreign *adjusted bias* in each fund's portfolio, calculated as the sum of percentages of foreign investment in each country *i* relative to a fund's total foreign investment less the expected allocation in that country based on world float capitalization. The first independent variable is the fund home bias. The next set of independent variables is Hofstede's cultural variables for investors. The rest of the independent variables are either common variables between an investor country and a target country or target and investor country specific variables. Analysis includes only those funds that have less than 95% home bias in their portfolios and more than 5% investments abroad. Analysis is also repeated in unreported tables with country clustered errors. The coefficients are the same, and the main results remain similar, although the significance level reduces. All errors are adjusted for heteroscedasticity. (* significant at 10% level, ** significant at 5% level, ***significant at 1% level).

	All	All but US	Developed	Dev. ex US	EU	All But Big 10	Emerging
Fund Home Bias	0.013***	0.011***	0.013***	0.010***	0.011***	0.019***	0.028***
Cultural Individualism	-0.005***	-0.005***	-0.008***	-0.007***	-0.002*	-0.002*	0
Cultural Masculinity	0.002***	0.002***	0.001	0.001***	0.001***	0.002***	-0.023*
Cultural Uncertainty	-0.006***	-0.005***	-0.004***	-0.003***	0.002***	-0.006***	0.015*
Familiarity Language	0.119***	0.211***	0.091***	0.166***	0.051**	0.893***	2.590***
Familiarity Distance	-0.131***	-0.240***	-0.166***	-0.251***	-0.169***	-0.202***	0.161
Familiarity Trade	1.524***	0.326**	1.395***	0.563***	0.573***	-1.622***	6.681***
Legal Regulatory: Tax	0.026***	0.083***	0.033***	0.087***	0.042***	0.058***	-0.257***
Legal Regulatory: Transaction	0.002***	0	0.002***	0.001*	0	-0.006***	-0.004
Legal Regulatory: Emerging Dummy	0.876***	0.876***	0.830***	0.813***	0.736***	1.295***	3.685***
Legal Regulatory: Corporate Gov.	0.030***	0.058***	0.032***	0.056***	0.018***	0.095***	-0.078
Legal Regulatory: Corruption/Transp	0.224***	0.206***	0.221***	0.207***	0.217***	0.186***	0.243*
Macro: Investor Real GDP per capi	-0.400***	-0.531***	-0.084***	-0.197***	0.188***	-0.505***	0.164
Macro: Investor 3 year mkt growth	-0.005***	0.002	-0.010***	-0.004**	-0.003	0.005*	0.008
Macro: Investor Real Xchange Diff	0.003***	0.003***	0.002***	0.002***	0.002***	-0.002	0.01
Target: Investor Stock Market Cap	-0.733***	-0.844***	-0.732***	-0.848***	-0.806***	-0.674***	-0.545***
Target: Investor Real GDP per cap	-0.028**	-0.008	-0.031***	-0.021	-0.140***	0.115***	0.347
Target: Investor 3 year mkt growth	-0.005***	-0.005***	-0.005***	-0.004***	-0.005***	0.002	-0.011
Constant	24.62***	28.56***	21.79***	25.55***	21.33***	22.31***	11.73**
Observations	117,339	74,706	116,500	73,867	60,198	12,203	839
Adj R-squared	26.40%	27.60%	26.10%	27.10%	24.50%	26.70%	55.80%

Table 10. Determinants of Foreign Investment in Developed Markets

Regression estimates repeat analysis from Table 7 for several groups of investor countries but for developed market investments only. The dependent variable is the foreign *developed adjusted bias* in each fund's portfolio, calculated as the sum of percentages of foreign investment in each developed country *i* relative to a fund's total developed market foreign investment less the expected allocation in that country based on world developed market float capitalization. The first independent variable is the fund home bias. The next set of independent variables is Hofstede's cultural variables for investors. The rest of the independent variables are either common variables between an investor country and a target country or target and investor country specific variables. Analysis includes only those funds that have less than 95% home bias in their portfolios and more than 5% investments abroad. Analysis is also repeated in unreported tables with country clustered errors. The coefficients are the same, and the main results remain similar, although the significance level reduces. All errors are adjusted for heteroscedasticity. (* significant at 10% level, ** significant at 5% level. ***significant at 1% level).

	All	All but US	Developed	EU	All But Big 10	Emerging	
Fund Home Bias	-0.0007	0.0047**	-0.0028*	-0.0068***	-0.0384*	-0.0057	
Cultural	Individualism	-0.003	-0.0139	-0.0262*	0.0617	0.1293**	0.0487***
	Masculinity	0.0298***	0.0362***	0.0178**	0.0099	0.1633***	-0.0242
	Uncertainty	-0.0191***	-0.0103***	0.0014	0.0371	-0.1127***	-0.025
Familiarity	Language	-0.8020***	0.8029***	-0.9628***	0.4462*	0.7394	8.6917***
	Distance	-2.5426***	-2.7211***	-2.8702***	-4.1371***	-2.1747***	-2.1573***
	Trade	15.26***	3.84**	13.35***	-9.76*	118.4***	141.4***
Legal Regulatory	Tax	0.8285***	1.0281***	0.9436***	1.3745***	0.8783***	-2.2371***
	Transaction	0.0836***	0.0568***	0.0985***	0.1466***	0.2033***	0.021
	Corporate Gov.	-0.6234***	-0.4296***	-0.6194***	-0.4266***	-0.2137	0.5421***
	Corruption/Trans	0.9916***	0.6654***	1.1069***	1.2351***	0.5349	-1.2393***
Macro: Investor	Real GDP per cap	1.2486**	1.3920**	4.5115***	2.6747	2.4541**	0.4719
	3 year mkt growth	0.1036*	0.1294**	0.059	0.2010*	0.4933***	-0.0636**
	Real XΔ Diff	-0.029***	-0.044***	-0.039***	-0.151***	-0.136***	-0.076***
Macro: Target	Stock Market Cap	0.6575***	0.6548***	0.5667***	0.6099*	1.9385***	4.0206***
	Real GDP per cap	-6.2199***	-8.8343***	-6.5883***	-14.4507***	-5.7080***	-3.4032***
	3 year mkt growth	0.0367***	0.1450***	0.0268**	0.1461***	0.053	0.0691*
	Constant	33.43***	57.27***	7.9249	93.04**	-43.36	-21.81*
Observations	363,775	227,165	358,275	168,066	42,884	5,500	
Adj R-squared	1.8%	1.4%	1.8%	1.6%	0.9%	17.5%	

Table 11. Determinants of Foreign Investment in Emerging Markets

Regression estimates repeat analysis from Table 8 for several groups of investor countries but for emerging market investments only. The dependent variable is the foreign *emerging market adjusted bias* in each fund's portfolio, calculated as the sum of percentages of foreign investment in each developing country *i* relative to a fund's total emerging market foreign investment less the expected allocation in that country based on world emerging market float capitalization. The first independent variable is the fund home bias. The next set of independent variables is Hofstede's cultural variables for investors. The rest of the independent variables are either common variables between an investor country and a target country or target and investor country specific variables. Analysis includes only those funds that have less than 95% home bias in their portfolios and more than 5% investments abroad. Analysis is also repeated in unreported tables with country clustered errors. The coefficients are the same, and the main results remain similar, although the significance level reduces. All errors are adjusted for heteroscedasticity. (* significant at 10% level, ** significant at 5% level, ***significant at 1% level).

	All	All but US	Developed	EU	All But Big 10	Emerging
Fund Home Bias	-0.0081***	-0.0085***	-0.0083***	-0.0080***	-0.0078***	0.0091**
Cultural						
Individualism	0.0136***	0.0060***	0.0116***	0.0381***	-0.0131***	0.0099
Masculinity	-0.0103***	-0.0039***	-0.0114***	0.0001	0.0049***	-0.0381*
Uncertainty	-0.0254***	-0.0239***	-0.0251***	-0.0047***	-0.0210***	0.0112
Familiarity						
Language	-0.1884***	0.1151***	-0.2030***	-0.3672***	0.0669	-1.7435***
Distance	-1.0622***	-1.4934***	-1.0426***	-1.7948***	-1.5756***	-3.1647***
Trade	2.3666***	-9.4807***	2.3468***	-9.9211***	3.4599	116.1433**
Legal Regulatory:						
Tax	0.1095***	0.1754***	0.1076***	0.2455***	0.2317***	0.1412***
Transaction	0.0014***	0.0040***	0.0016***	0.0021***	0.0012	-0.0070***
Corporate Governance	-0.2845***	-0.0834***	-0.2858***	-0.1435***	-0.1634***	-0.6481***
Corruption/Transparency	-0.2267***	-0.5127***	-0.2208***	-0.1662***	-0.2381***	0.0216
Investor Macro:						
Real GDP per capita	-0.4672***	-0.7226***	-0.3723***	-0.1587	-0.1878***	-0.4775
3 year market growth	-0.0297***	0.0006	-0.0377***	0.0145***	0.0301***	0.0397***
Real Exchange Diff	0.0522***	0.0514***	0.0514***	0.2069***	0.1205***	0.1378***
Target Macro:						
Stock Market Cap	1.3545***	1.9019***	1.3386***	1.6756***	1.3548***	2.1077***
Real GDP per capita	0.6148***	0.9643***	0.6204***	0.7543***	0.8320***	-0.2063
3 year market growth	0.0228***	0.0149***	0.0235***	-0.0106***	-0.0022	-0.0021
Constant	-27.71***	-40.03***	-28.18***	-40.85***	-30.30***	-23.83***
Observations	381,929	238,129	376,694	176,474	44,149	5,235
Adj R-squared	7.50%	10.50%	7.50%	14.30%	8.70%	23.90%

Table 12. Probability of Foreign Investment in a Target Market

LOGIT regression estimates for investor countries are used to test for the determinants of foreign investment in a particular country. Foreign securities used in these estimations consist only of investable securities according to WorldScope's definition. The dependent variable is a dummy variable (1, 0) so that all the countries with at least one of the funds *j* investing in a target country *i* take on value 1 and zero if none of the investor countries' funds have investment in a target country *i*. The first independent variable is the average fund home bias. The next set of independent variables is Hofstede's cultural variables for investor countries. The rest of the independent variables are either common variables between an investor country and a target country or target and investor country specific variables. Analysis includes only those funds that have less than 95% home bias in their portfolios and more than 5% investments abroad. (* significant at 10% level, ** significant at 5% level, *** significant at 1% level)

	1	2	3	4	5	6
Fund Home Bias	-0.0627***	-0.0750***	-0.0764***	-0.0318***	-0.0700***	-0.0706***
Cultural Individualism			0.0354***			0.0339***
Cultural Masculinity			-0.0038			-0.0021
Cultural Uncertainty			-0.0188***			-0.0181***
Familiarity Language	0.5202**	0.5501*	0.1496	0.4342***	0.5215*	0.1436
Familiarity Distance	-0.4833***	-0.6947***	-0.9276***	-0.3375***	-0.7410***	-0.9613***
Familiarity Trade	43.1576***	28.9982***	29.7821***	15.0846***	13.5519***	12.8907**
Legal Regulatory: Tax		0.0045	0.0185		0.0365*	0.0475**
Legal Regulatory: Transaction		-0.0118***	-0.0128***		-0.0138***	-0.0146***
Legal Regulatory: Corporate Governance		0.0293	0.0568		0.097	0.1315*
Legal Regulatory: Corruption/Transparency		0.1514	0.1689		0.092	0.1013
Macro: Investor Real GDP per capita	0.7267***	0.6426***	0.3890**	0.9118***	0.7226***	0.4872***
Macro: Investor 3 year market growth	-0.0132	-0.0136	-0.0067	-0.0078	-0.0091	-0.0017
Macro: Investor Real Exchange Diff	0.0032	0.0017	0.0137***	0.0021	0.0033	0.0146***
Macro: Target Stock Market Cap	-0.5769***	-0.4118***	-0.5238***	-0.6407***	-0.4578***	-0.5585***
Macro: Target Real GDP per capita	0.5762***	-0.2537	-0.2782	0.2644***	-0.3393**	-0.3629**
Macro: Target 1 year market	0.0184***	0.0089	0.009			
Macro: Target 3 year market growth	0.0029	-0.0031	-0.0037			
Constant	10.69***	17.68***	24.44***	10.53***	18.76***	24.86***
Observations	2,064	1,683	1,683	3,741	1,769	1,769
Pseudo R-squared	59.60%	63.00%	66.70%	44.60%	61.50%	65.10%

CHAPTER 2

Effects of Information, Familiarity, and Culture on Stock Selection by International Institutions in the United States

Abstract

We examine 3,487 non-US institutions' portfolio allocations in US securities. We test how familiarity, information, and cultural uncertainty avoidance, masculinity and individualism influence portfolio strategies. International funds from geographically distant countries tend to invest less in the US and in a narrower set of securities than institutions from geographically nearby countries. However the "familiarity effect" from geographical distance reduces significantly when we control for the time zone differential between the investor country and the US. This shows that information flow at least partially explains the familiarity based explanation of international diversification. We also show that cultural uncertainty avoidance, individualism, and masculinity affect portfolio allocations and risk exposures so that funds from countries with high uncertainty avoidance tend to underweight the US market, but overweight a small set of US benchmark portfolios with the amount they invest in the US

1. Introduction

Finance literature has established that economic development, familiarity and investors' cultural traits influence the amount of capital that is allocated at home and abroad. Chen, Covrig, Ng (2005) and Amadi (2004) find strong support for irrational familiarity based portfolio allocation or overweighting of investors' home markets in investment portfolios, and under diversifying the capital that is left for foreign investment across selected few "familiar" international markets. Familiarity matters also at security level investment decisions. Stock selection by fund managers in their home markets and abroad has been studied mainly in small sample sizes and limited to comparison of domestic versus internationals' behaviour. At firm level, Kang and Stulz (1997) show that foreign investors in Japan prefer large, international manufacturing firms. In a recent study of large number of international funds with holdings in 11 developed countries Covrig, Lau, and Ng (2006) investigate stock selection by domestic and foreign fund managers and find that domestic managers typically prefer smaller, high market-to-book firms. Foreign ownership is also positively related to analyst coverage and overall the results provide support for foreigners' preference for stocks with lower degree of information asymmetry.

Our contribution is to study 3,487 non-US institutions' asset allocation in the United States. Our paper is the first one to our knowledge to provide a detailed description on foreigners' ownership in the US firms. Our analysis also differs from the prior literature's comparison of domestic versus foreigners' behaviour, and instead shows that country specific characteristics not only influence the total

investments into target markets, but that country characteristics also impact security selection in those target markets.

We enrich the international diversification literature by showing that investors' familiarity (measured as geographical distance between the investor and the US, common language, and trade flows) impacts security selection. We divide the NASDAQ, NYSE, and AMEX traded securities into benchmark portfolios constructed based on size and market-to-book quintiles and show that the portfolio over and underweighting relates to familiarity. For example, we hypothesize that distant and less familiar countries have less overall investment in the US and have less diversified holdings in portfolios of US securities.

Prior literature in international finance has found strong support for irrational familiarity based portfolio allocation (Chen, Covrig, Ng 2005, Amadi 2004). Another stream of literature, geography of finance (Malloy 2003), argues that information drives diversification decisions rather than familiarity. Investors choose to invest in securities they have information about and typically those securities are the ones located geographically nearby. In this study, we address the familiarity versus information question in a larger scale and include a new variable, time zone difference, into the analysis to distinguish investment decisions made based on familiarity caused by short geographical distance versus decisions made based on information flow related time zone effect. If countries that are geographically far from the US eastern Standard Time, but are located near or in the Eastern Standard Time zone allocated a higher amount of capital to the US than countries that are

equally distant but also on the other side of the world, would support information rather than familiarity based explanation of capital flows.

We also derive hypotheses from survey based cultural variables from the literature on cross-cultural psychology. Variables such as country specific uncertainty avoidance, masculinity, and individualism have been shown to be significant drivers of behaviour in international business research. We relate these three primary cultural dimensions to investor countries' diversification decisions.

Results show that foreign funds from countries that are more familiar with the US (familiarity measured as geographical distance) invest more in the US as a percentage of their total portfolios and that they invest in a more diversified set of securities than institutions from less familiar countries do. The time zone differential has a significant and negative effect on portfolio allocation and diversification in the US. Funds from countries in far away time zones underweight the US market more and diversify their holding less after controlling for geographical distance. The effect of geographical distance reduces by half after controlling for time zone differential, but remains significant determinant of total portfolio allocation and diversification. These findings support both familiarity and information based decision making, but the significance of familiarity reduces. Also, time zone differential has a significant effect on the types of securities the international funds invest in. Funds from countries in far away time zones invest more in portfolios containing risky securities (small and value). Geographical distance does not have a significant effect on security selection.

Cultural uncertainty avoidance is related to underweighting of the US market in investment portfolios, and the amount that the funds from high uncertainty avoiding countries allocate to the US is less diversified. The US part of these funds' portfolio overweighs a small set of US securities. Funds from countries that rank high on cultural masculinity have more ownership in risky securities.

The rest of the paper is organized in the following way: Section 2 provides an extensive literature review on international investment and diversification, information and familiarity, and culture and finance. Section 3 discusses hypothesis development, section 4 discusses data and methodology, section 5 shows the results, and section 6 concludes.

2. Literature Review

2.1. Introduction

We review different strands of investments and international finance literature that relate to our research. We review findings from international diversification and security selection. We also add to the discussion of familiarity versus information, so we briefly review some performance studies that have given support to both stories. We also review literature on culture and finance and cross-cultural psychology and how our cultural variables have been used in international business literature in the past.

2.2 Diversification and Security Selection by International Investors

Determinants of portfolio allocation and security selection at home and abroad have been studied in many recent papers in international finance literature. Covrig, Lau, and Ng (2006) investigate stock selection by domestic and foreign fund managers and find that domestic managers typically prefer smaller, high market-to-book firms. Foreign ownership is also positively related to analyst coverage and overall the results provide support for preference for stocks with lower degree of information asymmetry. Also, Cai and Warnock (2006) analyze foreign and domestic institutions' positions in the US securities and find that both foreigners and domestic investors prefer large, internationally diversified firms. Ferreira and Matos (2006) utilize a similar dataset to the one used in this paper, and conduct an extensive cross-sectional study of funds' international diversification. Authors use institutional investors' stock holdings database and investigate US, non-US foreign, and domestic managers' preferences for country- and firm-level characteristics. All three groups of institutions reveal a strong preference for large and liquid stocks with good governance practices. Foreign investors, however, overweight stocks that are cross-listed in the US, are members of MSCI indexes, firms that are globally visible through foreign sales or analyst coverage, whereas domestic investors seem to underweight the same stocks.

Familiarity impacts diversification decisions across international markets. Chan Covrig and Ng, (2005) find that portfolio allocations of mutual funds depend on cultural and economic familiarity. Factors that determine mutual fund asset allocations worldwide are positively related to stock market development and

familiarity traits such as common language, bilateral trade flows, and geographical proximity between investor and the target countries. Amadi (2004) examines foreign diversification by more than thirty countries around the World, and finds that the small foreign diversification that is present is not well diversified across foreign equity markets. His empirical analysis shows that familiarity factors such as common language, trade, and immigrant links affect foreign allocation.

Familiarity also affects investment decisions within countries. Coval and Moskowitz (1999) find that mutual fund managers prefer to invest in firms headquartered close to their home cities. Grinblatt and Keloharju (2001) show that in addition to language and distance, also culture affects investment decisions and that Finnish investors prefer to invest in firms with CEOs from the same cultural background.

There are two competing explanations for home bias and under diversification in portfolios. The first, familiarity, is discussed above in detail. However, another strand of literature gives support for information advantage based asset allocation. Individuals, institutions and also analysts have been shown to prefer nearby investments because of information advantage. Gehrig's (1993) theoretical model offers an information based explanation of home bias in international equity investment. Gehrig introduces a rational expectations model where even in the equilibrium investors remain incompletely informed. Home bias arises, when investors are better informed about the domestic stocks. In a more recent theoretical model, Van Nieuwerburgh and Veldkamp (2006) develop a rational model of

investors who choose which assets to acquire information about when forming portfolios. Scale economies lead investors to learn about a set of highly-correlated assets, which competes with benefits to diversification. Resulting portfolios are under diversified but optimal. Information choice leads to investing in a diversified fund and a set of highly correlated assets.

In empirical literature, information advantage from nearby proximity has been shown to matter for analyst and fund performance. Bae, Stulz and Tan (2005) find a statistically and economically significant advantage in domestic analysts' opinions after controlling for firm and analyst characteristics. Advantage is higher in countries with less information available and it is negatively related to market participation by foreign investors.

Information advantage has also been tested empirically in fund performance, so that if there exists information advantage, then under diversified funds should exhibit better performance at risk adjusted basis. At industry level, Kacperczyk, Sialm, and Zheng (2005) study the relationship between industry concentration and performance of actively managed US mutual funds, and find that on average more concentrated funds outperform at risk adjusted basis. In Australian market, Brands, Brown, and Gallagher (2005) examine the relationship between investment performance and concentration in equity portfolios. The authors document a positive relationship between fund performance and portfolio concentration. The relationship is stronger in stocks that managers overweight in their portfolios and in stocks that are not included in the largest 50 securities traded in Australian Stock Exchange (ASX).

Ivković and Weisbenner (2005) document local concentration in funds within the US. Authors use a database of individual investors' investments and find that households exhibit a strong preference for local stocks and test whether the locality bias stems from familiarity or information. Average household generates an additional 3.2% return from its local holdings suggesting that local investors are getting an advantage from local knowledge. Returns are also larger when the securities are non-S&P 500 companies. Coval and Moskowitz (2001) show that institutional investors in the US earn substantial abnormal returns on their nearby investments, especially in smaller, older, and more concentrated funds with fewer holdings.

In the literature of domestics' versus foreigners' performance and information advantage, Dvořák (2005) investigates transaction data from Indonesia and shows that domestic investors earn higher profits than foreign investors in short term, but clients from global brokerages are better at picking long-term winners. Also, domestic clients of global brokerages earn higher profits than foreign clients, which suggests that local information and global expertise lead to higher profits. Also, Choe, Kho, and Stulz (2005) show that because prices move more against foreign investors than against domestic investors before trades in Korea, domestic investors have an edge in trading domestic stocks. The authors also show that the sample average daily trade-weighted disadvantage is 21 basis points for purchases and 16 basis points for sales. In a cross-country study, Hau (2001) investigates trading profits earned in German Security Exchange by 756 professional traders located in 8 European countries. Hau finds that traders located outside Germany in non-German-speaking

cities show lower trading profits that, however, are not statistically significant. Hau finds no evidence for financial center advantage, but finds an information advantage due to corporate headquarters proximity in intraday trading. In the US specific study, Parwada, Walter, and Winchester (2006) examine firm- market- and source country-level determinants of the execution costs incurred by foreign and domestic institutional investors in the US. There is a statistically significant increase in foreign institutional investors' roundtrip trading costs in the US.

2.3 Culture and Finance

In addition to Grinblatt and Keloharju's study of Finnish firms and Amadi's evidence for immigrant links and portfolio investment, culture and its effects on foreign portfolio diversification have been studied in finance literature by Morsi (2003), who shows that cultures with high levels of patriotism have larger proportion of their investments allocated at home. In a paper by Stulz and Williamson (2003) the authors show that differences in culture should not be ignored when studying variation in investor protection across countries. Also, in their recent series of papers Guiso, Sapienza, and Zingales (2004, 2005, 2007) show that perceptions rooted in culture are important and generally omitted determinants of economic exchange. For example, they find that level of trust is related to amount of trade, portfolio investment, and direct investment. Trust within a country also affects household and firm level investment and lack of trust can affect stock market participation rates.

Cultural trust also partially explains the limited participation puzzle, especially among wealthy investors.

2.4 Hofstede and Cross-Cultural Psychology

We link a well known study by social psychologist Geert Hofstede on cross-cultural psychology to international diversification literature. Geert Hofstede's *Culture Consequences* (1980, 2001) is one of the most cited studies in the entire Social Science Citation Index and one of the most influential researches in cross-cultural psychology. The study on primary dimensions of culture and differences in thinking, values, and social actions among people from more than 50 nations has been widely cited in marketing and international business literature. Hofstede's survey-based evidence shows that countries' cultural attributes can be measured in five primary dimensions:

- **“Uncertainty Avoidance Index (UAI)** deals with a society's tolerance for uncertainty and ambiguity. It indicates to what extent a culture programs its members to feel either uncomfortable or comfortable in unstructured situations. Unstructured situations are novel, unknown, surprising, different from usual. Uncertainty avoiding cultures try to minimize the possibility of such situations by strict laws and rules, safety and security measures, and uncertainty avoiding countries are also more emotional, and motivated by inner nervous energy
- **Individualism (IDV)** on the one side versus its opposite, collectivism, is the degree to which individuals are integrated into groups. On the individualist side we find societies in which the ties between individuals are loose: everyone is expected to look after him/herself and his/her immediate family. On the collectivist side, we find societies in which people from birth onwards are integrated into strong, cohesive groups
- **Power Distance Index (PDI)** is the extent to which the less powerful members of organizations and institutions accept and expect that power is distributed unequally. It suggests that a society's level of inequality is endorsed by the followers as much as by the leaders. Power and inequality are extremely fundamental facts of any society and that all societies are unequal, but some are more unequal than others
- **Masculinity (MAS)** versus femininity, refers to the distribution of roles between the genders. The survey studies reveal that (a) women's values differ less among societies than men's values; (b) men's values from one country to another contain a dimension from very assertive and competitive and maximally different from women's values on the one side, to modest and

caring and similar to women's values on the other. The assertive pole has been called 'masculine' and the modest, caring pole 'feminine'. The women in feminine countries have the same modest, caring values as the men; in the masculine countries they are somewhat assertive and competitive, but not as much as the men, so that these countries show a gap between men's values and women's values

- **Long-Term Orientation (LTO)** versus short-term orientation: this fifth dimension was found in a study among students in 23 countries around the world. Values associated with Long Term Orientation are thrift and perseverance.¹⁰

3. Hypothesis Development

3.1 Introduction

We divide this section of hypotheses into three subsections. First, we derive hypotheses on international funds' US allocation and diversification. Second, we derive testable hypotheses on information versus familiarity's impact on portfolio investment and stock selection, and third we derive hypotheses on culture's impact on portfolio investment and stock selection

3.2. Stock Selection by International Institutions

There are two competing theories on how rational investors select securities. One possibility is that in the Markowitz (1952) framework, followed by Levy and Sarnat (1970) in the international setting, portfolio investment abroad is allocated into less correlated securities so that the overall risk of investment portfolio reduces. In the traditional portfolio setting, we expect to observe large amount of diversification in foreigners' US holdings and mean-variance optimized portfolios.

¹⁰ Primary dimensions of culture from Geert Hofstede's website: <http://www.Geert-Hofstede.com> and from *Culture Consequences, 2001, 2nd ed. pages xix-xx.*

Merton (1987) deviates from the traditional CAPM setting and argues that because of search costs investors focus on the familiar because they believe to know the stock return distribution. Empirical literature has shown that familiarity and perceived information advantage may lead to unbalanced portfolios so that nearby firms are preferred and this may or may not lead to abnormal performance (Coval and Moskowitz (1999, 2001), Kacperczyk, Siam, and Zheng (2005) among others). Also, empirical literature provides support for Merton's argument in international setting, because international investors focus their holdings to selected few large, safe, and visible firms (Kang and Stulz (1997), Dahlquist and Robertsson (2001), Ferreira and Matos (2006))

In this framework, we expect to observe international funds from more familiar countries with the US to invest a higher amount of their portfolio to the US consistent with prior findings in cross-sectional studies (Chan, Covrig, and Ng 2005, Amadi 2004). We also hypothesize that the documented preference by international investors for larger and safer firms varies among investor countries, so that the more familiar investors will have more dispersed ownership in the US securities and also higher amount invested in portfolios that contain low market-to-book and small securities. This leads to three testable hypotheses:

H 1: Funds from countries with more familiarity with the US invest a higher percentage of their portfolio in US securities.

H 2: *Funds from countries with more familiarity with the US have more dispersed holdings in the US across a larger number of portfolios of securities.*

H 3: *Funds from countries with more familiarity with the US are more likely to invest in less visible and riskier portfolios of securities.*

3.3. Information versus Familiarity

Past research has shown (Amadi 2004 and Chan, Covrig and Ng 2005 among others) that geographical distance plays an important role in funds' international allocation. This has been interpreted as evidence of irrational familiarity based decision making. Another possibility is that geographically nearby countries have a better and faster access to information in each other than distant countries do (supported by Coval and Moskowitz 1999 and 2001 within the US). In the international setting the effect of time zones and overlapping business hours may have an impact on access to information. Therefore, we test whether familiarity based or information based security selection characterizes international funds' US investment decisions. If familiarity based explanation is true, then we should expect to observe geographical distance dominate time zone difference. If information based explanation is true, we should expect to observe larger allocation to the US from countries that are located in nearby time zones and that geographical distance does not matter after controlling for the time zone effect. Also, funds from countries in nearby time zones may have an easier access to information, and because of the

information advantage those funds are able to invest in a broader sample of securities that are belong to the riskier portfolios more often. More formally:

H 4: Funds from countries with more information about the US invest a higher percentage of their portfolio in the US securities. The impact of familiarity reduces after controlling for information.

H 5: Funds from countries with more information about the US have more dispersed holdings in the US across a larger number of portfolios of securities. The impact of familiarity reduces after controlling for information.

H 6: Funds from countries with more information about the US are more likely to invest in less visible and riskier portfolios of securities. The impact of familiarity reduces after controlling for information.

3.4. Culture and Stock Selection

Hofstede's cultural uncertainty avoidance is a measure of a society's tolerance for uncertainty and ambiguity. It indicates to what extent a culture programs its members to feel either uncomfortable or comfortable in unstructured situations. A direct implication from cultural uncertainty avoidance to security selection is the amount of uncertainty that can be observed in investment portfolios. Funds from countries with high levels of uncertainty avoidance countries may be less likely to

invest abroad because of the more uncertain environment compared to the home market. Therefore we expect to observe lower levels of investment in the US by funds from high uncertainty avoiding countries. We also expect uncertainty avoidance to impact the amount of diversification that is present in the international funds' portfolios. Prior literature shows, and we also test this in the previous section, that international funds focus their holdings to few large visible firms. We expect funds from countries with high uncertainty avoidance to concentrate their holdings to few visible firms, and that their portfolios of securities are on average more concentrated than other international funds' portfolios. More formally we test the following two hypotheses

H 7a: Funds from countries with high uncertainty avoidance have less total investment in the US.

H 7b: Funds from countries with high uncertainty avoidance have smaller amounts of diversification in the US because their holdings are concentrated in few visible, large multinational enterprises..

The second Hofstede dimension, masculinity relates to Barber and Odean's research on male versus female investors behavior. Barber and Odean (2001) show that male investors with more overconfidence have higher average turnover in their portfolios. Graham, Harvey, and Huang (2006) show that individual US investors

who perceive themselves as competent – perhaps overconfidently – have lower home bias in their portfolios. We expect to observe similar behavior in funds from countries that have higher levels of masculinity. Since overconfidence may lead to lower levels of home bias, we predict that more masculine countries that have more overconfidence, invest more abroad, and therefore have higher average levels of investment in the US as well. We also expect to observe more dispersion in the US holdings of funds from countries with high levels of masculinity. High levels of masculinity and overconfidence may cause an investor to believe that they have more information or that they interpret information better, and this causes investment in a larger number of portfolios of securities on average. More formally:

H 8a: *Funds from countries with high masculinity have more total investment in the US*

H 8b: *Funds from countries with high masculinity have higher amounts of diversification in the US because their holdings are dispersed outside of just few visible, large multinational enterprises.*

The Hofstede measure for individualism distinguishes countries based on whether their residents display individualistic versus collectivist behavioral tendencies. Chui, Titman, and Wei (2005) suggest that investors from countries with higher individualism scores may suffer from higher degree of overconfidence or

similar self-attribution biases, which in turn translates to higher trading volume. Graham, Harvey, and Huang (2006) show that individual US investors who perceive themselves as competent – perhaps overconfidently – have lower home bias in their portfolios. We predict that funds from countries characterized by higher individualism will display lower levels of investment at home, and therefore more investment in the US. We also argue that countries with higher individualism scores and possibly higher degrees of overconfidence may on average think that they possess more information than investors from other countries or that they interpret information from variety of foreign markets better. The perceived information advantage by investors from high individualism countries would then also lead to a higher number of securities in the US and more diversification on average. Thus we investigate two additional hypotheses:

H 9a: Funds from countries with high individualism have more total investment in the US.

H 9b: Funds from countries with high individualism have higher amounts of diversification in the US because their holdings are dispersed outside of just few visible, large multinational enterprises.

4. Data and Methodology

4.1 Data

Institutional holdings data come from FactSet/LionShares database. Each of the institutions in the dataset can be identified with a unique holders' identifier, and the data include information on each security that the funds hold in their portfolios in year-end 2006 as a percentage of the fund's total portfolio. Data also include the funds' domiciles, descriptions of the investment style of the fund, the total equity value of the fund in US dollars, turnover, and identifiers for each of the securities held.

Since we are only focusing on the US holdings, we use CRSP and Compustat to obtain exchange data and company specific information. We also obtain market return information from CRSP and the Fama French factors from Kenneth French's website.¹¹

Explanatory variables are collected from several different sources. GDP, GDP per capita, projected GDP growth, exchange rate data, and inflation data for investor countries are obtained from United States Department of Agriculture.¹² Hofstede scores for investor countries' three primary dimensions of culture are obtained from Geert Hofstede's website.¹³ Bilateral trade flows are from NBER world trade database maintained by Feenstra.¹⁴ Familiarity variables language, border and distance are from Jon Haveman's international trade data source¹⁵ and are completed

¹¹Kenneth French's Data Library:

http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html

¹²United States Department of Agriculture: <http://www.usda.gov/wps/portal/usdahome>

¹³Geert Hofstede's dimensions of culture: <http://www.geert-hofstede.com/>

¹⁴NBER World trade database: <http://www.econ.ucdavis.edu/faculty/fzfeens/>

¹⁵Jon Haveman's International Trade data source: <http://www.haveman.org/>

with information obtained from CIA World Factbook.¹⁶ The time zone differentials between the US Eastern Standard Time and the investor country are obtained from Astronomical Applications Department of the US Naval Observatory.

4.2 Construction of the Master Data

We begin with the dataset of funds that contains a total of 37,346 institutions with unique identifiers. We delete funds that report fund domicile codes “Z1”, “Z2”, “Z3”, and “Z4” or funds with missing domicile codes. Altogether we have 21,557 international funds. Next, we drop all those funds that do not report US holdings at all reducing the number of funds to 9942 from 44 countries. We also exclude all the funds that do not report their equity value or style. This reduces the sample of funds to 3,487 funds from 36 countries. We merge the funds that have ownership in the US to CRSP. We drop those securities that are not traded in NYSE, AMEX or NASDAQ according to the stock database. This eliminates holdings by international funds in US securities that are cross-listed. We drop all those securities that do not have CRSP share codes 10 or 11. Generally this involves all foreign securities, REITS, funds, trusts and leaves us with 3,866 securities that are held by foreign institutions in year-end 2006. For comparison, the US institutional funds hold 4,593 securities with share codes 10 or 11 that are traded in NYSE, NASDAQ or AMEX and altogether there are 5,074 of such securities.

¹⁶ CIA World Factbook: <https://www.cia.gov/library/publications/the-world-factbook/>

Next, we merge the security data to Compustat. The firm characteristics from Compustat include book value of equity and earnings per share. We also generate a P/E ratio from the latest adjusted closing price for the year 2006 divided by 2006 earnings per share. We also estimate betas for the firms in the sample using firms' five year monthly returns against the S&P 500 return.

Table 1 shows detailed summary statistics for investor countries' holdings and fund characteristics. Panel A shows the style distribution of all the funds and Panel B shows the style distribution of the funds by country. The sample consists mainly of growth, aggressive growth and GARP style funds. Country level style analysis shows that the proportions of styles across countries are fairly similar. Majority of index funds are from Canada and Japan. Panel C reports summary statistics for investor countries' holdings for both value weighted and equally weighted country averages. The highest number of funds are from Canada (868 funds), UK (510) and Germany (315). In dollar terms, British funds have the largest amount invested in the US securities (\$274 billion) followed by Canadian funds (\$240 billion) and Swedish funds (\$64 billion). The highest percentage of the total portfolio is invested in the US on average by Bermudan funds (33%), Dutch funds (29.7%), and Danish funds (28.6%).¹⁷

Table 2 shows selected summary statistics for securities in the sample. The total sample consists of 5,074 securities and of those 3866 are held by international funds. The summary statistics are computed for 25 portfolios formed based on size

¹⁷ Bermudan funds drop from the regressions analysis because we do not have country specific explanatory variables available for Bermuda.

and market-to-book value. International funds have ownership in all of the 25 portfolios. The ownership is lower in the smaller size portfolios and also the median size of the securities held in those portfolios is larger compared to the median size of securities in the size/market-to-book portfolios formed from the entire security database. Overall, median firm size of each portfolio's international holdings is larger, the median betas of international holdings are mainly higher, and median market-to-book ratios are very similar compared to the medians in the size/market-to-book portfolios formed from the entire security database.

4.3 Methodology

In this section we create several measures for funds' ownership and diversification in the US securities. First, we construct a measure for funds' total allocation in the US securities. We sum the percentages of each funds' portfolio that is allocated to the 5,074 securities that meet the criteria (NASDAQ, NYSE, AMEX with share codes 10 and 11 and closing price information).

$$Total_j = \sum_{i=1}^N pct_{ij} \quad (1)$$

Where the percentage $Total_j$ is the sum of the percentages pct_{ij} allocated to each security i by fund j . Figure 1 displays the distribution of funds' allocation in US securities as a percentage of the funds' total portfolio. Panel A shows the US allocation for the entire sample of 3487 funds from 36 countries. Panel B shows the US allocation for geographically near countries, or for the nearest 25th percentile of

funds. Panel C displays the US allocation for geographically far countries, or for the furthest 75th percentile of funds. Panels D and E show the US allocations by funds from countries that are located in nearby time zones (less than 5 hours away from US Eastern Standard Time) in Panel D and far away time zones (more than 5 hours away) in Panel E. Panels F and G show the US allocation by funds from countries with low levels of uncertainty avoidance in Panel F and high levels of uncertainty avoidance in Panel G. In all panels the US allocations are skewed to the left, so that majority of the funds allocate less capital to the US than US' share of world market capitalization (roughly 33% in year end 2006). The skewness is higher in panels C, E, and F, when the samples include funds from geographically distant countries, countries in far away time zones, and countries that have high levels of uncertainty avoidance.

Next, we create a measure of dispersion for funds' holdings in the US. We use 25 size/market-to-book portfolios as a benchmark for expected holdings in the US securities. The dispersion measures funds' deviation from the expected benchmark, or the funds' average under and overweighting of the benchmark portfolios. The expected allocation is the total share of market values of all securities that belong to each of the 25 portfolios as a percent of the total US market capitalization:

$$Expected_p = \frac{\sum_{i=1}^P MV_i}{\sum_{i=1}^N MV_i} \quad (2)$$

Where the Expected_p is each of the 25 portfolio p's share of the total US market capitalization The actual allocation to each of the 25 portfolios by funds is calculated as a share of the funds total US investment:

$$Actual_j = \frac{\sum_{i=1}^P pct_{ij}}{\sum_{i=1}^N pct_{ij}} = \frac{\sum_{i=1}^P pct_{ij}}{Total_i} \quad (3)$$

Where the fund j's actual investment, pct_{ij}, in each portfolio p is the sum of securities i that the fund j holds in each of the 25 portfolios as a share of all of fund j's US holdings.

Next, we calculate the deviation from the expected investment for each fund in the 25 portfolios. We call each of the 25 measures of deviation by fund j from portfolio p BIAS_{pj}:

$$BIAS_{pj} = \frac{\sum_{i=1}^P pct_{ij}}{\sum_{i=1}^N pct_{ij}} - \frac{\sum_{i=1}^P MV_i}{\sum_{i=1}^N MV_i} \quad (4)$$

Where BIAS_{pj} is the difference between fund j's actual allocation to portfolio p and expected investment to portfolio p. Figure 2 shows the expected allocations and the biases that several groups of investor funds have in their investments in 25 US portfolios formed based on size and market-to-book ratios. Panel A. shows the expected allocation to 25 portfolios. Nearly 90% of the US market capitalization is in the largest five portfolios. The largest share of market capitalization is in the largest medium market-to-book portfolio. The fifteen smallest size portfolios, or the three

smallest size quintiles, have only a small percent of the total market capitalization, approximately 5% of the total expected investment. Deviations from the expected allocation are calculated in Panels B through I. In Panel B the deviation from the expected allocation is displayed for all funds, first by calculating value weighted country average and then by equally weighting the averages for all investor countries. Panel C shows the value weighted under and over weightings for the entire sample of funds. Panels D and E display the value weighted average under and over weightings of the portfolios for geographically near countries (nearest 25th percentile of funds) and distant countries (furthest 75th percentile of funds). Panels F and G show the value weighted averages for funds in near and far time zones (less than 5 hours from US Eastern Standard Time and more than 5 hours from US Eastern Standard Time). Finally, Panels H and I show the value weighted average under and over weightings for low and high uncertainty avoiding countries (low= Hofstede UAI<36, high = Hofstede UAI>64). Findings in Panels B through I show that funds do not allocate their holdings according to expected market capitalizations. Overall, the funds seem to overweight the growth portfolios. This is not surprising considering that majority of funds in the sample are growth, aggressive growth, and GARP funds. Geographically distant funds and funds in far time zones overweight growth portfolios more and geographically near funds and funds in close time zones overweight value portfolios more.

Finally, the dispersion measure for funds becomes the summation of the deviations from the benchmark portfolios, scaled by the number of portfolios that the funds have positive investment in:

$$DISPERSION_j = \sqrt{\frac{\sum P BIAS_{pj}^2}{P}} \times 100 \quad (5)$$

where fund j 's $DISPERSION_j$ is calculated as the sum of the squared deviations from each of the 25 benchmark size/market-to-book portfolios. For an investment fund whose US allocations are made exactly in line with benchmark weights this measure will be zero. In contrast, the measure will be close to eleven for a fund whose US investments are highly concentrated in a single portfolio that has low share of the total market capitalization. Figure 3's Panels A through G display the dispersions of funds' holdings in the 25 size/market-to-book portfolios formed from 5,074 US securities. Panel A shows the distribution of dispersion for the entire sample of 3,487 funds from 36 countries. Panel B shows dispersions for geographically near countries, or for the nearest 25th percentile of funds. Panel C displays the dispersion of funds' holdings from geographically distant countries, or for the furthest 75th percentile of funds. Panels D and E show dispersions for funds from countries that are located in the nearby time zones (less than 5 hours away from the US Eastern Standard Time) and far away time zones (more than 5 hours away from the US Eastern Standard Time). Dispersion scores for majority of funds lie between two and four, but each Panel also shows that some funds have highly concentrated holdings and dispersion scores between nine and eleven. Geographically distant funds, funds in far away time

zones, and funds from high uncertainty avoidance countries seem to have less diversified holdings and therefore higher dispersion scores.

In the regression analysis, the independent variables are grouped in familiarity/information variables, macroeconomic variables, fund specific variables, and cultural variables. Familiarity variables that have been shown to explain part of international diversification in prior literature include language, distance, and trade. *Common language* is a dummy variable equal to one if the investor country shares a common language with the US. In addition to a country's official language, also countries with English speaking population of 9% or more take on value one. We expect English speaking countries to invest more in the US based on prior literature's findings and to have more dispersed ownership. *Distance* controls for the geographical proximity of the investor country to the US. Distance is calculated as the logarithm of distance in miles between country pairs' capital cities. We expect distance to decrease the total amount invested in the US securities and lead to less dispersed ownership. *Scaled Trade* is calculated as the sum of all imports and exports between the US and an investor and it is scaled by the investor's GDP. We expect scaled trade to take a positive sign, so that the more trade an investor country has with the US the more familiarity they have, and that may lead to larger investment in the US and more dispersed ownership.

The next set of control variables includes the macroeconomic variables for investor countries. The signs of some of the variables are not necessarily clear, and some of them are merely included to make sure that our other independent variables

are not correlated with an omitted macroeconomic characteristic of investor countries. These macroeconomic variables include historical *stock market growth*, *real GDP*, *real GDP per capita*, *real exchange rate differential*, and *historical GDP growth*.

Fund specific control variables include the amount of *home bias* in each fund's portfolio, calculated as the percentage invested at home minus the home market's market capitalization as a share of the world. *Emerging market indicator* takes on value of one if fund is domiciled in a developing country. *Fund size* is the total value of funds' equity.

Cultural dimensions are from Hofstede's five primary dimensions of culture. masculinity, uncertainty avoidance, and individualism take on values between 0 and 120 for investor countries.

5. Results

5.1. US Investment by International Institutions

First we focus on testing for determinants of funds' US allocation and diversification. The dependent variables in the regressions include the total percentage invested in the US of funds' total equity (equation 1) and dispersion in the portfolios of securities that funds are invested in (equation 5). The explanatory variables are grouped into familiarity variables, fund characteristics, macroeconomic variables, and cultural variables.

Table 3 shows the results from OLS regressions that test for determinants of funds' US allocation. The dependent variable is the percent of portfolio allocated to

the US. The first four columns show the regression estimates at fund level and the last four columns show results for investor country value weighted averages. The results show that geographical distance is the only familiarity variable that significantly impacts the amount allocated to the US. Common language has a positive effect on the US allocation at the fund level analysis but the sign reverses in the country level analysis, perhaps suggesting that familiarity is more of a small fund phenomenon. Geographical distance has a significant negative effect on the funds' and countries' US allocation. This finding is consistent with hypothesis 1. Also, in the fund level analysis, time zone differential has a significant negative impact on funds' US allocation. One hour increase in the time differential corresponds to 1% decrease in funds' US holdings. Also, when the time differential is included in the analysis, the magnitude of geographical distance reduces by almost half. This result supports hypothesis 4 that more information increases the allocation into a target market. The economic magnitudes of both geographical distance and time zone differential remain high when they are included simultaneously in the analysis. One standard deviation increase in geographical distance reduces US allocation by 6.7% and one standard deviation increase in time differential reduces US allocation by 3.3%. Cultural variable uncertainty avoidance has a significant negative impact on the amount allocated to the US. A ten point increase in the level of uncertainty avoidance (takes on values between 0 and 120) leads to 1.2 to 1.9% decrease in the US allocation. This result supports hypothesis 7a, that high level of uncertainty avoidance leads to less overall investment in markets that are less familiar to the investors or that the

perceived knowledge about the market is lower. Individualism has a positive effect on the US allocation only at the fund level analysis so that a ten point increase in individualism leads to 1% increase in the US allocation, consistent with hypothesis 9a. The economic significance of cultural variables is comparable to the economic significance of the familiarity/information variables. One standard deviation increases in uncertainty avoidance and individualism correspond to 2.6% decrease and 1.55% increase in the US allocation and one standard deviation increases in geographical distance and time differential lead to 6.1% and 2.5% decreases in the US allocation in specification four. The economic significances of the fund level regression results for cultural and familiarity/information variables are similar in magnitude in country level analysis in specifications five through eight¹⁸.

Table 4 reports results from OLS regressions that test for determinants of funds' holdings' dispersion in the US securities. The dependent variable is dispersion (from equation 5) or the under and overweighting of the 25 US portfolios formed based on size and market-to-book ratio. The lower the measure of dispersion the more diversified the fund is in the US portfolios. Overall the results support hypothesis 2 and 5, that familiarity and information impact the diversification behavior in the US. The results show that geographical distance and time zone differential have a significant and positive effect on the concentration of funds' US holdings. In specification four, one standard deviation increase in geographical distance

¹⁸ Table 3 b reports the results from regression analysis similar to Table 3, but excludes those funds that rank in the top 10 percentile of dispersion (>8.75). The results remain mostly unchanged in statistical significance, magnitude and economic significance.

corresponds to a 0.46 point increase in the dispersion measure and a one standard deviation increase in time zone differential corresponds to a 0.11 point increase in the dispersion measure. Also, uncertainty avoidance has a marginally significant and positive effect on the concentration of funds' holdings in specifications one through four. One standard deviation increase in uncertainty avoidance leads to 0.07 point increase in the dispersion measure. This finding supports hypothesis 7b, that countries with high levels of uncertainty avoidance concentrate their holdings more in uncertain environments. Individualism and masculinity have their expected signs in the country level analysis, but the coefficients are not statistically significant.

5.2. Risk Taking by International Institutions

Next, we turn our focus to risk taking behavior by funds in the US portfolios. Table 5 shows the results from logistic regressions (LOGIT) that test for funds' probabilities of investing any amount in the riskiest US portfolios. In the first four regressions, the dependent variable (1,0) is equal to one if a fund has any amount invested in the two smallest size quintiles of securities and zero otherwise. In the last four regressions the dependent variable (1,0) takes on value one if a fund has any amount invested in the two lowest market-to-book quintiles and zero otherwise. The results support hypothesis 3, that countries with less familiarity with the US, measured with geographical distance, are less likely to invest in the risky portfolios, when riskiness is measured by size. However, geographical distance has no effect on investment in the value stock portfolios. Opposite to what hypothesis 6 expects, time

zone differential has a positive and significant effect on the funds' likelihood of investing in both small and value stocks in the US market. One hour increase in the time differential increases the probability of investment by 1.4 to 6.4% depending on the specification. Masculinity is positive and significant, so that more masculine countries with higher levels of overconfidence are more likely to invest in value stocks. Individualism has a negative and significant sign in value stock regressions.

5.3. US Investment and Diversification by International Growth Funds

In this last section, we repeat the analysis from Tables 3 and 4 for only those funds that specify their style as growth, aggressive growth, or GARP. These robustness checks help ensure that the previous findings of underinvestment and under diversification are not due to different fund objectives. Table 6 shows the results from OLS regressions that test for determinants of growth funds' US allocation. The dependent variable is the percent of portfolio allocated to the US for both funds and for value weighted country averages. The results show that geographical distance and time zone differential both have a significant negative effect on the amount growth funds and countries allocate to the US similarly to the sample of all the funds in Table 3. The negative effect of distance reduces significantly when the time zone differential is included in the analysis, but the magnitude of the distance coefficient is larger in Table 6 than in the sample consisting of all the funds. Neither distance nor time zone differential are statistically significant in the country level analysis. Cultural variable uncertainty avoidance has a significant negative impact on the amount allocated in the US, so that in the growth fund sample

a ten point increase in uncertainty avoidance leads to 2.2% decrease in the growth funds' average US allocation.

Table 7 shows the results from OLS regressions that test for determinants of growth funds' holdings' dispersion in the US portfolios. The first four columns show regression results at fund level and the last four columns show results for investor country value weighted averages. Funds that have higher than the 90th percentile dispersion (>8.75) scores are excluded from the analysis in the first four regressions. The results are similar to the results for the whole sample presented in Table 4. Geographical distance and time zone differential have a significant and positive effect on the concentration of funds' US holdings in the fund level analysis. Also, uncertainty avoidance has a positive and significant effect on the concentration of growth funds' holdings. Overall, the robustness checks support hypothesis 1, 2, 4, 5, 7a and 7b.

6. Conclusion

International portfolio allocation literature has established that familiarity and cultural traits affect investors' decision making processes. Most studies in this literature have been limited to comparison "domestic versus foreigners". We enrich this knowledge by showing that culture and familiarity also affect security selection across foreign countries, so that foreign funds from different cultural environments and geographical distance tend to invest in a different set of securities than institutions from close countries, when they invest in a foreign market.

We also include a new variable, time zone differential, in the analysis to distinguish investment decisions made based on familiarity caused by nearby geographical distance versus decisions made based on information flow related time zone effect. If countries that are geographically far from the US, but are located near or in the US Eastern Standard Time allocated a higher amount of capital to the US than countries that are equally distant but also on the other side of the world, would support information based explanation to capital flows rather than familiarity based explanation.

We find that time zone differential has a significant and negative effect on portfolio allocation and diversification in the US. Funds from countries in far away time zones underweight the US market more and diversify their holding less after controlling for geographical distance. The effect of geographical distance reduces by half after controlling for time zone differential, but remains significant determinant of total portfolio allocation and diversification. This finding supports both familiarity and information based decision making, but reduces the significance of familiarity. The results show that foreign funds from geographically distant countries and countries in faraway time zones tend to invest in a narrower set of securities in the US than institutions from geographically close countries and countries in nearby time zones. Overall our results add support to the literature on geography of finance (Malloy 2003).

Also, cultural uncertainty avoidance, masculinity, and individualism affect portfolio allocations and risk exposures so that high uncertainty avoidance leads to

more underweighting of a small set of portfolios of US securities. High masculinity increases the probability of risk taking, and high individualism lowers the probability of risk taking.

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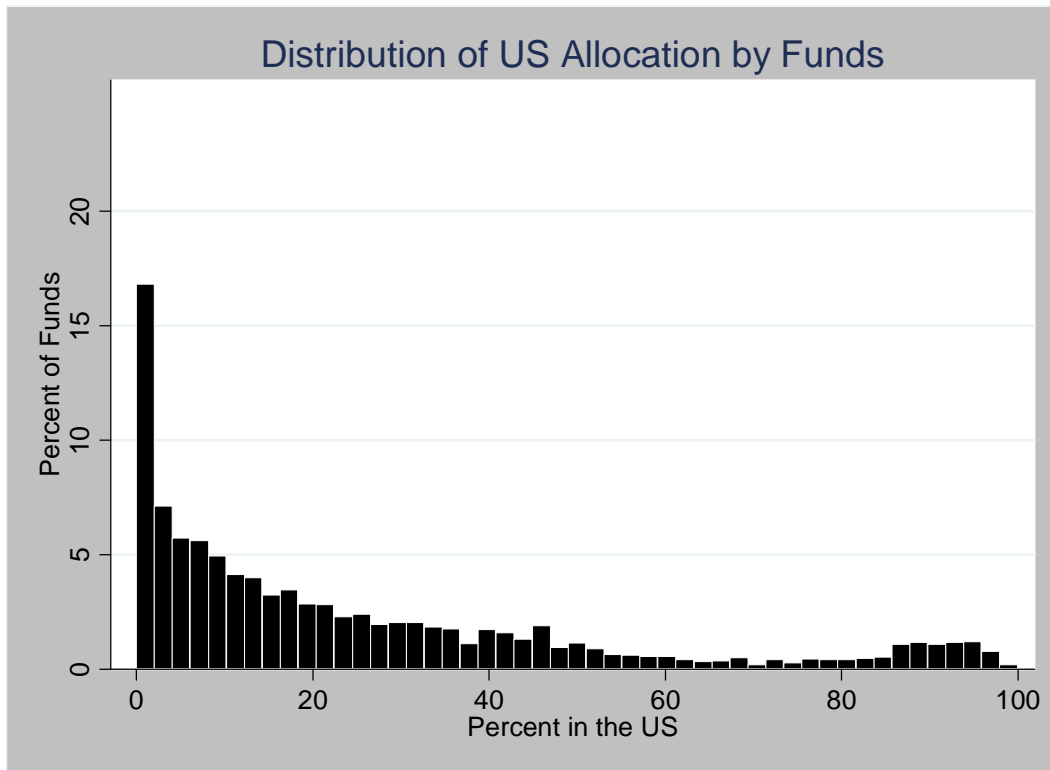
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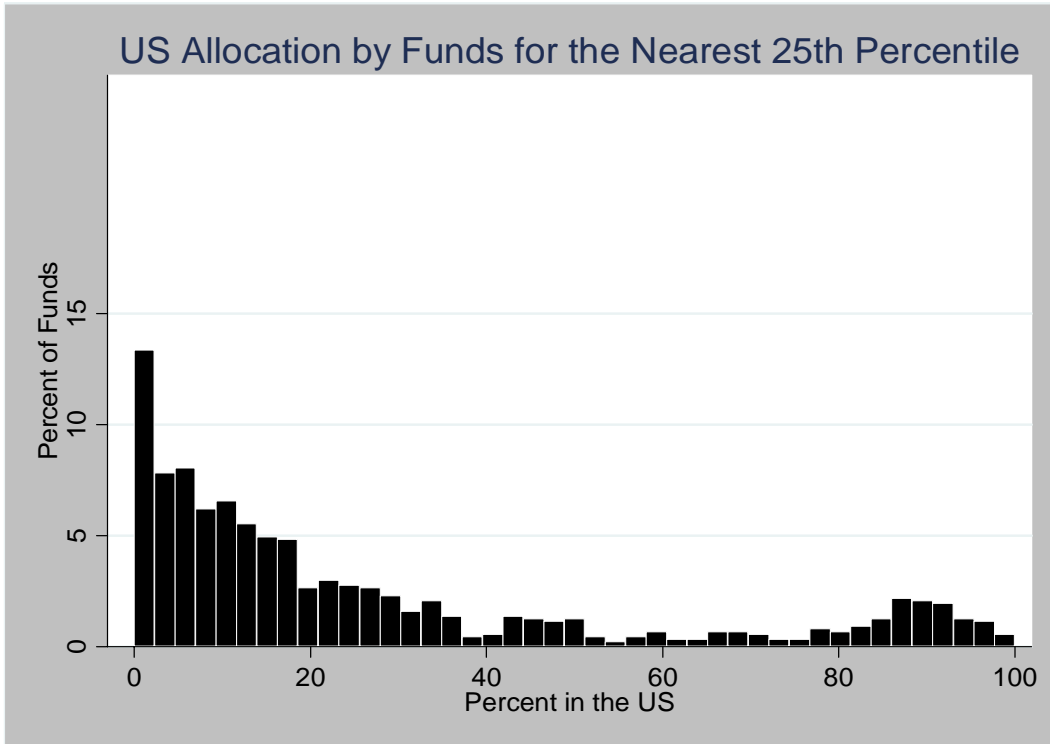
Figure 1. Distribution of US Allocation by Funds as a Percent of their Total portfolio

Figure 1 displays the distribution of funds' allocation in US securities as a percentage of the funds' total portfolio. Panel A shows the US allocation for the entire sample of 3487 funds from 36 countries. Panel B shows the US allocation for geographically near countries, or for the nearest 25th percentile of funds. Panel C displays the US allocation for geographically far countries, or for the furthest 75th percentile of funds. Panels D and E show the US allocations by funds from countries that are located in nearby time zones (less than 5 hours) from the US Eastern Standard Time zone in Panel D and far away time zones (more than 5 hours away) in Panel E. Panels F and G show the US allocation by funds from countries with low levels of uncertainty avoidance in Panel F and high levels of uncertainty avoidance in Panel G. In all panels the US allocations are skewed to the left, so that majority of the funds allocate less capital to the US than US' share of world market capitalization. The skewness is higher in panels C, E, and F, when the samples include funds from geographically distant countries, countries in far away time zones, and countries that have low levels of uncertainty avoidance.

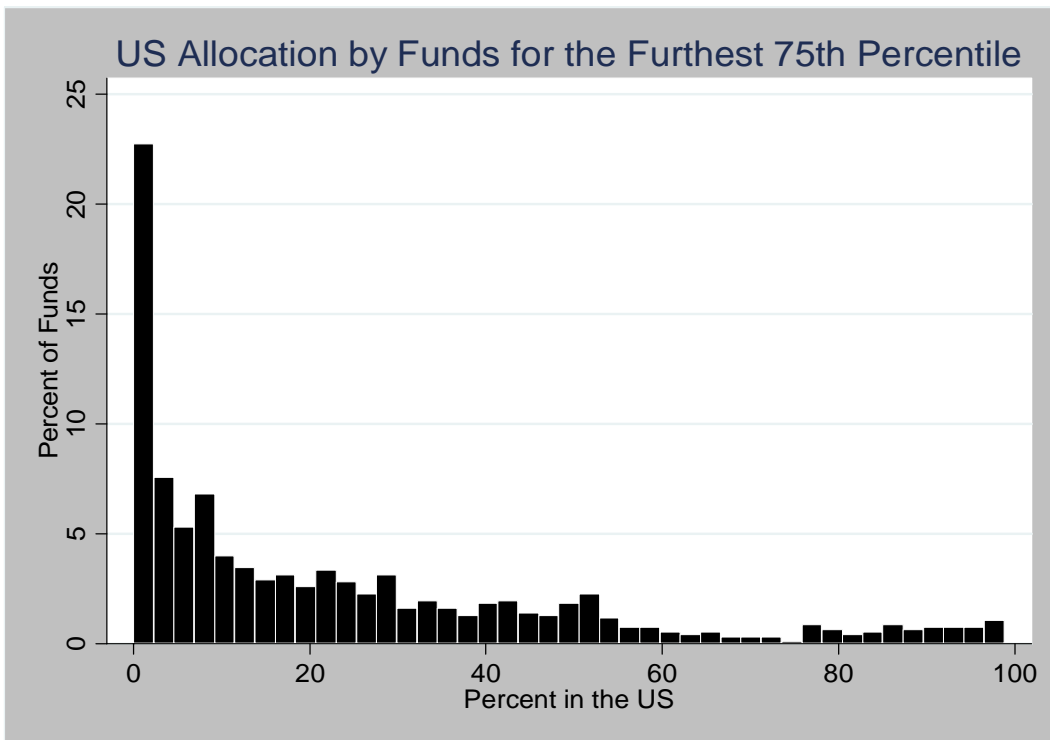
Panel A



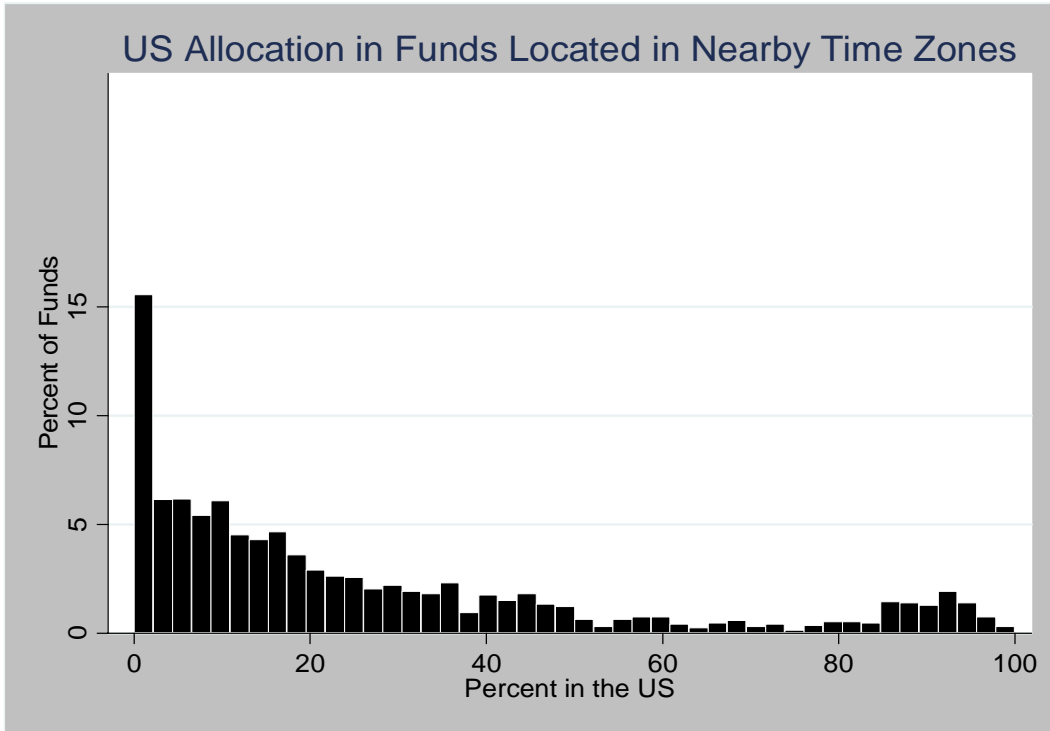
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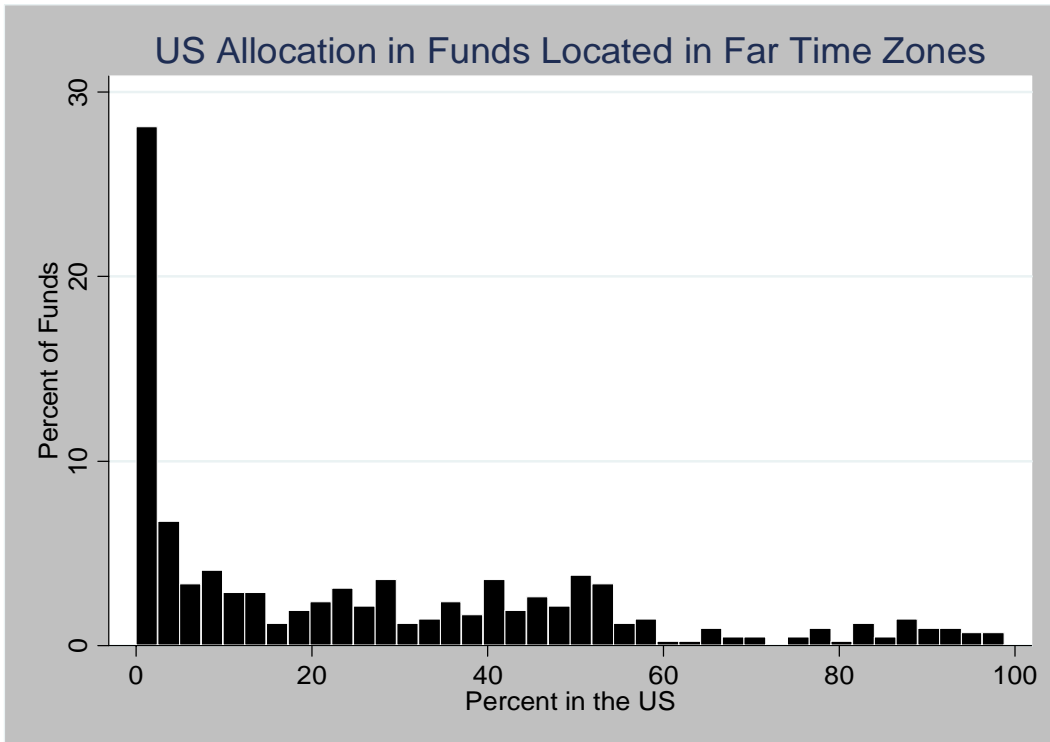
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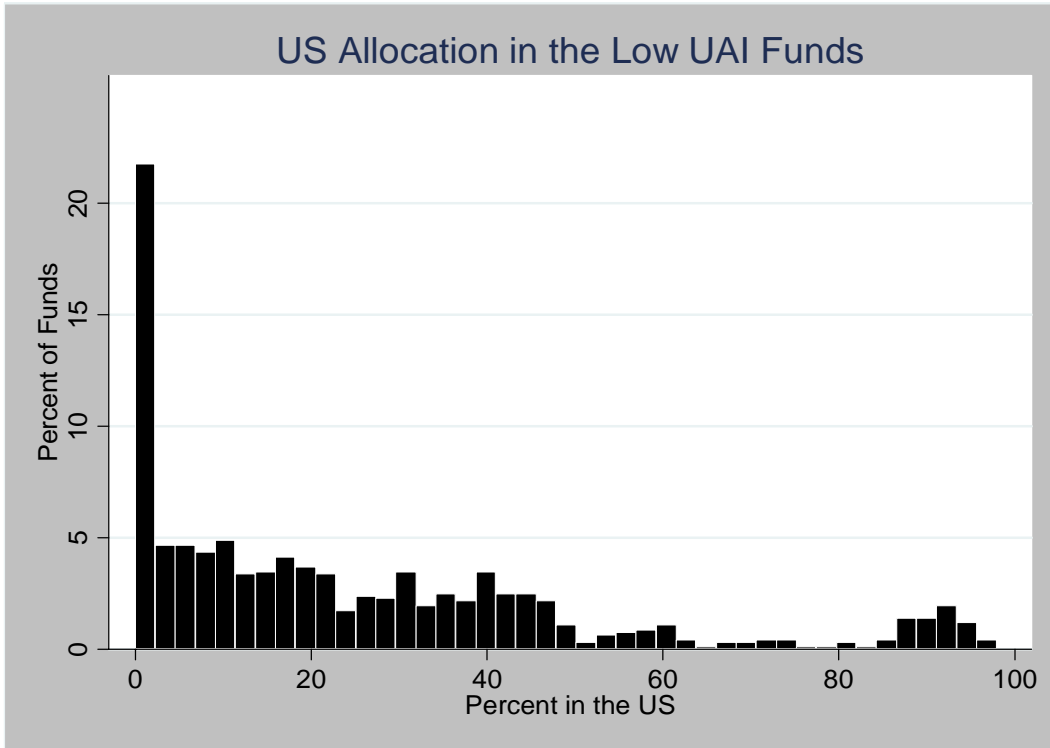
Panel D



Panel E



Panel F



Panel G

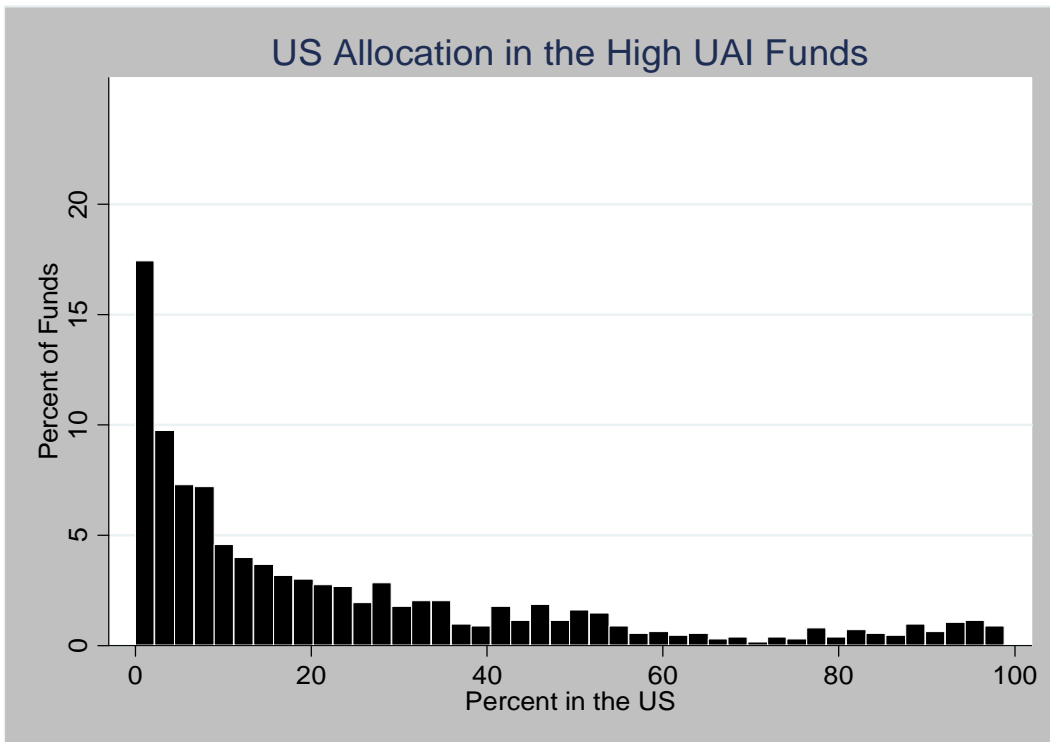
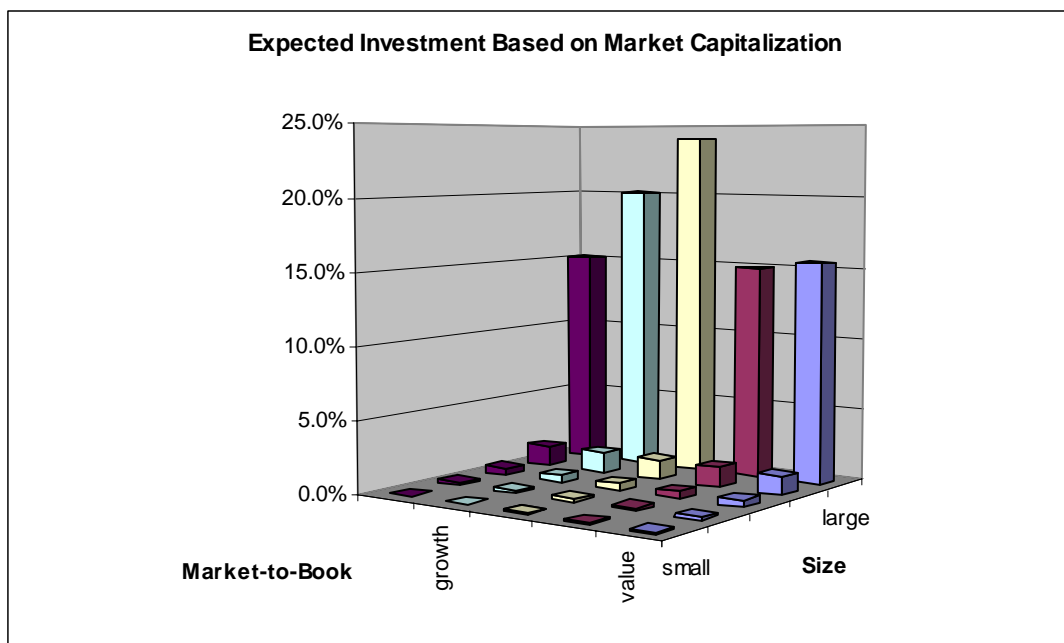


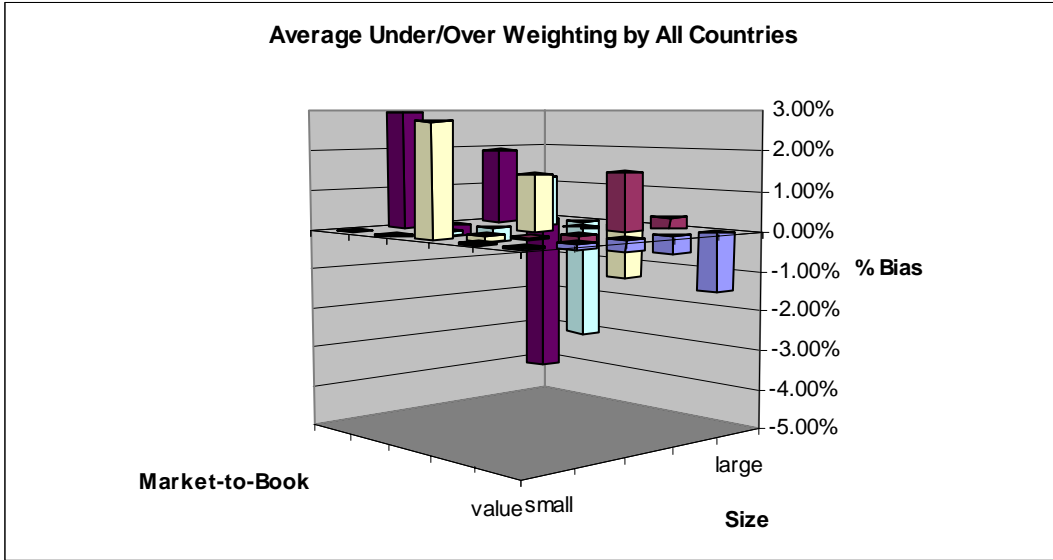
Figure 2. Under/Overweighting of the 25 Size/Market-to Book Portfolios in the US

Figure 2 shows the expected and actual allocations to 25 US portfolios formed based on size and market-to-book ratios. Panel A. shows the expected allocation to 25 portfolios. The expected allocation is the total share of market values of all securities that belong to each of the 25 portfolios as a percent of the total US market capitalization. The sample consists of 5103 securities that are NYSE, NASDAQ, or AMEX traded, have CRSP share codes 10 or 11, and closing price information available. Deviations from the expected allocation are calculated in Panels B through I. Funds' deviation from the expected allocation (actual-expected), is funds' actual allocation to each of the 25 portfolios as a percentage of funds' total US investment less the market share of the portfolio. In Panel B the deviation from the expected allocation is displayed for all funds, first by calculating value weighted country average and then equally weighted average for investor countries. Panel C shows the value weighted under and over weightings for the entire sample of funds. Panels D and E display the value weighted average under and overweighting of the portfolios for geographically near countries (nearest 25th percentile of funds) and distant countries (furthest 75th percentile of funds). Panels F and G show the value weighted averages for funds in near and far time zones (less than 5 hours from US Eastern Standard Time and more than 5 hours from US Eastern Standard Time). Finally, Panels H and I show the value weighted average under and over weightings for low and high Uncertainty Avoiding countries (low= Hofstede UAI<36, high = Hofstede UAI>64). Panel A shows that nearly 90% of the US market capitalization is in the largest five portfolios. The largest share of market capitalization is in the medium market-to-book portfolio. The fifteen smallest size portfolios have only a small percent of the total market capitalization, approximately 5% of the total expected investment. Findings in Panels B through I show that funds do not allocate their holdings according to expected market capitalizations. Overall, the funds seem to overweight the growth portfolios. This is not surprising considering that majority of funds in the sample are growth, aggressive growth, and GARP funds. Geographically distant funds and funds in far time zones overweight growth portfolios more and geographically near funds and funds in close time zones overweight value portfolios more.

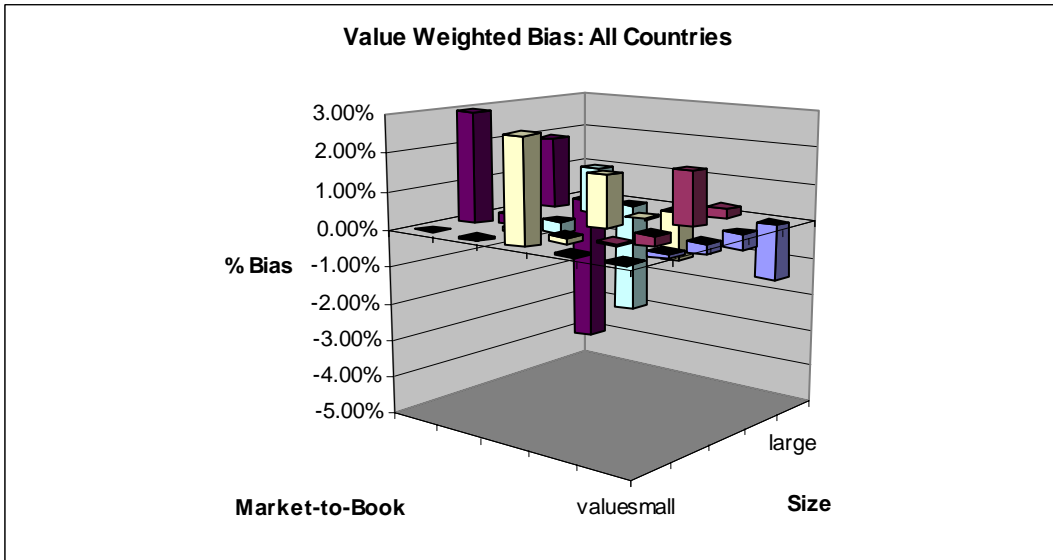
Panel A



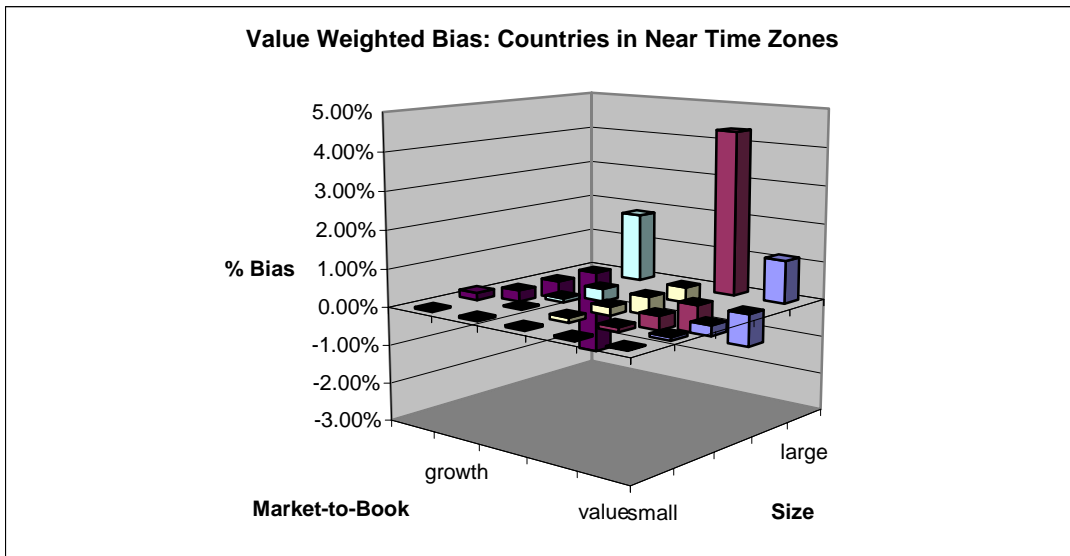
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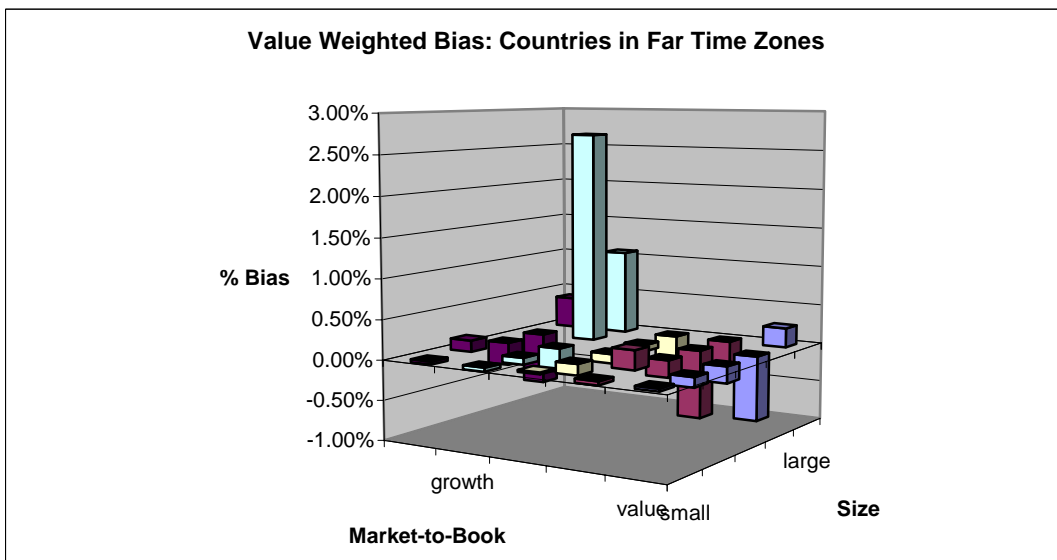
Panel C



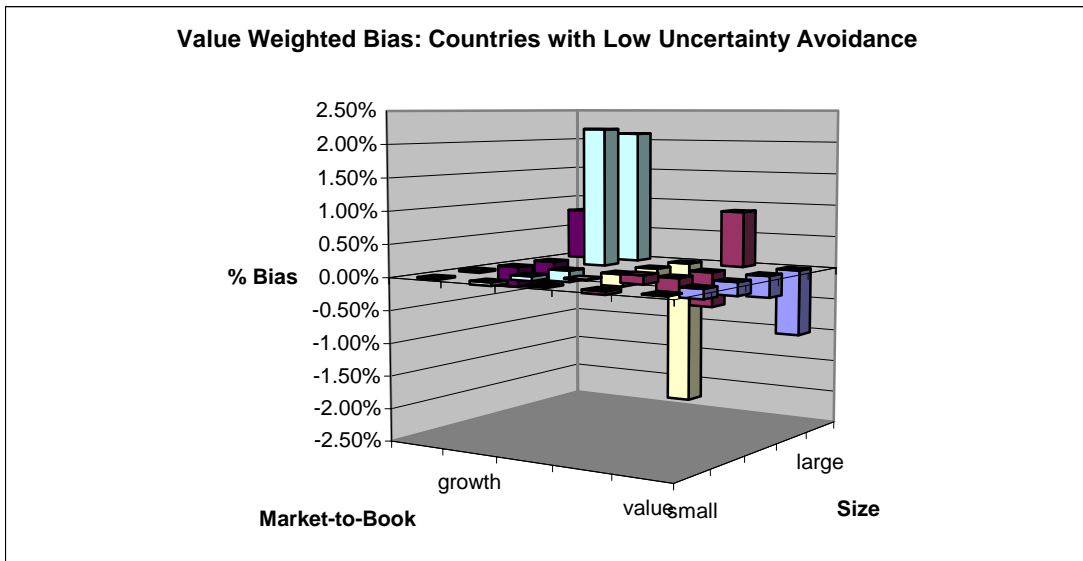
Panel F



Panel G



Panel H



Panel I

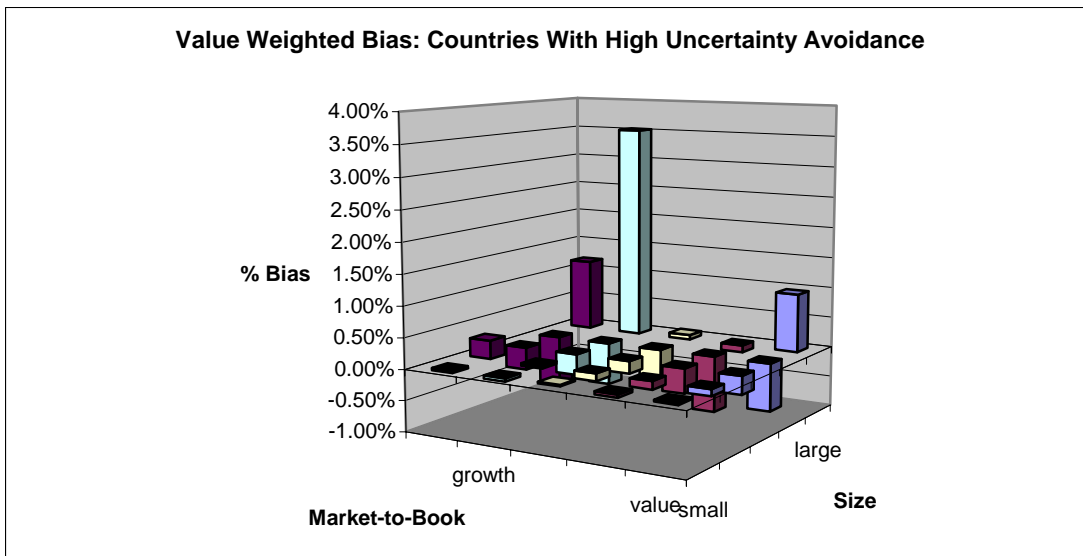
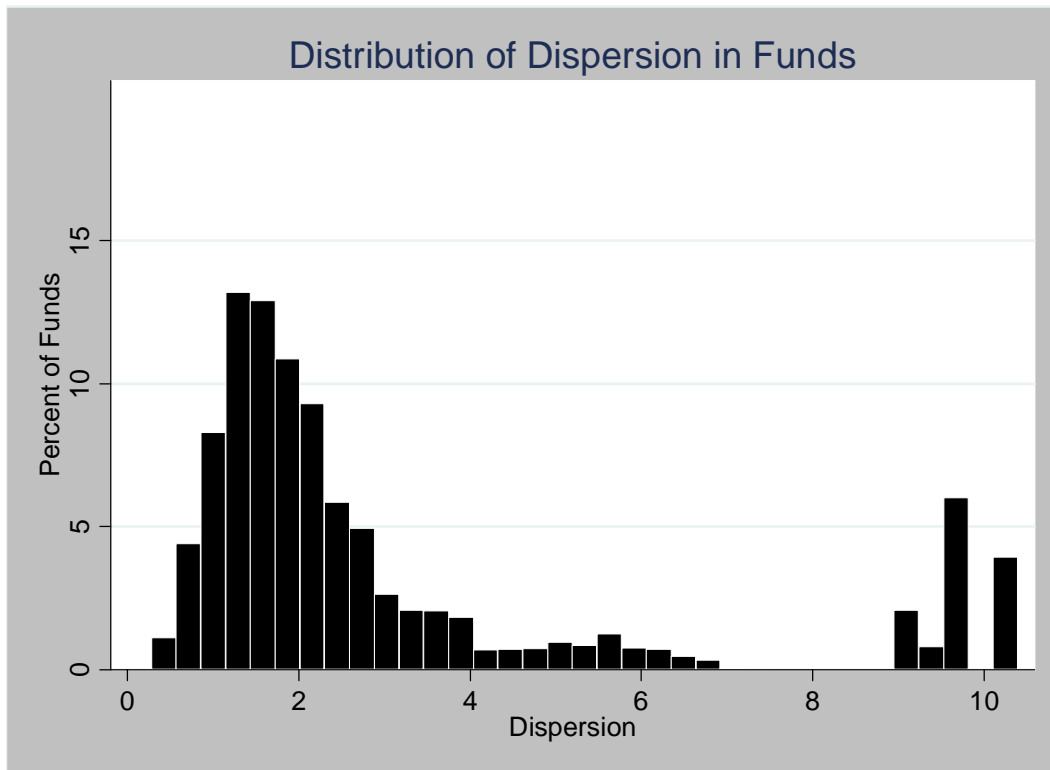


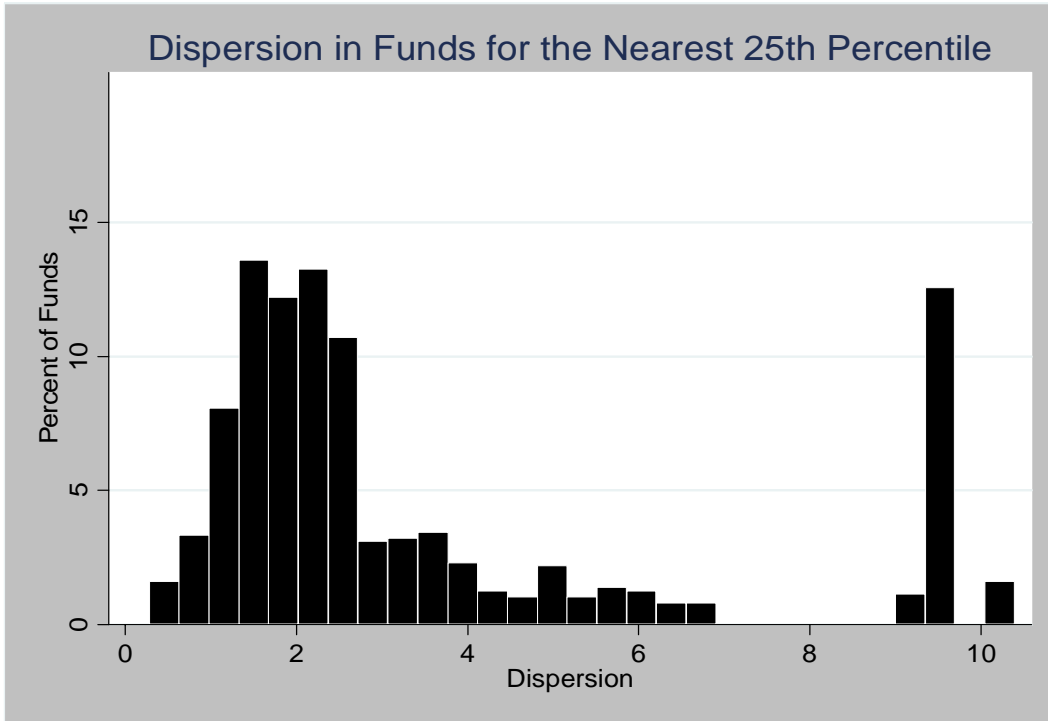
Figure 3. Distribution of US Dispersion by Funds

Figure 3's Panels A through G display the dispersions of funds' holdings in the 25 size/market-to-book portfolios formed from 5103 US securities. The US securities are from CRSP and must be traded in NYSE, NASDAQ, and AMEX and have share codes 10 or 11. Dispersion is from equation XXX measured as the square root of the squared sum of deviations by each fund from each of the 25 portfolios scaled by the number of portfolios the fund is invested in. Panel A shows the distribution of dispersion for the entire sample of 3487 funds from 36 countries. Panel B shows dispersions for geographically near countries, or for the nearest 25th percentile of funds. Panel C displays the dispersion of funds' holdings from geographically distant countries, or for the furthest 75th percentile of funds. Panels D and E show dispersions for funds from countries that are located in the nearby time zones (less than 5 hours away from the US Eastern Standard Time) and far away time zones (more than 5 hours away from the US Eastern Standard Time). Dispersion scores for majority of funds are between two and four, but each Panel also shows that some funds have highly concentrated holdings and dispersion scores between nine and eleven. Geographically distant funds, funds in far away time zones, and funds from high uncertainty avoidance countries seem to have less diversified holdings.

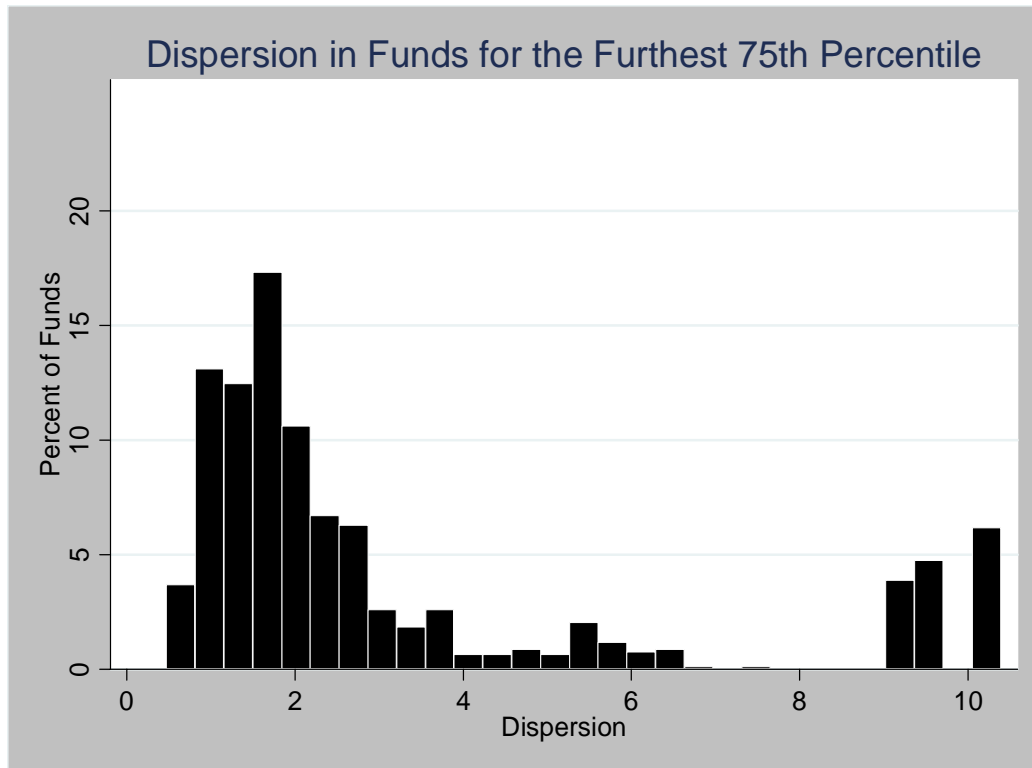
Panel A



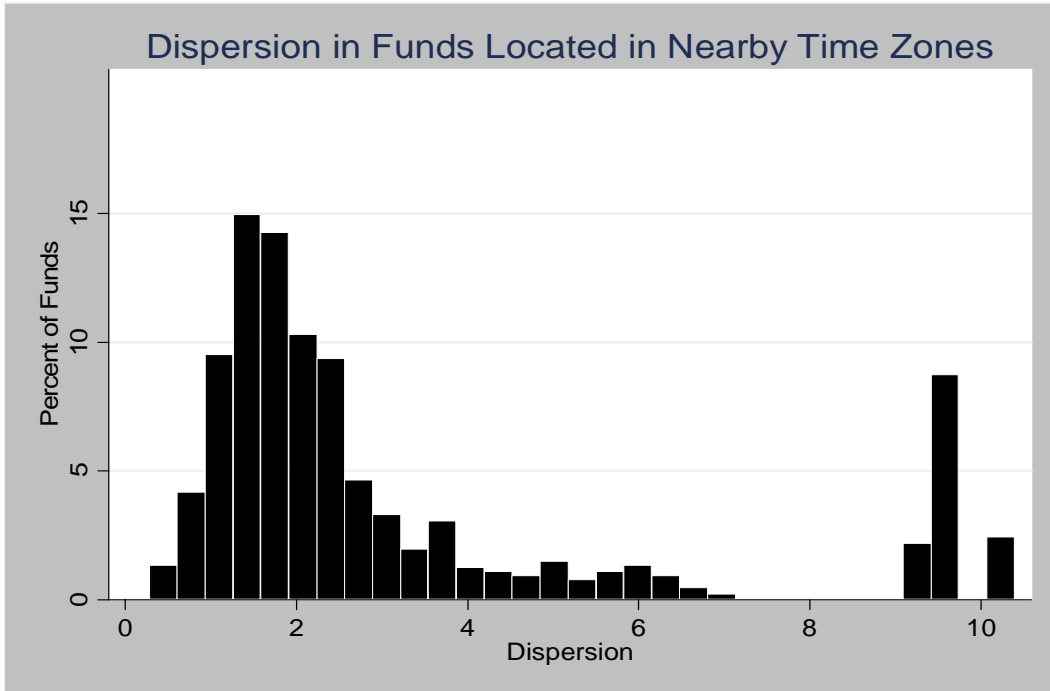
Panel B



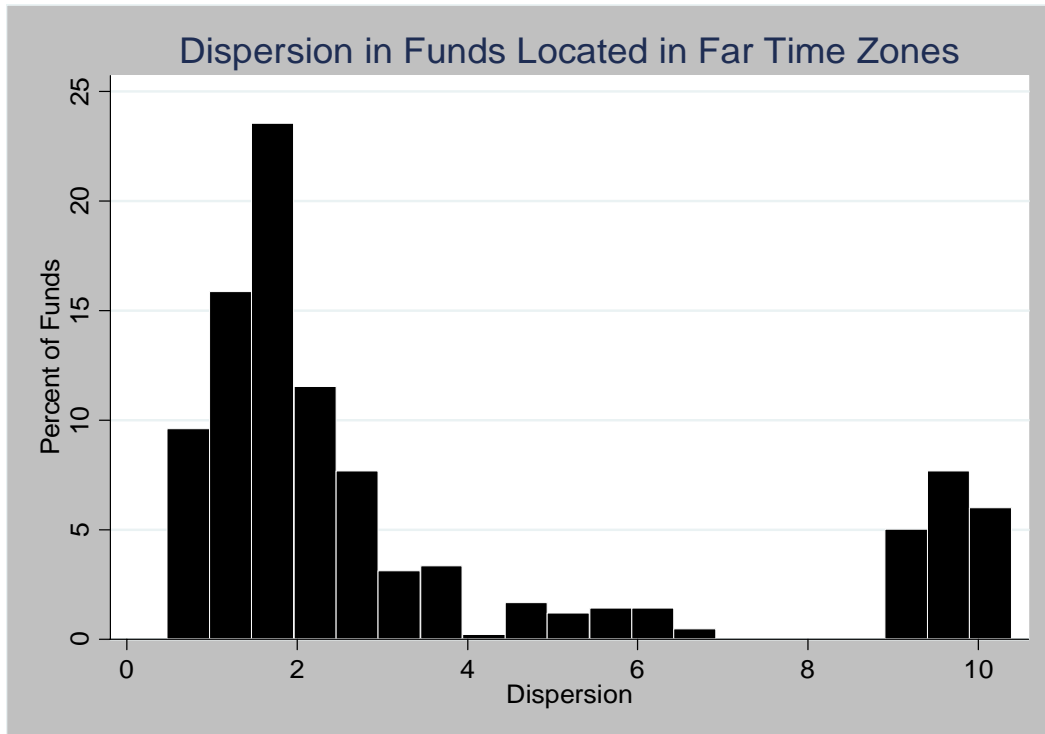
Panel C



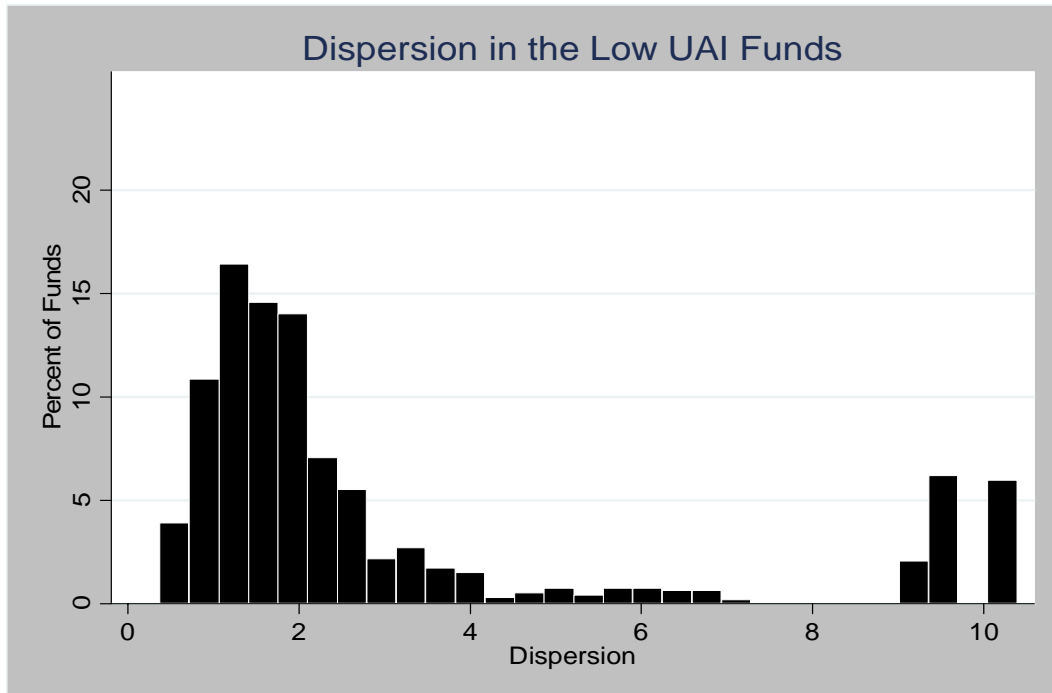
Panel D



Panel E



Panel F



Panel G

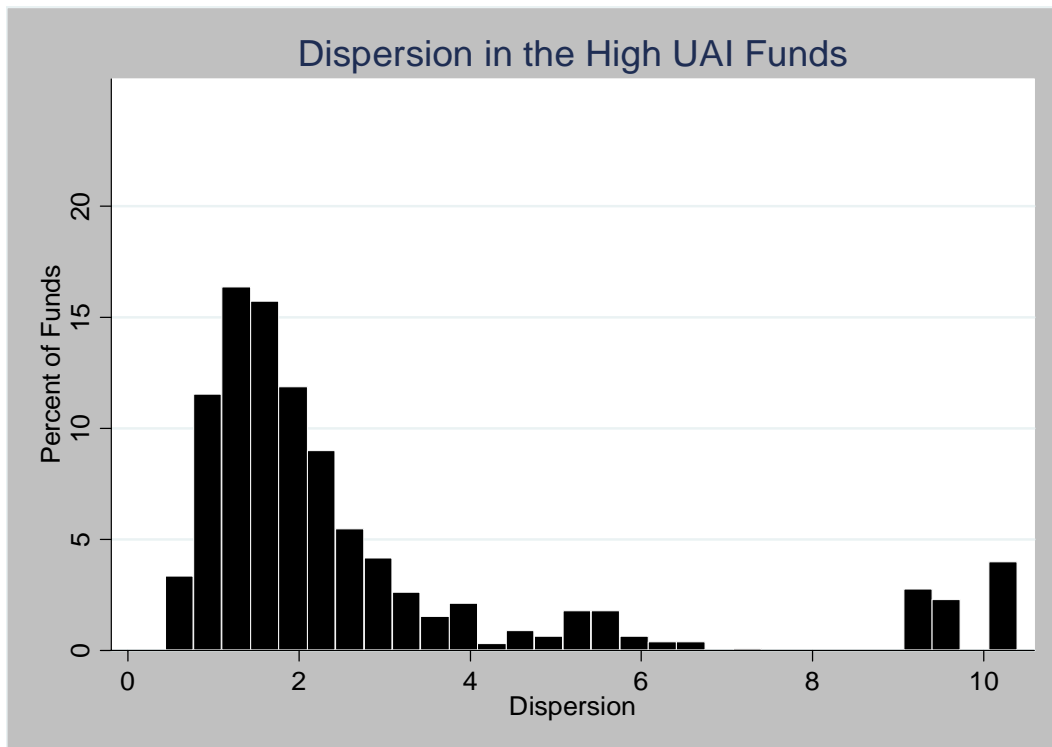


Table 1. Fund Characteristics

Table 1 displays summary statistics for 3,487 funds located in 36 countries. Panel A shows the style distribution of all the funds. Panel B shows the style distribution of the funds by country. Panel C's column one displays the number of funds from each of the investor countries, column two shows the value weighted average of the percent invested in the US of funds' total portfolio. The value weighting is done based on funds' equity value. Column three shows the value weighted average dispersion in countries' funds. Column four shows the total US investment by each country in aggregate in millions. Columns five and six show equally weighted average investments and dispersions for investor countries. The sample consists mainly of growth, aggressive growth and GARP style funds. The highest number of funds are from Canada (868 funds), UK (510) and Germany (315). In dollar terms, British funds have the largest amount invested in the US securities (\$274 billion) followed by Canadian funds (\$240 billion) and Swedish funds (\$64 billion). On average, the highest percentage of the total portfolio is invested in the US by Bermudan funds (33%), Dutch funds (29.7%), and Danish funds (28.6%).

Panel A

Holding Style	Frequency	Percent %	Cumulative %
Aggressive Growth	200	5.74	5.74
Core Value	73	2.09	7.83
Deep Value	58	1.66	9.49
GARP	1,615	46.31	55.81
Growth	637	18.27	74.08
Index	78	2.24	76.31
Value	511	14.65	90.97
Yield	315	9.03	100
	3,487	100	

Panel B

Country	Holding Style						
	Aggressive Growth	Core Value	Deep Value	GARP	Growth	Index	Total
AUSTRALIA	4	0	6	5	5	0	43
AUSTRIA	4	3	1	22	14	0	51
BELGIUM	3	3	2	48	6	2	78
BERMUDA	0	0	0	1	7	0	11
CANADA	61	8	11	261	170	38	868
CHINA	0	0	0	1	0	0	1
CZECH REPUBLIC	0	0	0	5	2	0	11
DENMARK	7	0	1	56	41	4	123
ESTONIA	0	0	1	2	2	0	6
FINLAND	3	0	0	18	11	1	54
FRANCE	5	6	1	53	25	3	109
GERMANY	9	8	4	170	53	2	315
GREECE	0	0	0	21	13	0	39
HONG KONG	1	0	1	12	1	0	28
HUNGARY	0	0	0	8	0	0	12
ICELAND	0	0	0	4	0	0	4
INDIA	4	1	0	8	3	0	17
IRELAND	0	1	0	28	5	0	43
ITALY	2	1	1	46	9	0	65
JAPAN	15	1	0	91	35	10	185
LUXEMBOURG	4	2	2	91	28	1	150
MALAYSIA	0	0	0	0	0	0	2
MEXICO	0	0	0	2	0	0	2
NETHERLANDS	4	1	0	35	11	1	63
NEW ZEALAND	0	0	0	0	0	0	1
NORWAY	5	0	3	31	8	0	59
POLAND	0	0	0	3	0	0	9
PORTUGAL	0	0	0	11	6	0	17
SINGAPORE	6	0	1	16	11	0	40
SLOVAKIA	0	0	0	3	2	0	6
SLOVENIA	3	0	1	16	5	0	37
SPAIN	2	7	1	73	14	2	125
SWEDEN	13	3	1	117	19	5	174
SWITZERLAND	15	5	2	127	46	4	228
UNITED ARAB EMIRATES	0	0	0	0	0	0	1
UNITED KINGDOM	30	23	18	230	85	5	510
Total	200	73	58	1,615	637	78	3,487

Panel C

Country	Number of Funds	Average % invested in the US, value weighted	Dispersion, value weighted	Total US investment, \$0000	Average US investment, \$0000	Average % invested in the US, equally weighted
AUSTRALIA	43	4.0%	23.4	\$415,100	\$9,653	10.1%
AUSTRIA	51	10.3%	6.0	\$173,547	\$3,403	27.2%
BELGIUM	78	13.9%	1.7	\$1,304,821	\$16,728	20.1%
BERMUDA	11	33.0%	6.7	\$1,045,907	\$95,082	56.6%
CANADA	868	20.1%	8.5	\$24,000,000	\$27,656	26.9%
CHINA	1	0.2%	108.0	\$156	\$156	0.2%
CZECH REPUBLIC	11	18.2%	13.7	\$12,275	\$1,116	30.0%
DENMARK	123	28.6%	5.6	\$2,738,908	\$22,268	40.4%
ESTONIA	6	0.4%	103.5	\$963	\$160	0.3%
FINLAND	54	5.4%	20.0	\$254,896	\$4,720	20.5%
FRANCE	109	13.1%	2.9	\$5,452,163	\$50,020	13.8%
GERMANY	315	8.7%	3.1	\$4,314,295	\$13,696	20.9%
GREECE	39	26.5%	1.9	\$100,072	\$2,566	38.0%
HONG KONG	28	0.9%	37.1	\$108,443	\$3,873	4.2%
HUNGARY	12	7.5%	63.4	\$8,800	\$733	18.1%
ICELAND	4	12.3%	4.2	\$20,711	\$5,178	22.7%
INDIA	17	0.3%	82.3	\$8,589	\$505	0.7%
IRELAND	43	26.0%	2.1	\$2,070,514	\$48,152	48.9%
ITALY	65	16.6%	1.6	\$1,556,955	\$23,953	22.8%
JAPAN	185	14.1%	2.3	\$5,344,449	\$28,889	36.1%
LUXEMBOURG	150	17.0%	2.7	\$837,718	\$5,585	27.6%
MALAYSIA	2	8.4%	1.3	\$3,777	\$1,888	21.8%
MEXICO	2	2.4%	93.3	\$3,607	\$1,803	2.4%
NETHERLANDS	63	29.7%	3.1	\$5,990,098	\$95,081	28.4%
NEW ZEALAND	1	3.3%	106.8	\$586	\$586	3.3%
NORWAY	59	26.9%	8.3	\$4,823,934	\$81,762	26.9%
POLAND	9	1.1%	68.5	\$3,860	\$429	3.7%
PORTUGAL	17	15.6%	4.8	\$65,148	\$3,832	40.2%
SINGAPORE	40	2.5%	28.1	\$369,244	\$9,231	23.2%
SLOVAKIA	6	25.8%	3.9	\$3,028	\$505	55.1%
SLOVENIA	37	5.9%	33.0	\$27,847	\$753	10.8%
SPAIN	125	6.0%	2.6	\$361,138	\$2,889	11.2%
SWEDEN	174	16.7%	4.5	\$6,410,343	\$36,841	27.3%
SWITZERLAND	228	25.5%	3.5	\$4,959,880	\$21,754	29.2%
UNITED ARAB EMIRATES	1	0.2%	107.9	\$1,230	\$1,230	0.2%
UNITED KINGDOM	510	10.4%	4.4	\$27,400,000	\$53,727	19.9%
Total	3487			\$100,193,004		
Average		12.7%	27.1		\$18,789	21.9%

Table 2. Security Characteristics

Table 2 shows selected summary statistics for securities in the sample. Security data are from CRSP and Compustat. The sample includes all CRSP securities that are traded in NYSE, NASDAQ, or AMEX, securities that have closing price information and shares outstanding available, and securities that are traded with share codes 10 or 11. The total sample consists of 5,074 securities and of those 3866 are held by international funds. The summary statistics are computed for 25 portfolios formed based on size and market-to-book value. Market-to-book ratios are calculated based on the 2006 book value of equity and market value from the last available closing price in 2006. Betas are calculated based on 5 year returns. International funds have ownership in all of the 25 portfolios. The ownership is lower in the smaller size portfolios and also the median size of the securities held in those portfolios is larger. Overall, median size of each portfolio's international holdings is larger, the median betas of international holdings are mainly higher, and median market-to-book ratios are very similar.

Portfolio ID	All Securities					Securities Held by Foreign Funds				
	Market Value of Total	Number of Securities	MtoB	Beta	Size, \$mm	Number of Securities	MtoB	Beta	Size, \$mm	
1	0.05%	202	1.0	0.61	33.4	102	1.0	0.52	42.0	
2	0.05%	203	1.5	0.71	41.9	86	1.5	0.76	45.9	
3	0.06%	203	2.7	1.24	44.4	78	2.6	1.46	50.2	
4	0.05%	203	8.9	1.25	41.2	79	8.8	1.68	49.3	
5	0.04%	203	n/a	0.88	32.6	73	n/a	0.98	40.6	
6	0.18%	203	1.2	0.72	135.9	159	1.1	0.78	142.6	
7	0.17%	203	1.7	0.48	129.2	145	1.7	0.60	142.0	
8	0.18%	203	2.4	0.97	140.9	141	2.4	1.05	145.5	
9	0.18%	203	5.5	1.75	131.9	131	5.2	1.91	152.5	
10	0.18%	203	n/a	1.17	143.4	114	n/a	1.41	144.5	
11	0.46%	203	1.3	0.83	352.1	186	1.3	0.87	352.3	
12	0.47%	203	1.9	0.76	347.7	180	1.9	0.78	347.0	
13	0.47%	203	2.6	1.01	353.6	191	2.6	1.02	357.1	
14	0.48%	203	4.5	1.52	363.3	179	4.4	1.52	365.6	
15	0.48%	203	13.8	1.52	360.6	143	13.7	1.55	369.4	
16	1.32%	203	1.3	0.84	954.1	188	1.3	0.85	956.5	
17	1.37%	203	1.9	0.85	1037.9	199	1.9	0.85	1038.7	
18	1.40%	203	2.6	1.05	1068.7	199	2.6	1.05	1071.3	
19	1.44%	203	4.1	1.19	1105.0	195	4.1	1.30	1130.7	
20	1.39%	203	9.4	1.35	1025.3	145	9.6	1.40	1069.0	
21	15.42%	203	1.3	0.71	3951.3	196	1.4	0.75	4033.5	
22	14.88%	203	2.1	0.74	4405.8	196	2.1	0.74	4581.3	
23	24.02%	203	3.0	0.89	4503.3	202	3.0	0.89	4473.7	
24	20.10%	203	4.5	1.01	6110.7	196	4.5	0.95	6029.0	
25	15.16%	203	9.2	0.94	5613.7	163	9.2	0.96	6231.8	
		Total 5,074				Total 3,866				

Table 3. Determinants of US Allocation by Funds and Countries

Table 3 shows the results from OLS regressions that test for determinants of funds' US allocation. The dependent variable is the percent of portfolio allocated to the US. Explanatory variables include familiarity and/or information variables, macroeconomic variables, several fund characteristic variables, and cultural variables. Common language takes on value of one if at least 9% of an investor country's population is English speaking. Distance is the logarithm of distance in miles between the investor's capital and Washington DC, and trade is the sum of an investor country's exports and imports with the US scaled by the investor country's GDP. Time zone is the time difference between the investor country's capital and US Eastern Standard Time zone. Fund equity is the market value of a fund's equity in dollars. Fund home bias is the fund's percentage invested at home relative to home market's capitalization, and emerging market dummy takes on value of one if fund is domiciled outside of the developed world. Cultural variables are Hofstede's uncertainty avoidance, masculinity, and individualism. The first four columns show the regression estimates at fund level and the last four columns show results for investor country value weighted averages. T-statistics are displayed underneath the coefficients. The results show that geographical distance and time zone differential both have a significant negative effect on the amount funds and countries allocate to the US. The negative effect of distance reduces significantly when the time zone differential is included in the analysis. Cultural variable uncertainty avoidance has a significant negative impact on the amount allocated in the US. Individualism has a positive effect on the US allocation only at the fund level analysis.

		Dependent Variable				Dependent Variable			
		Percent of Portfolio in the US				Percent of Portfolio in the US			
		Fund Level				Country Value Weighted Averages			
Familiarity Variables	Common Language	3.704	4.264	5.538	-0.007	-2.631	-2.515	-2.546	-5.419
		2.78	3.20	4.38	0.00	0.83	0.78	0.74	1.53
	Distance	-11.20	-6.74		-6.20	-11.00	-9.85		-14.90
		5.38	2.97		1.94	2.67	2.05		2.85
	Trade	-296.85	-158.30	279.39	-52.92	-588.08	-606.26	-147.19	-774.32
Familiarity Variables		1.94	1.02	5.70	0.25	1.67	1.69	0.50	1.92
	Time Zone Differential		-1.028	-1.289	-0.793		-0.435	-1.344	
			4.79	6.57	3.23		0.48	1.62	
Macroeconomic Variables	Real Exchange Rate Diff.	0.328	0.346	0.286	0.441	0.149	0.163	0.109	0.228
		9.09	9.58	9.55	9.74	1.30	1.36	0.89	1.79
	Real GDP per Capita	-2.786	-4.806	-6.32	-12.468	1.757	1.862	1.422	-0.383
		1.61	2.71	3.72	5.65	0.79	0.82	0.59	0.16
	Real GDP per Capita	-1.732	-2.012	-3.505	-2.928	0.194	0.272	-1.243	-0.262
		2.29	2.66	6.20	3.23	0.13	0.17	0.84	0.16
	3 Year market Growth	0.321	0.302	0.264	0.205	0.108	0.108	0.121	0.061
Macroeconomic Variables		4.67	4.40	3.91	2.03	0.70	0.69	0.73	0.37
	GDP per Capita growth	-1.099	-0.679	-1.989	-0.464	-1.07	-0.769	-1.686	-2.865
		1.24	0.76	2.58	0.35	0.73	0.48	1.03	1.83
Fund Variables	Fund Equity	0.000	0.000	0.000	0.000				
		0.71	0.65	0.66	0.88				
	Emerging Market Indicator	-4.803	-7.296	-8.217	-23.287				
		1.35	2.03	2.29	3.50				
Fund Variables	Fund Home Bias	-0.534	-0.538	-0.537	-0.539				
		41.94	42.31	42.17	41.23				
Cultural Variables	Uncertainty Avoidance				-0.122				-0.194
					3.52				2.53
	Masculinity				-0.014				0.066
					0.43				0.91
Cultural Variables	Individualism				0.101				-0.062
					2.02				0.69
	Constant	167.756	154.502	122.847	234.782	95.717	85.715	17.55	174.1
		7.34	6.73	6.04	6.81	2.63	2.03	0.64	3.13
	Observations	3,487	3,487	3,487	3,435	36	36	36	33
	R ²	37.3%	37.7%	37.6%	38.1%	49.9%	50.3%	42.3%	58.9%

Table 3b. Determinants of US Allocation by Funds and Countries

Table 3b repeats the analysis from table 3 but excludes those funds that rank in the top 10 percentile of dispersion (>8.75). The dependent variable is the percent of portfolio allocated to the US. Explanatory variables include familiarity and/or information variables, macroeconomic variables, several fund characteristic variables, and cultural variables. Common language takes on value of one if at least 9% of investor country's population is English speaking. Distance is the logarithm of distance in miles between the investor's capital and Washington DC, and trade is the sum of an investor country's exports and imports with the US scaled by the investor country's GDP. Time zone is the time difference between the investor country's capital and US Eastern Standard Time zone. Fund equity is the market value of a fund's equity in dollars. Fund home bias is the fund's percentage invested at home relative to home market's capitalization, and emerging market dummy takes on value of one if fund is domiciled outside of the developed world. Cultural variables are Hofstede's uncertainty avoidance, masculinity, and individualism. The first four columns show the regression estimates at fund level and the last four columns show results for investor country value weighted averages. T-statistics are displayed underneath the coefficients. Results are similar to Table 3. Geographical distance and time zone differential both have a significant negative effect on the amount funds and countries allocate to the US. The negative effect of distance reduces significantly when the time zone differential is included in the analysis. Cultural variable uncertainty avoidance has a significant negative impact on the amount allocated in the US.

		Dependent Variable				Dependent Variable			
		Percent of Portfolio in the US				Percent of Portfolio in the US			
		Fund Level				Country Value Weighted Averages			
Familiarity Variables	Common Language	3.465	4.163	5.564	-0.490	-2.559	-1.801	-0.227	-4.153
		2.43	2.92	4.20	0.21	0.62	0.42	0.06	0.76
	Distance	-11.547	-6.436		-8.359	-9.764	-6.822		-13.673
		5.08	2.61		2.27	1.77	0.96		1.95
	Trade	-317.79	-158.06	258.95	-188.08	-465.19	-388.52	-21.77	-720.92
Time Zone Differential		1.92	0.94	5.02	0.78	0.97	0.78	0.07	1.30
			-1.177	-1.406	-0.823		-0.715	-1.348	
			5.27	6.85	3.19		0.67	1.61	
Macroeconomic Variables	Real Exchange Rate Diff.	0.324	0.347	0.290	0.460	0.116	0.127	0.096	0.221
		8.50	9.08	9.23	9.18	0.91	0.98	0.77	1.41
	Real GDP per Capita	-1.357	-3.805	-5.206	-12.185	1.961	1.633	0.407	-0.498
		0.74	2.01	2.87	4.92	0.67	0.54	0.15	0.15
	Real GDP	-1.183	-1.558	-3.042	-2.184	0.015	-0.275	-1.673	-0.669
		1.43	1.88	5.05	2.07	0.01	0.13	1.08	0.25
	3 Year market Growth	0.377	0.354	0.321	0.183	0.071	0.083	0.095	0.003
GDP per Capita growth		5.12	4.83	4.43	1.61	0.38	0.44	0.50	0.01
		-0.252	0.159	-1.148	-0.045	-1.096	-1.110	-2.443	-3.248
		0.26	0.16	1.38	0.03	0.45	0.45	1.21	1.15
Fund Variables	Fund Equity	0.000	0.000	0.000	0.000				
		0.98	0.91	0.95	1.18				
	Emerging Market Indicator	-0.789	-3.680	-4.524	-20.312				
		0.21	0.95	1.17	2.43				
Fund Home Bias		-0.580	-0.585	-0.582	-0.583				
		40.72	41.16	41.04	39.99				
Cultural Variables	Uncertainty Avoidance				-0.158				-0.177
					4.22				1.95
	Masculinity				-0.003				0.057
					0.08				0.70
	Individualism				0.047				-0.057
				0.84				0.53	
Constant		152.23	138.85	108.48	253.83	84.58	66.89	32.26	167.64
		6.16	5.61	4.96	6.54	2.09	1.37	0.99	2.49
Observations		3,112	3,112	3,112	3,066	32	32	32	29
R ²		38.6%	39.1%	39.0%	39.6%	43.5%	44.7%	42.4%	51.6%

Table 4. Determinants of Dispersion in 25 Size/Market-to-book Portfolios

Table 4 shows the results from OLS regressions that test for determinants of funds' holdings dispersion in the US securities. The dependent variable is dispersion or the under and overweighting of the 25 US portfolios formed based on size and market-to-book ratio. Explanatory variables include familiarity and/or information variables, macroeconomic variables, several fund characteristic variables, and cultural variables. Common language takes on value of one if at least 9% of an investor country's population is English speaking. Distance is the logarithm of distance in miles between the investor's capital and Washington DC, and trade is the sum of an investor country's exports and imports with the US scaled by the investor country's GDP. Time zone is the time difference between the investor country's capital and US Eastern Standard Time zone. Fund equity is the market value of a fund's equity in dollars. Fund home bias is the fund's percentage invested at home relative to home market's capitalization, and emerging market dummy takes on value of one if fund is domiciled outside of the developed world. Cultural variables are Hofstede's uncertainty avoidance, masculinity, and individualism. The first four columns show regression results at fund level and the last four columns show results for investor country value weighted averages. Funds that have higher than the 90th percentile dispersion (>8.75) scores are excluded from the analysis in the first four regressions. This mainly eliminates funds that only hold one security. Also, the dependent variables are logarithms of dispersion. T-statistics are displayed underneath the coefficients. The results show that geographical distance and time zone differential have a significant and positive effect on the concentration of funds' US holdings. Also, uncertainty avoidance has a marginally positive and significant effect on the concentration of funds' holdings.

		Dependent Variable				Dependent Variable			
		Dispersion in the 25 Size/M-to-B Portfolios				Dispersion in the 25 Size/M-to-B Portfolios			
		Fund Level				Country Value Weighted Averages			
Familiarity Variables	Common Language	0.346	0.332	0.229	0.45	0.067	0.074	0.075	0.085
		5.01	4.80	3.57	3.22	0.55	0.60	0.59	0.59
	Distance	0.614	0.457		0.471	0.225	0.300		0.478
		5.64	3.90		2.56	1.43	1.65		2.25
	Trade	45.56	41.17	11.38	40.24	18.89	17.70	3.70	35.61
		5.72	5.11	4.51	3.22	1.40	1.30	0.34	2.18
	Time Zone Differential		0.038	0.054	0.036		-0.029	-0.001	
			3.56	5.41	2.82		0.84	0.03	
Macroeconomic Variables	Real Exchange Rate Diff.	-0.009	-0.01	-0.006	-0.011	-0.003	-0.002	-0.001	-0.006
		4.90	5.37	3.83	3.93	0.68	0.47	0.11	1.18
	Real GDP per Capita	0.105	0.206	0.298	0.399	-0.09	-0.083	-0.07	-0.046
		1.13	2.12	3.17	2.50	1.05	0.96	0.79	0.47
	Real GDP per Capita	-0.203	-0.196	-0.089	-0.217	-0.07	-0.065	-0.018	-0.09
		5.07	4.89	3.04	4.06	1.18	1.08	0.34	1.34
	3 Year market Growth	-0.003	-0.003	0.000	0.003	0.001	0.001	0.000	0.001
	0.88	0.78	0.04	0.55	0.11	0.11	0.04	0.19	
	GDP per Capita growth	-0.194	-0.22	-0.122	-0.236	0.059	0.079	0.107	0.116
		3.88	4.36	2.78	2.31	1.06	1.29	1.76	1.81
Fund Variables	Fund Equity	0.000	0.000	0.000	0.000				
		16.78	16.86	16.77	16.71				
	Emerging Market Indicator	0.379	0.477	0.541	0.725				
		2.07	2.57	2.92	1.39				
	Fund Home Bias	0.008	0.008	0.008	0.008				
		11.91	12.14	11.90	11.82				
Cultural Variables	Uncertainty Avoidance				0.003				0.006
					1.76				1.91
	Masculinity				0.001				-0.003
					0.43				1.10
	Individualism				0.002				0.006
				0.62				1.51	
	Constant	-8.468	-8.271	-6.07	-10.69	-0.775	-1.432	0.647	-4.119
		6.92	6.76	5.58	4.80	0.56	0.89	0.63	1.82
	Observations	3,039	3,039	3,039	2,993	36	36	36	33
	R ²	14.0%	14.3%	13.9%	14.4%	46.8%	48.1%	42.7%	56.3%

Table 5. Probability of Investing in the riskiest Size or Market-to-Book Portfolios

Table 5 shows the results from logistic regressions (LOGIT) on funds' probabilities of investing any amount in the riskiest US portfolios. The 25 portfolios are formed based on size and market-to-book ratios of 5,074 US securities that are from CRSP, have closing price information available, and share codes 10 and 11. In the first four regressions, the dependent variable (1,0) is equal to one if a fund has any amount invested in the two smallest portfolios. In the last four regressions the dependent variable (1,0) takes on value one if a fund has any amount invested in the two lowest market-to-book quintiles and zero otherwise. Explanatory variables include familiarity and/or information variables, macroeconomic variables, several fund characteristic variables, and cultural variables. Common language takes on value of one if at least 9% of an investor country's population is English speaking. Distance is the logarithm of distance in miles between the investor's capital and Washington DC, and trade is the sum of an investor country's exports and imports with the US scaled by the investor country's GDP. Time zone is the time difference between the investor country's capital and US Eastern Standard Time zone. Fund equity is the market value of a fund's equity in dollars. Fund home bias is the fund's percentage invested at home relative to home market's capitalization, and emerging market dummy takes on value of one if fund is domiciled outside of the developed world. Cultural variables are Hofstede's uncertainty avoidance, masculinity, and individualism. The absolute values of T-statistics are displayed underneath the coefficients. Geographical distance lowers the probability of investment in the riskiest portfolios and time zone differential increases the probability of investment in the riskiest portfolios. Of the cultural variables only individualism is significant and negative throughout the specifications.

		Dependent Variable				Dependent Variable			
		Risky Ownership =1 Small PFLs				Risky Ownership =1 in Value PFLs			
		Fund Level in 25 size/M-to-B				Fund Level in 25 size/M-to-B			
		Portfolios				Portfolios			
Familiarity Variables	Common Language	-0.049	-0.060	0.004	0.036	-0.111	-0.105	-0.083	-0.055
		1.01	1.25	0.10	0.57	1.09	1.04	0.87	0.40
	Distance	-0.198	-0.307		-0.398	0.145	-0.119		-0.429
		2.52	3.64		3.31	0.88	0.67		1.59
	Trade	-11.32	-14.37	5.83	-18.66	10.63	3.48	11.35	-16.95
Time Zone Differential		1.97	2.47	3.30	2.39	0.87	0.28	2.89	0.98
			0.026	0.016	0.033		0.066	0.061	0.060
			3.52	2.34	3.78		3.82	3.85	2.93
Macroeconomic Variables	Real Exchange Rate Diff.	0.002	0.002	-0.001	0.003	-0.012	-0.013	-0.014	-0.015
		1.82	1.48	1.06	2.12	4.20	4.53	6.19	4.56
	Real GDP per Capita	0.159	0.196	0.147	0.130	0.240	0.351	0.332	0.388
		3.49	4.17	3.27	2.09	2.26	3.10	3.03	2.76
	Real GDP	0.015	0.017	-0.052	-0.030	0.084	0.078	0.051	0.116
		0.57	0.64	2.80	0.87	1.49	1.37	1.25	1.56
	3 Year market Growth	-0.006	-0.006	-0.008	-0.012	-0.020	-0.020	-0.020	-0.023
	2.70	2.70	3.38	3.37	3.79	3.80	4.09	2.89	
GDP per Capita growth		-0.109	-0.124	-0.188	-0.214	-0.066	-0.122	-0.147	-0.112
		3.32	3.71	6.52	4.88	0.90	1.60	2.21	1.16
Fund Equity		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		19.35	19.34	19.30	19.49	20.82	20.77	20.77	21.13
Cultural Variables	Uncertainty Avoidance				0.000				0.002
					0.36				0.78
	Masculinity				0.001				0.007
					0.74				2.84
	Individualism				-0.003				-0.010
				1.74				2.59	
Constant		-0.74	-0.25	-1.89	1.99	-6.86	-5.80	-6.44	-3.30
		1.08	0.35	3.57	1.75	4.48	3.70	5.18	1.28
Observations		34,870	34,870	34,870	34,350	34,870	34,870	34,870	34,350
Pseudo R ²		2.0%	2.0%	2.0%	2.0%	5.0%	5.0%	5.0%	5.0%

Table 6. Determinants of US Allocation by Growth Funds and Country Averages

Table 6 shows the results from OLS regressions that test for determinants of growth funds' US allocation. The dependent variable is the percent of portfolio allocated to the US. Explanatory variables include familiarity and/or information variables, macroeconomic variables, several fund characteristic variables, and cultural variables. Common language takes on value of one if at least 9% of an investor country's population is English speaking. Distance is the logarithm of distance in miles between the investor's capital and Washington DC, and trade is the sum of an investor country's exports and imports with the US scaled by the investor country's GDP. Time zone is the time difference between the investor country's capital and US Eastern Standard Time zone. Fund equity is the market value of a fund's equity in dollars. Fund home bias is the fund's percentage invested at home relative to home market's capitalization, and emerging market dummy takes on value of one if fund is domiciled outside of the developed world. Cultural variables are Hofstede's uncertainty avoidance, masculinity, and individualism. The first four columns show the regression estimates at fund level and the last four columns show results for investor country value weighted averages. T-statistics are displayed underneath the coefficients. The results show that geographical distance and time zone differential both have a significant negative effect on the amount growth funds and countries allocate to the US. The negative effect of distance reduces significantly when the time zone differential is included in the analysis. Cultural variable uncertainty avoidance has a significant negative impact on the amount allocated in the US.

		Dependent Variable				Dependent Variable			
		Percent of Portfolio in the US				Percent of Portfolio in the US			
		Fund Level				Country Value Weighted Averages			
Familiarity Variables	Common Language	2.939	3.397	5.604	-4.616	-4.825	-4.932	-3.681	-2.352
		1.71	1.98	3.53	1.38	1.24	1.19	0.93	0.45
	Distance	-13.8	-9.82		-15.49	-6.462	-6.850		-8.951
		4.99	3.30		3.13	1.16	0.98		1.23
	Trade	-415.1	-291.4	348.2	-553.5	-353.1	-362.5	29.00	-474.1
Time Zone Differential		2.06	1.43	5.60	1.70	0.73	0.71	0.09	0.82
			-0.936	-1.241	-0.569		0.097	-0.467	
			3.70	5.26	1.90		0.10	0.57	
Macroeconomic Variables	Real Exchange Rate Differential	0.368	0.390	0.298	0.537	0.084	0.082	0.042	0.262
		8.06	8.49	8.13	8.02	0.68	0.64	0.35	1.71
	Real GDP per Capita	-0.558	-3.104	-4.803	-14.943	1.326	1.367	0.052	-3.372
		0.26	1.38	2.19	4.01	0.48	0.47	0.02	1.02
	Real GDP per Capita	-1.179	-1.408	-3.654	-0.707	0.172	0.209	-1.203	-1.881
		1.21	1.45	5.22	0.51	0.09	0.10	0.82	0.76
	3 Year market Growth	0.395	0.384	0.337	0.175	0.044	0.042	0.044	-0.173
GDP per Capita growth		4.63	4.52	4.01	1.15	0.24	0.23	0.24	0.77
		0.172	0.750	-1.251	2.311	-0.289	-0.287	-1.574	-3.232
		0.14	0.62	1.19	0.96	0.13	0.12	0.81	1.29
Fund Variables	Fund Equity	0.000	0.000	0.000	0.000				
		1.24	1.18	1.14	1.43				
	Emerging Market Indicator	-1.92	-4.37	-5.04	-26.75				
		0.43	0.97	1.12	2.10				
Fund Home Bias		-0.625	-0.632	-0.625	-0.630				
		33.63	33.93	33.69	33.21				
Cultural Variables	Uncertainty Avoidance				-0.223				-0.138
					4.59				1.68
	Masculinity				0.025				-0.065
					0.48				0.76
	Individualism				-0.017				-0.056
				0.21				0.55	
Constant		165.09	159.78	108.56	339.81	55.70	58.06	23.93	163.04
		5.58	5.41	4.31	6.27	1.44	1.25	0.78	2.65
Observations		2,250	2,250	2,250	2,218	30	30	30	27
R ²		37.2%	37.6%	37.3%	38.4%	29.3%	29.3%	25.9%	52.5%

Table 7. Determinants of Dispersion in 25 Size/Market-to-book Portfolios for Growth Funds

Table 7 shows the results from OLS regressions that test for determinants of growth funds' holdings dispersion in the US securities. The dependent variable is dispersion or the under and overweighting of the 25 US portfolios formed based on size and market-to-book ratio. Explanatory variables include familiarity and/or information variables, macroeconomic variables, several fund characteristic variables, and cultural variables. Common language takes on value of one if at least 9% of an investor country's population is English speaking. Distance is the logarithm of distance in miles between the investor's capital and Washington DC, and trade is the sum of an investor country's exports and imports with the US scaled by the investor country's GDP. Time zone is the time difference between the investor country's capital and US Eastern Standard Time zone. Fund equity is the market value of a fund's equity in dollars. Fund home bias is the fund's percentage invested at home relative to home market's capitalization, and emerging market dummy takes on value of one if fund is domiciled outside of the developed world. Cultural variables are Hofstede's uncertainty avoidance, masculinity, and individualism. The first four columns show regression results at fund level and the last four columns show results for investor country value weighted averages. Funds that have higher than the 90th percentile dispersion (>8.75) scores are excluded from the analysis in the first four regressions. This mainly eliminates funds that only hold one security. T-statistics are displayed underneath the coefficients. The results show that geographical distance and time zone differential have a significant and positive effect on the concentration of funds' US holdings. Also, uncertainty avoidance has a marginally positive and significant effect on the concentration of funds' holdings.

		Dependent Variable				Dependent Variable			
		Dispersion in the 25 Size/M-to-B Portfolios				Dispersion in the 25 Size/M-to-B Portfolios			
		Fund Level				Country Value Weighted Averages			
Familiarity Variables	Common Language	0.317	0.302	0.210	0.482	-0.038	-0.029	-0.044	-0.109
		4.21	4.01	3.02	3.26	0.42	0.31	0.48	1.03
	Distance	0.540	0.409		0.448	0.143	0.184		0.330
		4.45	3.14		2.05	1.10	1.22		1.87
	Trade	42.63	38.59	11.96	40.05	22.25	21.86	13.03	34.21
		4.85	4.33	4.40	2.78	2.18	2.11	1.73	2.68
	Time Zone Differential		0.031	0.043	0.027		-0.014	0.000	
			2.76	4.20	2.05		0.57	0.01	
Macroeconomic Variables	Real Exchange Rate Differential	-0.008	-0.009	-0.005	-0.012	-0.003	-0.003	-0.002	-0.006
		3.98	4.30	3.01	4.23	1.11	0.93	0.62	1.67
	Real GDP per Capita	0.034	0.118	0.188	0.440	-0.099	-0.098	-0.076	-0.141
		0.37	1.20	1.96	2.68	1.52	1.48	1.18	1.81
	Real GDP per Capita	-0.186	-0.178	-0.085	-0.176	-0.054	-0.053	-0.022	-0.024
		4.36	4.18	2.77	2.88	1.22	1.19	0.60	0.47
	3 Year market Growth	-0.004	-0.004	-0.002	-0.002	0.002	0.002	0.002	-0.005
	1.08	0.98	0.47	0.30	0.47	0.47	0.55	0.89	
	GDP per Capita growth	-0.183	-0.202	-0.119	-0.262	0.042	0.048	0.072	0.049
		3.49	3.83	2.60	2.47	0.91	1.01	1.65	0.96
Fund Variables	Fund Equity	0.000	0.000	0.000	0.000				
		13.53	13.60	13.61	13.38				
	Emerging Market Indicator	0.270	0.350	0.378	1.115				
		1.38	1.77	1.91	1.98				
	Fund Home Bias	0.008	0.008	0.008	0.008				
		9.85	10.08	9.79	9.93				
Cultural Variables	Uncertainty Avoidance				0.004				0.001
					1.98				0.41
	Masculinity				0.000				-0.004
					0.03				1.82
	Individualism				-0.003				-0.001
				0.73				0.49	
	Constant	-7.28	-7.11	-4.98	-10.74	-0.12	-0.43	0.68	-1.21
		5.63	5.50	4.52	4.49	0.11	0.37	0.90	0.75
	Observations	2,250	2,250	2,250	2,218	33	33	33	30
	R ²	12.9%	13.2%	12.8%	13.6%	61.0%	61.6%	59.1%	71.1%