The Effect of Familiarity with Foreign Markets on Institutional Investors' Performance

Version: January 13, 2017

Mark Fedenia[a], Hilla Skiba[b], Tatyana Sokolyk[c]

[a] University of Wisconsin-Madison; Email: mfedenia@wisc.edu
[b] Colorado State University; Email: hskiba@colostate.edu
[c] Brock University; Email: tsokolyk@brocku.ca

Abstract: Traditional portfolio theory predicts that investors' portfolios should be diversified across international markets. In contrast, empirical studies document that investors are more likely to invest in their home country and in familiar foreign markets. This study examines whether the familiarity driven foreign portfolio allocation is a rational choice attributed to information advantage rather than irrational investor's decision due to behavioral bias. Using a comprehensive sample on foreign portfolio allocations of over 46,000 institutional investors from 46 countries during 1999-2015, we confirm prior findings that investors overweight familiar foreign markets. However, investors also earn higher risk-adjusted returns in more familiar foreign markets. Furthermore, high skill investors outperform low skill investors; and the performance of low skill investors especially suffers in unfamiliar foreign markets. Taken together, these new findings on better performance outcomes in familiar foreign markets suggest that investors have information advantage in familiar foreign markets and rationally exploit it by concentrating their holdings in these markets rather than diversifying internationally. This study provides new evidence on the international underdiversification puzzle in line with the rational decision-making.

Keywords: Institutional investors, Information advantage, Familiarity; Under-diversification, Cultural distance, Geography
JEL Classifications: G11, G14, G15, G23, Z10

1. Introduction

Numerous studies document the pervasive nature of concentrated portfolios relative to the well diversified alternative prescribed by traditional portfolio theory. Rather than holding diversified portfolios, investors choose portfolio concentrations across investment styles, industries, regions, and other asset characteristics. Concentrated portfolios are theoretically optimal, relative to the diversified portfolios, if they are formed based upon an information advantage.[1] Intuitively, portfolio managers should concentrate positions to profitably exploit their information advantage.

Several empirical studies provide support for the information advantage argument but typically focus on portfolio concentrations in the home market, mainly the United States (see, for example, Coval and Moskowitz, 2001; Kacperczyk, Sialm, and Zheng, 2005). A notable exception is a recent study by Choi, Fedenia, Skiba, and Sokolyk (2016) who examine portfolio concentration and performance in the home and foreign markets of institutional investors worldwide. Consistent with the financial manager exploiting an information advantage, the study documents that global institutional investors earn higher risk-adjusted returns by concentrating their holdings in the home market and in a few foreign markets and industries.

In this paper, we extend the empirical analysis of information advantage theory in international markets by analyzing a well-known phenomenon that, when investing abroad, investors tend to concentrate their holdings in countries that are geographically nearby or culturally similar to the investor's home country (see Chan, Covrig, and Ng, 2005; and Sjoerd and Frijns, 2010). This disproportionate allocation to familiar markets is often interpreted in the

[1] See Merton (1987), Gehrig (1993), Levy and Livingston (1995), and Van Nieuwerburgh and Veldkamp (2009, 2010).

existing empirical literature as evidence of the investor's irrationality due to behavioral bias.[2] In contrast to the behavioral bias argument, we develop and test the information advantage hypothesis conjecturing that the observed foreign portfolio allocation to familiar markets is driven by the investor's rational preference to exploit the information advantage. We argue that familiarity with a given foreign market may give investors a mechanism for exploiting profitable investment opportunities and achieving better performance. This argument contrasts the alternative behavioral explanation that familiarity may lead to cognitive dissonance and likely attenuated performance. To determine which of these effects prevails, we focus on the link between familiarity driven foreign portfolio allocations and performance outcomes of institutional investors worldwide.

As a starting point, we develop a new parsimonious metric of familiarity between the investor's home country and the foreign target market derived as the principal component of the Hofstede's dimensions of culture, common legal origin, language similarity, and geographic proximity. This familiarity metric is time-invariant and is common for all investors from a given home country - foreign country pair. Furthermore, the degree of familiarity varies greatly for any given foreign market depending on the investor's home country and facilitates testing of how differences in information advantage affect the investor's asset allocation decisions and performance outcomes.

Utilizing a unique data on foreign market security holdings of over 46,000 institutional investors from 46 countries during 1999–2015, we examine the relation between the degree of familiarity with a foreign target market and the investor's performance. We hypothesize that

[2] For the details on the irrational familiarity bias argument, see Feldstein and Horioka (1980), Huberman (2001), Cohen (2009), and Morse and Shive (2011).

investors make superior investment decisions when investing in familiar foreign markets because they exploit information advantage and earn higher rsik-adjusted returns.

Our main findings can be summarized as follows. First, using a larger and more comprehensive sample of institutional investors worldwide than previously examined, we confirm prior findings that institutional investors overweight familiar foreign markets (see, for example, Chan, Covrig, and Ng, 2005; Anderson et al., 2011). Second, we find that investors earn higher risk-adjusted returns from portfolio allocations in familiar foreign markets. This analysis was not addressed in the prior literature and the result allows us to argue that familiarity with a given foreign market captures the initial information advantage. Third, we find that investors earn higher risk-adjusted returns from concentrated holdings in familiar foreign markets. In other words, the investors rationally choose to concentrate in familiar foreign markets because they are able to exploit information advanatages, earning higher risk-adjusted returns.

The remaining part of our paper focuses on differences in allocation patterns and performance outcomes among investors with different level of skill. Relying on the predictions of the information advantage theory (Van Nieuwerburgh and Veldkamp, 2009), we show that investors with high skill level magnify their initial information advantage by concentrating even more in familiar foreign markets. We also find that more skilled investors outperform less skilled investors in foreign markets. More specifically, less skilled investors underperform in both familiar and unfamiliar foreign markets compared to highly skilled investors, but the performance differential is especially high in unfamiliar foreign markets. This result suggests that the performance of low skilled investors especially deteriorates in less familiar foreign markets. Overall, our results suggest that familiarity is an important dimension of information

advantage in international markets consistent with the rational explanation of investors' preferences.

Our study makes an important contribution to the existing literature. In contrast to prior studies, which identify factors that affect asset allocation decisions in foreign markets, our study explains these decisions within the rational-decision making process modelled in the information based theory of Van Nieuwerburgh and Veldkamp (2009). This study provides evidence for on-going debate in academic literature whether the observed international underdiversification is attributed to behavioural bias or rational information advantage. Our evidence provides strong support for the information advantage argument.

The rest of the paper is organized as follows. Section 2 reviews related literature and develops hypotheses. Section 3 discusses our data and methodology. Section 4 presents the results, and Section 5 concludes.

2. Literature Review and Hypotheses Development

2.1. International Under-diversification and Foreign Bias

Traditional asset pricing theory predicts that investors should diversify across risky assets to maximize portfolio efficiency (e.g., Markowitz, 1952; Sharpe, 1964, Lintner 1965). Because of a relatively high degree of positive correlations among the securities' returns within a country, the greater benefits of risk reduction can be achieved by diversifying internationally (e.g., Grubel, 1968; Levy and Sarnat, 1970; Grauer and Hakansson, 1987).

In contrast to the implications of the traditional asset pricing theory, empirical studies document that home-country portfolio allocations exceed and international allocations fall short of benchmark weights based on each country's market capitalization (e.g., French and Poterba,

1991; Chan, Covrig, and Ng, 2005). Furthermore, when investing abroad, investors tend to overweight certain types of foreign markets rather than diversify across all foreign markets. For example, mutual funds invest in foreign countries based on the stock market development of the foreign country and the fund's familiarity with the foreign country implied by common language, bilateral trade flows, and geographic proximity to the fund's home country (e.g., Chan, Covrig, and Ng, 2005). Similarly, on a country-wide level, Amadi (2004) documents that investors allocate financial capital to countries that most closely resemble the investor's home country in terms of language, trade, and immigration links. In addition, Beugelsdijk and Frijns (2010) and Anderson et al. (2011) show that culture and cultural distance between the investor's home country and the foreign target market affect portfolio allocation decisions. Specifically, investors from countries with high degree of uncertainty avoidance tend to form more home biased portfolios and less diversified foreign portfolios, and investors underweight culturally distant foreign markets. This pattern in asset allocations to familiar foreign markets is the focus of this study.

Several studies attempt to explain the inconsistency between the implication of the traditional asset pricing theory and the observed pattern in asset allocations in international markets. One strand of literature argues that investors exhibit behavioural bias toward familiar investments (see, e.g., Huberman, 2001; Cohen, 2009; and Morse and Shive, 2011). The implication of this body of research is that investors act irrationally when investing in familiar markets and assets. On the other hand, other studies argue that investors rationally choose to hold underdiversified portfolios and invest in familiar markets and assets because they have preferences or incentives to hold portfolios similar to those held by the members of their society or community (see, e.g., Cole, Mailath, and Postlewaite, 2001; DeMarzo, Kaniel, and Kremer,

2004). Furthermore, portfolio managers may rationally overweight certain markets because of lower information barriers and transaction costs (see Grinblatt and Keloharju, 2001). The implication of that line of reasoning is that investors acquire useful information about familiar firms from reading company statements in a language they understand, from general or acquired knowledge about geographically nearby firms or from culturally similar groups. This latter group of literature is often interpreted in line with the information advantage hypothesis rather than the behavioral bias phenomenon.

Our study extends the existing literature and contributes to the current debate of whether the irrational familiarity bias or the rational information advantage, gained from familiarity, drives the observed asset allocation decisions in international markets. We derive our hypotheses from the information advantage theory, which we review in the following section.

2.2. Information Advantage Theory and Empirical Evidence

In contrast to the traditional asset pricing theory, several studies model investors' portfolio choices conditioning on information advantage. The main implication of these studies is that portfolios can be concentrated but optimal if the decision to hold concentrated portfolio is based on information advantage. For example, Merton (1987) argues that optimal portfolios contain only a subset of securities known to the investors because information costs of learning about unknown assets can be substantial. Levy and Livingston (1995) show, in a mean-variance framework, that fund managers with superior information hold relatively concentrated as opposed to well-diversified portfolios. Gehrig (1993) develops a rational-expectations model where even in equilibrium investors remain incompletely informed. He shows that home bias arises when investors are better informed about domestic than about foreign stocks.

Several country-specific empirical studies show that focused (i.e., under-diversified) investment strategies lead to better performance. Ivković and Weisbenner (2005) document that an average US household generates an additional 3.2% annual return from its local holdings, suggesting that local investors gain an advantage from local knowledge. Similarly, Coval and Moskowitz (2001) show that mutual fund managers earn a substantial abnormal return when investing in firms that are located closer to the fund's headquarters. In an international setting, Bhargava, Gallo, and Swanson (2001) evaluate the performance of 114 international equity managers and show that, on average, these managers do not outperform Morgan Stanley Capital International (MSCI) World benchmark index. However, certain geographic asset allocation and equity-style allocation decisions enhance fund performance.

Other studies compare domestic and foreign investors' performance in small samples and provide some support for the information barrier hypothesis. Dvořák (2005) shows that in the Indonesian market, domestic clients of global brokerages earn higher profits than foreign clients, suggesting that local information and global expertise lead to higher profits. Choe, Kho, and Stulz (2005) show that in the Korean market, domestic investors have an edge in trading domestic stocks. They document that foreign fund managers face about 37 basis points greater transaction costs than domestic fund managers. In a cross-country study, Hau (2001) investigates trading profits earned on the German Security Exchange by 756 professional traders located in eight European countries. He finds that traders located outside of Germany, in non-German-speaking cities, have lower trading profits, though the results are not statistically significant. In a study of US holdings, Shukla and van Inwegen (2006) find that UK mutual funds under-perform US mutual funds in US stocks and attribute this performance differential to information barriers. Supporting the information advantage argument of Van Nieuwerburgh and Veldkamp (2009),

Choi et. (2016) find that concentrated portfolios in home markets and foreign target markets earn higher risk-adjusted returns; but the authors do not examine the link between the degree of familiarity with foreign markets and performance implications in international markets.

Our study extends the support for portfolio allocation that is driven by information advantage. We utilize a unique testing laboratory that allows us to directly proxy for initial information advantage in foreign markets as well as observe learning capacity directly from performance of investors in independent setting. Using the cross-country allocations to foreign markets we provide further support for the information advantage argument in international portfolio allocations, presenting evidence consistent with investors' rational decision-making and contributing to the debate on the international portfolio allocation puzzle.

2.3. Hypotheses Development

The perspective that we undertake in this study is based on the argument presented in Van Nieuwerburgh and Veldkamp (2009) that investors rationally deviate from the world market portfolio because of the initial information advantage in foreign markets that are familiar to the investor. This initial information advantage is amplified through learning and results in higher risk-adjusted returns, with more skilled investors, i.e., those with higher capacity to learn, choosing more concentrated portfolios and achieving higher risk-adjusted returns.

To determine whether asset allocation decisions in foreign markets are attributed to the rational investor's behavior, rather than irrational behavioral bias as argued by other studies attempting to solve the underdiversification puzzle, we develop several hypotheses following the empirical implications of the information-based theory of home bias of Van Nieuwerburgh and Veldkamp (2009). While the theory focuses on home assets as the source of information

advantage, the authors note that the empirical implications of the theory can be extended to international markets and foreign investments, which we pursue in this study.

According to Van Nieuwerburgh and Veldkamp (2009), without learning and initial information advantage, the expected asset holdings vector q equals the world market portfolio, $E[q] = \bar{x}$. Information advantage and learning reduce the conditional variance (i.e., risk or uncertainty) of the asset without reducing its return; hence, providing excess risk-adjusted return. Thus, in equilibrium, the expected asset holdings can be expressed as a tilt, B, relative to the perfectly diversified world market portfolio of home and foreign assets, $E[q] = B\bar{x}$. Note that the implications of the information advantage theory are fundamentally different from those of the behavioral bias hypothesis which predicts that investors deviate from the world market portfolio *thinking* that they have better estimates of risk and return on familiar assets, while, in fact, they do not.

We formulate three testable hypotheses concerning portfolio concentration and performance of investors in foreign markets. First, according to the model, the greater the information advantage about a given factor, the greater the tilt toward assets that load heavily on that factor. We presume that the familiarity of the investor with the foreign target market serves as a source of the initial information advantage in that foreign market. Consequently, we predict that the investor's portfolio weight in a given foreign country is positively related to the investors' familiarity with that market. Formally, our first hypothesis, H_1, states:

> *H_1: Portfolio weight of a given foreign market is positively related to investor's familiarity with the foreign market.*

We then examine whether investor's familiarity with the foreign target market impacts investor's performance. If familiarity is a source of information advantage, investors should earn

higher risk-adjusted returns by investing in familiar foreign markets. Formally, our second hypothesis, H_2, states:

> *H_2: An investor's risk-adjusted return is positively related to the investor's familiarity with the foreign target market.*

We then use additional implications of Van Nieuwerburgh and Veldkamp's (2009) model that allow for differences in the investor's capacity to learn about the assets' risks and payoffs. The theory predicts that investors with higher learning capacity are able to magnify the initial information advantage through learning about an abundant risk factor because: (1) information has increasing returns to scale and, therefore, investors gain more from learning about an abundant risk factor; (2) investors gain more from learning about a risk factor about which the average investor is uncertain; that is, the risk factor has a high posterior variance for the average investor; and (3) investors learn about a risk factor for which they have less initial uncertainty relative to the average investor. The empirical prediction that follows is that the investor with high learning capacity can exploit the initial information advantage more efficiently than investor with low learning capacity. As a consequence, we should expect to observe: (a) higher concentration of investment in familiar markets by high learning capacity investors compared to low learning capacity investors, (b) higher excess returns to the investor in familiar markets when the investor's holdings are concentrated. Formally, our next set of hypotheses, H_3 and H_4, states:

> *H_3: Portfolio allocation to a foreign market by investor with high capacity to learn is higher, compared to investor with low capacity to learn, when both investors have the same initial information advantage.*

> *H_4: Risk-adjusted returns in familiar foreign markets are higher to concentrated portfolios.*

3. Data and Methodology

3.1. Data

We use quarterly institutional holdings data from the FactSet (former Lionshares) Company database from the first quarter of 1999 to the second quarter of 2015. These data are available through Wharton Research Data Services (WRDS). The database covers securities with market capitalization of more than $50 million and institutional holdings larger than 0.1% of a company's total issued shares.

FactSet collects institutional holdings data from various sources. For example, for US institutions, FactSet obtains holdings information through mandatory reports (e.g., 13-F, N-Q, and N-CSR). For institutions outside the US, where reporting is not mandatory, the company gathers data from sources such as company websites, annual reports and announcements, and industry directories, or direct contact with the fund companies. Holdings information (number of shares owned as well as market value of holdings in current US dollars), domicile of securities' issuers and institutions, fund type and characteristics, among other data, are included in the dataset.[3]

Since the purpose of the study is to examine foreign portfolio performance, we require each institution to hold at least one foreign stock during the time period to be included in the sample. We define institutions' holdings as foreign if their reported country of domicile[4] is not the same as the security's country of domicile. Also, all observations are required to have non-missing data for the main explanatory variables that we use to measure familiarity (explained in the next section). At the end, 46,003 institutions from 46 countries meet our data selection

[3] Prior studies, e.g., Li, Moshirian, Pham, and Zein (2006), Ferreira and Matos (2008), and Ferreira, Matos, and Pereira (2009) also use FactSet data. Ferreira and Matos (2008) provide an extensive set of summary statistics and explain in great detail comprehensiveness and limitations of the database.

[4] FactSet's country domicile is the location of the institution's main operations.

criteria and these institutions hold foreign securities in 49 different countries. Forty-one percent of the sample (18,900 institutions) hold secutities in home and foreign markets, while forty-nine percent of the institutional investors in our sample (27,103 institutions) invest only in foreign markets.

Table I presents the sample distribution by the investor's home country (Panel A) and by foreign target country (Panel B). Panel A shows that a large set of institutions' home countries is represented in our sample. In contrast to prior studies on foreign investments, which tend to focus on a narrow group of countries, our study analyzes allocation strategies and performance outcomes of institutional investors from virtually every part of the world. Columns 1 and 2 in Panel A present the results for the sample of institutons who hold foreign securities; these institutionas may or may not have holdings in home markets. These columns show that the largest number of institutions are from the Unites States, followed by Spain, Germany, and the United Kingdom. The number of institutions (percentage of the total sample) from these countries is 10,881 (23.65%), 5,680 (12.35%), 4,917 (10.67%), and 4,903 (10.66%), respectively. However, we also have institutions domiciled in South Africa, Australia, Latin American, Asian, and Eastern European countries.

In the analyses of the investor's learning capacity to test hypotheses H_3 and H_4, we use a sample of 18,900 institutuional investors who hold securities in foreign and home markets. Because the measure of learning capacity requires home market holdings, institutions with no domestic holdings are therefore excluded from the learning capacity tests. As the result of this data requirement, we are losing several countries from our analysis (Bulgaria, China, Indonesia, Israel, New Zealand, Philippines, Slovakia, and Thailand), but we still maintain institutional investors from 38 different countries. Columns 3 and 4 in Panel A show the number of

institutions and sample share for this group of investors. This sample is dominated by institutional investors from United States, Spain, United Kingdon, and Germany, who altogether represent seventy percent of all institutional investors who hold domestic and foreign holdings.

The institutional investors in our sample hold securities in 49 foreign markets. Panel B in Table I shows the sample distribution by foreign target markets. The first column shows the number of institutions that have holdings in each foreign market during at least one quarter in the sample period. The Netherlands, United Kingdom, Switzerland, and France attract the largest number of institutional investors. The number of institutions (percentage of the total sample of foreign target markets) present in these markets is 30,054 (5.99%), 28,214 (5.6%), 24,354 (4.85%), and 24,025 (4.79%), respectively.[5]

3.2. Methodology

3.2.1. Familiarity with a foreign target market

Central to all our hypotheses is the investor's familiarity with a foreign target market which estimates the degree of similarity with and closeness to the foreign target market along several dimensions, such as, culture, legal origin, language, and geographic distance. Below, we first describe each dimension of the familiarity measure and then provide the details of the variable's construction.

To measure the degree of familiarity along cultural dimension, we use the *Cultural similarity* variable, which measures the bilateral distance between the investor's home country and the foreign target country along the four primary dimensions of culture from Hofstede (1980,

[5] In unreported analysis we also remove ADR's and GDR's from the sample. In the current sample cross-listed shares are considered "foreign" because their country of domicile is different from the institutions' domicile. Removing the cross-listed shares increases the significance of the results.

2001).[6] We omit the fifth dimension, long-term orientation, because its values are missing for the majority of countries in our sample. The four primary dimensions include:

> **Uncertainty avoidance index (UAI)** - society's tolerance for uncertainty and ambiguity.
>
> **Individualism (IDV)** as opposed to collectivism - the degree to which individuals are integrated into groups.
>
> **Power distance index (PDI)** - the extent to which less powerful members of organizations and institutions accept and expect that power is distributed unequally.
>
> **Masculinity (MAS)** versus femininity - the distribution of roles between the genders.

Following Kogut and Singh (1988), we compute the bilateral *Hofstede distance* (*HD*) from investor country to each target country as:

$$HD_{IJ} = \sum_{H} \left(\frac{C_{hJ} - C_{hI}}{V_h} \right) / H \qquad (1)$$

where C_{hI} is the h^{th} cultural dimension of an investor country *I*, CD_{hJ} is the h^{th} cultural dimension of target market *J*, and V_h is the variance of the h^{th} cultural dimension. The *Cultural similarity* variable takes a negative value of *Hofstede distance* so that culturally similar markets have a higher *Hofstede distance* value.

Another dimension of familiarity is *Similar language* variable, which is the negative value of the difference in languages between the investor's home market and the foreign target

[6] Hofstede's survey-based evidence shows that countries' cultural attributes can be measured along five primary dimensions (see Geert Hofstede's website: http://www.Geert-Hofstede.com and Culture Consequences, 2001, 2nd edition, pages xix-xx). Appendix A of this paper provides a detailed explanation of the primary dimensions of culture; Appendix B reports the countries' index scores of each primary dimension.

market, obtained from Douglas Dow's research website.[7] This variable is a factor score from differences in major languages in the home market and the target foreign country, an incidence of the home country's language in the target country, and an incidence of a target country's language in the home country. According to this measure, two countries are perceived to be similar or familiar if difference in languages is small; that is, *Similar language* variable is high.

The *Common legal origin* variable is another dimension of the familiarity measure, from Djankov et al. (2008). It takes the value of one if the home country and the foreign target country share a common legal origin and takes the value of zero otherwise. Countries with the same legal origin (*Common legal origin*=1) are perceived to be similar or familiar; countries with a different legal origin (*Common legal origin* =0) are perceived to be different or unfamiliar.

The fourth dimension used in the familiarity measure is the negative of the geographic distance between the investor's home market and the foreign target market, *Geographic proximity*. The geographic distance measure is from Centre d'Etudes Prospectives et d'Informations (CEPII) and is the distance, in kilometers, between the investor's capital city and the target market's capital city. Countries with shorter geographic distance, thus, higher *Geographic proximity* are perceived to be more familiar with each other than countries that are geographically distant.

Since the four measures can be correlated and all are meant to capture a dimension of familiarity without giving more importance to any one dimension over another, we combine all four of these variables into one measure of familiarity - *Familiarity PC*. *Familiarity PC* is computed as the first principle component of the four bilateral distance measures described above (*Cultural similarity*, *Similar language*, *Common legal origin*, and *Geographic proximity*).

[7] Douglas Dow's psychic distance scales: http://www.mbs.edu/home/dow/research.

Foreign countries that are more familiar to the investor will have a higher value of *Familiarity PC* variable; foreign countries that are unfamiliar to the investor will have a lower value of *Familiarity PC* variable.

It is also noteworthy that our familiarity variable possesses attractive qualities to capture the initial information advantage central to the information advantage theory. First, *Familiarity PC* is time-invariant and allows for a cleaner test of initial information advantage which is expected not to change over time for any investor. Second, because *Familiarity PC* is common for all investors from a given home country-foreign country pair, we can estimate how investors are able to exploit the initial information advantage through their learning capacity. Third, *Familiarity PC* varies greatly for any given foreign market depending on the investor's home country and allows for a clean test of how differences in initial information advantage affect the investor's asset allocation and performance.

3.2.2. Portfolio weight and familiarity

To test our first hypothesis, H_1, whether portfolio weight of a foreign market increases with investor's familiarity with that market, we examine the relation between the institution's portfolio weight of a given foreign market and the familiarity proxy between the institution's home and foreign target markets. We compute a country's portfolio weight, *Country Bias*, as the difference between the actual and expected country weight in the portfolio. Actual country weight is computed as:

$$Country\ Actual\ Weight^{f}{}_{p,q,J} = \frac{MV^{f}{}_{p,q,J}}{MV^{f}_{p,q}}, \qquad (2)$$

where each foreign country's actual weight is the market value of all securities held in portfolio *p* in quarter *q* located in country *J*, scaled by the total market value of all foreign holdings by

portfolio *p* in quarter *q*. The expected weight of each foreign country is based on that country's world capitalization weight and is computed as:

$$Country\ Expected\ Weight^{f}_{q,J} = \frac{MV^{f}_{q,J}}{MV^{f}_{q}}, \quad (3)$$

where *Country Expected Weight* is the total market value of country *J* in quarter *q*, scaled by the total market value of all countries, not including portfolio *p*'s home market. The expected weight is computed based on investable shares, as defined by World Scope. The country over- or under-weight is the difference between the expected and actual weight:

$$Country\ Bias^{f}_{p,q,J} = Country\ Actual\ Weight^{f}_{p,q,J} - Country\ Expected\ Weight^{f}_{q,J} \quad (4)$$

so that *Country Bias* shows the deviation from expected investment in each market and takes on negative values for under-weights and positive values for over-weights.

To test H_1, we run cross-sectional ordinary least squares (OLS) regressions examining the determinants of the investor's portfolio weight in a foreign market, where *Country Bias* is the dependent variable. As our main explanatory variables, we first use four individual measures of familiarity between the investor's home market and the foreign target market: *Cultural similarity, Similar language, Common legal origin,* and *Geographic proximity.* We then use the principal component of all four measures - *Familiarity PC.* We also control for the total market value of the institution's equity (*MV of investor*). All regressions include the investor's type, home country-quarter, and foreign country-quarter fixed effects. The errors are clustered by investor-quarter.

3.2.3. Familiarity with the foreign market and investor's performance

To test our second hypothesis, H_2, we examine the link between the institutional investor's performance and the degree of investor's familiarity with the target foreign market. We measure investor's performance by investor's excess returns in the securities of each foreign market. The investor's excess return in a foreign target market is the quarterly value-weighted return of the institutional investor's securities in each foreign market with positive holdings minus the global risk-free rate over the same quarter, obtained from Kenneth French's data library.[8] The value-weighted quarterly return is computed based on the consecutive 3-month security returns following the reporting period ($Ret_{t,t+3}$) for each foreign market the investor holds.

We expect that investors will show better performance in familiar foreign markets. Notably, the relation between familiarity and excess returns must be net of any potential risk differences in portfolios that are more concentrated in familiar foreign markets. To this end, we employ a variety of risk adjustments to appropriately benchmark portfolio performance. We utilize the global capital asset pricing model (CAPM) to control for the differences in systematic risk in institutions' excess returns.[9] When we estimate our risk measures, we do not have the benefit of the information available to skilled investors. We appeal to a result in Kacperczyk, Van Nieuwerburgh, and Veldkamp (2014), which shows that risk measures from an unconditional CAPM approach the model-implied conditional counterpart when idiosyncratic risk is small relative to aggregate risk. We also perform risk adjustments using the four country-specific market, size, value, and momentum premiums from monthly security return data, closely

[8] Kenneth French's data library is at http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.
[9] *Market premium* in CAPM is calculated as the market return less the global risk-free rate, both measured in quarter *q*. Market return equals the global market return obtained from Kenneth French's data library when evaluating aggregate portfolio performance, and it equals each country's value-weighted market return, based on securities' return data for that country when evaluating performance in the target country (home or foreign).

following Fama and French (1993) in construction of the factors. Firm return, size, and book value data are from WorldScope. For robustness, we control for all country specific variation in returns through additional analyses including foreign country – quarter fixed effects instead of systematic risk premiums.

In all of our regressions, we control for the institution's portfolio size measured as the natural logarithm of the institution's market value of equity in the quarter. In addition, we include home country-quarter fixed effects to account for different country characteristics that affect investment behavior and portfolio characteristics. We also include fixed effects for investor type to control for potential variation in different objectives and strategies across different types of institutional investors.

3.2.4. Investor's learning capacity

Furthermore, we conjecture that, if investor's familiarity with a given foreign market is associated with information advantage, investors with high degree of learning capacity should hold a higher weight of a familiar foreign market because they can exploit information advantage more effectively through learning and specializing than can investors with low degree of learning capacity.

To proxy for the investor's learning capacity, we employ a measure of the investor's skill level, which we estimate based on the investor's abnormal returns earned in the home market holdings. This analysis is performed for the subset of investors who hold home market securities in addition to the foreign securities. The abnormal return is computed on home market securities, quarterly, using the four factor benchmark which is created for each home country from that country's security returns. The abnormal return is a rolling alpha based on 12 quarters of returns

to investor's home market securities. Using these home market alphas, we categorize each investor into a skill quintile every quarter followed by the measuring period so that Skill =5 is the highest skill quintile and Skill =1 is the lowest skill quintile.

4. Results

4.1. Foreign market portfolio weight and familiarity

We first examine whether foreign country weight is related to the investor's familiarity with the foreign target market. If familiarity serves as a source of information advantage, investors will rationally choose to overweight familiar foreign markets. Table II presents the results of OLS regressions examining the relation between the foreign country weight (*Country bias*) and five proxies for familiarity with foreign market: *Geographic proximity, Cultural similarity, Similar language, Common legal origin,* and *Familiarity PC*. The dependent variable, *Country bias*, is the difference between the investor's portfolio weight in a given foreign market and that market's expected weight, defined in equation (4). All regressions control for the investor's market value and include investor's type, home country-quarter, and foreign country-quarter fixed effects.

The positive coefficients on *Geographic proximity*, *Cultural similarity*, *Similar language*, and *Common legal origin* in specifications (1)-(4), respectively, suggest that institutional investors overweight foreign markets that are familiar to the investor. The results remain highly significant when familiarity variables are incorporated in *Familiarity PC* variable, which is the principle component measure of all four dimensions of familiarity. The positive coefficient on *Familiarity PC* in specification (5) suggests that institutional investors are more likely to overweight foreign markets that are familiar to the investor. The results support our first hypothesis, H_1. This analysis complements prior studies (e.g., Anderson et al. 2011; Chan,

Covrig, and Ng, 2005; and Sjoerd and Frijns, 2010) by providing a comprehensive analysis of the largest sample on foreign assets' allocations by institutional investors worldwide currently available in the literature.[10]

4.2 Foreign market performance and familiarity

We then perform the analysis of the relation between the investor's familiarity with the foreign target market and the investor's performance. We reason that, if familiarity serves as a source of initial information advantage, we should see a positive relation between familiarity and investor's performance. Table III presents the results of OLS regressions, where the dependent variable, $Ret_{t,t+3,}$ is the quarterly value-weighted return of the institutional investor in each foreign market's securities in excess of the global risk-free rate over the same quarter. Independent variables include: the familiarity measures, examined individually in specifications (1) – (4), and the principal component of all four individual familiarity measures, *Familiarity PC*, in specification (5). All specifications control for the institution's market value, *MV of investor*. In Panel A, we include investor type, home country-quarter, and foreign country-quarter fixed effects. In Panel B, we include investor type and home country-quarter fixed effects and control for the differences in systematic risk characteristics of the investor's returns by including four country-specific Fama and French (2012) risk factors for each target market: *Market premium*, size premium (*SMB*), value premium (*HML*), and momentum premium (*UMD*). The *Market premium* is calculated as each country's value-weighted market return less the global risk-free

[10] We do not claim the novelty of these findings but present additional evidence in support of prior findings. We show that results hold for the large sample of institutional investors worldwide, over a longer time period than previously examined, and using a measure of familiarity that combines correlated factors. Furthermore, the fixed effects included in our regressions allow controlling for the unobservable investor type, home and target country, and time characteristics that could be driving the observed relation between cultural distance and portfolio allocation decisions.

rate, both measured in quarter *q*. SMB_q is the difference between the returns on a diversified portfolio of small and large stocks over quarter *q*; HML_q is the difference between the returns of value and growth stocks over quarter *q*; and UMD_q is the difference between the returns on winners and losers over quarter *q*. These factors, calculated for all foreign countries, have been used in prior studies to explain international stock returns (see, e.g., Fama and French, 2010, 2012; and Hou, Karolyi, and Kho, 2011). We compute country-specific factors from monthly security return data, closely following Fama and French (1993) methodology. Firm return, size, and book value data are from WorldScope.

Overall, the results presented in Table III suggest that risk-adjusted returns of institutional investors are positively related to the investor's familiarity with the foreign target market. First, in both panels A and B, all individual proxies for familiarity have their expected positive signs and all, but *Geographic proximity* in panel A, are statistically significant. The positive coefficients on individual measures of familiarity indicate that, as geographic proximity, cultural, language, and legal origin similarities increase from the investor's home market to the foreign target market, the investor's excess returns in the foreign country increase. This evidence implies that cultural, legal systems', and geographic distances deteriorate the investor's performance. Finally, the coefficient on *Familiarity PC* variable is positive and statistically significant, indicating that investor's excess returns increase as the investor's familiarity with the foreign market increases.

These results provide support for H_2 and imply that investors rationally choose to overweight familiar foreign markets because of the higher risk-adjusted returns they earn in these markets. It appears that investors possess initial information advantage in familiar foreign markets.

In Table IV, we extend the analysis reported in Table III by including *Country bias*, defined in equation (4), as an additional explanatory variable (specifications (1)-(6)). We test if the observed relation between the investor's familiarity and excess returns in a foreign market is mainly driven by the larger portfolio weight in familiar countries or whether familiarity with the foreign market enhances excess returns of investor's portfolio concentrated in certain foreign markets.

Specifications (2)-(6) replicate specifications (1)-(5) of panel B of Table III. Results in these specifications show that while the coefficient on *Country bias* is positive and statistically significant in three out of six specifications, the coefficient on all familiarity measures maintain their statistical significance and economic magnitude (comparing the size of the coefficients in Tables III and IV). These results suggest that initial information advantage from familiarity enhances investors' excess returns independent of the degree of portfolio concentration.

4.3 Investor's learning capacity

Next we turn to the tests of hypotheses H_3 and H_4, which relate the investor's learning capacity to portfolio allocation and performance. We expect to observe that investors with higher learning capacity overweight foreign countries in which they possess initial information advantage. Through learning they amplify their initial information advantage. We also expect that investors with high learning capacity earn higher excess returns than investors with low learning capacity when they have the same initial information advantage

We proxy for the investor's magnitude of learning capacity with the investor's skill measure. The skill measure is estimated by home market "alpha quintile" so that the highest skill investors belong to quintile 5. In Table V, we examine the relation between the investor's

portfolio weight of a foreign country by investor's familiarity with the foreign country and the investor's skill level. In specification (1) we show that there exists no systematic pattern in portfolio allocation to a foreign country by skill quintiles. However, the interaction terms of *Skill* and *Familiarity PC* show that *Skill* quintiles 2, 3, and 4, allocate more to familiar foreign markets compared to *Skill* quintile 1. This is consistent with H_3. However, the highest skill investors, the omitted category, behave inconsistent with the prediction of H_4 compared to *Skill* quintiles 2, 3, and 4 by allocating more than *Skill* quintiles 2, 3, and 4 to unfamiliar markets. However, when we compare just the quintiles 1 and 5, we find consistent evidence for H_3 that high learning capacity investors allocate more to markets where they possess information advantage because they are able to learn and capitalize on the initial information advantage.

In Table VI we examine the relation between investor's excess returns in a foreign country by investor's familiarity, portfolio weight, as well as the investor's skill. To do this, we first define our main independent variables based on investor's familiarity with the foreign market as well as the investor's country weight in that market. In specifications (1)-(3), this indicator variable, *High familiarity & High weight,* equals 1 if the market is familiar to the investor and the country weight is high. In all the specifications, high is defined to be the top 50^{th} percentile and low is defined to be the bottom 50^{th} percentile of each variable. In specifications (4)-(6) indicator variable, *Low familiarity & Low weight,* equals 1 if the market is unfamiliar and country weight is low. In specifications (7)-(9) indicator variable, *Low familiarity & High weight*, equals 1 if the market is unfamiliar and country weight is high. In specifications (10)-(12) indicator variable, *High familiarity & Low weight*, equals 1 if the market is familiar and country weight is low. We also include investor's *Skill*, proxied by investor's home market alpha, using previous three years of returns leading up to the measuring period, so that larger

values indicate higher levels of skill. We include interaction terms between the indicator variables of familiarity and country weight and investor's *Skill*.

First, result of specification (1) shows that the risk adjusted returns in a foreign country are positively related to the *Skill* variable, which is positive and significant across all specifications in the table. In other words, as skill increases (measured by domestic market performance from previous three years), so do investor's risk adjusted returns in foreign markets. Second, the interaction term *High familiarity & High weight* is positive and significant, so that performance by investors in familiar markets with high portfolio weight is higher than by other investors. This result supports H_4 that when investor capitalizes on information advantage by learning even more about assets in familiar markets and accumulates a greater share of them, risk adjusted returns increase. The opposite result is true in specifications (4)-(6) with respect to the interaction term *Low familiarity & Low weight.* Investors' returns in unfamiliar markets with low portfolio weights are more negative than in other markets. This also supports H_4. In specifications (7)-(12), the interaction terms *Low familiarity & High weight* and *High familiarity & Low weight* also reveal an interesting insight into initial information advantage. When familiarity is low and portfolio weight is high, investors returns are negative. When familiarity is high and portfolio weight is low, the returns are positive. Overall, the result suggests that initial information advantage is an important determinant of risk adjusted returns in foreign markets. Overall, we find support for H_3 and H_4.

Finally, in Table VI, we test how investors skill influences risk adjusted returns and interacts with familiarity and portfolio allocation weights. In specifications (3), (6), (9), and (12) we interact *Skill* with the familiarity & weight indicator variables. These results show that in familiar markets, the low skill investors benefit more from the initial information advantage

(evident from the negative interaction terms of *High familiarity & High weight* and *High familiarity & Low weight*), whereas in unfamiliar markets the skilled investors outperform the low skilled investors by a greater amount (evident from the positive interaction terms of *Low familiarity & High weight* and *Low familiarity & Low weight*). The interaction terms show that low skilled investors are especially hurt by lack of information advantage.

5. Conclusion

Prior literature documents that investors are home-biased and internationally under-diversified. It is not clear, however, if the observed under-diversification is an irrational choice due to behavioral bias or a rational decision influenced by information advantage. This study uses institutional investors' portfolio allocations and performance from 46 countries during 1999-2015 to investigate that question.

First we show that investor's familiarity with a foreign target market positively impacts portfolio allocation as well as risk adjusted returns of institutional investors. We also show that high skilled investors, based on their home market performance, allocate more to familiar foreign markets. Overall, the findings of this study suggest that investors rationally choose to concentrate their portfolios in familiar countries because of the information advantage that leads to better investors' performance.

References

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

Amadi, A., 2004. Does familiarity breed investment? An emipirical analysis of foreign equity holdings. Working paper, University of California, Davis.

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

Bhargava, R., Gallo, J.G., Swanson, P.E., 2001. The performance, asset allocation, and investment style of international equity managers. Review of Quantitative Finance and Accounting 17, 377-395.

Bottazzi, L., Da Rin, M., Hellmann, T., 2012. The importance of trust for investment: evidence from venture capital. Universita Bocconi Working Paper.

Chan, K., Covrig, V., Ng, L., 2005. What Determines the Domestic Bias and Foreign Bias? Evidence from Mutual Fund Equity Allocations Worldwide. The Journal of Finance 60, 1495-1534.

Choe, H., Kho, B., Stulz, R.M., 2005. Do domestic investors have an edge? The trading experience of foreign investors in Korea. Review of Financial Studies 18, 795-829.

Cohen, L., 2009. Loyalty-based portfolio choice. Review of Financial Studies 22, 1213-1245.

Choi, N., Fedenia, M., Skiba, H., Sokolyk, T., 2016. Portfolio concentration of institutional investors worldwide. Journal of Financial Economics, forthcoming.

Cole, H., Mailath, G., Postlewaite, A., 2001. Investment and concern with relative position, Review of Economic Design 6, 241-261.

Coval, J.D., Moskowitz, T.J., 2001. The geography of investment: Informed trading and asset prices. Journal of Political Economy 109, 811-841.

DeMarzo, P., Kaniel, R., Kremer, I., 2004. Diversification as a public good: Community effects in portfolio choices, Journal of Finance 59, 1677-1715.

Dvořák, T., 2005. Do domestic investors have an information advantage? Evidence from Indonesia. The Journal of Finance 60, 817-839.

Fedenia, M., Shaffer, S., Skiba, H., 2011. Information immobility, industry concentration, and institutional investors' performance. Working Paper, University of Wisconsin-Madison, and University of Wyoming.

Feldstein, M., Horioka, C., 1980. Domestic Saving and International Capital Flows. Economic Journal 90, 314–329.

Ferreira, M.A., Matos, P., 2008. The colors of investors' money: The role of institutional investors around the world. Journal of Financial Economics 88, 499-533.

Ferreira, M.A., Matos, P., Pereira, J., 2009. Do foreigners know better? A comparison of the performance of local and foreign mutual fund managers. Working Paper, Universidade Nova de Lisboa, University of Southern California, and ISCTE Business School.

French, K., Poterba, J., 1991. Investor diversification and international equity markets. American Economic Review 81, 222-226.

Gehrig, T., 1993. An information based explanation of the domestic bias in international equity investment. The Scandinavian Journal of Economics 95, 97-109.

Giannetti, M., Laeven, L., 2012. Flight home effect: Evidence from the syndicated loan market during financial crises. Journal of Financial Economics 104, 23-43.

Giannetti, M., Yafeh, Y., 2012. Do cultural differences between contracting parties matter? Evidence from syndicated bank loans. Management Science 58, 365–383.

Grinblatt, M., Keloharju, M., 2001. How distance, language, and culture influence stockholdings and trades. Journal of Finance 56, 1053-1073.

Grubel, H.G., 1968. Internationally diversified portfolios. American Economic Review 58, 1299-1314.

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

Hau, H., 2001. Location matters: An examination of trading profits. Journal of Finance 56, 1959-1983.

Hofstede, G., 1980. Culture's consequences: International differences in work related values. Sage Publications, Inc., Beverly Hills, CA.

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

Huberman, Gur, 2001. Familiarity breeds investment. Review of Financial Studies 14(3), 659-680.

Hwang, B.-H., 2011. Country-specific sentiment and security prices. Journal of Financial Economics 100, 382–401.

Ivković, Z., Weisbenner, S., 2005. Local does as local is: Information content of the geography of individual investors' common stock investments. The Journal of Finance 60, 267-306.

Kacperczyk, M., Sialm, C., Zheng, L., 2005. On the industry concentration of actively managed equity mutual funds. The Journal of Finance 60, 1983-2011.

Karolyi, A., Stulz, R., 2003. Are financial assets priced locally or globally? Handbook of the Economics of Finance 1, 975-1020.

Kogut, B., Singh, H., 1988. The effect of national culture on the choice of entry mode. Journal of International Business Studies 19, 411-432.

Levy, H., Sarnat, M., 1970. International diversification of investment portfolios. The American Economic Review 60, 668-675.

Lewis, K., 1999. Trying to explain home bias in equities and consumption. Journal of Economic Literature 37, 571-608.

Li, D., Moshirian, F., Pham, P.K., Zein, J., 2006. When financial institutions are large shareholders: The role of macro corporate governance environments. Journal of Finance 61, 2975-3007.

Morse, A., Shive, S., 2011. Patriotism in your portfolio. Journal of Financial Markets 14, 411-440.

Shukla, R., Van Inwegen, G., 1995. Do locals perform better than foreigners? An analysis of UK and US mutual fund managers. Journal of Economics and Business 47, 241-254.

Van Nieuwerburgh, S., Veldkamp, L., 2009. Information immobility and the home bias puzzle. Journal of Finance 64, 1187–1215.

Van Nieuwerburgh, S., Veldkamp, L., 2010. Information acquisition and portfolio under-diversification. Review of Economic Studies 77, 779-805.

Table I
Sample Distribution by Investor Home Country and Foreign Country

Table I reports the sample distribution of institutional investors by investor home country (Panel A) and by foreign country where institutions have at least one holding during the sample period (Panel B). Investor home country is the location of the institution's main operations; foreign country is the security's country of exchange. Data are from the FactSet institutional quarterly holdings database from the last quarter of 1999 to the first quarter of 2015.The sample consists of global institutional investors with at least one investment outside of the institution's home country in a given quarter. To be included in the sample, institutional investors are required to hold at least one foreign market security at any given quarter; they are not required to hold any home market securities. Sample includes 46,003 institutions from 46 countries with allocations in 49 different countries. In Panel A, the first column shows the home country of institutional investors with foreign holdings; the second column shows the number of institutions with foreign holdings from each of the home markets, and the third column shows the share of institutions from each home market relative to the total sample. The last two columns show the number of institutions and the fraction of the total sample from each home market for institutional investors who hold domestic and foreign securities. Panel B shows the sample distribution of institutions in the foreign markets. The number of institutions in each foreign market is the total of all foreign institutions who hold at least one security in that market during the sample period.

Table I (continued)

Panel A: Sample Distribution by Institutional Investor Home Country

	Sample with foreign holdings		Sample with domestic and foreign holdings	
Home country	Number of institutions	Share of the sample	Number of institutions	Share of the sample
Argentina	13	0.00028	1	0.00005
Australia	590	0.01283	100	0.00529
Austria	490	0.01065	108	0.00571
Belgium	611	0.01328	251	0.01328
Brazil	171	0.00372	12	0.00063
Bulgaria	1	0.00002	0	0.00000
Canada	2,437	0.05297	806	0.04265
Chile	78	0.00170	2	0.00011
China	31	0.00067	0	0.00000
Czech Republic	43	0.00093	3	0.00016
Denmark	584	0.01269	164	0.00868
Finland	342	0.00743	115	0.00608
France	3,388	0.07365	1,127	0.05963
Germany	4,917	0.10688	1,613	0.08534
Greece	130	0.00283	6	0.00032
Hong Kong	631	0.01372	252	0.01333
Hungary	44	0.00096	9	0.00048
India	255	0.00554	123	0.00651
Indonesia	4	0.00009	0	0.00000
Ireland	295	0.00641	65	0.00344
Israel	623	0.01354	0	0.00000
Italy	1,339	0.02911	273	0.01444
Japan	287	0.00624	27	0.00143
Luxembourg	1,032	0.02243	45	0.00238
Malaysia	114	0.00248	39	0.00206
Mexico	52	0.00113	3	0.00016
Netherlands	698	0.01517	226	0.01196
New Zealand	18	0.00039	0	0.00000
Norway	323	0.00702	149	0.00788
Pakistan	13	0.00028	5	0.00026
Philippines	3	0.00007	0	0.00000
Poland	243	0.00528	103	0.00545
Portugal	259	0.00563	87	0.00460
Russian Federation	14	0.00030	2	0.00011
Singapore	467	0.01015	158	0.00836
Slovakia	21	0.00046	0	0.00000
South Africa	585	0.01272	270	0.01429
South Korea	2	0.00004	1	0.00005
Spain	5,680	0.12347	4,054	0.21450
Sweden	882	0.01917	430	0.02275
Switzerland	2,250	0.04891	600	0.03175
Taiwan	234	0.00509	27	0.00143
Thailand	18	0.00039	0	0.00000
Turkey	7	0.00015	2	0.00011
United Kingdom	4,903	0.10658	1,652	0.08741
United States	10,881	0.23653	5,990	0.31693
Total	46,003	1.00000	18,900	0.41084

Table I (continued)

Panel B: Sample Distribution of Institutional Investors by Foreign Country

Country	Number of foreign institutions	Share of total
Argentina	1,867	0.00372
Australia	12,010	0.02393
Austria	11,391	0.02270
Belgium	14,976	0.02984
Brazil	8,750	0.01743
Bulgaria	122	0.00024
Canada	19,176	0.03821
Chile	2,629	0.00524
China	6,755	0.01346
Colombia	1,177	0.00235
Czech Republic	1,702	0.00339
Denmark	10,841	0.02160
Finland	20,404	0.04065
France	24,025	0.04787
Germany	22,220	0.04427
Greece	9,320	0.01857
Hong Kong	9,361	0.01865
Hungary	2,350	0.00468
India	5,634	0.01123
Indonesia	3,313	0.00660
Ireland	23,917	0.04765
Israel	10,749	0.02142
Italy	20,545	0.04094
Japan	13,986	0.02787
Luxembourg	16,758	0.03339
Malaysia	4,311	0.00859
Mexico	6,652	0.01325
Morocco	738	0.00147
Netherlands	30,054	0.05988
New Zealand	2,839	0.00566
Norway	12,343	0.02459
Pakistan	456	0.00091
Philippines	3,006	0.00599
Poland	2,774	0.00553
Portugal	10,799	0.02152
Russian Federation	4,480	0.00893
Singapore	11,209	0.02233
Slovakia	8	0.00002
South Africa	6,035	0.01202
South Korea	8,347	0.01663
Spain	16,835	0.03354
Sweden	16,894	0.03366
Switzerland	24,354	0.04852
Taiwan	7,307	0.01456
Thailand	4,610	0.00919
Turkey	3,807	0.00759
United Kingdom	28,214	0.05622
United States	21,795	0.04343
Venezuela	42	0.00008
Total	501,887	1.00000

Table II
Familiarity and Institutional Investors' Portfolio Weight of a Foreign Market

Table II shows the results of cross-sectional regressions examining the effect of investor's familiarity with the foreign target market on the institutional investor's portfolio weight in a foreign market from the first quarter of 1999 to the second quarter of 2015. The dependent variable (*Country bias*) is the investor's portfolio weight in the foreign target market net of the market's expected weight based on the country's market capitalization. The foreign target market for each institutional investor is defined as a foreign market with non-zero portfolio weight for a given institutional investor. The main independent variables are familiarity variables for the investor with each foreign target market. *Geographic* proximity is the negative value of the distance (in logarithm of kilometers) between the investor's home market and the foreign target market; *Cultural similarity* is the negative value of *Hofstede distance* as defined in equation (1); *Similar language* is the negative value of a factor score from differences in major languages in the home market and the target foreign country, an incidence of the home country's language in the target country, and an incidence of a target country's language in the home, obtained from Douglas Dow's research website. *Common legal origin* is the indicator variable and takes the value of one if the home country and the foreign target country share a common legal origin and takes the value of zero otherwise. *Familiarity PC*, is the first principle component of all four familiarity variables (*Geographic proximity*, *Cultural similarity*, *Similar language*, and *Common legal origin*). All regressions control for the total market value of the institution's equity (*MV of investor*). All regressions are run with investor type, investor home country - quarter, and target foreign country - quarter fixed effects. All errors are clustered by investor - quarter. The robust *t*-statistics are reported in brackets (*** significant at 1% level).[11]

	(1)	(2)	(3)	(4)	(5)
Geographic proximity	3.1762***				
	[219.45]				
Cultural similarity		2.2948***			
		[206.83]			
Similar language			2.6499***		
			[265.34]		
Common legal origin				0.0641***	
				[304.54]	
Familiarity PC					2.5820***
					[322.55]
MV of investor	-0.9319***	-0.9488***	-0.9405***	-0.9323***	-0.9347***
	[-139.55]	[-141.00]	[-141.88]	[-140.98]	[-142.77]
Fixed effects:					
Type	Yes	Yes	Yes	Yes	Yes
Home Country -Quarter	Yes	Yes	Yes	Yes	Yes
Foreign Country- Quarter	Yes	Yes	Yes	Yes	Yes
Observations	4,839,556	4,839,556	4,839,556	4,839,556	4,839,556
Adjusted R^2	0.1782	0.1754	0.1796	0.1851	0.1883

[11] For robustness, we have run the regressions using several alternative methods of error clustering. Overall, the results are quite similar in statistical significance and magnitude across the different variations.

Table III
Familiarity and Institutional Investors' Excess Returns in a Foreign Market

Table III shows the results of cross-sectional regressions examining the determinants of investors' excess returns in a foreign market from the first quarter of 1999 to the second quarter of 2015. The dependent variable is the quarterly value-weighted return of the investor's securities in each foreign market with positive holdings in excess of the global risk-free rate over the same quarter. The value-weighted quarterly return is computed based on the consecutive 3-month security returns following the reporting period ($Ret_{t,t+3}$) for each foreign market the investor holds. The main independent variables are familiarity variables for the investor with each foreign target market. *Geographic* proximity is the negative value of the distance (in logarithm of kilometers) between the investor's home market and the foreign target market; *Cultural similarity* is the negative value of *Hofstede distance* as defined in equation (1); *Similar language* is the negative value of a factor score from differences in major languages in the home market and the target foreign country, an incidence of the home country's language in the target country, and an incidence of a target country's language in the home, obtained from Douglas Dow's research website. *Common legal origin* is the indicator variable and takes the value of one if the home country and the foreign target country share a common legal origin and takes the value of zero otherwise. *Familiarity PC*, is the first principle component of all four familiarity variables (*Geographic proximity*, *Cultural similarity*, *Similar language*, and *Common legal origin*). We also control for the total market value of the institution's equity (*MV of investor*). In both panels A and B, we include fixed effects for investors' home country-quarter as well as investors' type. To control for systematic risk in the foreign target country returns, in panel A we include foreign country-quarter fixed effects. In panel B we condition for systematic risk of the investor's return by including the following for foreign target countries: *Market Premium* is equal to the value-weighted market return of a foreign market less the global risk-free rate; *SMB*, *HML*, and *UMD* are foreign country-specific systematic risk factors, generated for each foreign market. All regressions are run investor type and investor home country – quarter fixed effects and all errors are clustered by investor - quarter. The robust t-statistics are reported in brackets (* significant at 10%, ** significant at 5%, *** significant at 1% level).[12]

[12] For robustness, we have run the regressions using different return intervals (-3,0), (-2, 1), (-1, 2). We have also run the regressions using several alternative methods of error clustering (portfolio, portfolio –year, destination country – year). Overall, the results are quite similar in statistical significance and magnitude across the different variations.

Table III (continued)

Panel A

	(1)	(2)	(3)	(4)	(5)
Geographic proximity	0.0046				
	[0.55]				
Cultural similarity		0.0346***			
		[5.57]			
Similar language			0.0334***		
			[5.30]		
Common legal origin				0.0006***	
				[4.95]	
Familiarity PC					0.0300***
					[6.21]
MV of investor	0.0317***	0.0317***	0.0318***	0.0318***	0.0318***
	[8.97]	[8.97]	[8.99]	[9.01]	[9.01]
Fixed effects:					
Type	Yes	Yes	Yes	Yes	Yes
Home Country-Quarter	Yes	Yes	Yes	Yes	Yes
Foreign Country- Quarter	Yes	Yes	Yes	Yes	Yes
Observations	4,839,556	4,839,556	4,839,556	4,839,556	4,839,556
Adjusted R^2	0.5611	0.5611	0.5611	0.5611	0.5611

Table III (continued)

Panel B

	(1)	(2)	(3)	(4)	(5)
Geographic proximity	0.0490***				
	[7.88]				
Cultural similarity		0.0774***			
		[16.17]			
Similar language			0.0498***		
			[10.46]		
Common legal origin				0.0022***	
				[18.72]	
Familiarity PC					0.0733***
					[17.96]
MV of investor	0.0367***	0.0372***	0.0365***	0.0366***	0.0369***
	[9.86]	[9.98]	[9.80]	[9.83]	[9.92]
Market premium	0.8174***	0.8176***	0.8173***	0.8174***	0.8176***
	[645.63]	[646.32]	[645.48]	[645.20]	[645.94]
SMB	-0.0397***	-0.0395***	-0.0389***	-0.0392***	-0.0387***
	[-34.03]	[-33.87]	[-33.31]	[-33.59]	[-33.17]
HML	0.0375***	0.0379***	0.0377***	0.0369***	0.0378***
	[33.27]	[33.51]	[33.39]	[32.62]	[33.52]
UMD	-0.0152***	-0.0152***	-0.0151***	-0.0156***	-0.0154***
	[-15.41]	[-15.44]	[-15.36]	[-15.86]	[-15.66]
Fixed effects:					
Type	Yes	Yes	Yes	Yes	Yes
Home Country-Quarter	Yes	Yes	Yes	Yes	Yes
Observations	4,728,986	4,728,986	4,728,986	4,728,986	4,728,986
Adjusted R^2	0.5169	0.5169	0.5169	0.5169	0.5169

Table IV
Foreign Investors' Portfolio Weight and Excess Returns in Foreign Countries

Table IV replicates the analysis of Table III while also investigating the effect of portfolio weight on investor's excess returns in a foreign market from the first quarter of 1999 to the second quarter of 2015. The dependent variable is the quarterly value-weighted return of the investor's securities in each foreign market with positive holdings in excess of the global risk-free rate over the same quarter. The value-weighted quarterly return is computed based on the consecutive 3-month security returns following the reporting period ($Ret_{t,t+3}$) for each foreign market the investor holds. The main independent variables are familiarity variables for the investor with each foreign target market. *Geographic* proximity is the negative value of the distance (in logarithm of kilometers) between the investor's home market and the foreign target market; *Cultural similarity* is the negative value of *Hofstede distance* as defined in equation (1); *Similar language* is the negative value of a factor score from differences in major languages in the home market and the target foreign country, an incidence of the home country's language in the target country, and an incidence of a target country's language in the home, obtained from Douglas Dow's research website. *Common legal origin* is the indicator variable and takes the value of one if the home country and the foreign target country share a common legal origin and takes the value of zero otherwise. *Familiarity PC*, is the first principle component of all four familiarity variables (*Geographic proximity*, *Cultural similarity*, *Similar language*, and *Common legal origin*). We also control for the total market value of the institution's equity (*MV of investor*). We include fixed effects for investors' home country-quarter as well as investors' type. To control for systematic risk in the foreign country returns we condition for systematic risk of the investor's return by including the following for foreign countries: *Market Premium* is equal to the value-weighted market return of a foreign market less the global risk-free rate; *SMB*, *HML*, and *UMD* are foreign country-specific systematic risk factors, generated for each foreign market. All regressions are run investor type and investor home country – quarter fixed effects and the errors are clustered by investor - quarter. The robust t-statistics are reported in brackets.
(* significant at 10%, ** significant at 5%, *** significant at 1% level).

Table IV (continued)

	(1)	(2)	(3)	(4)	(5)	(6)
Country Bias	0.0012***	0.0008**	0.0007**	0.0009**	0.0004	0.0003
	[3.60]	[2.41]	[1.97]	[2.50]	[1.13]	[0.91]
Geographic proximity		0.0477***				
		[7.63]				
Cultural similarity			0.0734***			
			[15.49]			
Similar language				0.0510***		
				[11.02]		
Common legal origin					0.0022***	
					[18.97]	
Familiarity PC						0.0732***
						[-18.11]
MV of investor	0.0387***	0.0387***	0.0388***	0.0384***	0.0381***	0.0382***
	[10.76]	[10.76]	[10.81]	[10.69]	[10.61]	[10.65]
Market premium	0.8149***	0.8151***	0.8153***	0.8151***	0.8151***	0.8153***
	[659.92]	[660.59]	[661.26]	[660.43]	[660.16]	[660.91]
SMB	-0.0379***	-0.0378***	-0.0376***	-0.0370***	-0.0373***	-0.0368***
	[-33.35]	[-33.22]	[-33.06]	[-32.45]	[-32.77]	[-32.32]
HML	0.0390***	0.0395***	0.0398***	0.0397***	0.0388***	0.0398***
	[35.50]	[35.94]	[36.16]	[36.08]	[35.31]	[36.24]
UMD	-0.0139***	-0.0140***	-0.0140***	-0.0139***	-0.0144***	-0.0142***
	[-14.48]	[-14.60]	[-14.64]	[-14.58]	[-15.06]	[-14.85]
Fixed effects:						
Type	Yes	Yes	Yes	Yes	Yes	Yes
Home Country-Quarter	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,941,435	4,941,435	4,941,435	4,941,435	4,941,435	4,941,435
Adjusted R^2	0.5161	0.5161	0.5161	0.5161	0.5162	0.5162

Table V
Investors' Portfolio Under- or Overweight, Familiarity, and Investor Skill

Table V shows the results of cross-sectional regressions examining the determinants of investors' portfolio weight in a foreign market from the first quarter of 1999 to the second quarter of 2015 by investor skill level. The dependent variable is the investor's portfolio weight in the foreign market relative to the market's expected weight (*Country bias*). The main independent variables are the investor's familiarity with each foreign market with at least some investment, interacted with several investor skill levels, proxied by investor's home market alpha, using previous three years of returns leading up to the measuring period (Skill=1 is the lowest home market alpha quintile, Skill=5 is the highest home market alpha quintile and the omitted variable). The independent variable interacted with skill measures is the *Familiarity PC*, which is the first principle component of the familiarity proxies (*Geographic proximity*, *Cultural similarity*, *Similar language*, and *Common legal origin*). We also control for the total market value of the institution's equity (*MV of investor*). All regressions are run with investor type, investor home country - quarter, and investment destination - quarter fixed effects. All errors are clustered by investor - quarter. The robust t-statistics are reported in brackets (* significant at 10%, ** significant at 5%, *** significant at 1% level).

	(1)	(2)	(3)
Skill =1	-0.0028***		0.0017***
	[-5.51]		[3.84]
Skill =2	0.0073***		0.0055***
	[13.94]		[12.25]
Skill =3	0.0103***		0.0085***
	[19.34]		[18.31]
Skill =4	0.0128***		0.0099***
	[23.50]		[20.50]
Familiarity PC		2.7213***	2.7912***
		[233.76]	[109.83]
Skill=1 x Familiarity PC			-0.5603***
			[-18.48]
Skill=2 x Familiarity PC			0.0471
			[1.50]
Skill=3 x Familiarity PC			0.0598*
			[1.85]
Skill=4 x Familiarity PC			0.1953***
			[5.71]
MV of investor	-1.0275***	-0.9754***	-0.9964***
	[-97.20]	[-98.21]	[-99.96]
Fixed effects:			
Type	Yes	Yes	Yes
Home Country-Quarter	Yes	Yes	Yes
Foreign Country- Quarter	Yes	Yes	Yes
Observations	1,904,547	1,904,547	1,904,547
Adjusted R^2	0.2203	0.2442	0.2456

Table VI
Foreign Investors' Excess Returns in Destination Country by Investor Skill

Table VI shows the results of cross-sectional regressions examining the determinants of investors' excess returns in a foreign market (similar to Table III) by investor skill level (similar to Table V). The dependent variable is the quarterly value-weighted return of the investor's securities in each foreign market with positive holdings in excess of the global risk-free rate over the same quarter. The value-weighted quarterly return is computed based on the consecutive 3-month security returns following the reporting period ($Ret_{t,t+3}$) for each foreign market the investor holds. The main independent variables are the investor's familiarity with each foreign market with at least some investment, interacted with investor skill levels, proxied by investor's home market alpha, using previous three years of returns leading up to the measuring period (Skill=1 is the lowest home market alpha quintile, Skill=5 is the highest home market alpha quintile and the omitted variable). The independent variable interacted with skill measures is the *Familiarity PC*, which is the first principle component of the familiarity proxies (*Geographic proximity*, *Cultural similarity*, *Similar language*, and *Common legal origin*). We also control for the total market value of the institution's equity (*MV of investor*). We condition for systematic risk of the investor's return by including foreign country-specific systematic risk factors: *Market Premium*, *SMB*, *HML*, and *UMD*. The coefficients of these variables are omitted for brevity. All regressions are run with investor type and investor home country – quarter fixed effects and the errors are investor home country-quarter clustered. The robust t-statistics are reported in brackets (* significant at 10%, ** significant at 5%, *** significant at 1% level.

	(1)	(2)	(3)
Skill =1	-0.0044***	-0.0044***	-0.0050***
	[-13.28]	[-13.22]	[-14.19]
Skill =2	-0.0027***	-0.0028***	-0.0032***
	[-8.35]	[-8.54]	[-8.90]
Skill =3	-0.0018***	-0.0019***	-0.0025***
	[-5.69]	[-5.90]	[-7.08]
Skill =4	-0.0014***	-0.0014***	-0.0016***
	[-4.22]	[-4.42]	[-4.51]
Familiarity PC		0.0584***	0.0042
		[9.28]	[0.27]
Skill=1 x Familiarity PC			0.0867***
			[4.44]
Skill=2 x Familiarity PC			0.0535***
			[2.71]
Skill=3 x Familiarity PC			0.0795***
			[3.93]
Skill=4 x Familiarity PC			0.0294
			[1.38]
MV of investor	0.0287***	0.0300***	0.0300***
	[4.82]	[5.04]	[5.04]
Fixed effects:			
Type	Yes	Yes	Yes
Home Country-Quarter	Yes	Yes	Yes
Observations	1,847,505	1,847,505	1,847,505
Adjusted R^2	0.5213	0.5213	0.5214

Table VII
Familiarity, Concentration, and Foreign Investors' Excess Returns in Destination Country

Table VII shows the results of cross-sectional regressions examining the determinants of investors' excess returns in a foreign market (similar to Table III) by investor skill level (similar to Table V) while also controlling for familiarity and portfolio concentration. The dependent variable is the quarterly value-weighted return of the investor's securities in each foreign market with positive holdings in excess of the global risk-free rate over the same quarter. The value-weighted quarterly return is computed based on the consecutive 3-month security returns following the reporting period ($Ret_{t,t+3}$) for each foreign market the investor holds. The main independent variable is an indicator variable that captures the investor's familiarity with the foreign market as well as the investor's country weight in that market. In specifications (1)-(3), this indicator variable, *High familiarity & High weight*, equals 1 if the market is familiar and country weight is high (in all the specifications, high is defined to be the top 50^{th} percentile and low is defined to be the bottom 50^{th} percentile of each variable). In specifications (4)-(6) indicator variable, *Low familiarity & Low weight*, equals 1 if the market is unfamiliar and country weight is low. In specifications (7)-(9) indicator variable, *Low familiarity & High weight*, equals 1 if the market is unfamiliar and country weight is high. In specifications (10)-(12) indicator variable, *High familiarity & Low weight*, equals 1 if the market is familiar and country weight is low. We also include investor's *Skill*, proxied by investor's home market alpha, using previous three years of returns leading up to the measuring period, so that larger values indicate higher levels of skill. Finally, we include interaction terms between the indicator variables of familiarity and country weight and investor's *Skill*. We also control for the total market value of the institution's equity (*MV of investor*). We condition for systematic risk of the investor's return by including foreign country-specific systematic risk factors: *Market Premium*, *SMB*, *HML*, and *UMD*. The coefficients of these variables are omitted for brevity. All regressions are run with investor type and investor home country – quarter fixed effects and the errors are investor home country-quarter clustered. The robust t-statistics are reported in brackets (* significant at 10%, ** significant at 5%, *** significant at 1% level.

	High familiarity & High weight			Low familiarity & Low weight			Low familiarity & High weight			High familiarity & Low weight		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Skill		0.0351***	0.0388***		0.0353***	0.0318***		0.0350***	0.0303***		0.0358***	0.0407***
		[12.85]	[12.46]		[12.94]	[11.08]		[12.85]	[10.31]		[13.11]	[13.60]
High familiarity & High weight	0.0017***	0.0017***	0.0015***									
	[9.50]	[9.05]	[7.81]									
Skill x (High familiarity & High weight)			-0.0140***									
			[-3.01]									
Low familiarity & Low weight				-0.0029***	-0.0028***	-0.0026***						
				[-12.17]	[-12.00]	[-10.64]						
Skill x (Low familiarity & Low weight)						0.0177***						
						[3.31]						
Low familiarity & High weight							-0.0038***	-0.0038***	-0.0035***			
							[-17.07]	[-16.78]	[-15.00]			
Skill x (Low familiarity & High weight)									0.0292***			
									[5.65]			
High familiarity & Low weight										0.0025***	0.0025***	0.0023***
										[12.78]	[12.89]	[11.29]
Skill x (High familiarity & Low weight)												-0.0132***
												[-3.02]
MV of investor	0.0374***	0.0335***	0.0336***	0.0376***	0.0337***	0.0338***	0.0302***	0.0265***	0.0264***	0.0293***	0.0254***	0.0253***
	[6.29]	[5.62]	[5.65]	[6.32]	[5.67]	[5.68]	[5.09]	[4.46]	[4.45]	[4.93]	[4.27]	[4.26]
Fixed effects												
Home country - quarter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Type	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.5213	0.5213	0.5213	0.5213	0.5214	0.5214	0.5213	0.5214	0.5214	0.5213	0.5214	0.5214

Appendix A. Hofstede's Primary Dimensions of Culture

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, or different from usual. Uncertainty avoiding cultures try to minimize the possibility of such situations by strict laws and rules, safety and security measures. Uncertainty avoiding countries are also more emotional and are motivated by inner nervous energy.

2. **Individualism (IDV)** as opposed to *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 herself and her immediate family. In collectivist societies 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 while all societies are unequal, 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 more 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.

Appendix B. Hofstede's Primary Dimensions of Culture by Country

This table presents Hofstede's primary dimensions of culture by country. Cultural dimensions are from Hofstede's (1980, 2001) and are described in Appendix A. PDI is the measure of power-distance index. IDV measures individualism/collectivism. MAS measures masculinity. UAI measures uncertainty avoidance. LTO measures long-term versus short-term orientation. Countries in this table are ranked based on the uncertainty avoidance score from lowest uncertainty avoidance to the highest.

Country	PDI	IDV	MAS	UAI	LTO	Country	PDI	IDV	MAS	UAI	LTO
Singapore	74	20	48	8	48	Taiwan	58	17	45	69	87
Jamaica	45	39	68	13	n/a	Austria	11	55	79	70	n/a
Denmark	18	74	16	23	n/a	Luxembourg	40	60	50	70	n/a
Hong Kong	68	25	57	29	96	Pakistan	55	14	50	70	0
Sweden	31	71	5	29	33	Czech Republic	57	58	57	74	13
China	80	20	66	30	118	Italy	50	76	70	75	n/a
Vietnam	70	20	40	30	80	Brazil	69	38	49	76	65
Ireland	28	70	68	35	n/a	Venezuela	81	12	73	76	n/a
United Kingdom	35	89	66	35	25	Colombia	67	13	64	80	n/a
Malaysia	104	26	50	36	n/a	Israel	13	54	47	81	n/a
India	77	48	56	40	61	Hungary	46	80	88	82	50
Philippines	94	32	64	44	19	Mexico	81	30	69	82	n/a
United States	40	91	62	46	29	Bulgaria	70	30	40	85	n/a
Canada	39	80	52	48	23	South Korea	60	18	39	85	75
Indonesia	78	14	46	48	n/a	Turkey	66	37	45	85	n/a
New Zealand	22	79	58	49	30	Argentina	49	46	56	86	n/a
South Africa	49	65	63	49	n/a	Chile	63	23	28	86	n/a
Norway	31	69	8	50	20	Costa Rica	35	15	21	86	n/a
Australia	36	90	61	51	31	France	68	71	43	86	n/a
Slovakia	104	52	110	51	38	Panama	95	11	44	86	n/a
East Africa	64	27	41	52	25	Spain	57	51	42	86	n/a
Netherlands	38	80	14	53	44	Peru	64	16	42	87	n/a
West Africa	77	20	46	54	16	Romania	90	30	42	90	n/a
Trinidad	47	16	58	55	n/a	Japan	54	46	95	92	80
Switzerland	34	68	70	58	n/a	Surinam	85	47	37	92	n/a
Finland	33	63	26	59	n/a	Poland	68	60	64	93	32
Iran	58	41	43	59	n/a	Belgium	65	75	54	94	n/a
Bangladesh	80	20	55	60	40	El Salvador	66	19	40	94	n/a
Estonia	40	60	30	60	n/a	Russian Federation	93	39	36	95	n/a
Thailand	64	20	34	64	56	Malta	56	59	47	96	n/a
Germany	35	67	66	65	31	Uruguay	61	36	38	100	n/a
Ecuador	78	8	63	67	n/a	Guatemala	95	6	37	101	n/a
Arab World	80	38	52	68	n/a	Portugal	63	27	31	104	n/a
Morocco	70	46	53	68	n/a	Greece	60	35	57	112	n/a