

CHAPTER 15

Familiarity Bias

HISHAM FOAD

Assistant Professor of Economics, San Diego State University

INTRODUCTION

A popular Wall Street adage is to “invest in what you know.” But what if investing in “what you know,” means passing up higher returns and lower risks available in assets that “you do not know?” This revealed preference for familiar assets in the presence of higher returns and lower risks from less familiar assets is known as familiarity bias.

Displaying a bias toward the familiar suggests a lack of diversification. This was perhaps no more evident than with the Enron bankruptcy in 2001. More than 60 percent of the assets in the Enron 401(k) program consisted of Enron stock. When the company collapsed, not only did employees suffer a loss of income, but many also saw their retirement savings wiped out. Diversifying their investments into less familiar assets could have better insulated their consumption from labor income risk.

Why do investors continue to hold portfolios heavily weighted in familiar assets despite the seemingly obvious gains from diversification? This chapter reviews the existing theoretical and empirical literature aimed at answering this question. The remainder of this chapter consists of five sections. The first section seeks to define familiarity bias, showing that investors can achieve gains from greater diversification into unfamiliar assets.

The rest of the chapter reviews possible explanations for familiarity bias. The second section focuses on measuring familiarity bias. Explanations for the bias fall into three major categories. Several studies argue that familiarity biases are related to measurement issues. One way to measure home bias is to compare observed portfolio weights to those derived from the international capital asset pricing model (ICAPM). However, the ICAPM has not performed well in practice. Thus, the difference between optimal and observed portfolio weights may simply reflect specification error in the underlying model. Another method of measuring familiarity bias is to compute optimal portfolio weights from past asset returns. A criticism of this approach is that past returns are a poor proxy for expected future returns. The second section takes a closer look at these measurement issues.

The third section focuses on institutional frictions. Investors may be biased toward local assets because these assets do a better job of hedging against local

risks such as inflation and income. On the international side, currency risk and transaction costs may prohibit investors from international diversification. Furthermore, investors may be able to achieve international diversification by investing in domestically headquartered multinationals. Finally, investors may face asymmetric information when dealing with unfamiliar assets. These information asymmetries are especially relevant when considering foreign assets given language barriers or differences in accounting and reporting standards.

Institutional frictions can only explain part of the bias. Thus, the fourth section examines behavioral finance explanations for familiarity bias. For example, employees tend to overinvest in own-company stock, consistently underestimating the risk of concentrating wealth in a single equity. Perhaps explaining this observation, investors tend to display overconfidence in forecasting returns on familiar assets, even in the absence of superior information about these assets. Other behavioral explanations to be explored include risk avoidance, patriotism, and social identification. The fifth section concludes the chapter and discusses costs of familiarity bias to both individual investors and social welfare.

DEFINING FAMILIARITY BIAS

Researchers have studied familiarity bias in both the domestic (local bias) and international (home bias) settings. In both cases, familiarity bias occurs when investors hold a portfolio biased toward “familiar” assets compared to an unbiased portfolio derived from a theoretical model or empirical data.

Local Bias

With local bias, investors display a preference for local assets with which they are more familiar, despite the gains from diversification into the “unknown.” That investors prefer local assets within their own country suggests that international market frictions such as currency risk and transaction costs on foreign equity are not solely responsible for familiarity bias. Coval and Moskowitz (1999) survey mutual fund managers and find that these managers display a preference for locally headquartered firms. In another example of locally biased portfolios, Huberman (2001) finds that customers of a Regional Bell Operating Company (RBOC) hold more stock shares in their own RBOC than in other RBOCs. Employees of a firm often invest in their company’s stock at the expense of diversifying labor income risk. For example, Benartzi (2001) finds that at Coca-Cola, employees allocate as much as three-quarters of their discretionary contributions to their own-company shares. As a downturn in Coca-Cola’s profits is likely to lead to both a drop in stock returns and labor income for Coca-Cola employees, these employees may be better served by investing elsewhere.

If investors are biased toward local firms, then these investors should place a premium on these firms’ stock prices. As long as the geographic distribution of firms does not match the geographic distribution of investment dollars, then local bias should have an effect on stock price. Hong, Kubik, and Stein (2008) find that holding all other factors constant, firms located in the deep South, where there is a relatively low ratio of publicly traded firms to investment dollars, have stock

prices nearly 8 percent higher than those located in the mid-Atlantic, where there is a relatively high ratio of firms to investment dollars.

Several studies have argued that local bias may be a rational response to better information about familiar assets. Ivković and Weisbenner (2005) find that individual investors earned an excess return of 3.5 percent on local assets relative to non-local holdings, suggesting that these investors are taking advantage of local knowledge. Massa and Simonov (2006) find that familiarity bias has less of an effect on portfolios following a “familiarity shock” such as a change of profession or relocation, which would support the local knowledge hypothesis. Further evidence of investors taking their local bias along with them when they move is provided by Bodnaruk (2009), who finds that investors who move tend to sell shares of the firms they used to live near and buy shares of firms near their new homes.

Home Bias

Familiarity bias is even more evident at the international level with most portfolios heavily biased toward domestic equity despite the large gains to be made through international diversification. For example, French and Poterba (1991) derive optimal portfolio shares from an ICAPM and find that observed domestic equity shares can only be justified by implausible rates of risk aversion or transaction costs higher than any reasonable estimates.

One way to measure familiarity bias is to compare the share of “local” assets held in an investor’s portfolio to the share of these assets in an unbiased portfolio. At the international level, one approach is to compare the share of domestic equity held within a country to that country’s share of world market capitalization (i.e., comparing a country’s holdings of its own domestic equity compare to that held in the “global” portfolio). Exhibit 15.1 lists domestic equity and world market capitalization shares for 28 countries representing 90 percent of world market capitalization, using a survey of international equity holdings published by the International Monetary Fund. In nearly every case, the share of domestic equity held within a country far exceeds that country’s share of world market capitalization. For example, the typical investor in the United States holds a portfolio consisting of 87.2 percent domestic equity, despite the fact that American equity represents only 43.1 percent of world market capitalization. For other countries, this discrepancy is even larger.

Are the observed domestic equity shares rational? The observed shares only represent a bias if investors can improve welfare through greater diversification. Exhibit 15.2 displays a mean-variance analysis for a range of portfolios consisting of 100 percent U.S. equity to a portfolio consisting entirely of foreign equity. The horizontal axis shows the average monthly standard deviation of returns across these portfolios while the vertical axis shows the average annualized returns. If investors only care about risk and return, then welfare improves as they move left (less risk) and up (higher returns) along the diagram. As Exhibit 15.2 portrays, the poorest performing portfolio consists of 100 percent U.S. equity. The global portfolio yields the highest return but also the highest risk.

Determining the optimal portfolio requires knowing the investor’s relative preferences for risk and return. For example, an investor with preferences represented by the indifference curve U_0 would maximize his or her utility by holding a

Exhibit 15.1 Domestic Equity and World Market Capitalization Shares.

Note: This table shows domestic equity shares and world market cap shares as a percent. Domestic equity shares are computed from the International Monetary Fund's Coordinated Portfolio Investment Survey for 2005. The domestic equity share is defined as the share of domestic equity in a country's equity portfolio. The world market capitalization share is the share of a country's domestically issued equity in world market capitalization. The value for Ireland is not an error, but rather the result of an inordinately high share of foreign ownership of Irish equity.

	Domestic Equity Share (%)	World Market Cap Share (%)
Australia	86.5	2.0
Austria	59.5	0.2
Belgium	88.4	2.0
Canada	76.3	3.1
Czech Republic	91.1	0.1
Denmark	66.1	0.4
Finland	68.8	0.5
France	79.1	4.9
Germany	72.3	3.2
Greece	96.5	0.3
Hungary	95.9	0.1
Ireland	-27.7	0.3
Italy	78.0	2.1
Japan	90.5	9.7
Korea	98.8	1.1
Mexico	98.2	0.5
Netherlands	42.4	1.6
New Zealand	68.6	0.1
Norway	55.1	0.4
Poland	99.4	0.2
Portugal	85.0	0.2
Slovak Republic	85.9	0.0
Spain	91.2	2.5
Sweden	67.1	1.0
Switzerland	78.7	2.2
Turkey	99.9	0.3
United Kingdom	72.0	7.4
United States	87.2	43.1

portfolio consisting of 40 percent U.S. equity, roughly the U.S. share of world market capitalization. A more risk-averse investor would choose a portfolio weighted more toward U.S. equity, while a more risk-seeking investor would prefer greater international diversification. Regardless, the observed 87.1 percent domestic equity share is clearly dominated by portfolios with a greater degree of foreign equity. Exhibit 15.3 displays an even starker bias for the United Kingdom, where the global portfolio strictly dominates all others, reflecting the relatively lower returns and higher risk generated by British equities over this period. Despite these seemingly obvious gains, investors continue to display a bias toward familiar assets. The rest of the chapter focuses on explaining why this is the case.

FAMILIARITY BIAS

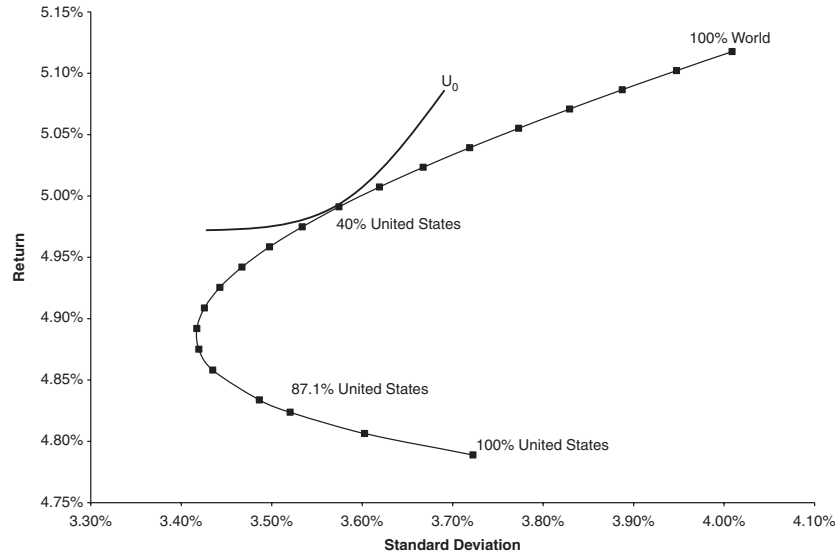


Exhibit 15.2 Mean Variance Diagram for the United States

Note: Portfolio returns and standard deviations are calculated from the MSCI USA and World (excluding the United States) indices. The return is computed as the average annualized return over the period January 1970 through July 2009, while the standard deviation is the average annual standard deviation of monthly returns over this same period. Portfolios range from 100 percent U.S. equity to 100 percent global (non-U.S.) equity in increments of 5 percent. The observed 87.1 percent domestic equity portfolio for the United States is also included below.

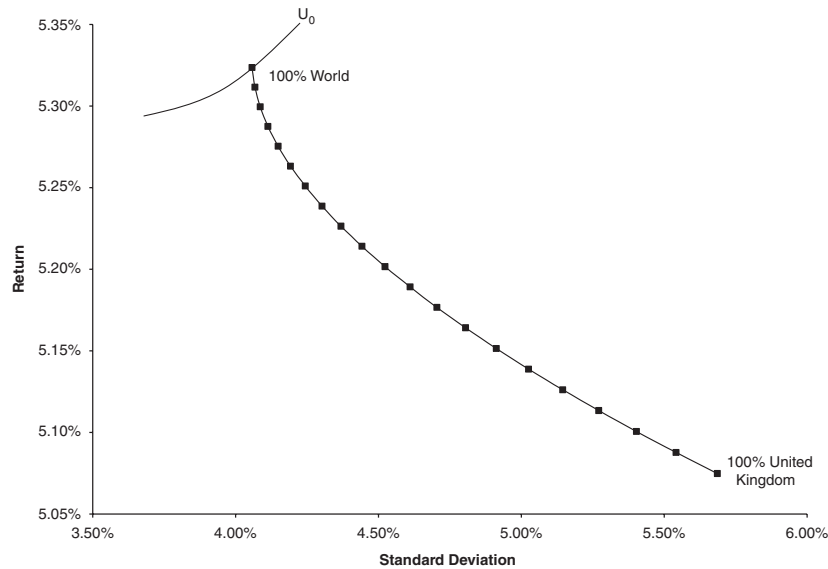


Exhibit 15.3 Mean Variance Diagram for the United Kingdom

Note: Portfolio returns and standard deviations are calculated from the MSCI United Kingdom and World (excluding the United Kingdom) indices. The return is computed as the average annualized return over the period January 1970 through May 2009, while the standard deviation is the average annual standard deviation of monthly returns over this same period. Portfolios range from 100 percent United Kingdom equity to 100 percent global equity in increments of 5 percent.

MEASURING FAMILIARITY BIAS

How can familiarity bias be measured? The existing literature describes two major approaches: (1) a model based approach based on a version of the ICAPM and (2) a data-based approach in which optimal portfolio weights are derived from a mean-variance optimization procedure. While both approaches have their merits and flaws, they reach the same conclusion: Namely, there are gains to greater diversification out of local assets.

The Model-Based Approach

The model-based approach uses the ICAPM that assumes complete information, no barriers to capital flows such as transaction costs or taxes, and identical beliefs and preferences about returns for all investors. This model yields the following relationship:

$$E(r_j) - r = \beta_j * [E(r_w) - r] \quad (15.1)$$

where $E(r_j)$ and $E(r_w)$ are the expected returns on any asset j and the world portfolio respectively, r is the risk-free rate (identical across locations), and $\beta = cov(r_j, r_w) / var(r_w)$. Under the assumptions given above, this equation holds when all investors maintain the world market portfolio in which the weight of each asset is relative to its share in world market capitalization. Thus, if a French asset represents 5 percent of world market capitalization and French investors hold 79 percent French assets, then these investors are displaying a bias.

Sercu (1980) modifies Equation 15.1 above by taking exchange rates into account. The expression above now becomes:

$$E(r_j) - r = \beta_j * [E(r_w) - r] + \sum_{i=1}^{N-1} \delta_{j,i} [E(s_i + r_i) - r] \quad (15.2)$$

where N is the number of countries in the world, s_i is the change in the nominal exchange rate, r_i is the risk-free rate in country i , and r is the world risk-free rate. Assuming that investors can hedge against currency risk with their own risk-free asset, this model yields the same conclusion as before: Namely, each investor should hold assets in proportion to their share of world market capitalization.

While familiarity bias is easy to observe using the model-based approach (simply compare observed portfolio weights to market capitalization shares), the model has not performed well in practice. One way to test the validity of the ICAPM is to estimate the following equation:

$$r_j - r = \alpha_j + \beta_j * (r_w - r) + \sum_{i=1}^{N-1} \delta_{j,i} * (s_i + r_i - r) + \epsilon_j \quad (15.3)$$

where r_j and r_w are the observed returns on portfolio j and the world portfolio. The empirical validity of the ICAPM depends on estimates of α_j being not significantly

different from zero. Otherwise, there exists some risk factor other than the relative return between asset j and the world portfolio. In practice, the empirical validity of the CAPM is very weak, suggesting that capital markets are not perfectly integrated and the optimal portfolio for all investors need not be the world portfolio.

Another argument against the model-based approach is that even if it were empirically valid, the global portfolio may be difficult to replicate for all investors. This world portfolio contains assets that are not freely tradable due to capital restrictions or shareholders who are reluctant to sell. As the share of unavailable assets varies by location, using the world portfolio of all shares (available or not) as a benchmark amplifies any observed familiarity bias. Dahlquist, Pinkowitz, Stulz, and Williamson (2003) suggest that the correct benchmark should be the world "float" portfolio of freely floated shares. Using this benchmark, familiarity bias is reduced but not eliminated.

The Data-Based Approach

Given the shortcomings of the ICAPM, other researchers advocate deriving optimal portfolio weights using a data-based approach. This approach assumes mean-variance investors, as in Markowitz (1952) and Sharpe (1963), who choose portfolio weights to maximize utility that is increasing in mean returns and decreasing in risk (variance). Let γ represent a typical investor's coefficient of relative risk aversion, μ be the $(N \times 1)$ vector of expected returns in excess of a risk-free rate on N risky assets, and Ω be the $(N \times N)$ covariance matrix for the N risky assets. Assuming that the investor faces no capital restraints and perfectly integrated financial markets, the optimal portfolio weights are given by:

$$w^* = \frac{1}{\gamma} \Omega^{-1} \mu \quad (15.4)$$

where w^* represents the $(N \times 1)$ vector of optimal portfolio weights. Assuming that risk aversion is constant, the optimal weights will change only in response to altered expectations over an asset's excess return (μ) or its contribution to overall portfolio risk (Ω). As the expected excess return on an asset increases or its contribution to overall risk decreases, the optimal weight on that asset increases.

Thus, measuring familiarity bias involves comparing the optimal portfolio weights derived from Equation 15.4 to the observed weights on local assets. However, estimating optimal portfolio weights from Equation 15.4 requires a measure of expected excess returns and the covariance matrix. Merton (1980) shows that while the covariance matrix may be estimated with high precision, expected returns are very difficult to forecast using historical data. For example, the average monthly return on the Morgan Stanley Capitalization Index (MSCI) for the U.K. between 1970 and 2009 was 0.43 percent, while the standard deviation of returns over this same period was 6.3 percent. Furthermore, high correlation across market returns yields a nearly singular covariance matrix. As a result, even small changes in μ can lead to large changes in optimal weights. Given that μ is estimated with great imprecision, any estimates of optimal portfolio weights from this data-based approach must be viewed skeptically.

In response to this, studies using the data-based approach have taken the observed portfolio weights as given and estimated the expected returns needed to rationalize these weights. These estimates show implausible investor optimism about local assets, suggesting a bias. For example, Jeske (2001) estimates that for the observed domestic equity share among Italian investors, these investors would have to believe that Italian assets would beat the risk-free rate by 11.83 percent and that foreign assets would underperform the risk-free rate by -2.83 percent. Given that Italian asset returns came nowhere near these expectations, something else must be driving the observed portfolio shares.

A third approach to estimating familiarity bias involves a compromise between the model and data-based approaches. Pástor (2000) develops a Bayesian model in which an investor is forced neither to accept unconditionally the ICAPM weights nor to discard them completely in favor of the data. Rather, investors can update their "skepticism" about the ICAPM using past information. As skepticism grows, weights move closer to those implied by the data. Garlappi, Uppal, and Wang (2007) refine this approach by allowing for multiple prior beliefs. This methodology yields more realistic optimal portfolio weights but does not disprove the existence of familiarity bias.

INSTITUTIONAL EXPLANATIONS

Both the model- and data-based approaches to measuring familiarity bias make certain assumptions that may not hold in practice. In reality, markets are not perfectly integrated due to transaction costs, currency risk, asymmetric information, and differences in corporate governance and standards. Numerous studies attempt to explain familiarity bias by challenging the assumptions of integrated capital markets to varying degrees of success. This section takes an in-depth look at these explanations and their ability to explain the familiarity bias puzzle.

Hedging against Local Risks

Investors may choose to hold more local assets than would otherwise be predicted if local assets provide a better hedge against risks such as inflation or reduced income. For example, an investor may prefer to invest in his or her own country's assets if they are highly correlated with domestic inflation. By doing so, this investor is shielding wealth from an erosion of purchasing power caused by inflation. While theoretically appealing, this explanation only holds if local returns and inflation are highly correlated. Adler and Dumas (1983) and Cooper and Kaplanis (1994) find evidence to the contrary.

Local assets may do a better job of hedging against labor income risk. Suppose that local assets are negatively correlated with local income. Thus, holding local assets so that consumption is insulated from fluctuations in labor income would make sense. Engel and Matsumoto (2006) argue that this negative correlation could hold if there is price stickiness in the goods market. As a result, reductions in labor income may temporarily lead to higher firm profits (and thus returns) as firm costs fall. Yet, the empirical evidence suggests that local asset returns and local income may be positively related. For example, Baxter and Jermann (1997) show that human and physical capital (i.e., labor income and asset returns) tend to

be positively correlated in the presence of productivity shocks. A productivity shock that reduces the demand for labor may also erode firm profits, leading to a reduction in both income and returns. In fact, localized shocks present one of the key arguments for greater diversification.

Currency Risk

Familiarity bias is perhaps most evident when comparing domestic to international asset holdings. As the effective return on a foreign asset is a function of both local currency return and the appreciation of the foreign currency, foreign assets carry with them an additional element of exchange rate risk. While investors may hedge currency risk using forward contracts, this hedging is not costless and may deter smaller volume investors from greater diversification. De Santis (2006) and Foad (2008a), who find that familiarity bias has declined across the euro-zone since the adoption of the euro, give support for the currency risk explanation. However, currency risk alone cannot explain all familiarity bias because a significant preference still exists for domestic equity even within the euro-zone. In a related study, Fidora, Fratzscher, and Thimann (2007) find that currency risk can explain only 20 to 30 percent of the variation in home bias across countries. Thus, currency risk is only one of several important factors.

Transaction Costs

Another institutional explanation for familiarity bias is that local assets have lower transaction costs. Both the model and data-based approaches to measuring the bias assume no barriers to capital mobility. In reality, there are explicit barriers such as different tax rates, laws limiting asset liquidity, and currency conversion fees, as well as implicit barriers such as appropriation risk in distant markets. Given the near singularity of the covariance matrix across returns, even small transaction costs can rationally tilt optimal portfolios toward local assets, as shown by Martin and Rey (2004).

Using the data-based approach described above, Glassman and Riddick (2001) compute the transaction costs needed to rationalize the observed domestic equity shares. They find that for France, Germany, Japan, and the United Kingdom, the implied foreign investment costs were 14 percent to 19 percent per year over the period 1985 through 1990. These costs are well above any reasonable estimates and exceed the actual asset returns. Using a more conservative risk-aversion measure, Jeske (2001) estimates more modest transaction costs of 1.5 percent for the United States, 4.5 percent for Germany, 7.6 percent for Spain, and 14.7 percent for Italy. These costs are still well above any reasonable estimates of transaction costs on foreign equity.

Further evidence against the transaction costs explanation is given by Tesar and Werner (1995), who find that turnover rates on foreign assets are actually higher than those on domestic assets. If transaction costs limited international diversification, foreign assets should be traded at lower, not higher, volumes (all else being equal). Amadi and Bergin (2006) point out that this ignores the potentially high fixed costs of entry into foreign financial markets. Transaction costs may be low for investors who have already "taken the plunge" into foreign markets,

but fixed costs of entry may prevent a subset of investors from ever investing abroad.

Implicit costs such as appropriation risk may also limit diversification. Stulz (2005) argues that twin agency problems may cause familiarity bias. On one hand, there is corporate-insider discretion in which inside investors extract private benefits from outsiders. Thus, the less familiar an asset, the more likely there will be an outsider investor. On the other hand, governments can appropriate returns from foreign investors through regulations and taxes through the use of state-ruler discretion. Thus, the seemingly implausible transaction costs on foreign assets needed to justify the observed domestic equity shares may be accurate. In support of this theory, Stulz finds that the highest levels of domestic asset ownership (i.e., low foreign presence) are in nations with weak minority shareholder protection and/or a high risk of appropriation. La Porta, Lopez-de-Silanes, and Shleifer (1999), who find that foreign asset ownership rises with minority shareholder protection, provide further support.

Diversification through Multinationals

Another explanation for familiarity bias is that investors can gain international diversification by investing in locally based multinationals, American depositary receipts (ADRs), country closed-end funds, and exchange traded funds (ETFs). For example, an American investor who buys a stake in the microchip maker Intel theoretically gains exposure to all of the markets in which Intel operates, as Intel's share price is determined in part by its profitability in these markets. Jacquillat and Solnik (1978) argue, however, that multinationals present a poor substitute for foreign assets, with only 2 percent of the variance in multinational returns attributable to the foreign markets in which they operate. More recent studies such as Rowland and Tesar (2004) as well as Cai and Warnock (2006) find more support for diversification through multinationals. Yet, even with hedging through multinationals, there are still gains from further international diversification. Hedging through closed-end funds or ETFs presents challenges as noted by the closed-end fund puzzle in which funds trade at a discount to their net asset values. Furthermore, the volume of trade in these asset classes is not nearly enough to achieve the international diversification suggested by both the model and data-based approaches.

Asymmetric Information

Perhaps the most popular institutional explanation for familiarity bias is asymmetric information. Investors may choose to invest in the familiar simply because they know more about it. The perceived risk of foreign assets is larger because forecasts about foreign returns are less precise. Brennan and Cao (1997) find that investors tend to buy foreign assets when returns are high and sell them when returns are low. This kind of return-chasing behavior is indicative of a limited-information setting. Brennan, Cao, Strong, and Xu (2005) find further support for this result with investors tending to be more "bullish" about a market following a strong performance by that market. That investors are forecasting returns based solely

off past returns (adaptive expectations) rather than using all available information (rational expectations) suggests an information asymmetry.

Economic and cultural distance appears to be a barrier to the flow of information. Portes and Rey (2005) find that home bias declines as the number of foreign bank branches rises, as bilateral telephone traffic increases, and as the number of overlapping hours in equity trading markets rises. Li, Yan, and Faruqee (2004) find that larger countries, about which information is more readily available, tend to have more of their assets held by foreigners. Others show that language is also an important determinant of foreign asset holdings. For example, Grinblatt and Keloharju (2001) find that Finnish investors prefer to invest in firms that have Finnish managers both at home and abroad. Numerous other studies report that countries sharing a common language have more cross-border investment, suggesting that language can be a significant barrier to cross-border information flow. This result is supported by Hau (2001), who examines the performance of 756 professional traders on the German Security Exchange. He finds that traders located outside Germany in non-German-speaking cities tend to underperform traders located in German-speaking cities, even those located outside Germany.

Economic and cultural distance appears to matter more for less sophisticated investors as well. Giofré (2008) finds that information proxies such as language, distance, and asset market transparency have a much stronger influence on the foreign equity holdings of household investors than institutional investors. That households depend more on country-specific rather than firm-specific factors suggests that asymmetric information may be limiting diversification.

Information asymmetries also appear to affect performance. Coval and Moskowitz (2001) find that mutual fund managers earn an excess return of nearly 3 percent on investments located within 100 kilometers of the fund headquarters. Grote and Umber (2006) find that the most successful mergers and acquisitions deals are those involving firms that are geographically close together. Choe, Kho, and Stulz (2005) look at Korean data and find that foreign money managers pay more when they buy Korean assets as opposed to when they sell those same assets. Dvorak (2005) finds a similar result in Indonesia with foreign investors more likely to sell their assets shortly before a large positive return.

Familiarity bias is essentially a puzzle of capital immobility. By appealing to asymmetric information as an explanation for the bias, are investors simply replacing the puzzle of capital immobility with an even less plausible puzzle of information immobility? If investors can make truly large gains through greater diversification, then a market should develop in which local information is traded abroad. Van Nieuwerburgh and Veldkamp (2009) argue that information about foreign markets is not limited, but rather that investors are constrained in their capacity to absorb information. Given this capacity constraint, investors will choose to maximize their comparative advantage in local information. In doing so, they should invest more heavily in domestic assets. Thus, information is asymmetric not by nature but by choice.

A criticism of the limited information explanation is that it only fits the data when investors forecast higher returns on domestic assets than foreign assets. If domestic investors base their expectations on a different information set than foreign investors, then there must be times in which domestic investors actually forecast lower domestic returns than foreign investors. During these times, domestic

portfolios should tilt toward foreign assets. However, home bias remains stable and persists over time. This suggests that investors are consistently over-estimating local returns, a behavioral rather than institutional explanation explored in the next section.

The literature investigating institutional explanations for familiarity bias has generally discarded explanations such as hedging against domestic risks, diversification through multinationals, and higher explicit transaction costs on foreign assets. Although explanations such as currency risk, appropriation risk, and asymmetric information find greater support, they still have limitations. The next section provides an examination of some behavioral finance explanations for familiarity bias.

BEHAVIORAL EXPLANATIONS

Rational explanations for familiarity bias can only explain part of the observed bias toward local assets. Several studies have turned to behavioral finance explanations to explain the remainder of the puzzle. These explanations cover such behavioral biases as investing in own-company stock, overconfidence, regret, patriotism, and social identification, and offer compelling explanations for why investors willingly “leave cash on the table” in order to invest in the familiar.

Overinvestment in Own-Company Stock

A study by Muelbroek (2005) estimates that holding a large position in own-company stock over a long period of time is worth 50 cents on the dollar when compared to a diversified portfolio. Investing heavily in company stock carries with it both the idiosyncratic risk of holding a single asset and the risk of losing both labor income and wealth if the company goes bankrupt. Despite the perils of investing in company stock, Mitchell and Utkus (2004) report 11 million participants in discretionary retirement plans held more than 20 percent of their assets in company stock. Within this group, five million held more than 60 percent of their assets in company stock. Why are employees investing so heavily in assets that, while familiar, present much greater risks than a diversified portfolio?

Benartzi, Thaler, Utkus, and Sunstein (2007) survey 500 employees participating in 401(k) programs and ask whether the high levels of investment in company stock can be rationalized. Although there is a tax advantage to investing in company stock, Benartzi et al. find that only 10 percent of employees are even aware of this. In fact, the authors find a higher percentage of employees who believe that company stock carries a tax disadvantage. Despite empirical evidence to the contrary, employees view company stock as being safer than even a well-diversified portfolio. The fact that employers match employee contributions with company stock is seen as an implicit endorsement of the stock, leading to even larger employee investment in company stock.

Employees overinvest in company stock because they fail to accurately assess the risk of doing so. Benartzi (2001) finds that only 16 percent of employees believe that investing in company stock is riskier than a broad market index. Choi, Laibson, and Madrian (2005) argue that this risk assessment failure is not due to a lack of information, but rather a behavioral bias. They examine how the bankruptcies

of Enron, WorldCom, and Global Crossing affected employer stockholdings by workers at other companies. Even in Enron's headquarters of Houston, Texas, where media coverage of the firm's collapse was at its highest, employees did not appreciably change their investment patterns despite the stark example of the risks of owning company stock.

Overconfidence

The propensity to overinvest in company stock suggests that even in the absence of asymmetric information, investors may feel more confident in their ability to forecast domestic returns. Kilka and Weber (2000) use experimental data (thus controlling for information asymmetries) to show that German investors display more confidence in their forecasts of German asset returns than in their forecasts of American asset returns, while American investors feel more confident forecasting returns on American assets. As the investors in this controlled experiment had equal access to information about both German and American companies, this result represents a behavioral overconfidence around predicting domestic returns. Barber and Odean (2001) find that overconfident investors tend to invest more in those assets with which they are familiar, suggesting that overconfidence may help explain familiarity bias.

Goetzmann and Kumar (2008) provide further evidence for this theory. They examine individual brokerage accounts for 40,000 U.S. investors and find that familiarity bias is highest for young, low-income, less educated, and less sophisticated investors. Hau and Rey (2008) find a similar result with mutual funds displaying less of a home bias than individual investors. For example, the average home domestic equity share in the United States is 87 percent, but it is only 68 percent for mutual funds. This evidence suggests that unsophisticated investors who feel more confident forecasting returns on familiar assets may partly drive familiarity bias.

Karlsson and Nordén (2007) document a gender bias in overconfidence. They use Swedish pension data to show that the greatest familiarity bias is for older single men with low levels of education. This result supports work by Barber and Odean (2001) who find that men tend to be more subject to overconfidence than women. While these studies imply that investor sophistication is negatively related to home bias, even investment professionals are not immune to being overly optimistic about local returns. Strong and Xu (2003) survey mutual fund managers in Europe, Japan, and the United States. They find that managers are most optimistic about the performance of markets in their own countries, which is a prediction that cannot be correct for all of these managers.

Regret

Another potential explanation for familiarity bias is that investors care more about minimizing losses than optimally trading off risk and return as suggested by both the data- and model-based approaches discussed at the beginning of this chapter. Investors also care about potential regret if their foreign assets underperform domestic stocks. Of course, these same investors would be elated if their foreign stocks delivered higher returns than domestic stocks *ex-post*, but estimates of regret

theory as in Loomes and Sugden (1982) and Bell (1982) find that investors weight potential losses relative to a benchmark more in their utility than in gains.

Solnik (2006) develops a model in which investors take return, risk, and regret into account when determining portfolio weights on foreign equity. Investors are only willing to hold foreign assets if they pay a “regret premium,” which is increasing in regret aversion across investors. Solnik argues that with symmetric regret aversion across countries, investors may still observe familiarity bias. Even if only one country exhibits regret aversion, this may be enough to generate global home bias. Although this theory lacks empirical confirmation, it does present an avenue for further research.

Patriotism and Social Identification

Other studies have considered patriotism and social identification as behavioral explanations for familiarity bias. Morse and Shive (2006) find that measures of patriotism such as positive responses to survey questions about national pride are significantly related to home bias, even after controlling for such factors as capital controls, diversification benefits, information advantages, and familiarity. Thus, investors may derive some positive utility from investing in local assets despite monetary gains from diversification.

Using controlled laboratory experiments, Fellner and Maciejovsky (2003) offer additional support and find that social identification can influence asset choices. The authors arbitrarily assign participants and assets into one of two groups. Conducting experiments in which there is both symmetric and asymmetric information across groups, the authors find that social identification has at least as much explanatory power as asymmetric information. This relates to the growing literature on culture, trust, and economic transactions as reviewed by Guiso, Sapienza, and Zingales (2006). Investors may prefer to stay with familiar assets because they are better able to gauge the risk in the familiar because of their social identification with the country or region issuing that asset.

Another study supporting social identification and investment is Foad (2008b), who looks at how immigration affects foreign asset holdings. While immigrants may socially identify with either their native or adopted countries, they do have stronger ties with their native countries than the average investor to their adopted country. As a result, the perceived risk of investing in foreign (i.e., native country) assets may be lower for an immigrant. An immigrant may also perceive an information advantage in investing in native country assets and be subject to the same overconfidence that domestic investors have with domestic assets. Foad finds that immigration into a country increases that country’s investment in the immigrant’s native country. Yet, there is no corresponding increase in investment coming from the immigrant’s native country to their adopted nation. This suggests that immigrants are bringing their own familiarity biases with them.

SUMMARY AND CONCLUSIONS

This chapter has examined the validity of multiple explanations for familiarity bias. The evidence suggests that there is not a single explanation for the bias. Instead, a mixture of the theories reviewed in this chapter drive the portfolio

allocation decisions of investors. On the institutional side, currency risk, asymmetric information, corporate governance, and weak property rights limit investors from diversification into unfamiliar assets. A new and growing literature ascribing behavioral explanations finds that investors fail to accurately assess the risk of company stock, perhaps due to overconfidence in predicting familiar asset returns, preferring local assets to avoid regret, and viewing familiar assets more favorably due to social identification.

Familiarity bias suggests that investors hold suboptimal portfolios. Greater diversification could generate both higher returns and lower risk. Furthermore, investors could better insulate consumption risk from income risk through diversification. Lewis (1999) estimates that efficient portfolios could increase investor wealth by 10 to 28 percent, with these gains increasing in investor risk aversion. Reducing familiarity bias could lead to greater financial market integration. Pungulescu (2008) finds that countries with lower rates of familiarity bias have higher rates of economic growth, controlling for a wide variety of factors. Given the potential welfare gains from reducing familiarity bias, finding viable explanations and therefore solutions to the bias will continue to be a fruitful area for further research.

DISCUSSION QUESTIONS

1. Identify one problem with using the model-based approach to estimate familiarity bias. What is one problem with the data-based approach?
2. Some suggest higher transaction costs on foreign assets as an explanation for why investors are so heavily weighted in domestic assets. Cite two studies that do not support the notion that transaction costs are responsible for familiarity bias. What are some less observable costs of foreign assets that could still limit foreign ownership?
3. Why would limited information about unfamiliar assets be an explanation for familiarity bias? What evidence supports this theory? Is there any reason to doubt asymmetric information as the key driver of familiarity bias?
4. Why would investing in own-company stock present greater risk than investing in a diversified fund? Despite this higher risk, many employees hold much of their 401(k) plan in company stock. Why does this phenomenon exist? Can heavy investment in company stock be rationalized? If so, how?
5. Why would a less-educated male be expected to display a larger familiarity bias than a better-educated female?
6. Why would social identification have a larger effect on investment patterns when information about financial markets is limited rather than abundant?

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ABOUT THE AUTHOR

Hisham Foad is an assistant professor of economics at San Diego State University. Dr. Foad received both a PhD in economics and a masters of economics from ~~Emery~~ University. He has written several papers on the topic of familiarity bias, looking at the effects of currency risk and immigration on the bias. His work has been published in the *International Regional Science Review* and he has presented research on both institutional and behavioral explanations for familiarity bias at multiple conferences in Europe and North America.