Does Familiarity Breed Investment? An Empirical Analysis of Foreign Equity Holdings

Amir A. Amadi*

ABSTRACT

Traditional financial diversification theory states that one should hold a portfolio with a well diversified mix of assets, both nationally and internationally. Using new international asset holdings data, this paper examines the foreign diversification of more than thirty countries around the world. It confirms the lack of international diversification is still an ongoing phenomenon, but more importantly this article demonstrates that the small diversification that is present is not even well diversified across foreign equity markets. What then affects the diversification that is present? The empirical analysis finds significance in familiarity factors such as a common language, trade and possibly immigrant links, which would support an information-based explanation for equity home bias. Additionally, the results demonstrate that interestingly, other factors such as monetary unions and market trading costs are insignificant. Overall the results help shed some light on foreign diversification and the equity home bias phenomenon.

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* Amir Andrew Amadi, Department of Economics, University of California, Davis, CA, 95616, USA. Email address: aamadi@ucdavis.edu. The first draft of this paper was written in January 26, 2004 and was first submitted to SSRN on April 6, 2004. It was also presented at the Western Economics Association 79th Annual Conference in Vancouver, BC on July 3, 2004. I would like to thank the conference participants for their helpful comments. Also I would also like thank Paul Bergin for his help and insight.

1. Introduction

According to traditional financial theory[1], an average investor should only hold domestic assets in his or her portfolio in proportion to their country's share of world capitalization. As it turns out, investors actually hold a disproportionately small amount of foreign equity, and therefore do not follow financial theory. This lack of international portfolio diversification is commonly referred to as equity home bias, and has been well documented.[2] However what is more intriguing is the actual investment positions, rather than the overall lack of diversification. Theory suggests that if one were to only partly diversify, as is the case, then one should at least invest in foreign markets which are less correlated with that of their own. The holdings data though, suggests that the diversification that is occurring is into markets which are in fact more correlated. This runs contrary to financial theory and suggests that it is not the primary source affecting investor behavior.

The IMF has recently conducted a Coordinated Portfolio Investment Survey on international asset holdings. This survey presents a unique opportunity for the examination of many nations' foreign equity holdings. Table 1 presents the holdings of one such country, Argentina. Although this study incorporates many countries, Argentina provides a noteworthy example of the main ideas and findings of this paper. The first column shows a measure of foreign diversification, while the second shows the rough theoretical predications based on the destination country's share of world capitalization. The third column provides a measure of the destination country's restriction on foreign investment. Finally, the last column shows correlations between

[1] Lintner(1965) and Sharpe(1964).
[2] French and Poterba(1991), Tesar and Werner(1995)

the destination market and Argentina. One can clearly see that the positions show a distinct pattern of investment toward the familiar. Specifically there is significant investment into Spain compared to other European countries. Similarly there is a larger amount of investment into Chile and Venezuela, even with market restrictions, compared to other countries of similar sizes. This might indicate a language preference. And Brazil, a country that shares a common border, is the third highest invested country, outranking bigger markets such as Germany, Japan, and the United Kingdom. Additionally the markets of Brazil, Spain, Chile and Venezuela are more highly correlated with Argentina comparatively, which would normally present a disadvantage for investing in those markets. As stated previously, these observations lead one to question traditional financial diversification theory, and examine familiarity factors such as openness, a common language, a common border, and distance to see if they affect investment patterns.

When examining foreign diversification positions, other variables that are presented in the theoretical and empirical literature need to be considered as well. Though there have been a number of these factors presented, this study only looks at the most relevant ones - the ones that have received notable support both theoretically and empirically. These factors include the destination market's share of world capitalization, risk-adjusted market return differences, market restrictions and trading costs. Additionally two other factors are worth examination: monetary unions and immigrant populations. The details of the possible effects and motivations of all of the factors mentioned will be discussed more thoroughly later. The empirical specification presented in this paper attempts to determine the significance of each of these relevant

factors in influencing international portfolio diversification into a particular country. This way a more comprehensive analysis of the determinants of foreign diversification is performed[3].

The next section presents a literature review on equity home bias. It includes articles on both the theoretical explanations and the empirical examinations of international diversification. Section 3 discusses the dependent variable and the dataset in detail, while Section 4 presents empirical specifications for testing the factors mentioned earlier. The results are presented in Section 5, and the conclusion is presented in the final section.

2. Literature Review

International portfolio diversification and the home bias puzzle have received a lot of attention recently. As stated earlier, finance theory states that it is beneficial for investors to diversify their portfolio internationally. Shapiro(1999) plots annualized monthly returns of portfolios consisting of different percentages of American and non-American equities against the monthly standard deviations of the portfolios as a measure of risk. Using data from 1970-1996, he shows that the optimal portfolio consists of at least a 40% investment in the non-American markets index and a 60% investment in the US market index. Although his findings are not absolute, they do provide further evidence supporting financial theory.

Having shown the benefit of international diversification both theoretically and empirically, economists then looked at actual portfolio holdings. French and Poterba (1991) presented the first notable study on the home bias phenomenon. In their article,

[3] This is not to say that numerous variables were added haphazardly. As stated previously, only variables with great relevance and empirical support are included.

the authors examined the portfolio holdings of 6 major countries in 1989. They found that in the United States, investors were investing 92.3 percent domestically; Japan 95.7 percent; United Kingdom 92 percent; et cetera. This was highly disproportionate compared to the theoretical predictions. Other authors observed similar phenomena. For example Werner and Tesar (1998), using a different data set, observed a significant home bias for 13 nations from 1987-1996. This came to be referred to as the equity home bias puzzle. However the focus of this paper is not the equity home bias itself per se, but its specific patterns mentioned earlier.

With regards to specific investment patterns some authors have indeed found "similarity" factors to be significant determinants in equity investment, though their studies were localized, focusing on specific markets and industries. Grinblatt and Keloharju (2001) examine the effects of distance, language, and culture on stockholdings and trade within Finland. Specifically, they examine the behavior of Finnish and Swedish investors in relation to Finnish and Swedish firms operating in Finland, using a gravity type equation model. Their empirical evidence suggests that "investors simultaneously exhibit a preference for nearby firms and for same language and same-culture firms." (Grinblatt and Keloharju 1071) That is the share ownership weights showed a significant positive relationship with regards to a common language and culture and a negative relationship with regards to distance.

As stated earlier, Huberman (2001) also examines familiarity factors in investment decisions, but in terms of investor behavior toward Regional Bell Operating Company (RBOC) within the United States. He examines data on RBOC customers and investors, and finds that RBOC investors tend to be its customers or employees and

observe a geographical bias for RBOC investment. Finally Coval and Moskovitz (1999) examine 1995 holdings data on the largest US money managers. They find "evidence for a geographic proximity preference" (Coval and Moskovitz 5), that is not justified by the equity returns, risk, and other related factors. These studies conclude that, despite the predictions of traditional financial diversification theory, similarities do play a role in investment decisions.

With regards to empirical studies on foreign diversification specifically, two studies have looked at foreign equity holdings of US investors. Bohn and Tesar(1996) argue that a significant factor in determining US equity investment in foreign markets is the concept of return chasing. Specifically, they contend that US investors tend to acquire stocks in a particular market when returns on those markets are high rather than selling off "winning stocks" to maintain balanced portfolio weights, as the theory might suggest. Through their empirical analysis they show that "in most of the large equity markets, US net purchases are significantly positively correlated with local capital gains and excess returns."(Bohn and Tesar 79) Therefore this demonstrates that this concept of return chasing can be influential in affecting foreign diversification.

Ahearne, Griever, and Warnock (2004) perform an empirical analysis on US foreign diversification using US Treasury survey data form 1994 and 1997. In their paper, they examine if such factors as the amount of foreign shares listed in the domestic market, return differences, market size, trade flows and market restrictions affect US foreign equity investment. They find a statistically significant bias toward countries that have relatively more stocks listed in the US markets. They also find significance in

factors such as market size, market restrictions, and as well as risk-adjusted return differences.

One can see from the literature that a number of factors in addition to the traditionally theoretical ones, do indeed play a significant role in an investor's decision. Using the IMF coordinated portfolio investment survey, this paper examines the foreign diversification patterns of more than thirty countries. It not only looks at familiarity factors but also examines and controls for the other potentially relevant factors mentioned, such as market size, restrictions, trading cost and return differences, as well as tests rather novel factors such as monetary unions and immigrant populations. It would be interesting to see if some of these variables affect international diversification and not just local diversification. By examining all of these important factors, this paper provides a new and comprehensive empirical study on factors affecting the composition of international portfolio investment.

3. Measurements and Data

It is quite important to specify the dependent variable carefully. In looking at international portfolio diversification and equity home bias, the dependent variable is constructed in the following manner:

(1) $$FD_{ij} = \frac{FA_{ij}}{MCAP_i + FA_i - FL_i}$$, from country *i* into country *j*.

That is the foreign diversification (FD) of the source country into the destination country is equal to the foreign equity assets (FA) of the destination country held by the source country divided by the sum of its stock market capitalization (SMC) and total foreign equity assets (FA) adjusted for its total foreign equity liabilities (FL).

It is also important to discuss the data used to calculate the dependent variable. The data on foreign equity assets is obtained from the IMF's 2001 Coordinated Portfolio Investment Survey. This survey was first conducted in 1997 in an attempt to standardize the procedures used by countries when calculating and reporting their foreign investments. After this initial survey was conducted, recommendations regarding collection and tabulation methods were put forth and later adopted by most participating countries. The data used in this study contains a majority of the countries[4] involved in the 2001 survey for which there are respective data available. Further metadata is used to eliminate countries which had relatively lower survey response rates.[5] This is quite important, as lower survey response rates might give an inaccurate view of foreign diversification. Therefore the remaining countries provide a much more accurate, yet still fairly comprehensive representation of global foreign diversification. A complete list of data sources is presented in the data appendix. In addition, summary statistics for the variables are presented in Table 2.

4. Empirical Specification

Attempting to explain the patterns mentioned in Table 1, this study examines several factors that could have influenced international diversification. Due to multicolinearity concerns between destination country fixed-effects, market restrictions and trading costs, three separate regressions are run. These regressions test the effects of

[4] Specifically these countries include Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, Colombia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hong Kong, Hungary, Indonesia, Ireland, Italy, Japan, Korea, Netherlands, New Zealand, Norway, Philippines, Portugal, Singapore, South Africa, Spain, Sweden, Switzerland, Thailand, Turkey, United Kingdom, and United States, and Venezuela.
[5] The eliminated countries include Chile, Indonesia, Philippines, Thailand, Turkey, and Venezuela. These countries had a response rate of less than 85%, based on the collection method primarily used.

market size, market returns, trade flows, distance, common language and common border effects on foreign diversification. The first specification is:

(2) $$FD_{ij} = a + B_1(MktCap_j) + B_2(Corr_{ij}) + B_3(KControl_j) + B_4(RtnDiff_{ij}) + B_5(Openness_{ij}) + B_6(Distance_{ij}) + B_7(Language_{ij}) + B_8(Border_{ij}) + e_{ij},$$

from country *i* into country *j*.

The first independent variable is MktCap, which is the destination country's market share of world capitalization. This variable is included to test financial theory. As stated in the introduction, according to the international version of the ICAPM, investors should diversify internationally according to the country's share of world capitalization. Accordingly this should be one of the most, if not the most, relevant factor in an investor's decision. If correct, this coefficient should be close to positive one, indicating that a one percent increase in a destination country's share of world capitalization would result in a one percent increase in foreign diversification into that country.

The second coefficient, Corr, represents the correlations between the source and destination country's market. Specifically it is the correlation between the two markets' monthly returns form 1995 to 2001. As stated in the introduction, if investors are only willing to partially diversify, then according to financial theory they should at least invest in markets that are less correlated to that of their own. If investors do follow this logic, then the coefficient for this variable should be negative, indicating investors' aversion to more positively correlated markets.

The third variable, KControl, is the percent of the destination market that is restricted to foreign investment. This study uses a measure of capital controls that was developed by Edison and Warnock (2003). It is equal to one minus the ratio of the

destination country's investable to regular capitalization. Standard and Poors develops a measure of the equity that is available to foreign investors, where availability is determined by legal restrictions. In other words, this "investable" index is simply the portion of the destination market's capitalization available to foreigners, and would therefore provide a good measure of market restrictions. One would expect this coefficient to be significantly negative, if market restrictions play a role in international diversification.

The forth coefficient, RtnDiff, is the difference between the risk adjusted return of the source country's market index and that of the destination country's market index. Specifically the risk adjusted return of each market is equal to its three year average monthly return divided by its standard deviation. Morgan Stanley creates individual country indexes that provide fairly accurate representations of market performance. Each index is adjusted for exchange rates, inflation, and dividend re-investment, which provides for accurate comparison. This variable is included to see if investors are "return chasers". Again, that is when investors increase their foreign holdings when the foreign market is outperforming the local market. As stated earlier, this will be a pragmatic test of Bohn and Tesar's (1996) theoretical argument as well as a more compressive test of Ahearne, Griever, and Warnock's (2004) findings.

The four variables mentioned above are included mostly as "controls." That is, since these variables have received either theoretical or empirical support, it is important to include them in the model. This way the effects of the familiarity variables discussed shortly can be more accurately measured.

The first variable of particular interest is that of the percent share of imports and exports to GDP, Openness[6]. This variable might be a representative measure of globalization and a general willingness to invest abroad. It may also provide a measure for familiarity in that one would be more "familiar" with those markets it trades with most. In addition, Lane and Milesi-Ferretti (2003) find that this variable had a significant impact on financial integration (foreign assets to GDP), and thus this coefficient could certainly have an influence on international diversification.

The next variables of particular interest are that of Distance and Border. Distance is equal to the natural log of the circular distance between the source and destination country's capital measured in kilometers, while Border is just a dummy variable indicating whether or not the two countries share a common border[7]. This latter factor shows particular relevance when examining Table One, as previously mentioned. Distance was also found significant in Grinblatt and Keloharju's (2001) article.

For similar reasons, Language is included as the final variable. It is just a dummy variable indicating whether or not the two countries share a common language. These four variables (Openness, Distance, Border, and Language) should provide a reasonable test to see if similarities or familiarities are significant determinants of international diversification.

As stated earlier due to multicolinearity concerns, separate regressions are run to incorporate trading costs and destination country fixed-effects. In the first alternative, the variable $TCost_j$ replaces $KControl_j$. TCost is a measure for the average cost of a foreign investor trading equity in destination country "j". Elkins & McSherry computes

[6] More specifically Openness = 0.5(Exports + Imports)/GDP.
[7] In this study island countries that are in close proximity to another country are considered to have a common border, like the United Kingdom and Ireland or New Zealand and Australia.

an average trading cost for most major world markets that is composed of a base trading cost, commissions, fees, and a market impact cost. It provides a fairly good representation of the total trading costs associated with each market. The variable, TCost, is the ratio of the destination markets trading cost to the world average trading cost. This variable is used to control for any market costs that would exceed the norm, and therefore would discourage foreign investors.

In the alternative regression, destination country fixed effects are added to the model so that the new specification becomes:

(3) $FD_{ij} = a_j + B_1(RtnDiff_{ij}) + B_2(Corr_{ij}) + B_3(Openness_{ij}) + B_4(Distance_{ij}) + B_5(Language_{ij}) + B_6(Border_{ij}) + e_{ij}$, from country *i* into country *j*.

Here $MktCap_j$ and $KControl_j$ are dropped and destination country fixed-effects dummies are added to the regression, so that "a" is replaced by "a_j". This alternative would hopefully provide a control for any unaccounted exogenous country fixed effects. It would be interesting to see if, by taking out these effects, it would change the other variables' impacts.

Finally two additional regressions are run that use a much smaller portion of the dataset. These variables test if monetary unions or immigrant populations affect foreign diversification. The new generic specification is:

(4) $FD_{ij} = a + B_1(MktCap_j) + B_2(Corr_{ij}) + B_3(KControl_j) + B_4(RtnDiff_{ij}) + B_5(Openness_{ij}) + B_6(Distance_{ij}) + B_7(Language_{ij}) + B_8(Border_{ij}) + B_9(X_{ij}) + e_{ij}$, from country *i* into country *j*.

The variable X represents either the variable EMU or Immigrant. EMU is a dummy variable that equals one when a country belongs to the European Monetary Union. In this

regression only source nations who are a part of the EMU are included. This variable will hopefully test to see if being in a monetary union, or having fixed exchange rates, affects international diversification. If the coefficient turns out to be significantly positive, then that might be an indication that exchange rate regimes, and arguably exchange rate exposure in general, might significantly factor into foreign investors' decisions.

Immigrant is a variable that represents the percentage of the source country's population composed of immigrants from the destination country. Gould (1994), in his article entitled, "Immigrant Links to the Home Country: Empirical Implications for US Bilateral Trade Flows," finds that immigrant populations have a significant impact on trade flows. This idea can also be extended to equity flows. If one accepts familiarity as an important factor, then certainly the greater the number of immigrants from the destination country, the more likely the investment into that country. It is important to note that this does not necessarily mean that the immigrants themselves are investing in foreign markets. More reasonably, this factor might capture the influence that immigrants have on their offspring or their surroundings, who then might be more inclined to invest abroad. If this factor is indeed important then one would expect a significant positive coefficient.

From these different specifications, this study hopes to account for the different patterns exhibited in foreign diversification. Although some of these variables have been previously studied, as stated earlier, those studies were quite localized and would certainly warrant examination in an international context. Certain factors are also quite new, such as monetary unions and immigrant populations, and would be interesting to

analysis. It is important to note that there are many factors influencing foreign diversification, and by no means is this study attempting to determine the effects of every factor. However, by examining these interesting factors on a comprehensive level, this study hopes to make a notable contribution to the field.

5. Results

With reference to the results, virtually all variables are presented as a percentage[8], making their interpretation more convenient. In each table, the control variables are presented first, after which the rest of the variables are added individually. When the regressions were first run, tests indicated that heteroskedasticity is a concern.[9] Therefore to overcome this issue, robust standard errors are used, with the t-statistics reflecting this correction. The results of the first regression are presented in Table 3.

When the "control" variables were added in the first column, they all turn out to be significant. The coefficient on MktCap is correctly positive, indicating that a one percent increase in the destination market's capitalization results in a 0.15 percent increase in foreign diversification. The sign does follow financial theory, but the fact that the coefficient is not near one, indicates that investors might not be following financial theory as closely. This is particularly true given the fact that the coefficient on Corr is positive and highly significant. It indicates that for a one unit increase in the correlation between the two markets, there is approximately a 3.2 percent increase in international diversification, meaning investors that are significantly more likely to invest in markets that are actually more correlated than that of their own. Furthermore the variable Restrict doesn't turn out to be a significant determinant of the dependent variable. This result

[8] With the exception of the correlation variable.
[9] In almost all the regressions, when the White (1980) test was used, the test statistic indicated that one could reject the null hypothesis of homoskedastic errors at the 5 % level.

indicates that market restrictions might not play as great of a role in investor behavior. This might not be so unreasonable, since market restrictions are much less significant today than they were in the past. Other studies have come to relatively similar conclusions.[10]

The coefficient of RtnDiff turns out to be significant. According to the results, a one percent increase in the domestic market's average risk adjusted return relative to that of the destination market causes around a 0.65 percent decrease in foreign diversification. The sign is correctly negative, indicating that investors might indeed be trend followers or return chasers, being less likely to invest in foreign markets when their local market outperforms the foreign market. This confirms the results of Bohn and Tesar (1996). The three variables combined result in an adjusted R squared of 0.36, which is reasonable for a cross-sectional regression.

When adding Openness, it seems that trade flows do affect foreign diversification. The results indicate that a one percent increase in trade flows to GDP result in a 0.20 percent increase in the dependent. One could argue that this increased willingness to invest might be a result of the increased familiarity with the destination market. Though the exact relationship between the two variables might be debatable, it would seem quite plausible that increased contacts with the destination market through trade could result in an increased familiarity with that market.

The next two variables, Distance and Border, prove to be less significant. Border effects are insignificant, while distance, although significant, produces a very weak impact on foreign diversification; a one percent increase in the relative distance between the two countries only produces a 0.001 percent decrease in the dependent variable.

[10] Ahearne, Grevier, and Warnock (2004) results for 1997

Although these results might seem damaging to the familiarity argument, they do not seem unusual. Typically just because two countries share a common border it does not mean that they engage in many contacts. Also the border effect might be dampened by the effect of the Openness variable. For similar reasons distance might not play a significant role. For example, distance might not have any effect once the two markets surpass a certain point. That is, in terms of equity trade, it would not make much of a difference if the two countries are 1000 miles apart versus 5000 miles apart. This might seem to contradict Grinblatt and Keloharju (2001) results, however their findings were based on equity holdings within Finland where differences in distances are quite small, and would be more important.

The last variable added is Language. The results indicate that Language plays a significant role in diversification, indicating that a common language increases international diversification by 1.49 percent. Though one might think that this percentage is somewhat low, given that the mean diversification per country is 0.68%, the result is quite significant. This result does confirm that familiarity does indeed play a relevant role in foreign diversification.

By adding these variables, the fit of the regression improves (Adj. $R^2 = 0.42$). The findings shed some light as to the influence of these factors on international diversification. They suggest that market size and correlations, return differences, trade flows and a common language all play important roles in determining foreign diversification. Also, it seems that market restrictions might not play as significant of a role as one would expect.

Table 4 displays the result of the same specification but with trading costs replacing market restrictions. Again two separate regressions were run because tests indicated that market restrictions and trading costs were highly correlated[11]. It should be noted that he first column represents the control variables. Basically the same results are obtained with an adjusted R squared of 0.36. The only difference is that the coefficient on trading costs is significant compared to that of market restrictions. Furthermore the coefficient is slightly positive, indicating that a one percent increase above the average global trading cost would actually increase foreign diversification by 0.003 percent. This might be due to certain markets charging a premium since they know that they are relatively more attractive to investors. Considering the magnitude of the coefficient, however, this result is essentially similar to that of market restrictions, mentioned earlier. It seems that trading costs and market restrictions have no real impact on foreign diversification.

When adding the familiarity variables, again, similar results are obtained. Trade flows and a common language are significant with similar magnitudes, while distance and border effects prove insignificant. These results mainly affirm the previous results, and provide a good robustness check

The results of the destination country fixed-effects regression are presented in Table 5. Here, MktCap and KControl are dropped due to correlation concerns between them and the country dummies. The results of this specification reach relatively similar conclusions to the previous one, with an adjusted R squared of 0.38. Market correlations are again highly significant and positive. Here, however, return differences have a greater impact. A one percent increase in the difference between the risk adjusted

[11] The correlation coefficient equaled 0.69.

monthly returns causes approximately a 1 percent decrease in international diversification, when all the variables have been added. The Openness magnitude is essentially the same, indicating a 0.19 percent increase in diversification for every one percent increase in trade flows to GDP. Finally the Language coefficient is significant with a similar magnitude, while the distance and border effects coefficient prove once again insignificant.

As one can see, the three tables provide evidence that market size, return differences, trade flows, and a common language, all play a relevant role in shaping foreign diversification. These results are quite intriguing because it is the first time that some of these factors have been tested in an international framework, and have shown to have tangible impact. Furthermore the tables provide robustness checks, as each table comes to similar conclusions. For example, even when country fixed effects were taken out, the results for the other variables remained relatively similar to that of the other tables. It is important to note that though these factors do not explain the movements in diversification completely, they do shed some light on the factors involved. Again, with almost all economic analysis, it is extremely difficult to account for every aspect of investor behavior.

Table 6 analyzes the effects of monetary unions on international diversification. Note that the number of observations is now less than one third of the number used in the previous regressions. Again this regression contains only source countries that are a part of the EMU. In this regression, somewhat different results are obtained for the control variables. Market correlations and return differences are no longer significant. This

would lead one to conclude that these variables do not play a significant role among European Union countries, possibly since these nations exhibit unique characteristics.

The coefficient related to Openness is slightly larger and significant. It indicates that a one percent increase in trade flows to GDP results in an approximately 0.54 percent increase in the dependent variable in the end. Distance and border effects again do not seem to have a significant impact even with this smaller dataset. Language, on the other hand, seems to have an even greater impact with these nations. A common language results in a 4.25 percent increase in diversification when all the variables are added. This increase is somewhat surprising given the lack of barriers and controls in these countries. This result further illustrates that familiarities do matter even when countries have no capital or trade barriers, and share a common currency.

The most interesting variable, that of being a part of a currency union, turns out completely insignificant. The coefficient on the dummy variable, EMU, seems to have no impact on diversification whatsoever. This dummy variable equals one when the destination country is a part of the EMU, and zero when the destination country is not included in the EMU. Again, this variable was included to see if monetary unions or lack of exchange rate exposure affect foreign diversification. Although there are ways to hedge against this exposure and still reap the benefits of diversification[12], exchange rate exposure might still be a consideration. This result may confirm the conclusion that having a fixed exchange rate might not necessarily foster greater international diversification.

[12] Alder and Dumas (1983) basically state that exchange rate exposure is not usually a concern in most cases.

The last regression incorporates the effects of immigrant populations. The results of interest are presented in the last column. Again the data is cut considerably. Here, most of the coefficients maintain similar significance and signs, with the exception of return differences. It seems that when using a smaller dataset return difference do not seem to have an impact on diversification. The variable of interest here is that of the percentage of immigrants from the destination country as a share of the source country's population. The coefficient is almost significant, with a t-statistic of 1.57 (p-value ≈ 11%). It also does have a correct positive sign, indicating that a one percent increase in the immigrant population would result in a 0.68 percent increase in foreign diversification into the destination country. This might mean that the Gould (1994) results can be extended to equity flows as well. When more immigration data becomes available, further analysis would certainly be warranted. Overall this regression could provide further evidence that familiarity is indeed an important factor affecting international diversification.

6. Conclusion

In 2001, Huberman published an article entitled, "Familiarity Breeds Investment," which found links between familiarity and the equity holdings of regional Bell company employees and costumers. This study came to similar conclusions but from an international context, finding that familiarity does indeed play a role in foreign diversification as well. Specifically trade flows, a common language, and possibly immigrant links do have an impact on international diversification. Additionally this study finds other factors such as market size, market correlations, and risk-adjusted return differences to be significant. The significance of familiarity factors might also support

the information asymmetries hypothesis for equity home bias. Briefly, this theory states that the lack of international diversification might be due to local investors being less informed about foreign markets.[13] In the sense that familiarity can be related to having more information, these findings lend support to the information asymmetries theory, though further analysis would certainly be warranted. This study also finds that monetary unions (fixed exchange rates), market restrictions, and trading costs do not play as significant a role as some might imagine. This study finds some new and interesting variables affecting the composition of foreign diversification, and therefore sheds light on the factors influencing international investors' behaviors.

[13] For more information see Gehring (1993).

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Data Appendix

Foreign Equity Asset and Liability Holdings: The International Monetary Fund's International Coordinated Portfolio Investment Survey (2001). This is the second such survey conducted by the IMF. After the 1997 survey, recommendations were put forth so that all participating countries provided accurate, consistent data on asset holding. The data is obtained from the 2001 survey in which countries had time to implement the recommendation. The metadata was used to eliminate countries that had lower survey response rates, based on their collection methods.

Market Capitalization: The Standard and Poor's Global Stock Markets Fact book. Data is available for 2001 for all countries.

Market Returns: Morgan Stanley Capital International (MSCI). Monthly returns in US Dollars adjusted for dividend re-investment for most countries. Data is from 1995-2001 for market correlations and 1998-2001 for risk-adjusted returns.

Market Investable Capitalization: Standard and Poor's Market Investable Indices. Formally calculated by the International Finance Corporation. Index measures the capitalization available to foreigners, where availability is based on legal restrictions. Data available for most countries for 2001.

Trading Costs: Elkins and McSherry Co. index for the average trading cost of 42 world markets. Index measured in basis points that included base trading costs, commissions, fees and market impact costs. Data available for almost all countries for 2001.

Exports, Imports, GDP: World Bank Economic Indicators Database. All values measured in millions of US dollars. Data is available for all countries for 2001.

Population: World Bank Economic Indicators Database. Values measured in millions. Data is available for all countries in 2001.

Immigrant Population: OECD Trends in International Migration Annual. Values based on the stock of immigrant populations based on the 2000 census from most reporting countries.

Distance: Data from Professor Jon Heaven's International Trade Dataset, Mancalester University. Values represent the circular distance between the countries' capitals measured in kilometers.

Table 1 : Argentina's Foreign Diversification

Destination Country	FD	MktCap	KControl	Corr
United States	3.134922	49.703068	0	0.40
Spain	0.204549	1.685040	0	0.42
Brazil	0.036148	0.670262	66.6	0.58
United Kingdom	0.012967	7.980042	0	0.34
Germany	0.009346	3.857173	0	0.35
Finland	0.008220	0.685442	0	0.15
Netherlands	0.004167	1.649115	0	0.36
Sweden	0.003053	0.836976	0	0.32
France	0.003037	4.226710	0	0.39
Switzerland	0.000541	1.875738	0	0.17
Italy	0.000444	1.898073	0	0.36
Japan	0.000346	8.104170	0	0.28
Norway	0.000294	0.248522	0	0.44
Chile	0.000065	0.202657	68.6	0.53
Greece	0.000037	0.311446	0	0.24
Korea, Republic of	0.000033	0.791935	40.8	0.23
Venezuela	0.000026	0.022371		0.30
Denmark	0.000014	0.341749	0	0.32
Belgium	0.000005	0.596861	0	0.15

FD is the measure of the percent foreign diversification discussed in the text. MktCap is the destination market's share of world capitalization. KControl measures the percent of the destination market that is restricted to foreign investment. CORR represents the correlations between the two markets based on six-year monthly returns.

Table 2 : Summary Statistics

Variable	N	Minimum	Maximum	Mean	Std. Dev.
FD	976	0	40.86	0.68	2.39
MktCap	1116	0.02	49.70	2.55	8.07
Corr	1116	-0.09	0.81	0.40	0.16
KControl	1025	0.00	90.28	22.05	32.68
TCost	1116	36.41	221.51	101.09	41.13
RtnDiff	1116	-0.41	0.41	0.00	0.15
Openness	1115	0	27.66	0.92	2.50
Distance	1116	515.92	989.69	853.69	109.06
Immigrant	215	0.01	6.27	0.38	0.75

Summary Statistics are for the raw data set. FD represents the dependent variable of foreign diversification. PSWC is the destination market's share of world capitalization. Restrict is the percent of the destination market that is restricted to foreign investment. TCost is the destination market's percent trading cost above the world average. RD is the risk adjusted return difference between the local and global market index. Openness is the percentage share of trade in GDP. Distance is the circular distance between the countries' capitals. Immigrant is the percent of the local population composed of destination market's immigrants. See text for specific definitions.

Table 3 : Cross Sectional Analysis of Foreign Diversification in 2001

	(1)	(2)	(3)	(4)
MktCap	0.151	0.131	0.137	0.134
	(4.97)***	(4.39)***	(4.64)***	(4.66)***
Corr	3.188	2.385	2.009	1.577
	(6.85)***	(6.38)***	(5.57)***	(4.44)***
KControl	-0.002	-0.001	-0.001	0.000
	(1.64)	(-1.28)	(-0.70)	(0.14)
RtnDiff	-0.655	-0.788	-0.737	-0.638
	(1.85)**	(-2.15)**	(-1.99)**	(-1.89)**
Openness		0.200	0.168	0.165
		(2.55)***	(1.91)*	(1.97)**
Distance			-0.001	-0.002
			(-2.44)***	(-4.41)***
Border			0.367	-0.010
			(1.14)	(-0.03)
Language				1.488
				(2.49)**
Intercept	-1.077	-0.901	0.294	0.999
	(-5.33)***	(-5.22)***	(0.58)	(2.45)**
Adj. R Sq.	0.356	0.396	0.399	0.421
N	908	907	907	907

Dependent variable represents foreign diversification. Cross-sectional estimation using robust standard errors. White t-statistics are reported in parentheses (*=10% level, **=5% level, ***=1% level). See text for variable definitions.

Table 4 : Cross Sectional Analysis of Foreign Diversification in 2001

	(1)	(2)	(3)	(4)
MktCap	0.155	0.135	0.141	0.137
	(5.07)***	(4.52)***	(4.77)***	(4.78)***
Corr	3.230	2.496	2.104	1.713
	(6.45)***	(6.73)***	(5.80)***	(5.13)***
TCost	0.003	0.004	0.004	0.003
	(2.33)**	(2.74)***	(2.74)***	(2.56)**
RtnDiff	-0.523	-0.648	-0.624	-0.567
	(-1.52)	(-1.83)*	(-1.76)*	(-1.71)*
Openness		0.205	0.175	0.171
		(2.40)**	(1.97)**	(2.02)**
Distance			-0.001	-0.002
			(-2.66)***	(-4.30)***
Border			0.309	-0.002
			(1.05)	(-0.01)
Language				1.297
				(2.47)**
Intercept	-1.441	-1.371	-0.093	0.534
	(-4.42)***	(-4.47)***	(0.15)	(1.10)
Adj. R Sq.	0.359	0.401	0.405	0.423
N	976	975	975	975

Dependent variable represents foreign diversification. Cross-sectional estimation using robust standard errors. White t-statistics are reported in parentheses (*=10% level, **=5% level, ***=1% level). See text for variable definitions.

Table 5 : Cross Sectional Analysis of Foreign Diversification in 2001 with Country Fixed-Effects

	(1)	(2)	(3)	(4)
Corr	3.069	2.324	2.138	1.832
	(6.64)***	(5.69)***	(4.85)***	(4.44)***
RtnDiff	-2.123	-2.143	-2.143	-1.954
	(-3.05)***	(-3.15)***	(-2.62)***	(-2.63)***
Openness		0.190	0.169	0.162
		(2.15)**	(1.76)*	(1.77)*
Distance			0.000	0.000
			(0.05)	(-0.52)
Border			0.555	0.251
			(1.65)*	(0.71)
Language				1.231
				(2.29)**
Intercept	-0.882	-0.737	-0.782	-0.390
	(-5.66)***	(-5.64)***	(-0.79)	(-0.45)
Adj. R Sq.	0.378	0.410	0.411	0.426
N	976	975	975	975

Dependent variable represents foreign diversification. Cross-sectional estimation using robust standard errors. White t-statistics are reported in parentheses (*=10% level, **=5% level, ***=1% level). See text for variable definitions.

Table 6 : Cross Sectional Analysis of Foreign Diversification in 2001 for EMU

	(1)	(2)	(3)	(4)	(5)
MktCap	0.217	0.188	0.189	0.189	0.186
	(2.92)***	(2.81)***	(2.86)***	(3.05)***	(2.93)***
Corr	4.278	0.720	0.673	0.712	0.726
	(2.92)***	(0.85)	(0.86)	(0.93)	(0.92)
KControl	0.000	0.002	0.002	0.003	0.003
	(-0.10)	(0.59)	(0.84)	(1.13)	(0.72)
RtnDiff	-0.541	-0.396	-0.445	-0.094	0.067
	(-0.82)	(-0.70)	(-0.84)	(-0.17)	(0.09)
Openness		0.525	0.524	0.482	0.491
		(2.54)**	(2.31)**	(2.57)**	(2.51)***
Distance			-0.001	-0.001	-0.002
			(-0.44)	(-1.28)	(-1.52)
Border			-0.152	-0.968	-0.974
			(-0.27)	(-1.25)	(-1.26)
Language				3.652	3.604
				(2.14)**	(2.13)**
EMU					-0.238
					(-0.55)
Intercept	-1.538	-0.540	-0.064	0.564	0.841
	(-2.73)***	(-1.52)	(-0.06)	(0.55)	(0.78)
Adj. R Sq.	0.350	0.483	0.480	0.530	0.527
N	300	300	300	300	291

Dependent variable represents foreign diversification. Cross-sectional estimation using robust standard errors. White t-statistics are reported in parentheses (*=10% level, **=5% level, ***=1% level). See text for variable definitions.

Table 7 : Cross Sectional Analysis of Foreign Diversification in 2001

	(1)	(2)	(3)	(4)	(5)
MktCap	0.151	0.131	0.137	0.134	0.205
	(4.97)***	(4.39)***	(4.64)***	(4.66)***	(4.41)***
Corr	3.188	2.385	2.009	1.577	6.492
	(6.85)***	(6.38)***	(5.57)***	(4.44)***	(2.81)***
KControl	-0.002	-0.001	-0.001	0.000	0.022
	(1.64)	(-1.28)	(-0.70)	(0.14)	(2.06)**
RtnDiff	-0.655	-0.788	-0.737	-0.638	0.363
	(1.85)**	(-2.15)**	(-1.99)**	(-1.89)**	(0.32)
Openness		0.200	0.168	0.165	0.296
		(2.55)***	(1.91)*	(1.97)**	(1.72)*
Distance			-0.001	-0.002	-0.004
			(-2.44)***	(-4.41)***	(-1.82)*
Border			0.367	-0.010	-1.270
			(1.14)	(-0.03)	(-1.41)
Language				1.488	2.862
				(2.49)**	(1.91)*
Immigrant					0.682
					(1.57)
Intercept	-1.077	-0.901	0.294	0.999	-0.905
	(-5.33)***	(-5.22)***	(0.58)	(2.45)**	(-0.40)
Adj. R Sq.	0.356	0.396	0.399	0.421	0.000
N	908	907	907	907	151

Dependent variable represents foreign diversification. Cross-sectional estimation using robust standard errors. White t-statistics are reported in parentheses (*=10% level, **=5% level, ***=1% level). See text for variable definitions.