

Determinants of Home Bias Puzzle in European Countries

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Abstract

In this paper researchers examine the home bias in international asset allocation. There are several explanations for this observed home bias. Recent studies offer some insight into understanding this puzzle. In this paper researchers assess whether the degree of home bias has changed over the twelve year period, especially after the financial crisis of 2008. Institutional and behavior-based explanations for the phenomena are considered and discussed. We examine if any of the theoretical explanations or recent developments such as the number of industries, trade, the advent of the internet, and geographic distance have affected the increase in foreign diversification. The empirical analysis produces some interesting results. It demonstrates that the rise of the number of industries and geographic distance affected significantly the changes in foreign diversification. The results also indicate that there is a shift of perspective from a national basis to a regional bias (Euro area basis), inevitably induced by EMU. Other factors such as number of internet users, which intuitively might be expected to affect foreign diversification, are insignificant. Research concludes that none of the proposed theories can explain the full extent of the home bias, thus we argue that international portfolio allocation should be justified by a combination of rational and irrational explanations.

Key Words: International Diversification, Home Bias, Emu, Industrial Diversification, Financial Crisis.

Introduction

International diversification responds to the well-known adage: Don't Put All Your Eggs in One Basket. The goal of any rational investor is to find the optimal combination of financial assets in his portfolio, which provides the best performance for a certain level of risk. Assets and portfolios are therefore identified by their couples (average return, risk) where risk is measured by the expected variance. After the pioneering work of Markovitz (1952, 1959) on portfolio optimization, and extensions to the international context by Grubel (1968), Levy & Sarnat (1970), and Lessard (1973), many studies in finance have examined the effects of international diversification in portfolios. Not surprisingly, since portfolio diversification depends on the correlations between return distributions of assets, which tend to be lower between- than within-countries, the gains from global portfolio diversification have been found to be large.

Despite its potential gains and the easier access to financial markets worldwide (Baele and Inghelbrecht, 2009; Chiou, 2009), international portfolio diversification has not been as fully embraced as expected. The actual portfolios that investors hold are heavily weighted in favor of domestic assets and international diversification gains have not been widely exploited by investors due to the so-called “home bias”. This phenomenon reflects investors’ preference for domestic equity and reluctance to diversifying.

Excellent literature reviews on home bias up to the year 2000 can be found in Lewis (1999) and Karolyi and Stulz (2003). In this paper, we cover only the recent findings on international portfolio choice. Studies that try to resolve the equity home bias puzzle focus on institutional explanations or individual investor behavior.

We propose in this study to contribute to this body of research by analyzing some determinants of the home bias and investigating the impact of the European integration since the introduction of the unique currency (Euro) has removed investment barriers and eliminated exchange rate among European member states.

Numerous studies have so far quantified the extent of the home bias for investors in various countries but the contribution of this paper is to study the evolution of this bias among a period of twelve years from 2001 to 2012 and specially the effect of the 2008 crisis. We propose also to examine the effect of the number of industries in each country, the effect of European Monetary Union and the impact of the 2008 financial crisis on home bias. To our knowledge no previous study, has taken on consideration the impact of this variables to explain investor’s preference for national assets.

The paper is organized as follows: The next section reviews the theoretical framework proposed by several studies trying to explain home bias. In Section 2 we study the evolution of home bias over time. The third section introduces the methodology and the data set. The fourth section discusses the results of the estimations. The last section concludes

Section 1: Background

Literature on the reasons as to why investors prefer domestic assets in their portfolio mainly fall into different explanations and several authors have focused on this phenomenon as French and Poterba (1991), Cooper and Kaplanis (1994), Tesar and Werner (1995), Baxter and Jermann (1997), Kho et al. (2009), Arouri (2008); De Santis and Gérard (2009); Coeurdacier and Guibaud(2011).). The explanations offered are very different, even contradictory. Among the institutional explanations, a number of attempts have addressed the issue in terms of direct barriers to international investments such as capital controls (Errunza and Losq, 1985; Stulz, 1981; Black, 1974) or other forms of market imperfections such as transaction costs (Rowland (1999), Warnock (2001)). However, most of these explanatory factors are rejected with the acceleration of financial globalization of capital markets starting from the mid-1980 and the relatively higher volumes of cross-border trading as revealed by high turnover rates in international transactions rule out these explanations (Warnock, 2002; Tesar and Werner, 1995).

Several authors argue that the home bias arises from deviations from purchasing power parity (Adler and Dumas, 1983), non-traded consumption goods (Stockman and Dellas, 1989; Cooper and Kaplanis, 1994), or non-tradable factors such as human capital (Baxter and Jermann, 1997).

A different strand of literature contest the validity of information driven explanation for the home bias, by finding inverse results. Grinblatt and Keloharju (2000) argue that foreign investors tend to buy past winning stocks and to sell past losers, while domestic investors behave the opposite. Therefore, foreign investor’s portfolio outperforms the household’s ones. Froot and Ramadorai (2008) show that Information rather price pressure is responsible for the observed predictability of domestic equity returns by cross-border flows.

Fidora Michael, Marcel Fratzscher and Christian Thimann, (2007) argue that barriers such as the volatility of the exchange rate could also explain this puzzle. It appears that the bias is more pronounced against countries with low volatility of returns. Note that low-yield currency respond more easily to the volatility of the exchange rate than countries with high yields currency. Therefore, the bias is high against countries whose exchange rate is very volatile. Through empirical testing on data from 40 industrialized countries and emerging economies, researchers conclude that a decrease in the volatility of monthly exchange rate would result in a reduction of the bias of more than 20%.

Institutional explanations based on cost-benefit analysis appear to be insufficient to explain the home bias. The costs of diversification do not seem so high to discourage investors to exploit the benefits of international diversification. Several studies are then directed to the behavioral explanations based on investor psychology on the portfolio selection problem. Inspired from behavioral finance school of thought, the central premise is that individuals are only quasi-rational in their decision-making process (Ricciardi, 2008) and behave according to the principles of prospect theory of Kahneman and Tversky's (1979). The main insight is to reject the fully rational model of individual decision making by introducing a series of cognitive and affective aspects likely to influence an investors' risk perception in uncertain or risky decision-making contexts. In applied work related to domestic or international asset allocation, many authors have addressed a number of concepts as the familiarity bias (Chan et al., 2005; Huberman, 2001; Grinblatt and Keloharju, 2001), narrow framing (Magi, 2009; Nocetti, 2006), or investors' relative optimism and perceived competence about domestic stocks (Suh, 2005; Strong and Xu, 2003). Briefly, although it is recognized that direct barriers to international investments are nowadays rejected as a reason to explain the home bias, the literature still lacks a fully convincing explanation and the ongoing debate mainly contrasts the informational vs. behavioral explanations of the home bias puzzle and many other explanations take more attention under the turbulent economic context:

1.1 Sector Diversification:

In the last decades, trade barriers and capital controls are no longer considered as hampering international diversification. In addition, a trend for stronger globalization within economic blocks appeared. As a consequence of this globalization, an increased interdependence between national economics can be expected.

This would translate into a higher covariance of traded assets from these countries and thus lead to a loss of diversification gains from investing across countries. Different articles have investigated this issue and have compared country diversification to an alternative: diversification across sectors.

Looking always for better diversification and better performance, some authors have focused their studies on the sector diversification. The portfolio will overweight or underweight different sectors relative to the market development, whether it is a bull or bear market. Indeed, all sectors do not behave with the same way and each sector has a different sensitivity to changing economic conditions. Sector diversification is increasingly widespread in portfolio management and takes over the geographical management.

This encourages Investors to invest in industries rather than investing in a very specific geographic scale (Europe, Asia, Middle East...). Through sector diversification, investors can buy shares and subsequently avoid the exposure to global risk factors and benefit from diversification gains. Our first hypothesis is therefore as follows:

Hypothesis 1: sector diversification has a moderating impact on home. In other words there is a negative relationship between home bias and number of industries

1.2 EMU effects

The establishment of the European Economic and Monetary Union (EMU) and the launch of the Euro in January 1999 have reshaped financial systems and so the radical institutional change in world economy could help explaining the large reallocation of capital that took place worldwide.

Baele and Inghelbrecht (2006) observed a sample of 21 countries where the betas of global and local market grew relatively faster for European countries.

De Santis and Gerard (2006) find that investors in the euro area have a strong preference for stocks and bonds in other countries in the euro zone, which indicates a strong regional integration. The authors document that financial integration is not a global phenomenon, as equity and bond home biases declined significantly only among European countries, Australia, New Zealand and Singapore. Equity and bond home biases continue to remain at relatively high levels. The significant decrease in bond home bias for European countries are characterized by a strong regional focus and are driven, to a certain extent, by the euro area itself. Therefore, the dramatic increase in allocation of savings in capital markets, which has taken of in the mid 1990's involved important changes in investors preferences only in a group of countries.

De Santis and Gérard (2006) show that the reduction in home bias has been accompanied by a large shift in holdings towards other euro area countries and that the EMU had a large impact on portfolio asset trade among euro area member states. The authors report that Euro area countries and in general European countries have increased the share of EMU assets as a fraction in their portfolio holdings, particularly in bond portfolios.

The international portfolio holdings issued by euro area residents increased for EU member states and the emerging markets in equity holdings and across all countries in bonds holdings. While the intra euro area allocation of equities slightly increased, intra euro area investment in bonds rose sharply.

Thus, we formulate our second hypothesis as follows:

Hypothesis 2: Euro investors show a strong preference for intra-Euro portfolios than international portfolios. In other words we want to test if whether the home bias has declined more rapidly in countries of the European Monetary Union with the rest of the world.

1.3 Information asymmetry

Wide number of authors consider that information asymmetries has a leading role as cause of the home bias puzzle (see among the others Gehrig (1993), Brennan and Cao (1997); Dvorak (2005);

This strand of literature has been initially explored by Gehrig (1993) that constructs a model showing that home bias emerges clearly when domestic investors are on average better informed about national securities.

Bae, Stulz and Tan (2008); Sercu and Vanpée (2008)). Brennan and Cao (1997) and Gehrig (1993) highlight investors' preference for domestic assets are due to information asymmetries between domestic and foreign investors. They provide theoretical models where domestic preference arises from an informational advantage possessed by local investors on their domestic market over foreign investors.

In this sense, a large number of empirical studies in literature provide evidence that information asymmetry is considered as significant plausible explanation for the observed domestic investor's preference for national securities.

In line with previous contribution, Aeharne, Griever and Warnock (2004) measure the effect of direct barriers to international investments and show that information asymmetries, generated by both the poor quality and the low credibility of financial information in many countries decrease US foreign investments.

Recently, Barron and Ni (2008) and Ni (2009) add up to this literature by showing that, in addition to asymmetric information, portfolio size also contributes to the probability of investors to be home biased.

Although it provides a simple and intuitive explanation of the puzzle, empirical evidence regarding the impact of the asymmetric information on home bias is so far inconclusive.

1.4 Geographic distance

Geographical distance is a barrier to interaction between economic agents and cultural exchanges. Investors prefer to invest in countries that are geographically close due to low information costs arising from cultural similarities and familiarity. We will use the logarithm of the distance value obtained from the website “le voyageur”. Rey and Doors (2005) suggest that, double the distance between two geographical areas decreased 82% trade in goods between these areas. But it is also true for all economic relations require direct interaction between agents and the distance also account for transactions in financial assets. Thus, Rey and Doors (2005) also show that doubling the distance results in a drop of 69% of cash securities.

Distance between countries results today in more cultural, linguistic, legal, etc. which are obstacles to trade (see Guiso, Sapienza and Zingales, 2005) and Proximity (geographical, cultural, legal, etc.) is also an important element of the relationship between financial intermediaries and issuers (Petersen and Rajan, 2002). Berger et al. (2002). The proximity has the great advantage of reducing information costs and probably also offers more facilities and better guarantees in terms of law enforcement. Hence, we want to test if this variable may still be considered relevant even if these countries belong to the European bloc.

1.4 2008 financial crisis:

1.5

With The progressive integration of the European financial markets the returns of regional or national indices (Freimann (1998), Beckers (1999)) tend to be more and more correlated, inducing a reduction of diversification opportunities. In an international perspective, Goetzmann, Li and Rouwenhorst (2001), Ratanapakorn and Sharma (2002), and Das and Uppal (2004) have observed that geographical financial indices show a bothering characteristic: they are highly correlated during market crises. These developments erode the potential gains from international diversification and investors may seriously think before holding international equities.

In fact, the 2007-09 global financial crisis has been a painful experience for investors and The widespread impact of this crisis caused a massive financial panic in 2008 (Gorton, 2008) that brought great uncertainty (Easley and O'Hara, 2010; Caballero and Krishnamurthy, 2009).

Traditional portfolio choice theories under uncertainty predict that if investors are ambiguity averse, an increase in uncertainty (Uppal and Wang, 2003; Epstein, 2001) or heightening of familiarity bias (Cao et al., 2011) would cause investors to reduce their foreign portfolio share.

Giannetti and Laeven (2012); Milesi-Ferretti and Tille (2011); Forbes and Warnock (2011); Fratzscher (2011) suggest that in 2008, investors left foreign markets for domestic one's.

In this study, we will investigate which influence the financial crisis has on the equity home bias. The focus of the research will be on whether the home bias increased or decreased during the 2008 crisis.

Hypothesis 3: the financial crisis has a positive impact on home bias.

1.6 Institutional investors

Many articles analyze the trading behavior of several investor categories. Grinblatt and Keloharju (2000), for instance, suggest that the degree of sophistication matters when studying investors in the Finnish market. They report that domestic investors, presumably less sophisticated, take the opposite position of that of more sophisticated foreign investors. This finding holds for both domestic institutional as well as individual investors.

Seasholes (2000) discriminates between domestic institutional and retail investors in Thailand and Taiwan, and documents that both categories trade against the flow generated by foreign investors. However, Choe et al. (1999) study the trading pattern on the Korea stock exchange, and show that Korean institutions generally behave like foreign investors.

The assets of the pension funds, life insurance companies and mutual funds in Europe have tripled, from 44% of GDP in 1985 to 122% in 2004 (OECD). As professional parties, institutional investors may in better ways overcome barriers to international investment. Analysts, for example, can reduce information asymmetries between investors and entrepreneurs. They can negotiate lower prices for great offers.

Section 2: Evolution of the equity home bias

Home Bias means that investors tend to overweight domestic assets in their portfolio, while this might not be optimal from a diversification point of view. International diversification should generate a better risk/return profile than domestic diversification, as the world capital market entails lower systematic risk than any domestic capital market. In a model-based approach, one can use the optimal portfolio weights from an international asset-pricing model as benchmark weights to compare with actual portfolio holdings. The ICAPM assumes that every investor is of the mean-variance type and has the same beliefs about the distribution of real asset returns. All investors face identical investment opportunities and there are no transaction costs or taxes. Inflation is independent of asset returns (or zero) and there is no exchange rate risk. These assumptions result in the well-known relationship:

$$E(r_j) - r = \beta_j * [E(r_w) - r] \quad (1)$$

where $E(r_j)$ and $E(r_w)$ denote the expected returns on any asset and the world portfolio respectively, r is the risk-free rate, and $\beta_j := \text{cov}(r_w, r_j) / \text{var}(r_w)$. The ICAPM implies that all investors hold the world market portfolio, which is a portfolio where the weight of each asset is equal to its relative share in the world market capitalization. The international asset pricing model (ICAPM) of Sercu (1980) takes exchange rates into account, and equation (1) becomes

$$E(r_j) - r = \beta_j * [E(r_w) - r] + \sum_{i=1}^N \delta_{j,si} [E(s_i + r_i) - r] \quad (2)$$

where N is the number of countries in the world, s denotes the exchange rate and r is now the risk-free rate of reference country N . In Sercu's model, currency risk can be perfectly hedged with the investor's own risk-free asset, implying that all investors hold the world market portfolio of risky assets, as in the world CAPM

D.Schoenmaker and T.Bosch (2007) compute the equity home bias labelled EHB_i as the difference between the relative weights of domestic equity in the portfolio of country i and the relative weight of country i in the total world market portfolio. The country portfolio is calculated as follows:

$$EHB_i = 1 - \frac{\text{Foreign Equity}_i}{\text{Foreign Equity to Total Market}_i} \quad (3)$$

In which:

Foreign Equity_i = share of country i 's holdings of foreign equity in country i 's total equity portfolio (1-share of domestic equity);

Foreign Equity to Total Market_i = the share of foreign equity in the world portfolio available to country i (1 - share of country i in the total market capitalization).

Equation 3 measures to which extent domestic equity is overweighted compared to foreign equity in the investment portfolio. From the international CAPM, the ratio is expected to be 0 as full geographical diversification (that is holding the world market portfolio) is beneficial. In other words, a country will have an EHB equal to 0 if investors show no preference for equity issued domestically. If domestic investors have a preference for domestic equity, the ratio will be between 0 and 1.

Since Germany has the first major European market, we have chosen it as a benchmark market

To illustrate the intensity of the home bias, Table 1 shows the difference between the proportion of domestic equities in a country's portfolio of stocks between 2001 and 2012. Data on portfolio holdings are from the Coordinated Portfolio Investment Survey.

Baele, Pungulescu and Ter Horst (2007) show empirically that the home bias has come down over the years, especially in EU-member states since the European integration.

Table 1: Evolution of Equity home bias

Année	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Pays												
Belgium	73.3	72.1	70.9	69.4	49.1	47.6	42.3	38.2	40.5	42.6	44.2	45.1
Denmark	65.2	64.3	63.12	64.3	62.2	58.9	56.5	56.1	55.4	54.8	55.9	57.2
Finlande	97.5	97.4	96.8	97.9	97.8	93.4	94.2	58.8	54.0	47.5	49.3	55.17
France	92.9	93.3	94.9	86.1	85.3	89.5	90.2	60.8	62.1	64.5	65.1	66.0
Germany	81.9	83.7	84.2	85.4	54.6	52.3	49.2	51.1	50.3	49.9	51.1	53.2
Italy	97.3	84.6	82.2	84.7	87.4	88.1	89.7	50.6	52.9	54.2	55.3	57.9
Netherland	56.6	52.1	49.4	43.3	30.8	38.5	43.5	12.2	23.7	34.0	35.8	38.7
Portugal	94.1	89.3	87.1	85.3	77.7	70.1	52.9	27.9	40.21	55.8	57.1	59.2
Spain	98.1	96.2	95.6	95.6	95.5	95.2	92.1	81.3	85.3	89.0	89.9	91.3
Sweden	86.3	82.7	78.3	73.8	58.4	57.6	56.4	52.1	53.6	55.1	57.1	58.2
UK	32.9	39.7	52.0	48.4	48.1	49.2	52.7	53.1	55.9	58.7	60.4	62.1
US	49.8	52.3	55.7	57.2	58.8	59.7	62.8	55.2	59.5	66.9	67.4	68.6

Table 1 gives an overview of the domestic bias values from 2001 to 2012 and shows that all countries hold significantly home-biased equity portfolios. For most countries there has been a steady decline in this bias from 2001 to 2008 and then an increase for the years from 2008 to 2012 even though a number of countries (e.g Finland, France, Italy, Portugal and Spain) show a strong preference for domestic assets during the study period varying from 0.97 to 0.55 for Finland, from 0.92 to 0.66 for France, from 0.97 to 0.57 for Italy, from 0.98 to 0.91 for Spain and from 0.94 to 0.59 for Portugal. The Netherlands has the lowest home bias of European bloc with a value of 0.56 in 2001, 0.12 in 2008 and 0.38 in 2012.

The home bias in the Anglo-Saxon, the United Kingdom and the United States countries, have increased significantly during the period 2001-2012 as opposed to countries of the European monetary union where there has been a significant decrease in the level of national preference of investors, which confirms that the use of a single currency the Euro and therefore the absence of currency risk helps to reduce home bias. The results for the home bias are largely in agreement with the findings of De Santis and Gérard (2006). They found a decline in national preference from 1997 to 2001 for the countries in their sample. However, our most recent data for 2001 to 2012 show an increase for this national preference in the area of EMU that the data for 2001, as reported by De Santis and Gerard (2006).

Section 3: Methodology and data

In this section, we perform a regression analysis to examine the factors that influence the home bias. Both the traditional theory and recent theories attempt to explain this preference for national assets. In this analysis the variables of the two theories are used to explain the existence and persistence of national preference in equity portfolios of institutional investors in Europe.

Regression analysis is a data set composed of 11 European countries and the United States for the years 2001 to 2012. A regression framework with single equation is used to estimate the relationship between home bias and a set of explanatory variables.

The following equation describes the econometric specification used:

$$EHB_{it} = \alpha + \beta_1 \cdot trade_{it} + \beta_2 \cdot EMU_{it} + \beta_3 \cdot GD_{it} + \beta_4 \cdot NI_{it} + \beta_5 \cdot NIU_{it} + \beta_6 \cdot CR_{it} + \beta_7 \cdot IAGDP_{it} + \epsilon_i$$

Trade: Trade/ GDP

EMU: European Monetary Union effect

GD: Geographical distance

N_i: Number of industries

NI_i: Number of Internet Users

CR: 2008 financial crisis.

IIAGDP_i: Assets of institutional investors to GDP

Trade / GDP

The trade ratio to GDP is the sum of exports and imports divided by GDP relative to each country. One would expect that investors in countries with significant trade ratio to GDP have a lower need for international diversification, as firms in these countries are already diversified through national trade. The trade data are available on Eurostat website and the World Bank.

EMU: European Monetary Union

To evaluate the effects of the EMU on international allocation of equity portfolios, we will divide our sample into two sub-samples between countries in the euro zone and non-euro area. Thus, some barriers to foreign direct investment will be eliminated.

Analyzing the impact of the euro on the home bias, we contribute to the literature by trying to determine the interests of forming a monetary union (regional) on home bias.

We include a binary variable that takes the value 0 if the country belongs to the EMU and 1 otherwise

Geographical Distance

The geographical distance is defined as the flight distance in kilometers between country *i* and country benchmark capital cities. We will choose the German market as benchmark since it is the biggest one in Europe. Prior studies suggest that the geographical distance could be a good proxy of the bilateral trade in international goods and asset markets. Concerning physical goods, the impact of the geographical distance is easy to understand: Distance can substitute, for example, transportation costs across boundaries. However, assets are weightless and trading in assets should not be affected by the physical proximity. In many empirical studies, however, the coefficient estimates on the geographical distance is found to be statistically significant, suggesting that distance plays a key role to explain the international capital flows or asset holdings. So we will consider that the geographical proximity supports familiarity-based aspects of investors' preference.

Number of industries

Investors care about diversification opportunities and prefer to invest domestically when their countries have a wide range of industries. We introduce a new variable – number of industries - that tries to capture more precisely the potential degree of sectoral diversification.

Data on this variable is from Datastream.

Assets of institutional investors to GDP ratio

The size of the institutional sector could have a mitigating impact on the home bias (Davis and Steil, 2001). Institutional investors are expected to behave rationally and invest in a professional manner; they might show a lower equity domestic bias than non-institutional investors.

In a different context, Chan, Leung and Wang (2004) find that the Monday effect (that is the performance on Monday is lower than on other days of the week) is related to the trading activities of less sophisticated individual investors. The Monday seasonal is stronger for stocks with low institutional holdings. Data on institutional investors are taken from OECD and Eurostat.

Internet Users: Availability of information

We have introduced a new variable, the number of Internet access per 100 habitants in a country, to substitute the number of telephone lines. This allows us to make a more current analysis, since the majority of securities are traded today with this mode of communication and investor can easily find information on French, Italian, and Japanese firms on the internet without painstakingly looking through newspapers or requesting costly documents from research agencies. So information now travels around the globe at rapid speed. The number of access to internet per 100 habitants also gives us a representation of the available information about a foreign country.

That is, the internet by itself might not be the factor driving greater diversification, however it might provide a reasonable measure of changes in the information availability, communication, and awareness that can foster greater diversification. As more information becomes available on the internet, the percentage of internet users can, therefore, be a rough but useful proxy for information.

2008 Crise

Since the data period includes the so-called “financial crisis”, our results bring insights on the behavior of the investors during and after this period, a currently hot topic for portfolio managers.

In fact, crises are bad news for investors since troubled times are precisely the ones during which they most need the benefits from diversification.

For our study, CR is a dummy variable equal to 1 if the year of the study is before 2008 and 0 otherwise.

Section 4: Results

4.1 Descriptive statistics

Table 2 provides the descriptive statistics (mean, standard deviation, minimum and maximum) of each variable used in our analysis.

Variable	mean	standard deviation	minimum	maximum
EHB	1	0.59	0.122	0.981
TRADE	40.11	19.09	10	85
EMU	0.49	0.22	0.00	1.00
GD	1313.35	1560.15	0.00	6529
CR	.28	.45	0.00	1.00
NIU	64.13	18.38	21.6	91.1
NI	12	4	3	24
IIAGDP	33.99	49.54	9.87	238.6

Table 3: Pairwise Correlations

	EHB	TRADE	EMU	GD	CR	NIU	NI	IIAGDP
EHB	1.000							
TRADE	-0.4338***	1.000						
EMU	-0.2289**	-0.4237***	1.000					
GD	0.1818*	-0.3311***	0.3593***	1.000				
CR	0.3146**	-0.0144	-0.0241	-0.0001	1.000			
NIU	-0.5917***	0.4536***	0.0828	-0.2044*	-0.2323**	1.000		
NI	-0.0755	-0.1251	0.3395***	0.2781**	0.4622***	0.3332**	1.000	
IIAGDP	-0.3795***	0.1136	0.0975	-0.1661	-0.2303**	0.4224***	0.2014*	1.000

The variable EHB is negatively and significantly associated with TRADE and EMU variables. Consistent with our hypotheses, the geographic distance and crisis variable are positively and significantly related with the level of equity home bias EHB, which assumes that in troubled period, investors prefer avoid taking the risk of investing abroad and invest the majority of their assets in the domestic markets. Likewise, bigger is the geographic distance between countries, investors feel unfamiliar with foreign markets and so the equity home bias will increase.

Table 3 highlights also a negative relationship between the variables NI and EHB. This suggests that preference of investors to domestic assets will decrease if the markets will be more diversified through an important number of industries.

Measured by the number of internet users, table 3 shows a negative and significant relationship between EHB and the information asymmetry. Such correlation is expected because we assure that with a lack of information, investors would be reluctant to foreign investments.

Table 3 also points out a negative correlation between the EHB and the institutional investor's assets/GDP showing that professional traders are expected to behave rationally and profit from international diversification benefits.

4.2 Regression results:

After the realization of econometric tests: Pearson's correlation matrix and vif's test, test for the presence of individual effects, Hausman test and heteroscedasticity test, it would be wise to present the results of our model. The R squared has a value of 0.586, which is reasonable, especially if we take into account the fact that there are several other variables (unobservable) that affect a country's national preference. Table 3 presents the regression results:

All explanatory variables display signs that are expected.

The trade to GDP ratio has a significant negative effect on national preference, which supports the theory that in countries where the volume of trade is relatively large, national companies in these countries have significant exposure to the global market due to their level of international trade. However, investors in these countries are subject to a lower preference for domestic assets, as they tend to invest internationally.

	EHB		
	Coefficient	Z	Value P> Z
Trade	-.0040646***	-7.29	0.000
EMU	-.0012966***	-4.16	0.000
GD	.011931**	2.23	0.026
CR	.0999621***	4.25	0.000
NIU	-.0009119	-1.22	0.224
NI	-.0007558**	-2.48	0.013
IIAPIB	-.0304533***	-3.14	0.002
_cons	.8626418***	12.71	0.000
R2 between	58.60%		

The statistically significant coefficient of the European monetary union shows a preference of European investors for European assets in their portfolios. After the launch of the euro in 1999, the integration of financial markets in the euro area has increased substantially, and the problem of information asymmetry has significantly decreased.

In addition to the asymmetry of information, the pace of foreign portfolio investment has often been hampered by many other classical risk factors such as exchange rate risk, interest rate and inflation risk. With the introduction of the common currency in 1999, these barriers have become unimportant and the concept of psychological barriers that was assumed to be a real obstacle to international diversification was questioned and the volume of trade has reached a new level (Adjaouté et al. (2000) and De Santis (2006)).

Accordingly, domestic bias decreased in the financial markets in the European Union. However, greater integration of markets has generated a new way: The Euro bias, a situation where investors tend to hold a large portion of assets issued in euros in the European region.

The statistically significant coefficient of the crisis involves so important impact of the financial crisis on stock markets around the world and particularly the eurozone. This result is not surprising, because of the very special nature of the study period 2001 - 2012 on the financial markets. The unprecedented crisis in the U.S. financial market has had a tremendous impact on all financial markets. Furthermore, as shown Coën and Desfleurs (2004) by analyzing the behavior of financial analysts during the Asian crisis in 1997, analysts have not been able to anticipate the crisis and made a show of huge optimism - in displaying very large forecast errors. Under these conditions of an exceptional character, the existence of a relationship between the crises with the phenomenon of preference for domestic securities might appear intuitive.

In addition, it is important to note that the measure of the number of Internet users does not bring the expected results on the 2001-2012 horizons. We anticipated a strong negative relationship with the home bias: financial officers are supposed to communicate with each other without having to be located in the same space, so the information will be readily available. But it is not. Instead, we observe a statistically significant relationship. It would tend to suggest that the number of Internet users would not eventually impact on portfolio composition, justifying de facto doubt as to their real informational value whereas normally the availability of Internet technology increases international level of investment and it is due to an access to information easier. We have had to choose another more relevant variable for measuring the availability of information.

The coefficient of geographical distance is significant at the 5% and it is positive which means the confirmation of the hypothesis on the existence of a positive relationship between the investors' preference for domestic assets and distance between countries. That said if the two countries in question are distant, investors are reluctant to invest abroad.

The negative and statistically significant coefficient of the number of industries (NI) confirms our hypothesis that when countries are diversified across many sectors the home bias decreases and large countries can be seen as more attractive and accessible by domestic investors.

In fact, the returns of the securities would be logically more related to the behavior of industry and less than the domestic market. Thus, we can say that industrial diversification is manner to manage a portfolio based on macroeconomic events. The portfolio will be overweight or underweight in different sectors according to the changing economic conditions. Indeed, all sectors do not behave at the same way in time of crisis. Every industry will have a different sensitivity to change in the economy. Sector diversification is increasingly present in portfolio management and takes over the geographical management. Investors prefer to invest in an industry focused on a global scale rather than investing in a specific geographic area.

We also observe that the relative size of the institutional sector appears significant. This result allowed us to write that institutional investors tend to favor investment abroad, as could we suggest the results of Chan, Leung and Wang (2004) and Shapira and Venezia (2007), who argue that there are differences in behavior between professional and amateur investors.

Indeed, the countries in which institutions manage a large part of the financial assets have more international diversification. Indeed, we can assume that institutional investors, such as professional asset managers are subject to a lower preference for the domestic non-financial corporations and households assets.

Section 5: conclusion

According to our study, which is the first to focus on the Euro zone markets in the pre- and post-2008 crisis period, the domestic bias is omnipresent across the 12 countries of our sample. The main aim of this paper is to study the evolution of this bias among twelve years and we observe a decline from 2001 to 2008 and an increase for 2008 and 2012

This paper contributes to the existing literature on international asset allocation by investigating the impact of the number of industries by country on home bias and so profiting from sector diversification benefits. We have shown significant decline of home bias across the European countries in equity market. In fact, portfolio managers should concentrate on industrial diversification which is more likely to confer greater portfolio performance for investors. In fact, to Investment in a domestic market that is diversified across several sectors (e.g., the U.S. market) may profit less from foreign diversification. On the other hand, in a domestic market concentrated in few sectors, greater gains from international diversification could result, as the relative impact of those sectors might be decreased. This is in line with the idea of Vanguard research by LaBarge (2008), who showed that sector effects are important considerations and that investors are best served by diversifying across both country and sector.

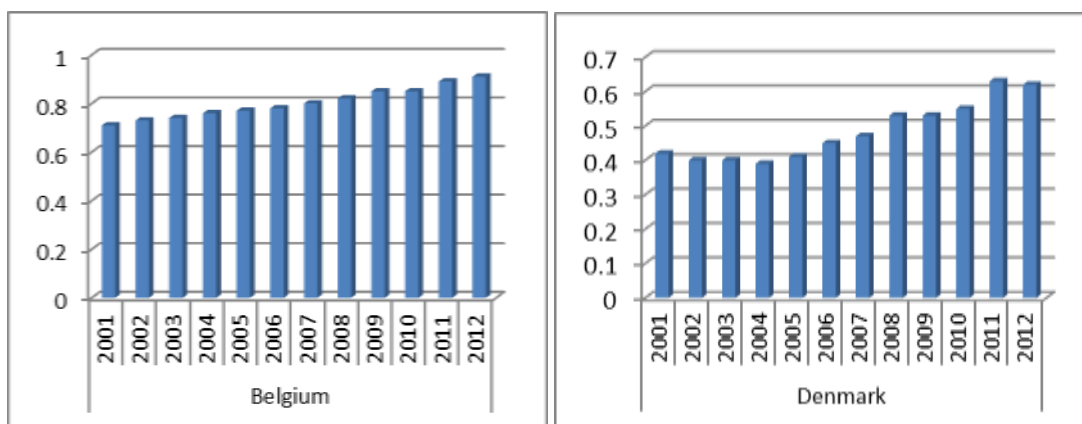
This paper has also the merit of drawing attention to what is the impact of the European Monetary Union (EMU) on asset allocation. We find that the decline in home bias was on average significantly more pronounced for euro area markets. This is due to the EMU, which has enhanced regional financial integration among euro area member states by easing market access in equity market by the adoption of a common monetary policy and the greater alignment of fiscal policy across member states, together with few legal or institutional barriers to investment.

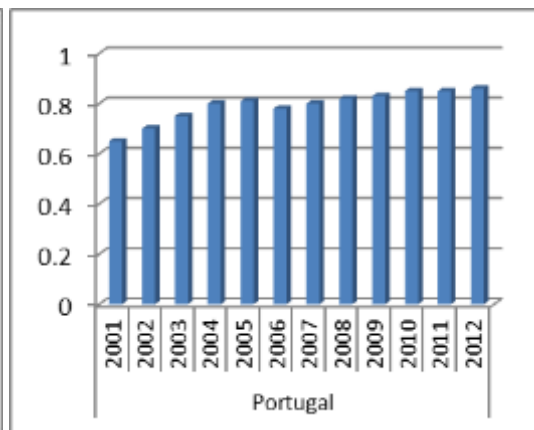
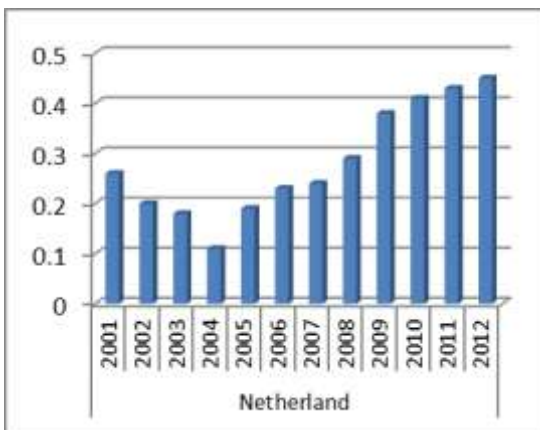
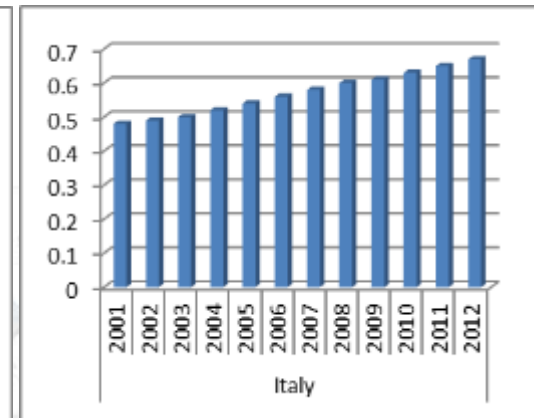
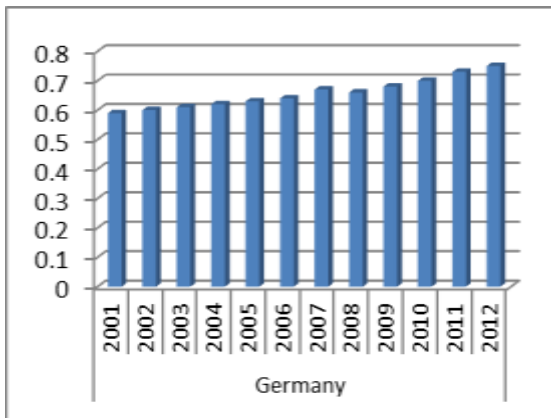
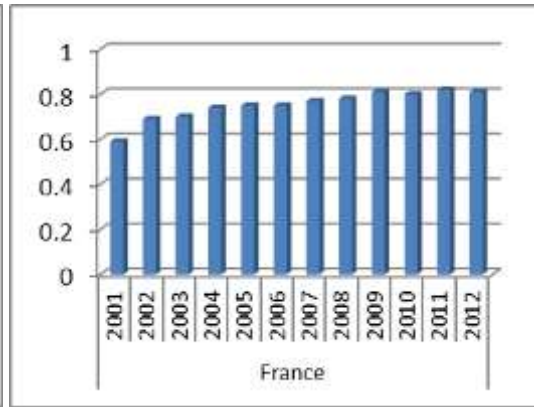
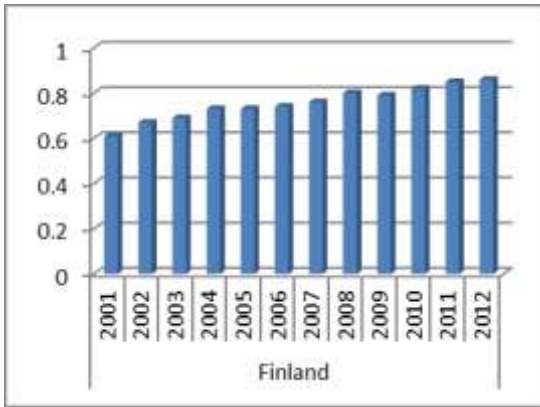
However, market integration has driven a new bias: portfolio Euro bias, a situation where Euro investors tend to hold large proportion of assets issued within the Euro region.

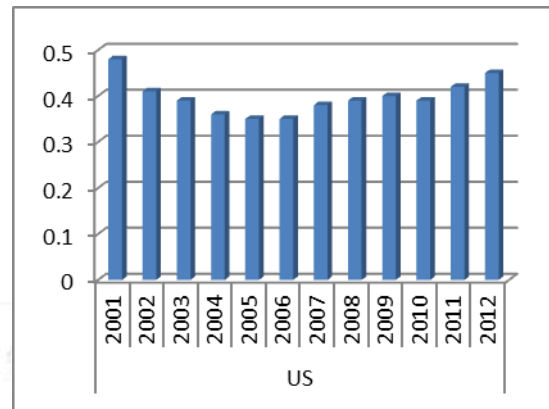
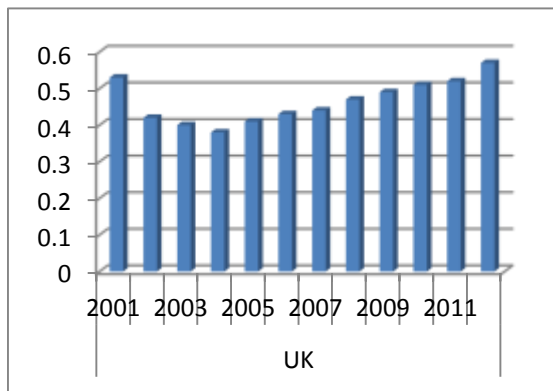
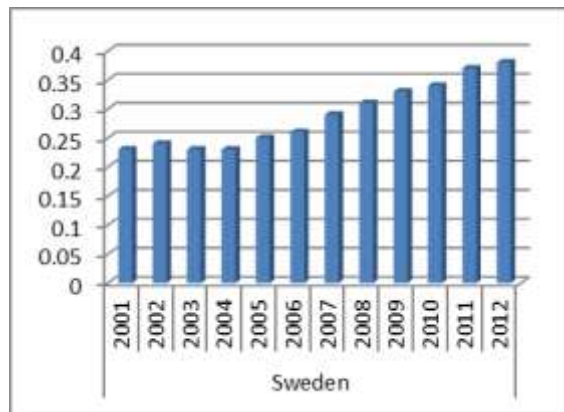
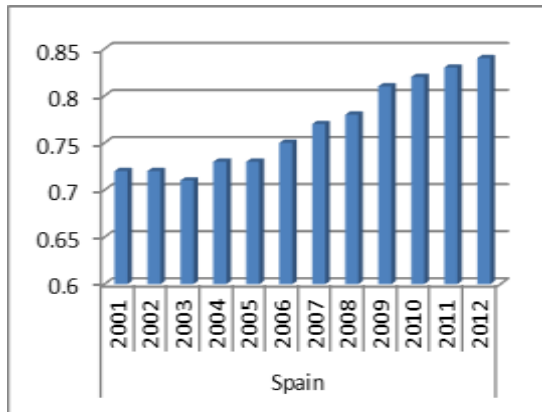
This research could lead to several developments. We could focus of the patterns playing behind the switch from home bias to this regional Bias: Euro bias, and we could also focus on the importance of sector diversification in reducing the risk of geographic diversification and rationalizing so the behavior of investors.

APPENDICES

Evolution of the home bias







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