



**CENTRAL BANK OF TRINIDAD
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**CARIBBEAN CENTRE FOR
MONETARY STUDIES**

**XXVIIIth ANNUAL CONFERENCE
ON MONETARY STUDIES**

**WHY DO DOMESTIC INVESTORS HOLD SO FEW FOREIGN ASSETS?
EXPLAINING THE INTERNATIONAL PORTFOLIO
DIVERSIFICATION PUZZLE AND ITS IMPLICATIONS**

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*October 28 - November 1, 1996
Conference Facilities - 16th Floor, Central Bank of Trinidad & Tobago*

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Abstract

Domestic investors in the major industrialised countries appear to hold a large proportion of their wealth in domestic assets relative to foreign assets. This large share of domestic assets in investors' international portfolio is inconsistent with the predictions of standard portfolio theory. This paper reviews the extant literature on this so-called "*international portfolio diversification puzzle*" and discusses its implications for international portfolio allocation, with specific reference to the development of emerging equity markets in developing countries.

JEL classification: F30, G11, G15.

* Paper prepared for presentation at the XXVIII Annual Monetary Studies Conference, Port-of-Spain, Trinidad and Tobago, 28 October - 1 November 1996.

Introduction

The deregulation of financial markets, the relaxation and abolition of capital controls, the creation of new financial products, and the advances in communication and transaction technologies have all contributed to the increased international trade in financial assets over the last two and one-half decades. Over the last twenty-five years there has been a dramatic decrease in the obstacles to international portfolio investment. Twenty-five years ago, cross-border portfolio investment was severely restricted by most countries; now few developed countries have such onerous restrictions and several of these severe restrictions are also being eliminated across many developing countries. In the past, some countries would have tried to inhibit altogether the influx of foreign *portfolio* investment; now only a few are still prepared to do so, although several countries still have limitations on the extent of foreign ownership. These transformations in international capital markets, phenomenal as they are, are by no means suggestive of the complete disappearance of *all* obstacles to the international trade in financial assets. Nevertheless, these changes have afforded investors in several countries the opportunity to acquire financial portfolio assets abroad, either through mutual funds or through the direct ownership of foreign shares.

Despite this increased liberalisation of financial markets, and the removal of numerous obstacles to the acquisition of foreign portfolio assets, many economists have observed that domestic investors' ownership of foreign portfolio assets, in particular equity, is still surprisingly limited and much smaller than would be expected in the absence of barriers to the trade in international financial assets. If investors are concerned only about the mean and variance of the real return on their invested wealth, as is postulated in the standard portfolio theory, and if obstacles to the trade in international financial assets are minimal, as most commentators suggest, then investors would be expected, as a first approximation, to hold the world market portfolio of equity. However, all the available evidence on the ownership of shares shows that domestic investors hold an unusually high proportion of the stocks issued in their own country. Thus, this domestic residents' bias for home assets is difficult to reconcile with standard portfolio arguments. This empirical puzzle - the so-called *international portfolio diversification puzzle* - has attracted the attention of several international finance researchers.

In this paper, we review the extant literature on this international portfolio diversification puzzle. Section 1 summarises the stylised evidence which has been obtained on the extent of domestic investors' bias for financial assets issued in their own country. Section 2 provides an account of the various explanations which have been put forward to rationalise the tendency of domestic investors to hold a disproportionate share of their wealth in their domestic financial assets. Section 3 discusses the implications that this home-bias in domestic investors' portfolios may have for the development of emerging equity markets in developing countries. Section 4 concludes the paper.

1. Stylised facts on the home-bias in domestic investors' portfolios

Most domestic corporate equity (and bonds) are held by *domestic* investors. The extent to which equity portfolios are concentrated in the domestic equity market has been documented by several researchers. For example, Cooper and Kaplanis (1994), using data for 1987, show that the percentage of equity portfolios in domestic equities for eight major equity markets ranged from 64.4 percent for France to 100 percent for Sweden! This evidence is reproduced in Table 1.¹

French and Porteba (1991), using data for 1989, provide a similar picture for the world's five largest stock markets. The domestic ownership of shares in the USA, Japan, the UK, Germany, and France were respectively 92.2 percent, 95.7 percent, 92 percent, 79 percent, and 89.4 percent. The authors use the above data and other data on international equity transactions to compute the foreign equity holdings of the domestic investors in the USA, and Japan, and the UK, reproduced in Table 2. Their estimates reveal very little international diversification by US and Japanese investors. Only 1.9 percent of Japanese investors' equity was held in foreign stock, while US investors held 6.2 percent of their portfolio in foreign stock. The share of foreign stock in the UK investors' portfolio was substantially higher at 18 percent, but this is not all that surprising given that the UK has a smaller share of the total world equity market. Moreover, French and Porteba point out that this relatively high proportion of overseas equity in UK investors' portfolio is a recent phenomenon - that is post -1979 - and coincided with the UK's removal of capital controls on cross-border trade in financial assets.

Tesar and Werner (1995a) also document the extent of foreign portfolio investment undertaken by investors in Canada, Germany, Japan, the UK, and the USA during the period 1970 to 1990.² They report (see Table 3) that the share of overseas investment, as a percentage of the domestic portfolio market capitalisation values, has largely remained unchanged for both Canada and USA. On the other hand however, the level of international portfolio investment has increased, since the early to mid-1970s, for the UK, Japan, and Germany. Indeed, the proportion of overseas assets held by UK investors had jumped to 31.9 percent in 1990 compared to only 8.6 percent in 1975. In the case of Germany, the share of foreign assets held had risen from 2.4 percent in 1975 to 10.7 percent in 1990, while Japanese portfolio investment abroad had increased from 1.3 percent in 1975 to 10.2 percent by the end of 1990. However, despite these increases in the international investment positions of these three countries, their shares of overseas investment still fell *substantially short* of the proportions which were permitted by their respective domestic regulations governing cross-border investment for institutional investors (Fairlamb (1989); Davis (1991)). *This would suggest therefore that (institutional) investors in these countries did not take full advantage of the opportunities available to them to diversify their investment portfolios.* The same can also be said about investors in both Canada and the USA.

¹ Several other researchers, apart from those discussed in this section, have also documented this strong home equity preference among domestic investors. See, for example Eldor et. al (1983), Howell and Cozzini (1990, 1991), and Broadgate Consultants (1991).

² Tesar and Werner (1995b) also provide detailed evidence of the extent of the US international investment position over a wider set of global financial markets.

More recent evidence from the Bank for International Settlements (see Table 4) has shown that the share of foreign assets, as a proportion of the total assets held by institutional investors in some OECD countries has risen during the 1990s *relative to* the 1980s. This increase has been largely confined to the institutional investors in the smaller OECD countries, with the exception of institutional investors in Japan. To some extent, this trend is not surprising because the smaller OECD countries account for a small proportion of the total global securities market. However, it is important to note that for the countries reported in Table 4, the proportion of foreign securities in institutional investors' portfolios has remained largely unchanged or has declined marginally during the period 1990 to 1993. Moreover, US, Canadian, Belgian and Italian institutional investors' holdings of overseas securities *have remained stubbornly small*, although the US investors' holding of foreign securities has been rising.

To date, the bulk of the evidence on the extent of domestic investors' holdings of foreign assets has largely come from aggregate data. Recently however, some additional evidence on the detailed characteristics of the international investment position of domestic investors has been documented. In a recent paper, Kang and Stulz (1995), using disaggregated data on foreign investors' holdings of Japanese equity, have observed a number of features about these investors' portfolios. Foreign investors place their funds predominantly in the stocks of large Japanese firms; firms concentrated in manufacturing industries; firms with good accounting performance; firms with high market-to-book ratios; firms with low leverage; and firms with low unsystematic risks relative to the holdings of the Japanese market portfolio. They also find that where investment is in the stocks of small firms, such investment is largely in the stocks of those firms with a high exports-to-sale ratio. Finally, it is shown that the composition of foreign investors' portfolio of Japanese equity is not consistent with the Japanese market portfolio. This is an additional insight into the bias of domestic investors' portfolios. Domestic investors neither hold the world market portfolio *nor the market portfolios of the countries in which they invest*. This latter observation, as will be explained below in section 2, has implications for some of the explanations which have been offered to rationalise the home-bias of domestic investors.

2. What accounts for the home-bias in domestic investors' portfolios?

The stylised evidence, presented in the foregoing section, on the tendency for domestic investors' portfolios to be biased in favour domestic assets is generally inconsistent with the standard models of international portfolio choice. In a basic international portfolio model with identical investors, identically and independently distributed random returns, the observance of purchasing power parity (PPP), and the integration of financial markets, all investors hold the same proportion of their wealth in each stock. Even when this basic model is modified to incorporate financial market segmentation and/or imperfections and deviations from PPP there is still a discrepancy between the observed pattern of investors' holdings and the conclusions of these modified models as is discussed below.³

³ See Dumas (1994) and Lewis (1995) for excellent discussions on partial and general equilibrium portfolio choice models.

Since the fortunes of different countries do not always coincide, investors can diversify their portfolios by holding assets in several countries. Such international diversification can provide investors with some insurance against the purely idiosyncratic fluctuations in national consumptions. More specifically, if domestic financial markets are not perfectly (positively) correlated, by diversifying their portfolios internationally, investors should be able to reduce the variance-risk of their portfolios without sacrificing their expected return. Hence, for investors who rank their portfolios on a mean-variance criterion, low correlations between domestic and foreign assets may signal potential benefits in terms of the variance reduction of their portfolios. These benefits from international diversification have long been recognised in the international finance literature. Given the potential benefits from international diversification, the obvious question is why domestic investors do not take advantage of these benefits? The prevalence of the home-bias puzzle, both in terms of foreign equity holdings and international consumption patterns, suggests that investors are either prevented from acquiring foreign assets and/or the gains from doing so may not be large enough. In this section we explore some of the reasons which have been posited in the literature to account for the home-bias.

2.A. Are the gains from international diversification large enough?

If the gains from international diversification are not large enough then domestic investors may not have the incentive to diversify their portfolios. The literature on the gains from international diversification is inconclusive about the size of these gains, and therefore whether domestic investors can benefit substantially by holding more foreign assets in their portfolios. Using financial data on asset holdings or asset returns to evaluate the gains from international diversification generally tends to show that these gains are substantial. On the other hand, using national consumption data provides mixed support for the existence of large gains from international diversification: some studies indicate that the gains are small, while others show that they are large.

When the benefits of international diversification are viewed in terms of the reduction in the variances of investors' portfolios which occurs by the incorporation of foreign assets in their portfolios, these gains are deemed to be very substantial. There is a large literature, beginning with Grubel (1968), which demonstrates the attainment of such portfolio variance-reduction gains. For example, the results contained in the works of Levy and Sarnat (1970), Lessard (1974, 1976, 1983), Solnik (1974a), Errunza (1983), Eun and Resnick (1988), Grauer and Hakansson (1987), Kaplanis and Schaefer (1991), French and Porteba (1991), and Tesar and Werner (1995a, 1995b) all show that international diversification, given that domestic financial markets are not perfectly correlated, allows domestic investors to achieve lower variances on their portfolios than would otherwise be attainable by only diversifying domestically.

Another method which has been used by researchers to demonstrate the potential benefits of international diversification in terms of risk-reduction has been the regression of individual stock returns or of national stock indices on a world market stock index (see for example Agnom (1972), Solnik (1974b), and Lessard (1974). The

general findings of this approach has been that there exists considerable scope for risk-reduction from the international diversification of investors' portfolios.⁴

General equilibrium models of international risk-sharing, which have utilised macroeconomic data on consumption, income, saving and investment, have produced a range of estimates of the gains from international diversification. Estimates computed by Lewis (1993), Obstfeld (1994), and van Wincoop (1994) put the gains from international risk-sharing substantially high, as much as fifteen percent of annual consumption. On the other hand, estimates by Backus, Kehoe, and Kydland (1992), Cole and Obstfeld (1991), Obstfeld (1992), and Tesar (1995) indicate that gains from international diversification are negligible, ranging from zero to two percent of annual consumption. If the gains are indeed as insignificant as these authors suggest, then the prevalence of investors' preference for domestic assets may be due to the absence of meaningful incentives to hold foreign assets.

One possible explanation for the lack of international diversification, which is linked to the absence of incentives for such risk-sharing, relates to the presence of some domestic assets which might provide the same diversification benefits as foreign assets. If the return variances on overseas assets are captured by return variances on some domestic assets, then domestic investors may hold a disproportionate amount of domestic assets in their portfolios because the domestic assets do the job of diversification just as well as foreign ones; hence there is no need to hold the latter. One class of assets which may play this role is the equity of domestic multinational corporations. Since most of their income is generated abroad, their returns may be closely correlated with those on foreign stocks. However, there is little evidence on this group of equity playing this role and thus providing an explanation for the home-bias in investors' portfolios. Jaquillat and Solnik (1978) showed that the stocks of domestic multinational firms do not offer any greater diversification than the domestic market portfolio and thus cannot substitute for foreign assets in investors' portfolios.

2.B. Are there lingering obstacles to international investment?

Domestic investors, though willing, may be unable to take advantage of the benefits of international diversification which exist. This may be due to the presence of government restrictions and other impediments to the international trade in financial assets which either reduce the expected return on foreign assets and/or limit the investors' ability to hold foreign assets. These restrictions may take various forms: governments may (i) impose discriminatory taxes on returns on foreign assets held, (ii) erect capital controls and other quantitative restrictions which serve to disrupt the free movement of capital across national borders, and (iii) utilise thinly-veiled threats - 'moral suasions' - to set future restrictive regulations which also impede the free flow of capital in the global economy.

⁴ The implications of these tests for the potential of risk-reduction from international diversification should be taken with caution because of the difficulties associated with the interpretation of the variance of the residuals generated from these regressions. See Adler and Dumas (1983) for a lucid exposition of these difficulties.

Discriminatory taxes on overseas investment may force domestic investors to bias their portfolios in favour of domestic assets, as would transactions costs which made it more expensive to acquire foreign assets relative to domestic ones.

In the presence of restrictions imposed by their own governments, domestic investors may be prohibited from holding foreign assets. In the extreme case of complete asset market immobility, such draconian restrictions would be applied on all types of foreign assets, and domestic investors would be cut off from foreign financial markets *altogether* and be forced to hold only assets issued in their own country. On the other hand, government regulations in foreign financial markets may limit the amount and types of foreign assets that non-resident investors may hold. In reality, irrespective of the form these restrictions take, international capital movement will be impeded, with the likely outcome that domestic investors' portfolios may be biased towards domestic assets.

2.B.I. Government restrictions and segmented asset markets

The recognition of the existence of restrictions on international asset markets has led international financial researchers to examine both the theoretical implications and empirical evidence of these restrictions on international risk-sharing. Theoretical models by Stulz (1981a), Eun and Janakiramanan (1986), Erruza and Losq (1986, 1989), Heitala (1989), and Bonser-Neal et. al. (1990) have explored the implications for various restrictions on overseas investment. These studies demonstrate how the acquisition of various types of foreign assets may be prohibited.

However, it is generally felt that controls on international investment, though binding prior to the 1980s, are no longer so, at least for the vast majority of developed countries.⁵ The process of financial liberalisation which has been taking place in several developed countries has removed altogether or minimised the effectiveness of controls on cross-border financial flows, particularly those relating to equity markets (see Halliday (1989), and French and Porteba (1991)). Moreover, as was indicated in section 1 above, existing restrictions on institutional investors' holdings of foreign assets are apparently not binding.

On the other hand, investment flows between developing and developed countries might still be impeded by lingering barriers in the former countries. This is despite the process of financial liberalisation which has also been occurring in these economies, and the existence of potential gains from international diversification, given the comparatively low correlation between developing countries' emerging markets and those in the developed countries (Harvey (1995)). Studies by Bonser-Neal et. al. (1990), Harvey (1993, 1995) and Bekaert (1995) suggest that the segmentation between the equity markets in the two groups of countries could be related to existing obstacles to cross-border financial flows. Hence, government restrictions are apparently an important reason for the home-bias in developing countries investors' portfolios but not a *crucial* factor in explaining the home-bias in the portfolios of investors in most developed countries.

⁵ Eun and Janakiramanan (1986) provide a partial list of the types and magnitudes of various restrictions on international investment.

2.B.II. Asset market imperfections and inefficiencies

Taxes which are disproportionately higher on foreign investment relative to domestic investment could cause investors to favour home assets. However, the evidence on tax burdens for developed countries does not substantiate this view. First, there is little difference between the domestic and foreign tax burdens for investors. Although most countries have withholding taxes on dividend payments to non-resident investors, these taxes can normally be credited against tax liabilities in investors' home countries. Hence such taxes need not have any impact on investors' portfolios. The exception to this is the case of tax-exempt investors who obviously face the burden of these taxes because they have no domestic tax liability against which to credit such taxes. However, even in the case of this exception, the estimated reduction in post-tax expected return - about 0.5 percent - does not seem large enough to explain the existing degree of home-bias (see French and Poterba (1991)). Second, studies which calibrate theoretical models of optimal investor's portfolio which incorporate withholding taxes have also demonstrated that these taxation costs cannot account for the observed home-bias in investors' portfolios (see, Cooper and Kaplanis (1986, 1994)).

Transactions costs associated with the acquisition of foreign financial assets also seem to be too low to provide a justifiable reason for the home-bias in domestic investors' portfolios (Kemp 1987). Transactions costs for trading in international markets are estimated to be between 0.5 to 0.7 percent, and more importantly, they tend to be similar for both domestic and foreign investors. It is the case that some equity markets are more liquid than others, and thus the cost of trading in these might be lower than that in more illiquid markets. But such divergences in transactions costs should force *all* investors to do business in more liquid markets and not *their own domestic markets*.

Moreover, the large gross international equity flows which have been observed would seem to suggest that transactions costs alone cannot account for the home-bias in investors' portfolios. In fact, Tesar and Werner (1995a) provide evidence on turnover rates in foreign equity markets which shows that these rates for international equity flows are *higher* than those for domestic equity transactions. Were transactions costs larger on international equity flows then this finding would have been *reversed*.

An alternative set of explanations for the domestic-bias in investors' portfolios may have to do with *investors' behaviour itself*. French and Poterba (1991) have demonstrated that domestic investors in the UK, USA and Japan are overly optimistic about the equity returns in their home markets relative to foreign ones.⁶ They argue that because of possible asymmetrical information, domestic investors may consider foreign equity more 'risky' than domestic ones because they have less information on

⁶ Baxter and Jermann (1993) demonstrate similar optimism on the part of domestic investors by considering human capital as part of investors' wealth. They show that the return on human capital is strongly positively correlated with domestic equity. Since human capital is non-tradeable they argue that domestic investors should have short-positions in the domestic financial market. This implies that, to the extent that domestic investors hold the opposing positions as the home-bias suggests, they must be 'optimistic' about the returns in the domestic market.

the former (Gehrig (1993) also examines the impact of asymmetric information on investors' home-bias). However, given the evidence in Kang and Stulz (1995) on the characteristics of the composition of Japanese stocks in foreign investors' portfolios, any explanation of the home-bias which focuses on asymmetrical information must not only shed light on why investors hold domestic equity *relative* to foreign ones, but also why they hold a disproportionate amount of *certain types* of foreign equity and relatively little of others (see the discussion in section 1 above).

Another explanation for the home-bias could simply be that domestic investors have 'irrational' expectations about the returns on domestic assets. In any case, either of these reasons may be suggestive of the existence of informational inefficiencies in asset markets.

2.C. Are investors hedging against domestic inflation risks?

One explanation for the bias in investors' portfolios towards domestic equity which has received a great deal of attention in the literature has been investors' desire to hedge against domestic inflation risk. An important feature which differentiates international portfolio theory from domestic portfolio theory is that in the former investors in different countries consume different baskets of goods. As the fraction of domestic goods which is consumed in each national basket increases or as domestic investors become more risk averse, and in the presence of deviations from PPP and inflation risks, domestic investors are induced to hold portfolios that differ by a component which is designed to hedge against inflation risk. Hence if domestic equity provides a hedge against domestic inflation, domestic investors would increase their demand for home assets, thereby giving rise to the home-bias in their portfolios. Solnik (1974c), Sercu (1980), Krugman (1981), Stulz (1981b, 1983), Adler and Dumaš (1983), Branson and Henderson (1985), and Cooper and Kaplanis (1986) have developed models which examine this hypothesis. However, the findings of Cooper and Kaplanis (1991, 1994) suggest that the home-bias cannot be explained by the desire to hedge inflation risk.

Uppal (1992, 1993) develops a general equilibrium model of international portfolio choice which incorporates a cost for transferring capital across national-borders and endogenises both the exchange rate and interest rate processes. In the models listed above, with the exception of Stulz (1983), these processes are taken as exogenous. He shows that home-bias emerges only if investors have a risk-aversion of less than unity. Hence his model predicts a *reverse* home-bias. Relatively risk-averse investors would have a preference for the foreign equity because the exchange rate is negatively correlated with the foreign stock and as risk-aversion increases, so does the share of the foreign good in investor's consumption basket. He argues that since most empirical studies of asset pricing models find that the relative risk-aversion is greater than one, then the results of his model suggest that investors' portfolios which are observed in reality cannot be explained by the desire to hedge inflation risk.

2.D. Are the international asset pricing models adequate?

Relative to the predictions of standard models of international portfolio choice, the observed degree of international diversification is quite low. However, could it be the case that the models which are usually employed to assess the extent of this home-bias *overstate* the phenomenon because of the assumptions which they make? Glassman and Riddick (1996) show that international mean-variance portfolio models actually exaggerate the extent of home-bias in investors' portfolios. Specifically, they find that models which make the following three simplifying assumption: (i) PPP holds consistently; (ii) there is an absence of second-order (covariance) terms; and (iii) investors' optimise nominal returns rather than real returns, were prone to accentuate the degree of home-bias. They observe that the assumptions of PPP and the absence of second-order terms seriously exaggerate the extent of investors' home-bias, and argue that optimisation in nominal terms might overstate home-bias much more in periods of high inflation than their study demonstrates. They conclude that model *misspecification* should in itself constitute an *additional* factor which provides partial explanation for the domestic-bias in investors' portfolios.

3. Home-bias in domestic investors' portfolios and its implications for emerging markets

Portfolio *equity* flows to developing countries have become an important component of both non-debt-creating flows and private capital flows to developing countries in recent years. Almost from nothing in 1985, portfolio equity flows grew to US\$46 billion by the end of 1993, before declining in 1994 to US\$35 billion and in 1995 to an estimated total of US\$22 billion (World Bank, 1996). The decline in these flows in these two latter years is primarily attributed to the price corrections in emerging equity markets in the first-half of 1994, the withdrawal by some institutional investors from these markets in the latter-half of 1994 and in 1995 as a result of the Mexican financial crisis, and the rise in US interest rates.

Equity flows have assumed several forms: direct equity purchases by investors in the host stock markets; investment through country funds; issues of rights on equities held by depository institutions in the form of American Depository receipts (ADRs) and Global Depository Receipts (GDRs); and direct foreign equity earnings (Claessens, 1995).

Several factors have contributed to the surge in equity flows to developing countries. One principal external factor, at least up to 1993, was the decline in global interest rates (Calvo, Leiderman, and Reinhart, 1993).

However, important developments in developing countries have been significant contributing 'pull' factors. First, improved domestic policies and growth prospects have bolstered foreign investors' confidence in several developing countries. These improved conditions are partly reflected in the high rates of return on equity in these countries (Chuhan, Claessens, and Mamingi, 1993).

Crucially also, as was previously discussed, the removal of barriers to international capital flows in the developing (and developed) countries has paved the way for foreign participation in the equity markets of several of these developing countries.

Foreign investors can benefit a great by acquiring equities in the these emerging markets. Several studies have already demonstrated that not only have equity returns in these markets been high, but given that the correlation between these markets and the equity markets in developed countries is relatively low, potential gains from portfolio diversification exist (see Harvey (1993, 1994), De Santis (1993), and Tesar and Werner (1995b)).

Available evidence seems to suggest that foreign investors are taking advantage of the diversification opportunities that emerging markets offer, notwithstanding the recent decline in equity flows in 1994 and 1995. Tesar and Werner (1995b) show that although the share of US investors' portfolio invested in emerging markets remains small, it has increased *faster than* the growth in the share of these markets (expressed as a percentage of the global capitalisation value of total equity markets).

As institutional investors continue to diversify their portfolios (see Table 4), more and more country funds are being moved toward emerging markets. In 1990, there were 232 emerging market funds world-wide, with total net assets of US\$13.7 billion. However, by the middle of 1995, their number had increased almost sixfold, with estimated net assets of about US\$123 billion (World bank, 1996).

This recent increase in the share of emerging markets in the global market is expected to continue. This is because of a number of factors which are viewed as having beneficial impacts on these markets: the growing number of foreign institutional funds which are devoted to emerging markets; the deepening of the process of financial integration of emerging markets with the rest of the international financial markets; higher than average anticipated growth in the twelve developing countries who account for three-quarters of all portfolio flows to developing countries; the pursuit of economic reform in more developing countries; and the further removal of restrictions which currently hamper international investment by institutional investors in developed countries. All these factors are expected to foster increased diversification in foreign investors' portfolios in the future, with the emerging equity markets set to play an increased role in this process (World Bank, 1996).

4. Conclusion

The available evidence on the international portfolio positions of many developed countries strongly suggests that investors in these countries do not hold sufficiently diversified portfolios. These investors tend to hold a disproportionate share of their wealth in domestic assets, much more than standard models of international portfolio choice predict. Many reasons have been posited for this home-bias. The gains from international diversification may not be big enough to entice investors to hold more foreign assets. The estimates of the benefits of international risk-sharing range from negligible to substantial depending on whether financial or national accounts data are used to calculate these gains.

Even if the gains from international portfolio diversification were indeed substantial, investors may be impeded from enjoying them because of government restrictions on international financial flows. However, government restrictions on overseas investment have been removed and/or minimised in most industrialised countries. A similar process of liberalisation is taking place in several developing countries, but it is still believed that lingering restrictions in these countries may be partly responsible for the home-asset preference of investors. Transactions costs associated with investing abroad are not deemed as a serious factor inhibiting foreign investment, nor are various forms of taxation on foreign asset holdings. The preference for domestic assets in investors' portfolios because of a desire to hedge against inflation risks is also not supported empirically.

Domestic investors, even in the absence of the above impediments to cross-border financial transactions, may still choose to hold more of their wealth in domestic assets because they lack adequate information on foreign investment opportunities and/or have 'irrational' expectations about the returns on domestic assets. But, any explanation of the home-bias which highlights asymmetrical information, must also be able to explain why domestic investors appear to have more information on some foreign assets and not on others, *even though the assets are issued in the same country.*

It has also been demonstrated that some of the models which have been employed to assess the extent of investors' home-bias are partly to be blamed for overstating the phenomenon. In particular models, which assume PPP and the non-existence of covariance terms are susceptible to exaggerating the home-bias in domestic investors' portfolios. Models which assume that investors maximise nominal returns-risk trade-off may also be problematic, but mainly in cases where high inflation is prevalent.

Finally, we pointed out that emerging markets in developing countries offer substantial benefits from portfolio diversification. Although, the share of these markets in the global securities markets is comparatively small, it has been growing very rapidly. Most commentators anticipate that the importance of these markets will be enhanced in the coming years, and they will play an increasing role in the process of international portfolio diversification.

With the availability of more disaggregated and detailed data on investors' international investment positions, it may turn out that the home-bias phenomenon is just ephemeral. Clearly, there are already indications that some investors are diversifying internationally their portfolios much more than previously.

Table 1. The home bias in equity portfolios, December 1987 from Cooper and Kaplanis (1994)

Country	Market capitalization as a percentage of total	Percentage of equity portfolio in domestic equity
France	2.6	64.4
Italy	1.9	91.0
Japan	43.7	86.7
Spain	1.1	94.2
Sweden	0.8	100.0
UK	10.3	78.5
USA	36.4	98.0
Germany	3.2	75.4
Total	100.0	

Market capitalizations are Morgan Stanley Capital International Indices (1987). The sources of portfolio holdings are for the United States, Survey of Current Business; for the United Kingdom, CSO Financial Statistics (Feb. 1990); for the remaining countries, Financial Accounts Statistics (OECD) (1988 -1989). The domestic proportion for Japan is for bonds and shares combined.

Table 2. Equity Portfolio Weights: British, Japanese, US Investors from French and Porteba (1991)

	Portfolio Weight			Adjusted Market Value (\$mn)
	US	Japan	UK	
US	.938	.0131	.059	2941.3
Japan	.031	.981	.048	1632.9
UK	.011	.0019	.820	849.8
France	.005	.0013	.032	265.4
Germany	.005	.0013	.035	235.8
Canada	.010	.0012	.006	233.5

Note: Estimates correspond to portfolio holdings in December, 1989. They are based on the authors' tabulations using data from the *U.S. Treasury Bulletin* and Michael Howell and Angela Cozzini (1990). Adjusted market values exclude intercorporate cross-holdings from total market value, and correspond to June 1990 values.

Table 3. International investment positions as shares of market capitalization values (in per cent) from Tesar and Werner (1995)

	1970	1975	1980	1985	1990
<i>Canada</i> ^a					
Portfolio Investment	n.a.	4.0	3.6	4.5	4.2
Stocks	n.a.	7.1	6.0	6.5	6.6
Bonds	1.7	1.2	0.8	2.4	2.2
<i>Germany</i> ^b					
Portfolio Investment ^d	4.9	2.4	2.7	5.8	10.2
<i>Japan</i>					
Portfolio Investment	n.a.	1.3	2.0	6.9	10.7
<i>UK</i> ^c					
Portfolio Investment	9.5	8.6	11.4	27.5	31.9
Stocks	n.a.	n.a.	16.9	24.8	23.5
Bonds	n.a.	n.a.	6.4	32.3	61.4
<i>US</i> ^d					
Portfolio Investment	n.a.	2.3	2.2	2.2	2.7
Stocks	n.a.	1.4	1.5	2.0	3.3
Bonds	2.6	3.0	2.8	2.4	2.4

Notes: The investment position in stocks is the domestic investment position in foreign equities as a fraction of the end-of-year domestic stock market capitalization. The investment position in foreign bonds is the investment position in foreign bonds as a fraction of the end-of-year domestic bond market capitalization. Portfolio investment is the sum of investment in foreign stocks and bonds.

All data on foreign investment positions are from the individual country sources. End-of-year stocks and bond market capitalizations are from Morgan Stanley Capital International and from Salomon Brothers, respectively.

^a Figures exclude loans and subscriptions, official international reserves, non-bank deposits, other debt and other assets.

^b Includes assets of enterprises and individuals and excludes banks and public authorities. In December 1990, enterprises and individuals accounted for 38% of total foreign direct investment and 87% of total holdings of foreign securities.

^c Overseas investment by UK residents including banks, financial institutions and other UK residents. The data appear to have been revised upwards in 1980. Values reported prior to 1980 should be interpreted with caution.

^d US private assets excluding claims on unaffiliated foreigners reported by non-banking concerns and US claims reported by US banks not included elsewhere. Portfolio investment positions are calculated at current cost.

Table 4.

Institutional investors' holdings of foreign securities						
Countries and items	1980	1985	1990	1991	1992	1993
	as a percentage of total securities holdings at year-end					
Austria						
Insurance companies	14.1	11.6	10.1	9.4	10.5	9.9
Investment funds	27.0	13.2	18.7	22.4	22.8	25.1
Australia						
Life insurance and pensions			14.0	16.2	16.8	18.8
Belgium						
Insurance companies	5.5	8.6	5.2	4.2	4.1	..
Canada						
Life insurance companies	2.2	2.3	2.4	2.8	2.7	3.1
Pension funds	6.1	6.6	7.0	8.5	10.2	10.6
Italy						
Insurance companies			13.6	12.2	13.2 ¹	12.2 ¹
Japan						
Private insurance companies	8.1	23.2	29.9	28.4	27.0	22.3
Postal life insurance	0.0	6.7	11.6	12.1	13.1	12.3
Netherlands						
Insurance companies	6.9	22.9	20.2	20.4	22.6	26.0
Private pension funds	26.6	28.1	36.6	38.2	39.2	36.9
Public pension funds	14.7	9.9	16.6	17.2	18.9	20.2
Sweden						
Insurance companies			10.5	12.1	11.0	12.3
United Kingdom						
Insurance companies ²	6.3	14.1	14.6	15.8	15.5	..
Pension funds ³	10.8	17.3	23.2	25.2	23.8	..
United States ⁴						
Mutual funds				4.0	5.1	8.0
Private pension funds			4.1	4.6	5.0	7.1

¹ Preliminary. ² Long-term funds. ³ Pension funds exclude the central government sector but include other public sectors.

⁴ As a percentage of total assets. ⁵ Tax-exempt funded schemes (excluding IRAs).

Source: Bank for International Settlements, 64th Annual Report, June 1994.

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