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The Role of Mature Market Mutual Funds in Emerging Markets: Myth or Mayhem?

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International Capital Markets Department

The Role of Mature Market Mutual Funds in Emerging Markets: Myth or Mayhem?[1]

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Abstract

The expansion of the global mutual funds industry has been characterized by growth in mature as well as emerging markets. This has clearly contributed to the development of local securities markets in emerging market economies, which in turn, has been key in attracting investment inflows from overseas funds. A major concern, however, is that large foreign investors could significantly disrupt the stability of local capital markets in the event of a market shock, with systemic implications for the real economy. Our estimates suggest that while local investors remain the more important group in terms of market share, the influence of foreign funds cannot be discounted. Asset allocation decisions by mature market funds—both dedicated and crossover—in aggregate, could affect emerging markets. In particular, European mutual funds appear to play a much bigger role in emerging markets than their U.S. counterparts.

JEL Classification Numbers: F21, G15

Keywords: asset allocation, crossover investors, dedicated investors, emerging markets, mature markets, mutual funds

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I. INTRODUCTION

The increase in global assets under management (AUM) in recent years has been characterized by growth in institutional investors' assets, in both mature and emerging markets. The retail sector has also played an increasingly important role in channeling funds to asset managers for investment. The expansion of the mutual fund industry is largely attributable to the proliferation of investment opportunities globally, as countries have continued to liberalize their capital markets, reduce trade barriers and demutualize. The growing middle class in many mature and emerging market economies is also expected to support the expansion of mutual fund sales in the future. From an institutional perspective, the privatization of pension systems and increasing market penetration of the insurance industry—especially in emerging markets—is also expected to increase the demand for mutual fund products.[2]

A mutual fund can be defined as an investment company that combines the assets of investors—individual and institutional—and collectively invests those assets in stocks, bonds and/or money market instruments. Investors invest in a mutual fund by purchasing shares issued by the fund, which then uses the cash raised to invest in portfolios of stocks, bonds and other securities. Mutual funds also tend to continuously offer new fund shares to the public. Mutual funds are "open-end" investment companies in that they are required to redeem outstanding shares at any time, upon demand, and at a price determined by the current value of the funds' net assets, known as the net asset value (NAV). There are generally four types of mutual funds: equity, bond, hybrid and money market.[3]

In emerging markets, the exponential growth in the local mutual fund industry has clearly contributed to the development of local securities and derivatives markets, which in turn, has been key in attracting investment inflows from overseas funds. More importantly, the greater depth and liquidity of local markets has reduced reliance on external funding. Mutual funds in emerging markets tend to invest locally, as they are, in many cases, "captive" due to investment restrictions or are simply averse to investing offshore. Thus, policymakers have tended to focus on the role of mature market mutual funds—which clearly dwarf the local ones in size—in these emerging markets. The biggest concern is that asset reallocation decisions by these foreign investment funds could significantly disrupt the stability of local

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[2] See Chapter IV of the Global Financial Stability Report, March 2004, for further discussion on the global pension and insurance industries.

[3] In contrast, a "closed-end" fund issues a fixed number of shares which trade on the stock exchange or the over-the-counter market. A unit investment trust (UIT) buys and holds a fixed portfolio of stocks, bonds or other securities; units in the trust are sold to investors who receive their proportionate share of dividends or interest paid by the respective investments. A UIT has a stated date for termination, upon which investors receive their proportionate share of net assets. An exchange-traded fund (ETF) is an investment company whose shares are traded on stock exchanges at market-determined prices.

capital markets, in the event of a market shock, with systemic implications for the real economy.[4]

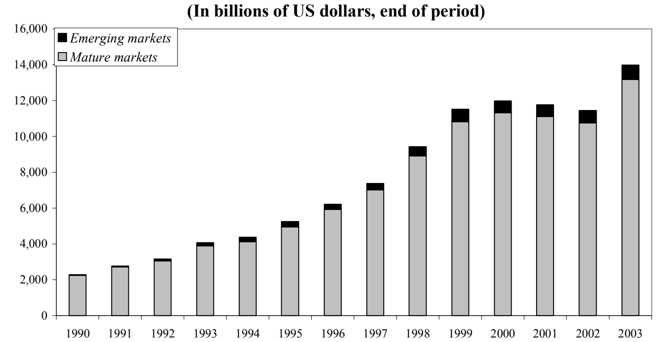
In this paper, we estimate the importance of mature market mutual funds in emerging equity and bond markets, *vis-à-vis* local mutual funds, and assess their potential impact on market stability. In this context, we also consider the importance of the investor base, namely, crossover versus dedicated investors. Finally, we provide an assessment on the issue of portfolio optimization by mature market mutual funds in their emerging market asset allocations. Our findings suggest that asset allocations by mature market funds into emerging markets, while not inconsequential, are still much less important than the holdings of domestic investors. Mutual funds in mature European markets appear to play a bigger role in emerging markets than their U.S. counterparts, with greater potential to influence local markets. Meanwhile, the portfolios of European funds appear to be more optimal than those of their U.S. counterparts, although both still exhibit home bias in their allocations.

The paper is presented as follows: Section II provides a broad overview of the developments in the industry, followed by a discussion on asset allocation trends in Section III. In Section IV, we estimate the allocations by dedicated and crossover mutual funds from mature markets into emerging markets, and discuss the stability implications of these and other local market investors. Section V provides a brief discussion on the diversification benefits achieved by U.S. and European investors, followed by the conclusion in Section VI.

II. Global Industry Overview

The net assets of the global mutual fund industry has grown more than six-fold since 1990, to $14 trillion at the end of 2003 (Tables 1A and 1B). Notably, the mutual fund industry in emerging markets has grown sharply over this period, by more than 19 times its size in 1990, notwithstanding the financial crises that has beset some of these markets since the mid-1990s. Despite the surge in total net assets, however, mutual funds in emerging markets still only represent less than 5.7 percent of total global net assets (Figure 1), with emerging Asia accounting for 3.7 percent of the global total.

Figure 1
Mutual Funds: Total Net Assets by Market
(In billions of US dollars, end of period)



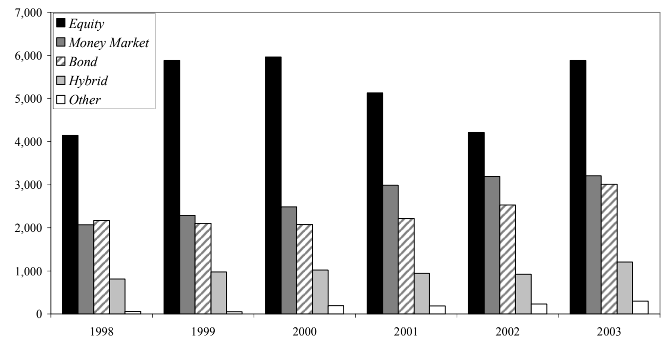
Sources: Investment Company Institute, Securities Commission of Malaysia, Securities and Exchange Commission of Thailand.

[4] Broner, Gelos and Reinhart (2003) argue that the allocation decisions of international funds, in response to their performance, could result in financial market spillovers into other markets, notwithstanding differences in country fundamentals.

In aggregate, equity mutual funds are clearly the most popular within the industry, with 43 percent of total global net assets as at the end of 2003, or $5.9 trillion (Figure 2). Money market funds are next in size, with 24 percent of the total net assets. Indeed, the trend over time shows continuous growth in global money market fund aggregates, in contrast with equity funds, which have tended to be more "volatile." Similarly, bond funds have continued to post positive growth in net assets since 2000.

Significantly, U.S. mutual funds alone make up 53 percent of the industry's total global net assets, which is some 1.6 times the size of the industry in all the mature European markets combined, and 8.5 times that of its mature market counterparts in the Asia-Pacific region. U.S. investors had placed some $7.4 trillion in 8,126 mutual funds as at end-2003, compared to $6.4 trillion invested in 8,244 funds at the end of 2002. The anticipation of a strong economic recovery and improving corporate profitability saw equity fund assets rise 37 percent to $3.7 trillion in 2003, from $2.7 trillion in 2002.

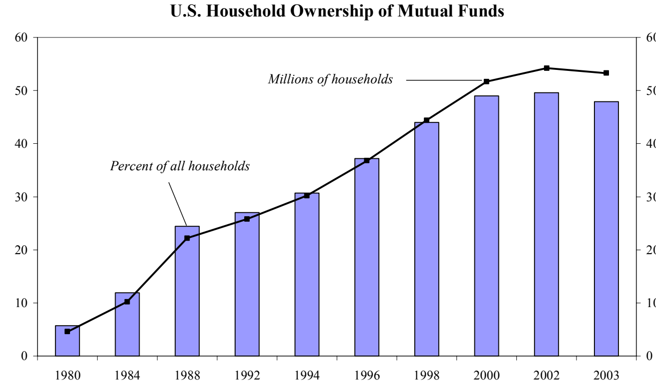
Figure 2
Global Mutual Funds: Total Net Assets by Fund Type
(In billions of US dollars, end of period)



Source: Investment Company Institute

The increasing popularity of mutual funds in United States is clearly supported by the investment profile of domestic households since the 1980s (Figure 3). Almost half of all households were owners of mutual funds by the end of 2003. These investors made $668 billion of net purchases of financial assets in 2002, up 21 percent from $554 billion the previous year. They were net buyers of mutual funds ($164 billion), bonds and bank deposits, albeit net sellers of directly held stocks.

Figure 3
U.S. Household Ownership of Mutual Funds



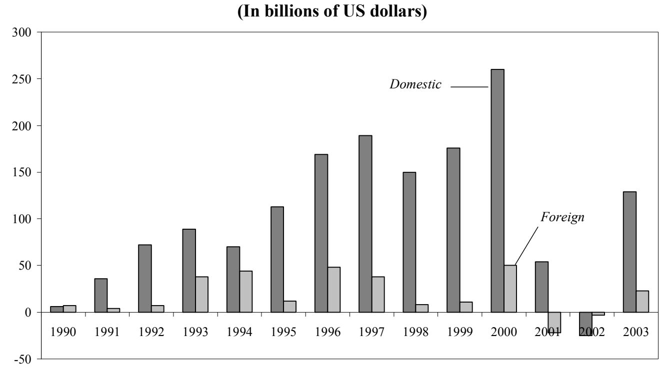
Source: Investment Company Institute

III. Trends in Asset Allocation

Allocations to different asset classes tend to differ across countries and regions (Tables 2A and 2B), depending on market infrastructure, availability of instruments to invest and hedge, liquidity of market, as well as risk considerations. For instance, mutual funds in United States hold the largest proportion (44 percent) of their net assets in equities, while funds in Latin America are predominantly invested in fixed income instruments (68 percent). Allocations by European mutual funds appear to be evenly balanced between equity and bond funds.

In terms of global allocations, while international mutual funds do have some presence in emerging market local currency bonds and equities,[5] few markets generally meet their investment criteria, which may include ease of exit, an attractive tax structure, along with clearing and settlement considerations. The issue of investability, where foreigners are prohibited from purchasing, or restricted to a limited fraction of, a given company's stock, has also excluded foreign investors from any significant holdings in emerging markets. That said, as the emerging market asset class becomes more mainstream, mutual fund managers are pushing more local market instruments and promoting hybrid mandates,[6] that are incidentally becoming popular amongst European investors seeking to diversify their holdings.

Figure 4
U.S. Equity Mutual Funds: Net New Cash Flows
(In billions of US dollars)



Source: Investment Company Institute

In United States, surveys of fund managers indicate that they too are planning to increase their holdings of emerging markets instruments—both equities and bonds—in their portfolios. This is in contrast to investor preference over the past decade, with domestic equity funds increasingly dominating those of foreign equity funds up to 2000 (Figure 4).[7] Net new cash inflows into all U.S. equity funds peaked at $310 billion in 2000, of which $260 billion were allocated to domestic funds and the remainder to foreign assets.

Interest in emerging market equity funds has been growing in Asia, in line with the global economic recovery and the perceived 'undervaluation' of Asian assets. Hong Kong SAR and Singapore are unique within the emerging markets in that they represent regional asset management hubs, with funds largely sourced from and invested overseas. In Singapore, there has been substantial growth in the asset management industry since 1997, with AUM growing by 65 percent to about $200 billion at the end of 2002.[8] Some 70 percent of funds

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[5] A few examples include South Africa, Mexico and some East European markets.

[6] A typical hybrid mandate consists of a mixed portfolio of fixed income securities of major industrial countries and emerging market countries.

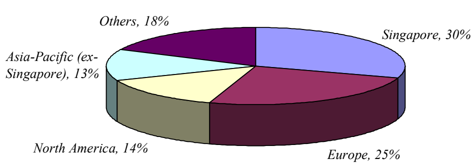
[7] Home bias in portfolios is well-documented in surveys by Lewis (1999) and Karolyi and Stulz (2002). However, Edison and Warnock (2003) find no home bias by U.S. investors towards emerging market equities that are cross-listed on U.S. exchanges. They attribute this to the reduction in information asymmetries associated with the cross-listings.

[8] This total includes discretionary and non-discretionary assets (which include funds under advisory service and funds contracted by financial institutions in Singapore. The Singapore

(continued…)

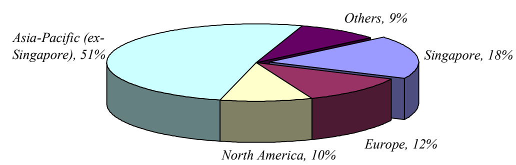
are sourced externally—from United States, Europe and the Asia-Pacific region, while investments into overseas markets account for 82 percent of funds (Figures 5A and 5B). In Hong Kong SAR, 63 percent of AUM of around $200 billion are sourced from overseas, with the balance sourced from local investors. Of this amount, 76 percent are invested abroad; the remaining 24 percent, which is invested locally, represents almost $48 billion of assets under management or around 30 percent of GDP.[9] In contrast to these two markets, the opposite is true of Korea**,** another important market for mutual funds, where net assets totaling some $134 billion (or 26 percent of GDP) are largely held in local securities. About 87 percent of AUM by investment trust management companies (ITMCs) is allocated to local fixed-income instruments, with the rest placed in equities.[10]

Figure 5A
Singapore: Sources of Discretionary Funds by Region, 2002



Source: Monetary Authority of Singapore

Figure 5B
Singapore: Investment of Discretionary AUM by Region, 200



Source: Monetary Authority of Singapore

Within Eastern Europe, the mutual fund industry has grown rapidly in both Hungary and Poland, with net assets of about 5 and 4 percent of GDP, respectively. The industry is

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authorities have actively encouraged the growth of the industry by allocating "developmental funds" of more than S$35 billion ($20 billion)—comprising S$10 billion ($5.8 billion) from the Monetary Authority of Singapore (MAS), S$25 billion ($14.6 billion) from the Government Investment Corporation (GIC) plus an allocation from Temasek Holdings—to foreign fund managers. The authorities are also offering concessionary tax rates for approved fund managers (of 10 percent versus the usual 20 percent). Investors in also benefit from tax concessions.

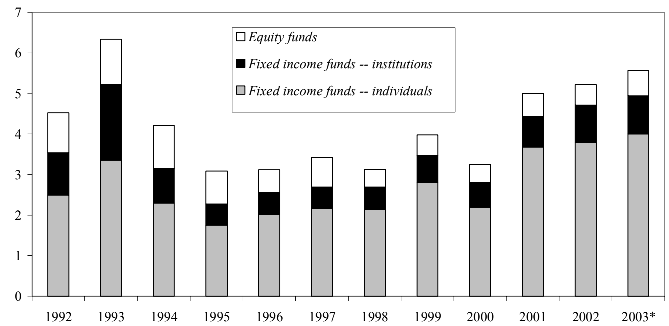
[9] While the funds invested Hong Kong SAR are predominantly in equities, at approximately 56 percent, the proportion of funds invested in bonds has grown substantially to around 24 percent, which is attributed to the government's efforts to develop the local bond market.

[10] Some 70 percent of inflows into the ITMC industry are from institutional investors, while the rest is sourced from the retail sector. That said, local mutual funds only hold 4.5 percent of Korea's stock market capitalization and 5 percent of total outstanding debt, while foreign investors currently own about 40 percent of Korea's stock market capitalization—the highest foreign ownership in the region—compared to around 14 percent prior to the Asian crisis in 1997.

extremely competitive in Hungary, partly owing to the lack of up-front fees, while the growth of the industry in Poland was prompted by the approval of the "Belka tax," a tax on bank deposits that caused a sharp shift of retail funds away from the banking system. These funds were initially allocated to fixed income mutual funds, and more recently to equity and hybrid funds.

Latin America's mutual funds industry is the second largest in emerging markets after Asia, with net assets of $221 billion. Of this amount, Brazil's mutual funds represent $172 billion (or 78 percent) of total net assets, with 59 percent of this amount allocated to bond funds (Table 2B). The mutual fund industry in Mexico has grown relatively quickly, despite lasting scars from the peso crisis in the mid-1990s. During 2000–03, the total net assets of Mexico's mutual funds grew rapidly and have predominantly been invested in fixed income instruments (Figure 6).[11] Similarly, mutual funds in Colombia have concentrated exclusively on fixed-income instruments, concentrated in medium- and long-term government bonds.[12]

Figure 6
Mexico: Net Asset Values by Fund Type
(In percent of GDP)



Sources: FundPro and WEO

* NAV as at end-June 2003

IV. DEDICATED AND CROSSOVER FUNDS IN MATURE MARKETS

An important development in changes to the emerging market investor base has been the ascendancy of "crossover" relative to "dedicated" investors (Figure 7).[13] The difficulty arises, however, in the definition of "dedicated" versus "crossover" investors for emerging markets. Broadly defined, a dedicated investor is one whose performance is measured against an emerging markets asset benchmarks, such as the Emerging Markets Bond Index (EMBI) or the Morgan Stanley Capital International (MSCI) indices. Crossover investors are the main institutional investors in instruments such as investment-grade debt and mature market high-yield securities. They tend to invest in emerging market assets to improve returns, and are thus more opportunistic. Crossover accounts tend to move in and out of a particular asset class, while dedicated investors usually reallocate within the asset class.

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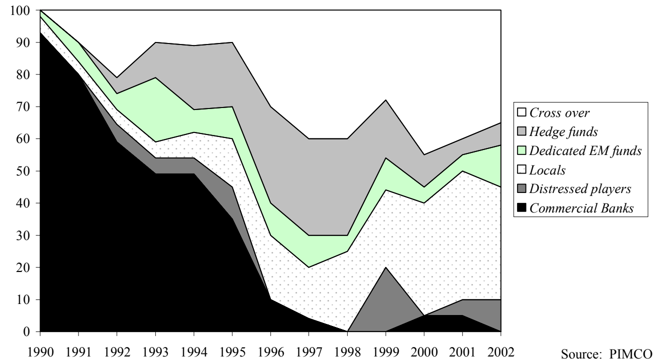
[11] The majority of fixed-income mutual funds are invested largely in peso-denominated government debt, due to previous restrictions on overseas investments. However, the lifting of restrictions on overseas investments on September 2003 has since seen local mutual funds launch international funds.

[12] Equity mutual fund practically disappeared after the stock market sell-off in 1996–97.

[13] Chapter IV of the *Global Financial Stability Report*, International Monetary Fund, September 2003, provides a discussion on these two classes of investors.

Figure 7
Emerging Markets Investor Class (In percent)



Source: PIMCO

Traditionally, the categories of crossover equity investors include *global equity funds* (which invest primarily in equity securities traded worldwide, including U.S. companies) and *international equity funds* (which invest primarily in equity securities of companies located outside United States). Dedicated equity funds include *emerging market funds* (which invest primarily in companies based in developing markets around the world). Meanwhile, *regional equity funds* (which invest in companies based in a specific part of the world, and may comprise both mature and emerging markets), could represent either dedicated or crossover accounts, albeit more benchmark indices are available for the former.[14] Within the fixed income universe, crossover investors include *global bond funds* (which invest in debt securities worldwide, and may invest up to 25 percent of assets in companies located in United States) and *international bond funds* (which must invest at least two-thirds of the portfolio outside United States). *Emerging market bond funds* invest primarily in the debt of less-developed regions.

The improving credit quality in emerging markets, as evidenced by the numerous credit upgrades in 2003, has instilled confidence in traditional high-grade crossover investors. For instance, recent institutional mandates to invest in emerging debt are widely considered a stable source of funds, as they are generally seen as longer-term, strategic allocation decisions. As more emerging market sovereigns receive an investment grade rating over time, and an increased proportion of global investment portfolios are committed to these countries which are included in core benchmarks, capital flows to these countries are expected to become less volatile. Already, more than 40 percent of the Emerging Markets Bond Index Global (EMBIG) is represented by investment grade issuers.

Overall, institutional inflows are viewed as a more stable source of assets under management, compared to the retail flows which have been fuelling the growth of emerging market bond funds over the past year. The less sophisticated retail investors are seen to be more likely to

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[14] For instance, the widely-used MSCI group of regional equity indices largely comprise separate benchmarks for either mature or emerging markets.

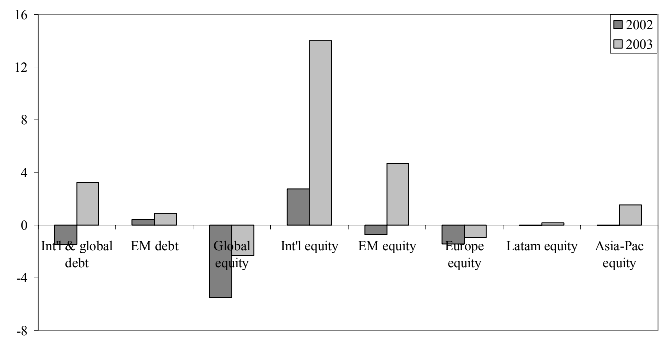
pull out their investments quickly during a market event. For instance, most European institutional investors are said to prefer to follow buy-and-hold strategies unless their views on a country turn excessively negative. Additionally, the large size of some portfolios, high transaction costs and lack of liquidity in emerging markets prevent excessive trading, and practically ensure that fund managers adopt a buy-and-hold approach, which sometimes makes tactical asset allocations in emerging markets rather difficult.[15]

The stability of the crossover base for emerging market assets remains uncertain, as it has yet to be tested by a major market shock in recent years, following the emerging market crisis of 1997–98. While analysts have noted that the increase in crossover investors has corresponded with increased market volatility, these investors tend to buy and hold assets despite their display of opportunistic behavior *vis-à-vis* emerging market assets. This is evidenced by their support for Brazilian assets after the 2002 crisis.

Given the size of the mutual funds industry in mature markets, relative to the emerging countries, it is not surprising that asset allocations by the former into the latter have been of some concern for policymakers. Notably, the potential for these mature market mutual funds to exacerbate market volatility, in the event of a market shock, may be significant.

U.S. crossover funds in both equity and debt asset classes have clearly benefited from new net flows from retail investors in 2003 (Figure 8). On balance, equity funds have been more attractive, compared to bond funds, with international equity funds in receipt of net cash inflows of almost \$14 billion for the year, while dedicated emerging markets equity accounts posted net inflows of almost \$5 billion. The size of international-type equity mutual funds in United States was 17 times that of debt mutual funds in 2002.

Figure 8
U.S. Mutual Funds: Retail Net Flows
(In billions of US dollars)



Source: AMG

Indeed, allocations to mutual funds with the mandate to invest in equities outside of United States are not insignificant. In 2003, the total net assets of all (long-term) U.S. crossover and dedicated emerging market funds amounted to \$518 billion out of the \$3.7 trillion in all equity funds, or about 14 percent.

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[15] That said, the monthly assessment of performance required in some emerging markets (e.g., in some Latin American markets) may implicitly restrict the investment horizon to one month.

Dedicated investors have 100 percent allocation to emerging market securities, so that the total net assets of dedicated investors in emerging markets in a particular country k could be calculated as:

$$(1) \qquad A_{D,k,t} = \sum_{i=1}^{n} 1 \cdot D_{i,k,t} \ ,$$

where $A_{D,k,t}$ is the total net assets allocated by dedicated equity funds in country k to emerging market equities at time t, and $D_{i,k,t}$ is the net assets in a particular dedicated equity fund i in country k at time t.

Investments by crossover equity funds are less clear. In order to estimate the amount of crossover funds allocated to emerging market equities, we estimate the following:

$$(2) \qquad A_{C,k,t} = \sum_{i=1}^{n} \alpha_{i,t} C_{i,k,t} \ ,$$

where $A_{C,k,,t}$ is the total net assets allocated by a crossover equity fund in country k to emerging market equities at time t, $C_{i,k,t}$ is the net assets in a crossover equity fund i in country k at period t and $\alpha_{i,t}$ is the weighting assigned to emerging market equities in the corresponding Morgan Stanley Capital International All-Country (MSCI AC) index at time t.[16] Thus, the total net assets allocated to emerging market equities in period t, $A_{T,t}$, in country k could be estimated as:

$$(3) \qquad A_{T,k,t} = A_{D,k,t} + A_{C,k,t} \ .$$

Despite the large amount allocated to overseas assets, dedicated emerging market equity accounts held by U.S. funds only represented an estimated $19.7 billion in 2003—around 0.5 percent of all equity mutual funds in United States or 3.8 percent of all funds assigned to portfolios which invest internationally. For the crossover class of investors, a weighting of 4.9 percent was assigned to emerging markets as a whole in the ACWI, which suggests that some $10 billion of the $203.5 billion in crossover *global* funds were allocated to emerging markets, based on equation (2). Further, using weightings from the ACWI ex-U.S. for crossover *international* and *regional* equity funds, an estimated 11.4 percent from these funds was assigned to emerging markets at the end of 2003 (Table 3, first panel). This translates to another allocation of $33.6 billion to emerging markets. In other words, investments by U.S. crossover (global, international and regional) funds in emerging equity markets would have totaled $43.5 billion in 2003, per equation (3), making them the more important investor base in emerging markets.

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[16] We use the MSCI AC World Index weights for global funds and the MSCI AC World ex-U.S.A. index weights for international and regional funds.

The amount of net assets held by U.S. investors in emerging market funds appears to be very small, relative to the total capitalization of their respective equity and bond markets. For instance, the $19.7 billion in dedicated emerging market equity accounts of U.S. mutual funds represent 0.6 percent of the total stock market capitalization of emerging markets. The inclusion of estimated crossover funds would have only brought the total up to $63.3 billion, or 2 percent of capitalization. This is compared to the 6.6 percent of capitalization held by local mutual funds in these markets (Table 4).

Meanwhile, the total net assets of all world bond mutual funds based in United States is $25.5 billion, which is about 2 percent of all bond funds in United States, totaling $1.2 trillion. If we assume these funds are allocated to emerging markets in around the same proportion as that of outstanding emerging market bonds to total bonds outstanding globally, then we would estimate that around 5 percent of the $25.5 billion (or around $1.3 billion) has been allocated to emerging markets debt (Table 3, second panel).[17] This would be equivalent to only about 1 percent of the total stock of bonds outstanding in emerging markets. Again, this appears insignificant compared to local bond funds, which hold 14 percent of the amount outstanding (Table 4).[18]

Interestingly, mutual funds in mature European countries appear to play a bigger role in emerging markets.[19] We estimate the total dedicated emerging market equity funds in mature Europe using equation a regional aggregate of equation (1), such that,

$$(4) \qquad A_{D,r,t} = \sum_{c=1}^{k} A_{D,k,t} \ ,$$

where $A_{D,r,,t}$ is the total net assets of dedicated emerging market equity funds in region r. Our calculations suggest that some $418 billion were allocated to these dedicated funds.

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[17] The relative illiquidity of emerging debt markets suggests that this percentage may be on the high side.

[18] Studies by Rea (1996), Rea and Marcis (1996) and Post and Millar (1998) on the investment pattern of U.S. mutual funds in emerging markets suggest that neither shareholders nor portfolio managers behaved in a manner that exacerbated market volatility during emerging markets crises in the 1990s. Moreover, portfolio managers at these mutual funds did not reallocate investments between countries in a way that would have intensified price swings. In contrast, Kaminsky, Lyons and Schmukler (2001) showed that emerging market mutual fund flows around crises were unstable.

[19] We use a sample of mutual funds data made available by Standard & Poor's Fund Services on the *Federation Europeenne des Fonds et Societes d'Investissement* website, http://dev.fefsi.sp.co.gg. We use the end-March 2004 fund weights for each country as proxies.

Similarly, the total allocation by European crossover equity funds to emerging markets is calculated from equation (2) as follows:

$$(5) \qquad A_{C,r,t} = \sum_{c=1}^{k} A_{I,k,t} \ ,$$

where $A_{C,r,,t}$ is the total allocation of crossover equity funds to emerging markets in region r. The data suggest that that some \$2.05 trillion out of almost \$6 trillion, or almost 36 percent of total net assets under management, have been allocated by mature European countries to crossover equity funds. Of this amount, we estimate from equation (5) that a total of \$107 billion has been allocated to emerging market equities and bonds (Table 5).[20] This means that dedicated funds in Europe are more important for emerging markets than crossover funds, in contrast to United States.

Overall, total allocations by mature European countries to emerging markets represent almost 9.5 percent of total equity market capitalization and bonds outstanding in emerging markets, compared to 2 percent for U.S. equity funds and 1.3 percent for U.S. bond funds. In other words, portfolio allocation decisions by mutual fund managers in mature European markets could potentially have an impact on emerging markets, where allocations by their U.S. counterparts appear relatively insignificant.

Nonetheless, local investors in emerging markets—corporates, institutions and individuals—remain the most important group of investors, in terms of their impact on market stability during market events. These investors still hold a higher proportion of market value, compared to foreign investors.[21] This is not surprising, given that many emerging market investors tend to put their funds in local markets, either as a result of overseas investment restrictions or a preference for local securities. Thus, the reallocation decisions of local investors during times of market stress remain the dominant issue for market stability, in our view. Any influence exerted by foreign investors is likely to be a result of 'herding' rather than size itself.[22]

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[20] This estimate is obtained by weighting the different classes of crossover funds by their corresponding MSCI indices, namely, the ACWI (for global funds), the ACWI ex-USA index (for international funds), the AC Asia-Pacific Index (for Asia-Pacific funds) and the AC Europe Index (for Europe funds).

[21] Kim and Wei's (2002) research into transactions by portfolio investors in Korea indicated that herding behavior was more prevalent among individual investors, compared to institutional investors, and more so among non-resident investors than residents.

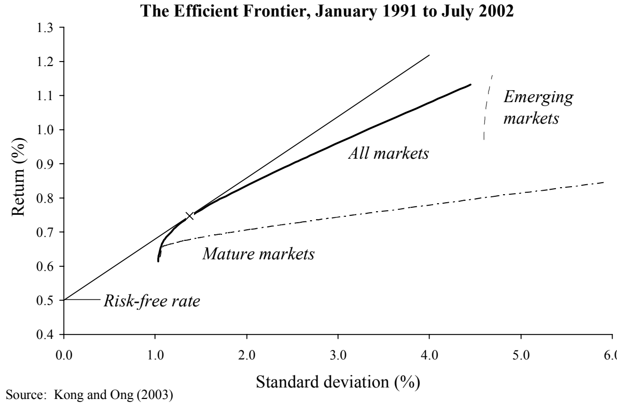
[22] Borensztein and Gelos (2003) examine a sample consisting of dedicated emerging market equity funds worldwide, and find herding behavior amongst these funds to be moderate, albeit statistically significant. However, this behavior does not appear to be more prevalent during crisis periods, and is unlikely to have been sufficiently strong enough to have accounted for instances of high volatility in international capital markets.

V. Extensions: Portfolio Optimization

The differences in regional allocation strategies between European and U.S. mutual funds raise an interesting point about the optimization of investment returns for these investors. Ex post evidence from Kong and Ong (2003) on the mean-variance optimization of a global market portfolio indicates that emerging market assets offered clear diversification benefits to mature-market investors over the 1991 to 2002 period (Figure 9).[23] The authors find that emerging market bonds are an important component of the optimal portfolio during this period.[24] Indeed, the most efficient portfolio would have consisted of almost 20 percent holdings in such assets. They find that Latin American equities also provided some diversification benefits over the 1991 to 1997 period.[25]

In comparison, our evidence suggests that the actual asset allocation strategies of U.S. and European investors may be somewhat less than efficient, in terms of the risk-return trade-off. That said, the overall "portfolio" of European funds appears to be more optimal than that of their U.S. counterparts, in that European asset allocations appear to be closer to the efficient frontier. These findings also provide support for the home bias argument,[26] albeit with U.S. investors exhibiting greater predilection for investing at home, than their European counterparts.

Figure 9
The Efficient Frontier, January 1991 to July 2002



Source: Kong and Ong (2003)

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[23] The authors use a mean-variance framework to construct optimal portfolios from historical returns data, including emerging and mature market equities and fixed income securities. They separately examine the following investment strategies: (i) mature markets only (equities and fixed income); (ii) emerging markets only (equities and fixed income); and (iii) all markets (mature and emerging) and asset classes (equities and fixed income).

[24] The JPMorgan Emerging Markets Bond Index (EMBI) is used as a proxy.

[25] The MSCI Latin America Index is used as a proxy.

[26] French and Poterba (1991), for instance, find evidence of home bias in the practices of German, British and French investors, among others.

VI. Conclusion

Our estimates of mature market mutual funds' involvement in emerging markets suggest that concerns about their role during market events may be exaggerated to some extent. The investment by foreign mutual funds in emerging markets, while not inconsequential in aggregate, cannot be solely responsible for the observed volatility during market events. Specifically, U.S. mutual fund holdings of emerging market securities appear negligible, and are unlikely to be the main source of volatility. According to our estimates, mutual funds from mature European countries appear to have significantly higher exposure to emerging markets than their U.S. counterparts, with holdings of almost 10 percent in emerging equity and bond markets. Further, crossover funds in United States play a more important role in emerging markets, while the opposite is true of European funds. The evidence also suggests that allocations to emerging market equities far surpass investments in bonds, both in absolute terms and relative to local market size. Further, the allocation strategies of both U.S. and European investors appear less than efficient, in terms of the risk-return tradeoff within a global portfolio.

Local investors in these emerging markets continue to be the biggest group of investors in emerging markets. Less clear, however, is the influence of foreign mutual funds on the trading dynamics of the market. For instance, do local investors, both retail and institutional, engage in momentum trading when they see their foreign counterparts—who are presumably more sophisticated—pull out of a particular market? Moreover, the relative illiquidity in some markets could readily magnify the effects of any irregular trading. These issues offer an avenue for further study.

Meanwhile, the growth of the local mutual fund industry in emerging markets has clearly contributed to the development of local markets. In many emerging markets, investment restrictions or the risk aversion of portfolio managers has largely kept these funds invested in local markets. This outcome reduces the risk of capital flight, and should, theoretically, help to mitigate volatility in times of market stress; these institutional investors also have a longer-term investment horizon. That said, the asset reallocation decisions of these funds during market events, within the local market itself, may yet induce market volatility, and require further study. Moreover, such investment constraints are likely to result in inefficient allocations of resources and diversification of risk. Indeed, historical evidence would suggest that the asset allocations by mature market investors as a whole have been less than optimal, in mean-variance terms.

Associated with the rapid growth of local mutual funds in emerging markets and the increased allocation in emerging markets by mature markets mutual funds are the policy issues that need to be addressed. Notably, policies to protect investors and prevent excessive volatility in capital markets resulting from the proliferation of these institutions are key for further market development. For instance, a developed and credible investor protection system is still largely lacking in many countries, especially as these mutual funds have been marketed as risk-free investments in some markets. This has, at times, resulted in the creation of unreasonable investor expectations. At the first sign of lower performance, mutual funds in some countries have experienced significant and sudden redemptions by retail investors, thereby exposing the weak foundations of such collective investment schemes. Previous incidents of government bailouts have also shown that the reform of the mutual fund industry needs to be carried out in conjunction with sound capital market development. Against this backdrop, policymakers will need to address possible weaknesses in current mutual fund regulation and supervision, as well as promote sufficiently deep and liquid markets, and provide the requisite infrastructure to accompany the rapid growth of the industry.

TABLE 1A Mutual Funds: Total Net Assets* (In billions of U.S. dollars)

Region	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
"World"	**2,281.0**	**2,763.6**	**3,143.9**	**4,071.6**	**4,369.7**	**5,251.3**	**6,213.6**	**7,377.8**	**9,423.1**	**11,516.6**	**11,979.2**	**11,777.3**	**11,449.5**	**13,978.7**
Mature markets	**2,239.5**	**2,718.7**	**3,045.6**	**3,883.2**	**4,119.7**	**4,946.9**	**5,923.0**	**7,028.0**	**8,907.2**	**10,826.7**	**11,316.3**	**11,098.0**	**10,747.5**	**13,181.7**
Asia-Pacific	***382.7***	***358.5***	***367.3***	***481.0***	***482.1***	***513.4***	***475.6***	***361.8***	***427.9***	***511.3***	***781.8***	***684.5***	***667.0***	***877.2***
Australia	29.1	34.5	19.3	24.6	44.0	36.5	47.8	42.9	44.1	n/a	342.0	334.0	356.3	518.4
Japan	353.5	323.9	346.9	454.6	435.6	470.0	420.1	311.3	376.5	502.8	432.0	343.9	303.2	349.1
New Zealand	n.a.	n.a.	1.1	1.8	2.5	6.9	7.7	7.5	7.3	8.5	7.8	6.6	7.5	9.6
Europe	***768.5***	***921.5***	***979.2***	***1,245.6***	***1,391.8***	***1,514.3***	***1,767.1***	***2,000.0***	***2,740.7***	***3,199.3***	***3,290.3***	***3,170.7***	***3,440.0***	***4,552.0***
Austria	14.3	15.1	15.0	18.2	23.5	33.5	39.5	44.9	57.4	56.3	56.5	55.2	66.9	88.0
Belgium	4.5	6.1	9.0	15.1	18.9	25.6	29.2	33.7	56.3	65.5	70.3	68.7	75.0	98.7
Denmark	3.6	3.7	3.7	4.4	5.4	6.5	9.3	13.0	19.5	27.6	32.5	33.8	40.2	49.5
Finland	n.a.	0.1	0.1	0.6	1.1	1.2	2.5	3.5	5.7	10.3	12.7	12.9	16.5	30.0
France	378.8	429.6	447.3	483.3	496.7	519.4	534.1	495.8	626.2	656.1	722.0	713.4	845.1	1,148.4
Germany	71.0	77.3	70.2	78.6	112.7	134.5	137.9	149.9	190.5	237.3	238.0	213.7	209.2	276.3
Greece	0.9	1.0	1.0	3.5	6.1	10.3	15.8	25.8	32.1	36.4	29.2	23.9	26.6	38.4
Ireland	7.0	7.5	5.9	5.2	7.8	8.5	7.7	22.7	50.3	95.2	137.0	191.8	250.1	360.4
Italy	41.9	48.8	41.0	64.3	79.4	79.9	130.0	209.4	439.7	475.7	424.0	369.9	378.3	478.7
Luxembourg	94.6	117.1	182.2	247.8	283.0	285.4	338.2	390.6	508.4	661.1	747.1	758.7	803.9	1,104.1
Netherlands	24.3	21.3	34.8	48.5	62.1	62.1	67.1	70.4	80.1	94.5	93.6	79.2	84.2	0.0
Norway	n.a.	2.5	2.7	4.7	5.1	6.8	9.9	13.1	11.1	15.1	16.2	14.8	15.5	22.0
Portugal	2.8	6.4	7.9	9.3	12.9	14.2	17.1	15.5	22.6	19.7	16.6	16.6	20.0	27.0
Spain	12.0	40.0	24.7	72.1	84.9	99.9	144.1	177.2	238.9	207.6	172.4	159.9	179.1	255.3
Sweden	21.1	20.8	18.1	24.4	20.2	27.4	35.0	45.5	54.9	83.3	78.1	65.5	58.0	87.7
Switzerland	n.a.	20.0	24.3	34.1	38.9	44.6	48.2	53.4	69.2	82.5	83.1	76.0	82.6	90.8
United Kingdom	91.5	104.4	91.2	131.5	133.1	154.5	201.3	235.7	277.6	375.2	361.0	316.7	288.9	396.5
North America	***1,088.4***	***1,438.7***	***1,699.2***	***2,156.6***	***2,245.7***	***2,919.3***	***3,680.3***	***4,666.2***	***5,738.7***	***7,116.2***	***7,244.2***	***7,242.8***	***6,640.6***	***7,752.5***
Canada	21.5	43.2	52.9	86.6	90.3	107.8	154.5	198.0	213.5	269.8	279.5	267.9	249.0	338.4
United States	1,066.9	1,395.5	1,646.3	2,070.1	2,155.4	2,811.5	3,525.8	4,468.2	5,525.2	6,846.3	6,964.7	6,975.0	6,391.6	7,414.1
Emerging markets	**41.5**	**44.9**	**98.2**	**188.4**	**250.0**	**304.4**	**290.6**	**349.8**	**515.8**	**690.0**	**663.0**	**679.3**	**701.9**	**797.1**
Africa	***n.a.***	***n.a.***	***4.5***	***4.6***	***7.4***	***9.2***	***9.4***	***12.7***	***12.2***	***18.2***	***16.9***	***14.6***	***21.0***	***34.5***
South Africa	n.a.	n.a.	4.5	4.6	7.4	9.2	9.4	12.7	12.2	18.2	16.9	14.6	21.0	34.5
Asia	***41.5***	***44.9***	***74.7***	***157.9***	***185.3***	***219.1***	***172.2***	***217.1***	***372.6***	***517.4***	***462.3***	***468.1***	***521.1***	***510.0***
Hong Kong SAR	0.0	0.0	16.7	31.2	29.5	33.7	41.0	58.5	98.8	182.3	195.9	170.1	164.3	255.8
India	7.6	7.9	5.8	7.9	11.7	10.1	9.7	9.4	8.7	13.1	13.5	15.3	20.4	29.8
Korea	33.8	37.1	46.2	70.0	81.3	92.4	n.a.	53.1	165.0	167.2	110.6	119.4	149.5	121.5
Malaysia	n.a.	n.a.	6.0	10.5	14.0	17.4	23.7	8.7	10.2	11.4	11.4	12.5	14.1	18.4
Philippines	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.1	0.1	0.2	0.5	0.8
Singapore	n.a.	n.a.	n.a.	38.4	45.2	61.1	89.3	74.6	67.8	109.9	95.9	97.9	105.7	0.0
Taiwan Province of China	n.a.	n.a.	n.a.	n.a.	3.6	4.4	8.4	12.4	20.3	31.2	32.1	49.7	62.2	76.2
Thailand	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.6	1.8	2.4	2.7	3.0	4.3	7.4
East Europe	***n.a.***	***n.a.***	***n.a.***	***n.a.***	***n.a.***	***n.a.***	***0.5***	***1.7***	***2.6***	***4.1***	***5.7***	***4.3***	***19.2***	***31.6***
Czech Republic	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.4	0.6	1.5	2.0	1.8	3.3	4.1
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.7	1.5	1.7	2.0	2.3	4.0	3.9
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.5	0.5	0.5	0.8	1.5	n.a.	5.5	8.6
Romania	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.0	0.0	0.0	0.0
Russia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.0	0.0	0.0	0.2	0.2	0.3	0.4	0.9
Turkey	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	6.0	14.2
Latin America	***n.a.***	***n.a.***	***19.0***	***25.8***	***57.3***	***76.1***	***108.6***	***118.4***	***128.5***	***150.2***	***178.1***	***192.3***	***140.7***	***221.0***
Argentina	n.a.	n.a.	0.2	0.2	0.4	0.6	1.9	5.2	6.9	7.0	7.4	3.8	1.0	1.9
Brazil	n.a.	n.a.	18.9	24.0	54.4	63.6	103.8	108.6	118.7	117.8	148.5	148.2	96.7	171.6
Chile	n.a.	n.a.	n.a.	1.6	2.5	2.8	2.9	4.5	2.9	4.1	n.a.	5.1	6.7	8.6
Colombia**	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1.9	2.7	3.6	3.8	4.2
Costa Rica	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.9	n.a.	1.7	2.8
Mexico	n.a.	n.a.	n.a.	n.a.	n.a.	9.0	n.a.	n.a.	n.a.	19.5	18.5	31.7	30.8	32.0

Sources: Bloomberg, Federation of Malaysian Unit Trust Managers, Investment Company Institute, Monetary Authority of Singapore, Securities and Exchange Commission of Thailand, Superintendencia Bancaria and Superintendencia Valores of Colombia.

* Funds of funds are not included; home-domiciled funds except for Hong Kong SAR, Korea, New Zealand and Singapore, which include home- and foreign-domiciled funds. ** As at September 2003.

TABLE 1B Mutual Funds: Growth in Total Net Assets (In percent)

Region	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
"World"	**21.2**	**13.8**	**29.5**	**7.3**	**20.2**	**18.3**	**18.7**	**27.7**	**22.2**	**4.0**	**-1.7**	**-2.8**	**22.1**
Mature markets	**21.4**	**12.0**	**27.5**	**6.1**	**20.1**	**19.7**	**18.7**	**26.7**	**21.5**	**4.5**	**-1.9**	**-3.2**	**22.6**
Asia-Pacific	***-6.3***	***2.5***	***31.0***	***0.2***	***6.5***	***-7.4***	***-23.9***	***18.3***	***19.5***	***52.9***	***-12.4***	***-2.6***	***31.5***
Australia	18.6	-44.2	27.4	79.3	-17.1	30.8	-10.2	2.8	n.a.	n.a.	-2.3	6.7	45.5
Japan	-8.4	7.1	31.0	-4.2	7.9	-10.6	-25.9	20.9	33.5	-14.1	-20.4	-11.8	15.2
New Zealand	n.a.	n.a.	72.6	34.8	177.9	11.9	-2.2	-3.6	17.3	-8.2	-15.9	14.3	28.5
Europe	***19.9***	***6.3***	***27.2***	***11.7***	***8.8***	***16.7***	***13.2***	***37.0***	***16.7***	***2.8***	***-3.6***	***8.5***	***32.3***
Austria	5.3	-0.3	20.9	29.3	42.4	18.2	13.6	27.9	-2.1	0.5	-2.4	21.1	31.6
Belgium	33.7	47.6	69.2	24.6	35.4	14.5	15.1	67.4	16.2	7.4	-2.3	9.2	31.7
Denmark	3.2	-1.9	20.3	23.8	18.5	44.7	39.6	49.7	41.2	17.9	4.1	18.7	23.4
Finland	0.0	42.9	461.8	76.2	11.2	107.3	40.8	61.1	81.2	23.1	1.9	27.7	81.4
France	13.4	4.1	8.0	2.8	4.6	2.8	-7.2	26.3	4.8	10.0	-1.2	18.5	35.9
Germany	8.8	-9.2	11.9	43.5	19.4	2.5	8.7	27.1	24.6	0.3	-10.2	-2.1	32.1
Greece	1.7	6.9	240.4	76.4	68.6	53.2	63.2	24.7	13.3	-19.9	-18.1	11.4	44.2
Ireland	6.8	-20.8	-11.2	48.9	8.4	-8.6	193.8	121.5	89.1	44.0	40.0	30.4	44.1
Italy	16.5	-15.9	56.6	23.5	0.6	62.7	61.1	110.0	8.2	-10.9	-12.8	2.3	26.6
Luxembourg	23.9	55.6	36.0	14.2	0.9	18.5	15.5	30.2	30.0	13.0	1.6	6.0	37.3
Netherlands	-12.2	63.1	39.5	28.0	0.0	8.1	4.8	13.9	18.0	-1.0	-15.4	6.4	n.a.
Norway	n.a.	9.7	74.0	8.1	33.5	45.3	31.5	-14.6	35.5	7.4	-9.1	4.9	42.2
Portugal	124.0	24.2	17.6	37.9	10.7	20.0	-9.4	45.9	-12.7	-15.8	0.2	20.2	35.1
Spain	233.7	-38.3	191.7	17.8	17.7	44.2	22.9	34.8	-13.1	-16.9	-7.3	12.0	42.5
Sweden	-1.6	-12.9	34.5	-17.0	35.5	27.7	29.9	20.8	51.6	-6.2	-16.1	-11.5	51.3
Switzerland	0.0	21.5	40.3	14.0	14.9	7.9	11.0	29.4	19.3	0.7	-8.5	8.8	9.9
United Kingdom	14.1	-12.7	44.2	1.2	16.0	30.3	17.1	17.8	35.2	-3.8	-12.3	-8.8	37.3
North America	***0.0***	***0.0***	***27.3***	***126.7***	***16.9***	***63.1***	***4.6***	***9.3***	***-0.8***	***26.1***	***-0.2***	***-34.7***	***77.4***
Canada	101.1	22.5	63.6	4.4	19.3	43.3	28.1	7.8	26.4	3.6	-4.2	-7.0	35.9
United States	0.0	0.0	0.0	4.1	30.4	25.4	26.7	23.7	23.9	1.7	0.1	-8.4	16.0
Emerging markets	**8.4**	**118.6**	**91.8**	**32.7**	**21.7**	**-4.5**	**20.4**	**47.5**	**33.8**	**-3.9**	**2.5**	**3.3**	**13.6**
Africa	*n.a.*	*n.a.*	***2.7***	***59.7***	***24.3***	***1.4***	***35.6***	***-4.2***	***50.0***	***-7.2***	***-13.9***	***44.1***	***64.2***
South Africa	n.a.	n.a.	2.7	59.7	24.3	1.4	35.6	-4.2	50.0	-7.2	-13.9	44.1	64.2
Asia	***8.4***	***66.1***	***111.5***	***17.3***	***18.2***	***-21.4***	***26.1***	***71.6***	***38.9***	***-10.7***	***1.3***	***11.3***	***-2.1***
Hong Kong SAR	n.a.	n.a.	87.2	-5.3	14.1	21.7	42.5	69.0	84.5	7.5	-13.2	-3.4	55.7
India	n.a.	-26.1	35.8	47.2	-13.4	-3.9	-3.7	-7.1	50.4	3.4	13.2	33.2	46.3
Korea	n.a.	24.7	51.5	16.2	13.7	n.a.	n.a.	210.7	1.3	-33.8	8.0	n.a.	-18.8
Malaysia	n.a.	n.a.	74.2	33.8	24.2	36.7	-63.5	17.6	11.7	0.1	9.3	13.4	30.5
Philippines	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	-7.7	95.4	124.6	67.1
Singapore	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	-12.7	2.1	8.0	n.a.
Taiwan Province of China	n.a.	n.a.	n.a.	n.a.	21.3	90.3	48.1	64.3	53.4	3.0	55.1	25.0	22.6
Thailand	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	12.7	10.2	45.0	71.7
East Europe	***n.a.***	***n.a.***	***n.a.***	***n.a.***	***n.a.***	***70.6***	***244.3***	***55.0***	***61.2***	***37.2***	***-23.4***	***340.9***	***65.2***
Czech Republic	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	54.0	164.9	35.1	-10.7	85.4	23.8
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	107.0	16.9	13.2	15.7	76.6	-1.4
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	68.4	13.9	-6.5	50.6	102.9	n.a.	n.a.	56.8
Romania	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	25.0	170.0	33.3
Russia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	583.3	-29.3	510.3	0.0	67.8	25.3	128.8
Turkey	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	136.0
Latin America	***n.a.***	***n.a.***	***35.6***	***121.9***	***32.8***	***42.6***	***9.0***	***8.6***	***15.4***	***18.2***	***7.6***	***-27.4***	***58.3***
Argentina	n.a.	n.a.	27.7	65.5	62.2	196.2	180.7	32.1	0.9	6.2	-49.5	-72.8	87.7
Brazil	n.a.	n.a.	27.3	126.7	16.9	63.1	4.6	9.3	-0.8	26.1	-0.2	-34.7	77.4
Chile	n.a.	n.a.	n.a.	57.2	13.6	3.2	55.0	-36.0	40.6	n.a.	n.a.	31.7	27.5
Colombia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	47.2	31.1	5.8	11.5
Costa Rica	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	58.5
Mexico	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	-5.0	71.6	-3.0	3.9

Sources: Bloomberg, Federation of Malaysian Unit Trust Managers, Investment Company Institute, Monetary Authority of Singapore, Securities and Exchange Commission of Thailand, Superintendencia Bancaria and Superintendencia Valores of Colombia.

* Funds of funds are not included; home-domiciled funds except for Hong Kong SAR, Korea, New Zealand and Singapore, which include home- and foreign-domiciled funds. ** As at September 2003.

TABLE 2A Mutual Funds: Total Net Assets by Fund Type, 2003 (In billions of U.S. dollars)

Region	Equity	Bond	Money market	Hybrid	Other	Total
World	**5,775.37**	**3,009.67**	**3,176.08**	**1,146.35**	**976.99**	**14,084.47**
Mature Markets	**5,498.60**	**2,674.38**	**3,039.01**	**1,021.37**	**948.29**	**13,181.65**
Asia-Pacific	***389.79***	***155.79***	***150.87***	***3.31***	***177.44***	***877.20***
Australia	189.19	44.51	109.65	--	175.06	518.41
Japan	199.02	109.55	40.57	--	--	349.15
New Zealand	1.57	1.73	0.65	3.31	2.38	9.64
Europe	***1,424.01***	***1,277.68***	***836.46***	***581.37***	***432.49***	***4,552.00***
Austria	14.54	57.04	6.93	9.47	--	87.98
Belgium	59.26	12.07	2.38	24.98	0.03	98.72
Denmark	13.81	35.17	0.00	0.56	--	49.53
Finland	10.97	4.54	10.56	3.89	--	29.97
France	269.78	206.63	414.90	257.15	--	1,148.45
Germany	121.48	85.61	49.17	17.75	2.30	276.32
Greece	6.13	8.26	19.94	4.06	--	38.39
Ireland	n.a.	n.a.	n.a.	n.a.	n.a.	360.43
Italy	94.47	190.28	121.41	75.58	--	478.73
Luxembourg	356.18	497.56	97.20	82.26	70.91	1,104.11
Netherlands	n.a.	n.a.	n.a.	n.a.	n.a.	0.00
Norway	10.59	3.18	7.40	0.83	--	21.99
Portugal	1.97	11.28	11.71	1.96	0.06	26.99
Spain	76.54	74.11	73.08	31.62	--	255.34
Sweden	58.95	5.81	6.91	14.31	1.77	87.75
Switzerland	34.11	19.05	11.70	25.91	--	90.77
United Kingdom	295.23	67.09	3.16	31.04	--	396.52
North America	***3,684.80***	***1,240.92***	***2,051.69***	***436.68***	***338.37***	***7,752.45***
Canada	168.61	34.94	42.03	57.47	35.32	338.37
United States	3,684.80	1,240.92	2,051.69	436.68	--	7,414.08
Emerging Markets	**276.78**	**335.29**	**137.07**	**124.99**	**28.69**	**902.81**
Africa	***10.55***	***3.26***	***11.90***	***4.49***	***4.26***	***34.46***
South Africa	10.55	3.26	11.90	4.49	4.26	34.46
Asia	***247.07***	***186.68***	***101.25***	***63.00***	***17.71***	***615.71***
Hong Kong SAR	158.98	60.90	14.86	19.39	1.68	255.81
India	4.69	15.51	7.11	0.85	1.64	29.80
Korea	7.84	9.87	64.68	39.10	--	121.49
Malaysia	12.36	2.19	3.30	--	0.59	18.44
Philippines	0.02	0.74	--	0.04	--	0.79
Singapore*	51.77	32.11	11.18	--	10.68	105.74
Taiwan Province of China	9.41	63.05	--	3.61	0.14	76.21
Thailand	2.00	2.30	0.12	0.03	2.99	7.43
East Europe	***1.91***	***11.01***	***12.90***	***5.78***	***0.05***	***31.65***
Czech Republic	0.12	1.02	1.93	1.01	--	4.08
Hungary	0.37	2.65	0.84	0.08	--	3.94
Poland	0.67	4.34	1.48	2.08	--	8.58
Romania	--	0.04	--	--	--	0.04
Russia	0.57	0.07	--	0.21	--	0.85
Turkey	0.18	2.90	8.64	2.39	0.05	14.16
Latin America	***17.25***	***134.34***	***11.02***	***51.72***	***6.67***	***221.00***
Argentina	0.36	0.15	1.34	0.07	--	1.92
Brazil	11.95	101.26	4.85	51.33	2.21	171.60
Chile	0.46	3.98	3.62	0.27	0.23	8.55
Colombia	n.a.	n.a.	n.a.	n.a.	n.a.	4.23
Costa Rica	0.00	2.28	0.47	--	--	2.75
Mexico	4.48	26.67	0.75	0.06	--	31.95

Sources: Investment Company Institute, Monetary Authority of Singapore, Securities Commission of Malaysia, Securities and Exchange Commission of Thailand.

* As at end-2002.

TABLE 2B Mutual Funds: Net Assets by Fund Type as Proportion of Total Net Assets, 2003 (In percent)

Region	Equity	Bond	Money market	Hybrid	Other
World	**41.01**	**21.37**	**22.55**	**8.14**	**6.94**
Mature Markets	**41.71**	**20.29**	**23.05**	**7.75**	**7.19**
Asia-Pacific	***44.44***	***17.76***	***17.20***	***0.38***	***20.23***
Australia	36.49	8.59	21.15	--	33.77
Japan	57.00	31.38	11.62	--	--
New Zealand	16.33	17.90	6.75	34.37	24.64
Europe	31.28	28.07	18.38	12.77	9.50
Austria	16.53	64.83	7.88	10.77	--
Belgium	60.03	12.23	2.41	25.30	0.03
Denmark	27.87	71.00	--	1.12	--
Finland	36.62	15.14	35.25	12.99	--
France	23.49	17.99	36.13	22.39	--
Germany	43.96	30.98	17.80	6.42	0.83
Greece	15.96	21.51	51.93	10.58	--
Ireland	--	--	--	--	--
Italy	19.73	39.75	25.36	15.79	--
Luxembourg	32.26	45.06	8.80	7.45	6.42
Netherlands	--	--	--	--	--
Norway	48.13	14.47	33.64	3.76	--
Portugal	7.31	41.80	43.40	7.27	0.22
Spain	29.97	29.02	28.62	12.38	--
Sweden	67.18	6.62	7.87	16.31	2.01
Switzerland	37.58	20.98	12.89	28.55	--
United Kingdom	74.46	16.92	0.80	7.83	--
North America	***47.53***	***16.01***	***26.46***	***5.63***	***4.36***
Canada	49.83	10.33	12.42	16.98	10.44
United States	49.70	16.74	27.67	5.89	--
Emerging Markets	**30.66**	**37.14**	**15.18**	**13.84**	**3.18**
Africa	***30.62***	***9.45***	***34.54***	***13.02***	***12.37***
South Africa	30.62	9.45	34.54	13.02	12.37
Asia	***40.13***	***30.32***	***16.44***	***10.23***	***2.88***
Hong Kong SAR	62.15	23.81	5.81	7.58	0.66
India	15.74	52.06	23.85	2.84	5.51
Korea	6.45	8.13	53.24	32.18	--
Malaysia	67.00	11.90	17.90	--	3.20
Philippines	2.53	92.93	--	4.55	--
Singapore*	48.96	30.37	10.57	--	10.10
Taiwan Province of China	12.35	82.74	--	4.73	--
Thailand	26.87	30.93	--	--	40.21
East Europe	***6.03***	***34.80***	***40.75***	***18.26***	***0.16***
Czech Republic	2.99	24.91	47.34	24.76	--
Hungary	9.38	67.25	21.29	2.08	--
Poland	7.78	50.62	17.30	24.29	--
Romania	--	97.22	--	--	--
Russia	67.33	8.34	--	24.32	--
Turkey	1.26	20.49	61.00	16.90	0.35
Latin America	***7.80***	***60.79***	***4.99***	***23.40***	***3.02***
Argentina	18.95	7.67	69.94	3.44	--
Brazil	6.96	59.01	2.83	29.91	1.29
Chile	5.33	46.56	42.33	3.13	2.64
Colombia	n.a.	n.a.	n.a.	n.a.	n.a.
Costa Rica	0.15	82.93	16.88	--	--
Mexico	14.02	83.46	2.34	0.18	--

Sources: Investment Company Institute, Monetary Authority of Singapore, Securities Commission of Malaysia, Securities and Exchange Commission of Thailand.

* As at end-2002.

TABLE 3 US World Mutual Funds: Estimated Allocation to Emerging Markets (In billions of U.S. dollars)

Investment objective	1996	1997	1998	1999	2000	2001	2002	2003
Equities								
Total net assets of U.S. equity funds	1,726.1	2,368.0	2,978.2	4,041.9	3,961.9	3,418.2	2,663.0	3,684.8
Total allocation to world equity funds	285.2	346.4	391.6	585.3	542.7	428.8	358.5	517.7
Dedicated funds	**14.0**	**16.0**	**12.7**	**22.1**	**15.4**	**13.7**	**13.7**	**19.7**
EM equities	14.0	16.0	12.7	22.1	15.4	13.7	13.7	19.7
Weighting allocated to EMs	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Dedicated allocation to EMs	***14.0***	***16.0***	***12.7***	***22.1***	***15.4***	***13.7***	***13.7***	***19.7***
Crossover funds	**271.2**	**330.3**	**379.0**	**563.2**	**527.3**	**415.1**	**344.8**	**498.0**
Global equities	105.2	137.5	159.8	236.4	228.0	183.0	140.9	203.5
Weighting allocated to EMs	0.104	0.074	0.046	0.066	0.055	0.048	0.046	0.049
Global equities allocation to EMs	*10.9*	*10.2*	*7.3*	*15.6*	*12.5*	*8.8*	*6.5*	*10.0*
International equities	134.1	164.9	187.2	276.2	262.1	206.3	183.7	265.4
Regional equities	31.8	27.9	32.0	50.5	37.2	25.8	20.2	29.1
Weighting allocated to EMs*	0.199	0.162	0.107	0.136	0.119	0.117	0.104	0.114
International and regional equities allocations to EMs	*33.0*	*31.2*	*23.5*	*44.4*	*35.6*	*27.2*	*21.2*	*33.6*
Crossover allocation to EMs	***44.0***	***41.4***	***30.8***	***60.0***	***48.2***	***35.9***	***27.7***	***43.5***
Estimated allocation to EM equities	***58.0***	***57.5***	***43.5***	***82.1***	***63.6***	***49.6***	***41.3***	***63.3***
EM allocation as % of U.S. equity funds	3.4	2.4	1.5	2.0	1.6	1.5	1.6	1.7
EM equities capitalization	2,396.9	2,106.1	1,706.8	2,827.1	2,255.5	2,068.7	1,979.7	3,238.4
EM allocation as % of EM capitalization	2.4	2.7	2.5	2.9	2.8	2.4	2.1	2.0
Dedicated EM allocation as % of EM capitalization	0.6	0.8	0.7	0.8	0.7	0.7	0.7	0.6
Crossover EM allocation as % of EM capitalization	1.8	2.0	1.8	2.1	2.1	1.7	1.4	1.3
Bonds								
Total US bond funds	645.4	724.2	830.6	812.5	811.2	925.1	1,124.9	1,240.9
Crossover and dedicated funds	**25.7**	**26.0**	**24.9**	**22.9**	**19.9**	**19.1**	**21.1**	**25.5**
Global general bonds	17.5	16.1	15.9	14.9	12.7	12.4	13.2	17.3
Global short-term bonds	5.4	6.1	5.7	4.0	3.3	2.7	3.2	4.2
Global other bonds	2.8	3.8	3.3	4.0	4.0	4.0	4.7	6.1
Emerging market bonds outstanding	1,418.9	1,443.5	1,662.9	1,697.9	1,790.3	1,939.4	2,074.0	2,288.8
Total world bonds outstanding	28,590.5	25,638.7	32,060.2	34,811.0	35,661.7	37,159.6	42,477.7	45,962.6
Estimated % weighting allocated to EMs	4.96	5.63	5.19	4.88	5.02	5.22	4.88	4.98
Estimated allocation to EM bonds	***1.28***	***1.46***	***1.29***	***1.12***	***1.00***	***1.00***	***1.03***	***1.27***
EM allocation as % of U.S. bond funds	0.20	0.20	0.16	0.14	0.12	0.11	0.09	0.10
EM allocation as % of EM bonds outstanding	0.09	0.10	0.08	0.07	0.06	0.05	0.05	0.06

Sources: Bank for International Settlements, Investment Company Institute, MSCI, World Federation of Exchanges, various stock exchanges, IMF staff estimates.
* Weightings calculated based on MSCI ACWI weights ex-U.S.

TABLE 4 Mutual Funds: Asset Allocation in Selected Markets, 2003

Region	Billions of U.S. dollars							Percent		
	Total	Allocation from local funds			GDP	Stock market	Bonds	Total net assets	EF to stock	BF to bonds
	net assets	Equity (EF)	Bond (BF)	Other		capitalization	outstanding#	to GDP	market cap	outstanding
World	**14,084.47**	**5,775.37**	**3,009.67**	**5,299.42**	**32,456.60**	**86,914.75**	**45,962.60**	**43.39**	**6.64**	**6.55**
Mature markets	**13,181.65**	**5,498.60**	**2,674.38**	**5,008.67**	**27,783.49**	**83,676.32**	**43,673.80**	**47.44**	**6.57**	**6.12**
Asia Pacific	***877.20***	***389.79***	***155.79***	***331.62***	***4,887.41***	***3,571.68***	***7,346.80***	***17.95***	***10.91***	***2.12***
Australia	518.41	189.19	44.51	284.71	508.24	585.53	413.80	102.00	32.31	10.76
Japan	349.15	199.02	109.55	40.57	4,301.82	2,953.10	7,318.50	8.12	6.74	1.50
New Zealand	9.64	1.57	1.73	6.34	77.35	33.05	28.60	12.46	4.76	6.03
Europe	***4,552.00***	***1,424.01***	***1,277.68***	***1,850.32***	***11,043.71***	***64,928.14***	***9,531.90***	***41.22***	***2.19***	***13.40***
Austria	87.98	14.54	57.04	16.40	253.58	56.52	363.10	34.70	25.73	15.71
Belgium	98.72	59.26	12.07	27.39	303.06	109.24	619.40	32.58	54.25	1.95
Denmark	49.53	13.81	35.17	0.56	210.81	121.64	372.90	23.50	11.35	9.43
Finland	29.97	10.97	4.54	14.46	162.16	170.29	159.70	18.48	6.44	2.84
France	1,148.45	269.78	206.63	672.04	1,754.26	853.51	2,258.30	65.47	31.61	9.15
Germany	276.32	121.48	85.61	69.23	2,408.59	1,079.03	3,624.40	11.47	11.26	2.36
Greece	38.39	6.13	8.26	24.01	174.06	106.64	217.30	22.06	5.75	3.80
Ireland	360.43	n.a.	n.a.	n.a.	149.16	85.07	138.30	241.64	n.a.	n.a.
Italy	478.73	94.47	190.28	193.99	1,470.93	614.84	2,312.40	32.55	15.36	8.23
Luxembourg	1,104.11	356.18	497.56	250.37	25.91	37.33	--	4,261.34	954.06	--
Netherlands	0.00	n.a.	n.a.	n.a.	512.65	306.98	996.60	n.a.	n.a.	n.a.
Norway	21.99	10.59	3.18	8.23	221.14	95.92	141.70	9.95	11.04	2.25
Portugal	26.99	1.97	11.28	13.73	147.50	36.42	187.60	18.29	5.42	6.01
Spain	255.34	76.54	74.11	104.70	840.15	726.24	862.90	30.39	10.54	8.59
Sweden	87.75	58.95	5.81	22.98	301.75	320.04	383.80	29.08	18.42	1.51
Switzerland	90.77	34.11	19.05	37.61	309.43	727.10	331.40	29.34	4.69	5.75
United Kingdom	396.52	295.23	67.09	34.20	1,798.57	2,425.82	2,118.30	22.05	12.17	3.17
North America	***7,752.45***	***3,684.80***	***1,240.92***	***2,826.74***	***11,852.37***	***15,176.50***	***17,709.50***	***65.41***	***24.28***	***7.01***
Canada	338.37	168.61	34.94	134.82	866.92	910.23	922.60	39.03	18.52	3.79
United States	7,414.08	3,684.80	1,240.92	2,488.37	10,985.45	14,266.27	19,873.90	67.49	25.83	6.24
				0.00						
Emerging markets	**902.81**	**276.78**	**335.29**	**290.75**	**4,673.11**	**3,238.43**	**2,288.80**	**19.32**	**8.55**	**14.65**
Africa	***34.46***	***10.55***	***3.26***	***20.65***	***163.84***	***260.75***	***75.60***	***21.03***	***4.05***	***4.31***
South Africa	34.46	10.55	3.26	20.65	163.84	**260.75**	75.60	21.03	4.05	4.31
Asia	***615.71***	***247.07***	***186.68***	***181.96***	***1,982.14***	***2,131.91***	***1,180.30***	***31.06***	***11.59***	***15.82***
Hong Kong SAR	255.81	158.98	60.90	35.93	158.60	714.60	91.20	161.30	22.25	66.78
India	29.80	n.a.	n.a.	n.a.	575.31	279.09	171.60	5.18	n.a.	n.a.
Korea	121.49	7.84	9.87	103.77	605.35	298.25	459.10	20.07	2.63	2.15
Malaysia	18.44	12.36	2.19	3.89	103.16	168.38	115.30	17.88	7.34	1.90
Philippines	0.79	0.02	0.74	0.04	19.23	23.18	47.30	4.12	0.09	1.56
Singapore	105.74 *	n.a.	n.a.	n.a.	91.34	148.50	73.00	n.a.	n.a.	n.a.
Taiwan Province of China	76.21	9.41	63.05	3.74	285.99	379.02	162.70	26.65	2.48	38.75
Thailand	7.43	2.00	2.30	3.14	143.16	**120.89**	60.10	5.19	1.65	3.82
East Europe	***31.65***	***1.91***	***11.01***	***18.72***	***1,106.00***	***323.04***	***356.00***	***2.86***	***0.59***	***3.09***
Czech Republic	4.08	0.12	1.02	2.94	85.44	25.07	50.30	4.78	0.49	2.02
Hungary	3.94	0.37	2.65	0.92	82.81	16.66	42.90	4.75	2.21	6.17
Poland	8.58	0.67	4.34	3.57	209.51	37.02	75.60	4.09	1.80	5.74
Romania	0.04	--	0.04	--	54.20	3.71	3.10	0.07	n.a.	1.13
Russia	0.85	0.57	0.07	0.21	434.22	172.19	33.10	0.20	0.33	0.21
Turkey	14.16	0.18	2.90	11.08	239.82	**68.38**	151.00	5.91	0.26	1.92
Latin America	***221.00***	***17.25***	***134.34***	***69.41***	***1,421.13***	***522.74***	***676.90***	***15.55***	***3.30***	***19.85***
Argentina	1.92	0.36	0.15	1.41	129.73	34.99	101.30	1.48	1.04	0.15
Brazil	171.60	11.95	101.26	58.39	497.85	264.56	363.50	34.47	4.52	27.86
Chile	8.55	0.46	3.98	4.11	72.05	87	46.70	11.87	0.53	8.53
Colombia	4.23 **	n.a.	n.a.	n.a.	78	14.12	15	5.43	n.a.	n.a.
Costa Rica	2.75	0.00	2.28	0.47	17.57	n.a.	1.5	15.67	n.a.	152.27
Mexico	31.95	4.48	26.67	0.80	626.08	122.53	163.9	5.10	3.66	16.27

Sources: Bank for International Settlements, Investment Company Institute, World Federation of Exchanges, various stock exchanges, World Economic Outlook, IMF staff estimates.

* As at end-2002. # As at June 2003. ** As at September 2003.

TABLE 5 European World Mutual Funds: Estimated allocation to Emerging Markets
(In billions of U.S. dollars, as at end-March 2004)

	Amount	Proportion of total net assets
Total net assets of European mutual funds	5,968.0	
Estimated allocation to emerging markets		
Dedicated funds	418.2	0.070
Crossover funds	107.5	0.018
Total allocation to emerging markets (1)	*525.7*	***0.088***
"Size" of emerging markets		
Stock market capitalization	3,238.4	
Bonds outstanding	2,288.8	
Total "size" (2)	***5,527.2***	
Emerging market allocation as a proportion of total "size" (1)/(2)	0.095	

Sources: FEFSI, MSCI, Standard & Poor's Fund Services, IMF staff estimates.

Notes: Estimates of amounts allocated to dedicated and crossover funds are derived from equation (5).

For countries where there is no allocation breakdown available, the average of the available countries is used.

The data for Europe is as at end-March 2004.

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