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# Going Global: The Changing Pattern of U.S. Investment Abroad

*By Marcela Meirelles Aurélio*

Investors typically allocate only a small share of their portfolios to foreign assets. This pattern of investment behavior, known as “home bias,” is puzzling because it causes investors to miss opportunities to diversify risks. During downturns in the U.S. economy, many domestic assets perform poorly, precisely when asset returns are most valuable. By purchasing foreign assets that are only partly affected by the U.S. business cycle, however, investors are able to hedge against adverse fluctuations in domestic income.

Recent evidence suggests that home bias might actually be declining. Over the past decade, U.S. holdings of foreign financial assets—stocks and bonds—have grown remarkably. At the same time, foreign physical assets, such as foreign direct investment in production plants, have also become far more common. Overall, the share of U.S. investments allocated to foreign assets swelled from 40 percent of GDP in 1990 to 89 percent in 2005.

This article investigates the recent behavior of U.S. foreign investment and the factors driving the change in its fastest growing category—namely, international equity investment. Home bias in U.S. equity investment has indeed declined during the last decade. However, the propensity to invest

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abroad has varied significantly across assets from different foreign economies. Specifically, U.S. investors tend to prefer investing in other industrial countries rather than in emerging markets. This pattern has likely developed because the assets of industrial countries provide a better hedge during downturns in the U.S. business cycle.

The first section of the article provides an overview of the recent trends in U.S. investment abroad. The second section discusses a theoretical framework that sheds light on why diversifying a portfolio with foreign assets can simultaneously increase the average return on investment and reduce the volatility of returns. The third section analyzes trends in the geographic allocation of cross-border investment. It also shows that U.S. investors have become more likely to favor investing in other industrial countries. The fourth section investigates the factors that could be driving this behavior.

## I. RECENT CHANGES IN U.S. FOREIGN INVESTMENT

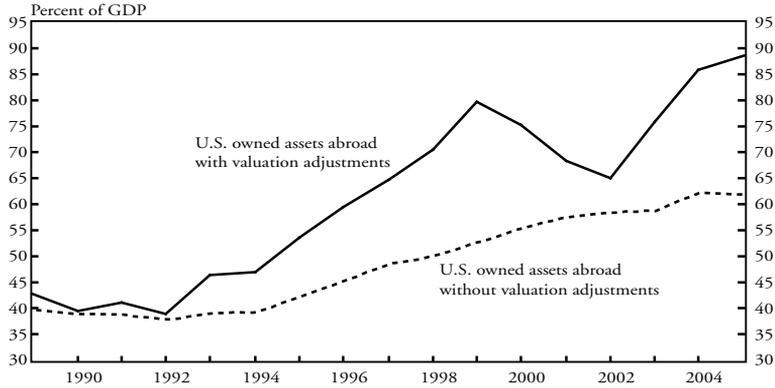
Since the early 1990s, the U.S. foreign investment position has changed dramatically, suggesting that home bias may be weakening. These changes can be summarized along three dimensions: the *magnitude* of the stock of foreign assets held in U.S. portfolios, the *composition* of investments abroad, and finally the *geographic allocation* of foreign investment.

The first dimension, the magnitude of investment abroad, began to evolve significantly more than a decade ago. In the early 1990s, the end-of-the-year market value of all types of foreign investments turned upward (Chart 1). By 2005, these investments, which range from foreign direct investment, to stocks and bonds, to government and private sector investments, had soared to 89 percent of U.S. GDP.

Of course, the change in investment behavior is due partly to a growing pool of funds available to fund foreign investment. But the change also depends on other factors. Specifically, the market value of the stock of these assets depends on new flows of investment, on capital gains (an increase in the price of foreign assets), and on exchange rate movements. For example, the rising value of the euro has increased the dollar value of assets whose price is denominated in euros. The year-over-year change in the stock of foreign assets partly reflects these

Chart 1

## U.S. OWNED ASSETS ABROAD HAVE INCREASED WITH AND WITHOUT VALUATION ADJUSTMENTS



Source: Bureau of Economic Analysis

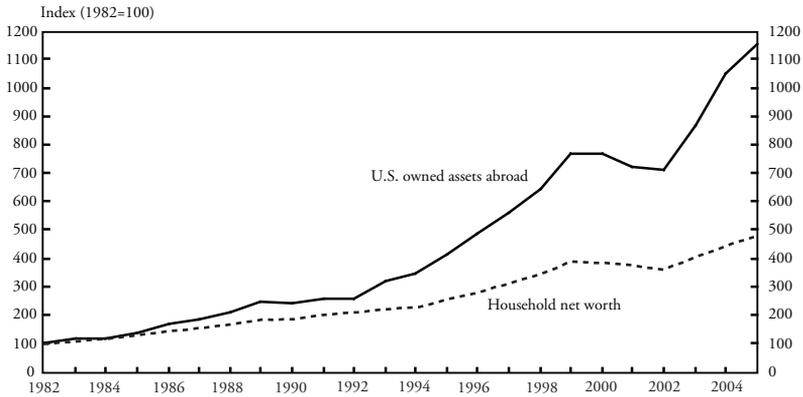
“valuation adjustments,” which are implicit in their dollar market price. The decline in the foreign asset position of U.S. investments from 1999 to 2002 was due in large part to the fall in the price of foreign assets, especially stocks, during that period (Chart 1).

How much of the growth in the stock of foreign assets can be attributed to new flows of investment abroad rather than to asset price and exchange rate changes? Chart 1 helps answer this question. The dotted line in the chart shows the evolution of the ratio of U.S. foreign assets to GDP, excluding from the end-of-year position the growth due to capital gains and to exchange rate fluctuations. The line shows a more gradual increase, confirming that the appreciation of foreign currencies against the dollar and capital gains (especially in the stock market) played a role increasing the market value of U.S. investment abroad. Still, even excluding these factors, a pronounced and steady increase in the ratio of foreign assets to GDP appears after 1994. Thus, new flows of investment clearly played a fundamental role in the growth of the foreign asset position.

Larger flows of funds being allocated to foreign assets does not necessarily imply, however, that the propensity to invest abroad has also increased. The pool of funds available for investment has grown significantly. In particular, wealth in the United States (measured by

Chart 2

## U.S. OWNED ASSETS ABROAD HAVE GROWN FASTER THAN HOUSEHOLD NET WORTH



Source: Bureau of Economic Analysis and Board of Governors of the Federal Reserve System

household's net worth) has increased much faster than GDP in the last decade. Hence, a large, and perhaps growing, share of U.S. wealth might also be flowing to investments in domestic assets.

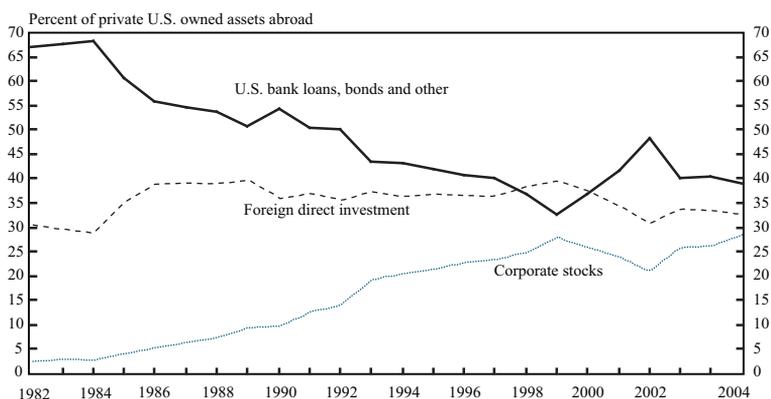
The evidence shows that the stock of foreign assets abroad has in fact outpaced household net worth (Chart 2). From 1982 to the early 1990s, both the stock of foreign assets and household net worth roughly doubled. By 1994, however, investment in foreign assets began to grow substantially faster.

The second dimension of foreign investment is the composition of flows, or the type of foreign assets that U.S. investors purchase. As with magnitude, significant changes in the composition of investments have also occurred (Chart 3).

The share of the aggregate composed by U.S. private bank loans, bonds, and other miscellaneous investments in the private sector portfolio of foreign assets declined substantially during the 1980s and 1990s.<sup>1</sup> This process was in large part due to the decline in importance in U.S. bank loans as a source of financing of foreign institutions.

Chart 3

## THE COMPOSITION OF PRIVATE U.S. OWNED ASSETS ABROAD HAS CHANGED



Source: Bureau of Economic Analysis

Meanwhile, the participation of foreign direct investment (FDI) in total private investment abroad has been fairly stable. The increase in the volume of FDI was large, but only sufficient to maintain its share in the private foreign investment portfolio. By the end of 2005, the market value of the stock of FDI was more than three times its 1994 level, reaching \$3.5 trillion, which corresponds to 33 percent of the stock of private foreign investments.

In contrast, investment in the stocks of corporations listed in foreign exchanges has soared. The share of foreign stocks in private-sector foreign assets has more than doubled since the early 1990s, reaching 28 percent by the end of 2005, with a market capitalization of almost \$3.1 trillion.

The third dimension of foreign investment is geographic allocation, described in Charts 4 and 5. The figures correspond to investments in foreign securities (stocks and bonds).<sup>2</sup> Most U.S. foreign investments in securities are still allocated to European markets, whose share in the U.S. securities portfolio grew from 46 to 53 percent (Chart

4). The distribution of U.S. foreign securities holdings by foreign economic development reveals the growth of the participation of emerging markets (Chart 5). The growth was concentrated in emerging markets in Asia, an issue that will be discussed in greater detail later in this article. The share of advanced economies has not changed much in the period 1994-2004 and still corresponds to 80 percent of the U.S. securities portfolio.

## **II. A FRAMEWORK FOR ANALYSIS OF THE GAINS FROM INTERNATIONAL DIVERSIFICATION**

In theory, the growing willingness to invest abroad has allowed U.S. investors to diversify their portfolios, thereby reducing the volatility of investment returns. But in reality, does international diversification offer actual gains? And if it does, are U.S. investors exploiting these potential gains—or is home bias still inhibiting them despite the increase in investment abroad?

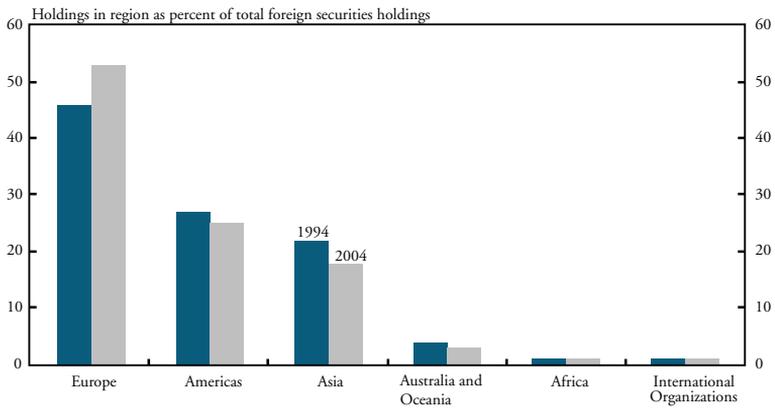
This section presents a framework to address these questions. The analysis will focus on investments in equity markets. As discussed earlier, the growth in the foreign asset position has been in large part fueled by investment in foreign corporate stocks.

When discussing the gains that diversification might achieve, it is important to recognize some basic characteristics of investor preferences. Investors naturally prefer high returns, yet they dislike the uncertainty associated with the volatility that often accompanies high returns. Analysts argue that investing abroad helps diversify portfolios and hence reduces the volatility of returns, because when some stocks perform poorly, others might be performing well. Foreign stocks are typically influenced by factors other than those at work in U.S. equity markets. In short, the view is that foreign stocks typically depend far less on the ups and downs of the U.S. business cycle.

Given the remarkable increase in the willingness to invest abroad over the last decade, the question remains: Are cross-border equity investments helping U.S. investors diversify their portfolios? And, if so, could U.S. investors do even better?

Chart 4

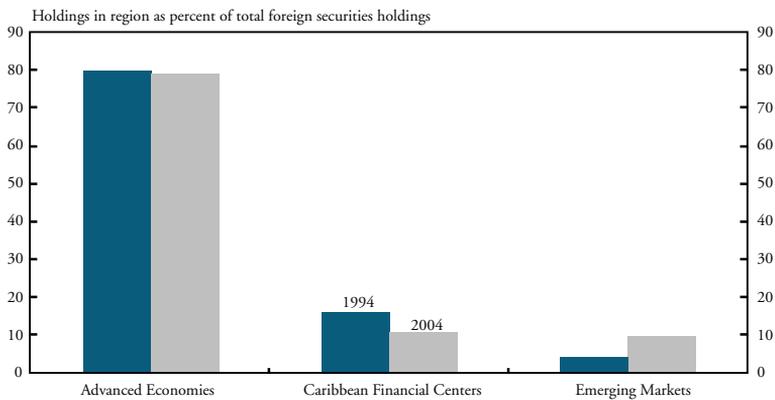
GEOGRAPHIC DISTRIBUTION OF U.S. HOLDINGS OF FOREIGN SECURITIES



Source: United States Treasury International Capital System

Chart 5

DISTRIBUTION OF U.S. HOLDINGS OF FOREIGN SECURITIES, BY ECONOMIC DEVELOPMENT



Source: United States Treasury International Capital System

Chart 6 helps answer these questions. The elliptical curve in the chart shows the return-volatility trade-off for portfolios holding stocks from the United States and other industrialized countries over the past three and a half decades.<sup>3</sup> The returns are based on the MSCI equity index for the United States and the MSCI EAFE index, a weighted aggregate of stock market returns of industrial countries in Europe, Australia, and the Far East. Both indexes were prepared by Morgan Stanley and both measure returns in U.S. dollars.

Each point along the trade-off curve corresponds to a hypothetical U.S. portfolio comprising a different mix of domestic and foreign stocks. Each portfolio would yield a specific level of average returns and volatility (as measured by the standard deviation of returns). For example, point *A* in the curve is a hypothetical portfolio comprised exclusively of U.S. stocks held from January 1970 until March 2006. The stocks in portfolio *A* would have earned an average annual nominal return of 10.25 percent, with a volatility of 15.1 percent. Table 1 summarizes information on average returns and volatility corresponding to portfolio *A* and to the remaining portfolios that will be described next.

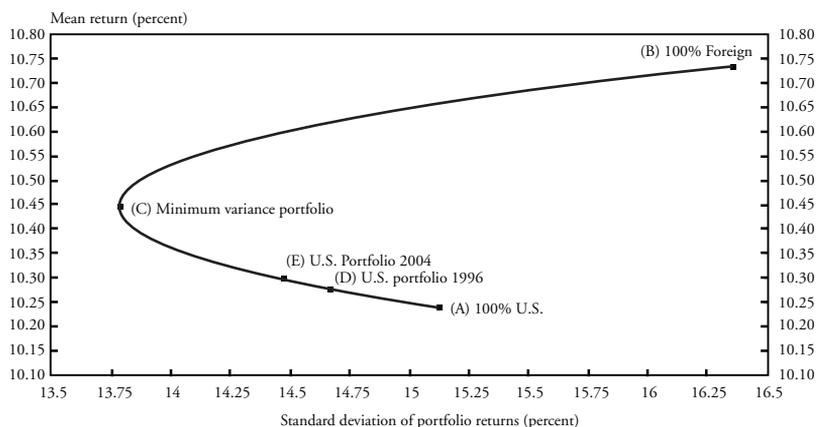
Moving left, upward, and then right along the curve from point *A* reflects an increasing share of foreign stocks in the portfolio. Point *B*, at the far end of the curve, represents a portfolio comprised exclusively of foreign stocks. From 1970 to 2006, portfolio *B* would have earned an average annual nominal return of 10.74 percent, with a volatility of 16.4 percent.

This return-volatility trade-off curve reveals some interesting points. A portfolio at point *C* on the curve would hold 41 percent of its assets in foreign stocks and would minimize the volatility of returns to their lowest possible level. In other words, if 41 cents of every dollar invested in the stock market between 1970 and March 2006 had been allocated to stocks from foreign industrial countries, the overall return of these investments would have reached their lowest level of volatility.

The 41 percent share of foreign stocks required to minimize the volatility of investment returns is much larger than the shares that U.S. investors actually held in 1997 (point *D*, 8 percent) and in 2004 (point *E*, 12 percent).<sup>4</sup>

Chart 6

### AVERAGE RETURNS AND VOLATILITY OF RETURNS OF INVESTMENTS IN U.S. STOCKS AND IN FOREIGN INDUSTRIAL COUNTRIES' STOCKS, 1970-2006



Source: Morgan Stanley MSCI indexes, Datastream, and author's calculations

Table 1

### MEAN AND STANDARD DEVIATION OF STOCK RETURNS, JANUARY 1970-MARCH 2006

Portfolios	Share of foreign equity (percent)	Average Annualized return (percent)	Standard deviation of returns (percent)
100% U.S. (point A in Chart 6)	0	10.24	15.12
1997 U.S. stocks allocation (point D)	8	10.28	14.67
2004 U.S. stocks allocation (point E)	12	10.30	14.47
Minimum variance portfolio (point C)	41	10.44	13.78
100% foreign industrial countries (point B)	100	10.74	16.35

Source: Author's calculations, based on MSCI equity returns available in Datastream

From 1997 to 2004, U.S. investors clearly showed a growing willingness to buy foreign stocks. Still, by 2004 home bias remained a feature of U.S. stock investment, a behavior that cannot be explained by more attractive domestic returns or volatility. As the trade-off curve shows, U.S. investors could have earned higher returns with less volatility by moving along the curve from point *E* to point *C*—in other words, simply by increasing their share of foreign stocks.

In the absence of home bias, the share of international stocks in the U.S. stock portfolio could have easily been even larger than 41 percent, the point associated with a minimum volatility of returns. Investors are typically willing to accept more volatile gains, provided that they are compensated in the form of higher returns. The only factor that would justify an allocation close to the point of minimum volatility would be unrealistically high levels of risk aversion. In fact, using levels of risk aversion typically used in the literature, the share of foreign stocks in the U.S. portfolio should range from 50 to 65 percent.

Some analysts, however, argue that the home bias evident in Chart 6 might actually be a sign of rational behavior. The optimal weight of foreign securities in the portfolio reflects data on average returns that can vary a lot, depending on the sample being used (Britten-Jones 1999). Other authors point out that the uncertainty regarding future returns at the moment that investment decisions are made can be considerable and the past behavior of stocks can only serve as a rough guide to form expectations about the return-volatility trade-off. They also suggest that the large asymmetry of information on domestic and international stocks makes investors' reluctance to invest abroad appear rational (Ahearne, Grier, and Warnock 2004).

Analysts further argue that when investors purchase stocks of U.S. multinationals with large sales abroad, they are implicitly diversifying their portfolios. In this way, investors increase the share of stocks whose return is, at least in principle, less dependent on domestic economic conditions (Cai and Warnock 2006).

The methodology used to construct Chart 6 clearly does not take these elements into account. These limitations notwithstanding, however, the historical time series of returns and their volatility provides robust evidence of the benefits of higher portfolio diversification.

Summing up, the analysis in this section showed that the increased willingness of U.S. investors to purchase foreign stocks is a welcome development: Increasing the share of foreign industrial countries' stocks (up to a level around 40 percent) can potentially lead to higher average returns that would also be less volatile. The evidence shows, however, that home bias in equity investment—that is, the bias *against* investing in foreign industrial countries' equity markets—persists, although it has declined.

The next two sections examine the persistence of the bias and its evolution across different foreign markets. Section III discusses trends in the geographic allocation of cross-border equity investment and provides a region-specific measure of the bias in U.S. allocations. Section IV investigates the factors that could be driving this geographic pattern of U.S. foreign stockholdings and the preferences that they reveal.

### **III. CHANGES IN INVESTMENT BIAS AND THE GEOGRAPHIC PATTERN OF U.S. FOREIGN STOCKHOLDINGS**

While home bias in U.S. equity investments has apparently lessened, it still persists. The reason for this behavior might lie in the evolution of bias toward investments in certain countries or regions of the world. This section analyzes recent trends in the geographic allocation of cross-border equity investment. The analysis compares a benchmark portfolio of world stocks to the U.S. portfolio, providing a region-specific measure of U.S. bias in investment allocation observed by the end of 2004 (the last year for which country-specific data of U.S. foreign investments are available at the time of this writing).<sup>5</sup>

A benchmark portfolio is one that represents the performance of the overall market. The S&P 500, for example, is a benchmark portfolio. It represents the performance of stocks of 500 U.S. corporations, representing 80 percent of the total U.S. stock market. The S&P 500 returns are measured by an aggregate index, with each stock weighted by its degree of market capitalization—that is, by the amount of shares outstanding times the price of each share. A greater market capitalization gives a company's stock a greater weight in the index.

The benchmark portfolio also represents the weight investors assign to specific stocks. If investors believe a stock will perform poorly, they may decide to underweight the stock—or allocate a smaller share of their portfolio to this stock—compared to the S&P 500 benchmark. The same type of reasoning reveals the geographic pattern of foreign stockholdings in U.S. investments. The U.S. domestic and international equity allocation can be thought of as an investment strategy, which possibly deviates from the world benchmark portfolio. In this context, the world benchmark portfolio represents the performance and allocation of the world stock market, just as the S&P 500 benchmark represents the U.S. stock market. The larger the market capitalization of a country's stock market, the higher the weight of that market in the world index. The MSCI world stock market composite is such a benchmark index.

As with the S&P 500, the world benchmark portfolio reveals the weights assigned to each of its components—in this case, to each country's stock market. The weights are also given by the share of each component in the total market capitalization. For instance, by the end of 2004, the stock market in the UK represented almost 8 percent of the world capitalization. That is, for each dollar invested in stock markets across the globe, 8 cents were allocated to UK stocks. In contrast, U.S. investors underweighted the UK market by choosing to allocate only 3 percent of every dollar to UK investments.

In Table 2, the extent to which U.S. investors underweight foreign stocks is summarized by grouping individual foreign stock markets by the level of economic development of the economies to which they belong.<sup>6</sup> The group of emerging markets is further classified according to geographic origin (Table 3). Table 2 shows, for instance, that while the world as a whole allocated to major industrial countries (excluding the U.S.) 31 cents of every dollar invested in the world stock market (column B), U.S. investors allocated to this same group of countries only 8 cents of each dollar they invested in stocks (column A).

In fact, U.S. investors continue to underweight all the entire portfolio of foreign stocks, a consequence of home bias in investment decisions. By the end of 2004, for every dollar allocated by U.S. investors in stock markets, 84 cents were invested in the domestic market (column A, Table 2). In contrast, the world as a whole invested

*Table 2*  
**DISTRIBUTION OF U.S. EQUITY PORTFOLIO, BENCHMARK WORLD ALLOCATION,  
 AND THE BIAS IN U.S. INVESTMENTS**

Region	(A) Share in U.S. equity portfolio (percent, end of 2004)	(B) Share in world market capitalization (percent, end of 2004)	(C) = (A)/(B) Relative weight in U.S. portfolio	Bias = 1-(C) (2004)	Bias (1997)
United States	83.56	42.47	1.97		
Major foreign industrial countries	8.43	31.22	0.27	0.73	0.82
Other advanced economies	4.16	14.05	0.30	0.70	0.76
Latin America	0.55	1.99	0.28	0.72	0.72
Emerging Asia	1.01	5.87	0.17	0.83	0.93
Eastern Europe	0.13	1.08	0.12	0.88	0.85
Other developing countries	0.18	1.07	0.17	0.83	0.90

Sources: United States Treasury International Capital System; Bloomberg; Ahearn, Gritever, and Warnock (2004)

Table 3

### COUNTRIES INCLUDED IN GROUP CLASSIFICATIONS OF FOREIGN STOCK MARKETS USED IN TABLES 2, 4, AND 5

<u>Major foreign industrial countries</u>	<u>Emerging markets:</u>
Canada	<u>Latin America</u>
France	Argentina
Germany	Brazil
Italy	Chile
Japan	Mexico
United Kingdom	Peru
<u>Other advanced economies</u>	Venezuela
Australia	<u>Emerging Asia</u>
Austria	China
Belgium	India
Denmark	Indonesia
Finland	Korea
Hong Kong	Malaysia
Ireland	Philippines
Israel	Taiwan
Netherlands	Thailand
New Zealand	<u>Eastern Europe</u>
Norway	Czech Republic
Portugal	Hungary
Singapore	Poland
Spain	Russia
Sweden	<u>Other developing countries</u>
Switzerland	Egypt
	South Africa
	Turkey

Note: The sum of the capitalization of the U.S. stock market and of the stock market of the countries listed above corresponds to 97 percent of the world stock market capitalization.

only 42 cents of every dollar in the U.S. stock market (column B, Table 2). Interestingly, the analysis in the previous section showed that, under reasonable assumptions regarding risk aversion, the share of domestic stocks in the U.S. portfolio should be around 40 percent. The actual weight of the domestic market in the U.S. portfolio is more than double that. Thus, it appears safe to say that home bias continues to influence U.S. investment decisions.

A natural measure of bias can be constructed based on the figures in Table 2.<sup>7</sup> The first step is to compute the relative weight of a given foreign market in the U.S. portfolio by dividing the weight in the U.S. portfolio (column A) by the weight in the world portfolio (column B). The relative weight is displayed in column C. The bias is described by the following expression:

$$\text{Bias} = 1 - \frac{\text{Share of foreign stock market in U.S. portfolio}}{\text{Share of foreign stock market in world market capitalization}}$$

By definition, bias is zero when the share of a given regional stock market in the U.S. portfolio is equal to its share or weight in the world market capitalization. The closer this indicator is to one, the larger the bias will be. In the U.S. stock market, the formula produces a negative number for U.S. stocks, -0.97, or a negative bias. In other words, U.S. investment still displays home bias because it favors domestic stocks.

The results regarding the levels of bias in 1997 and 2004 reveal some interesting features.<sup>8</sup> As the table shows, the bias in U.S. equity investment overall clearly declined from 1997 to 2004. There is, however, a clear geographic pattern in the evolution of the bias, and investors have become even more reluctant to invest in certain foreign regions. Major industrial countries experienced the greatest percentage decline in bias (-10.97 percent), followed closely by the Asian emerging markets (-10.91). In contrast, the bias toward stocks in Latin America remained constant, and the bias toward stocks in Eastern Europe increased by 3.5 percent.<sup>9</sup>

In short, bias in U.S. investment has declined with respect to some regions but not to others. The next obvious question is, why?

#### **IV. DETERMINANTS OF THE GEOGRAPHIC PATTERN OF U.S. INTERNATIONAL EQUITY INVESTMENT**

This section examines three factors that can potentially explain why U.S. investors have become more inclined to invest in some foreign markets but not others. The first factor is a broad category of institutional elements, ranging from regulatory issues to property rights. The second factor is the level of returns provided by foreign markets. The third factor is the opportunity of risk diversification, or the extent to which certain foreign stocks can be seen as a good hedge against adverse fluctuations in the domestic business cycle. Diversifying risks has likely played a key role in changing the geographic pattern of U.S. investments in foreign stocks.

### *The influence of institutional factors*

Institutional factors can be broadly defined as the set of issues that characterize a business environment. They relate to the regulatory framework and law enforcement, and how the two react with one another. As U.S. foreign equity investment surged during the 1990s, institutional factors in many foreign economies were also changing dramatically—suggesting a potential link between the two trends.

Two elements were especially important in the evolution of institutional factors during the 1990s. First, many countries liberalized capital flows. Some countries significantly eased restrictions caused by taxation and limits on repatriation of capital. Many countries cut restrictions on foreign ownership of companies operating in sectors previously considered “strategic,” such as mining, energy, and telecommunications. Until recently, strategic sectors could only receive investments funded by domestic capital.

The second important institutional factor is property rights. They influence capital flows through a set of rules that secure the private ownership of assets and that guide a lawful and efficient resolution of business issues such as insolvency. Property rights have been improving steadily in many emerging markets, particularly in economies that have been moving toward market-oriented economic systems.

Measuring the degree of capital liberalization and of property rights is not a straightforward task due to data limitations and the lack of consensus regarding a methodology to measure these variables. This analysis uses the degree of openness in trade as a proxy for the higher mobility of capital flows (Penn World Tables). The analysis uses World Bank data on the number of years required to resolve insolvency as a proxy for property rights. Resolving insolvency begins with filing for insolvency in court and ends with the resolution of distressed assets.<sup>10</sup>

Is there a link between these institutional factors and changes in U.S. investment bias? In other words, are changing institutional factors partly responsible for the tendency of U.S. investors to change the way they weight a given foreign market? Table 4 sheds light on the issue. The second column in the table reports the percentage change in the bias of U.S. equity investments from 1997 to 2004. A negative number, as in the case of major industrial economies, means the bias has

declined (in this case by 10.97 percent). U.S. investors now allocate a share of their portfolio to stocks of foreign major industrial economies that is closer to the share allocated in the world benchmark portfolio. In contrast, the bias against stocks from Eastern Europe has increased 3.5 percent since 1997, reflecting even more aversion on the part of U.S. investors to this region.

Clearly, the 1990s were characterized by widespread movement toward greater openness in trade, treated here as a proxy for the liberalization of capital flows (Table 4, column 3). However, the relationship between openness and the willingness of investors to allocate funds to a particular market is not clear. In Eastern Europe, the degree of openness in trade was dramatic, as reflected in a 132 percent rate of growth in trade. But by the end of 2004, the bias against stock markets traded in this region had actually increased.

Latin America and emerging Asia also experienced dramatic growth in openness—but the attitude of U.S. investors toward these markets has evolved quite differently. U.S. investors still underweight Latin America (a level of bias similar to that observed in 1997), but they have significantly *increased* the share of their portfolio allocated to emerging markets in Asia, despite the Asian crisis of the late 1990s (a decline of 10.91 percent in the bias).

The fourth column in Table 4 shows that property rights, measured by the number of years required to resolve insolvency, are also unable to explain the differentiated evolution of the bias, especially within the group of emerging markets.<sup>11</sup> Countries in the G7 and other advanced economies do a better job securing property rights according to this metric. The time needed to resolve insolvency in advanced economies is less than two years. This was perhaps one the factors that promoted a greater appetite of U.S. investors for stocks traded in these economies. However, while Eastern Europe scored higher in this criteria than emerging markets in Asia (2.2 versus 3.2 years to resolve insolvency), it was emerging markets in Asia—not in Eastern Europe—that experienced a remarkable increase in their share in U.S. investments.

Overall, institutional factors do not provide a satisfactory explanation for recent developments in the geographic pattern of U.S. foreign equity investments.

*Table 4*  
**CHANGE IN BIAS AND INSTITUTIONAL FACTORS**

Region	Change in bias between 1997 and 2004 (percent)	Change in openness during 1990's (percent)	Time to resolve insolvency in 2004 (years)
Major foreign industrial countries	-10.97	19.94	1.0
Other advanced economies	-7.37	31.30	1.8
Latin America	0.42	45.76	6.1
Emerging Asia	-10.91	53.84	3.2
Eastern Europe	3.50	132.10	2.2
Other developing countries	-7.82	37.21	2.4

Sources: Penn World Tables, World Bank, and author's calculations

### *The role of returns*

A second factor might shed light on this issue—the level of returns of foreign stocks. In principle, markets offering higher average returns are more attractive than other markets and thus might explain the greater success of certain foreign markets in attracting U.S. capital.<sup>12</sup> However, as discussed in Section II, in addition to caring about expected gains, investors are also wary of the volatility of returns.

Ideally, this analysis should focus on an indicator that takes into account both elements—the level of returns and their volatility. The Sharpe ratio is an indicator of expected returns, which is frequently used in investment analysis to compare the performance of portfolios. The Sharpe ratio is defined as the expected return  $R$  in excess of the return  $R_f$ , which would be earned by investing in a safe, risk-free asset, for each percentage point of the total return volatility  $\sigma$ :

$$S_r = \frac{R - R_f}{\sigma}$$

In this analysis, a country-specific Sharpe ratio for stock market returns is computed using average returns as a proxy for expected returns. The average U.S. federal funds effective rate is used as a proxy for the risk free rate  $R_f$ . Stock market returns are based on the MSCI index that includes reinvested dividends, and the computation uses

Table 5

## CHANGE IN BIAS, RETURNS, AND RISK

Region	Change in bias between 1997 and 2004 (percent)	Return adjusted for volatility (Sharpe ratio)	Betas
Major foreign industrial countries	-10.97	0.21	1.01
Other advanced economies	-7.37	0.40	1.06
Latin America	0.42	0.19	1.38
Emerging Asia	-10.91	-0.07	1.06
Eastern Europe	3.50	0.24	1.84
Other developing countries	-7.82	0.28	1.18

Source: Author's calculations

monthly data corresponding to the period from January 1993 to December 2004. The focus on this more recent sample allows the use of MSCI data on emerging market returns. The regional Sharpe ratio is a weighted average of each country's stock market Sharpe ratio.<sup>13</sup>

If returns drive investment allocations, then one would expect to observe a decline in the bias toward those regions with a higher Sharpe ratio. In other words, everything else equal, higher returns (adjusted for their volatility) would lead U.S. investors to increase the weight of that particular regional stock market in their portfolio. However, there is no conclusive evidence on the influence of these volatility-adjusted expected returns, as captured by the Sharpe ratio. The second and third columns in Table 5 illustrate this point. The second column reproduces the level of change in the bias in investment allocations, and the third column displays the Sharpe ratio corresponding to each group of countries.

It is clear that a high Sharpe ratio might have played a role in the decline in the bias toward stocks of the other advanced economies: The bias declined by 7.4 percent, and investors were rewarded with the highest Sharpe ratio in the sample during the period (equal to 0.4). Emerging markets in Asia, however, provide a remarkable counter example. U.S. investors increased their exposure to stocks traded in this region (resulting in a decline in the bias of 10.9 percent) but were not rewarded with higher returns. They extracted on average a negative

excess return (Sharpe ratio equal to -0.07). In fact, they would have been better off investing in a risk-free asset with a certain return equal to the effective federal funds rate.

The way the Sharpe ratio is constructed might explain its failure to provide a clear diagnostic of the role played by returns. The statistics are supposed to capture *expected* returns, whereas average observed returns are being used as a proxy. Therefore, this indicator is only a rough guide for investors' expectations at the beginning of the period under consideration, 1993-2004. However, by 2004 a vast amount of new information had been revealed. For instance, the Asian crisis had already occurred. The data show that even after taking this information into account, U.S. investors were still willing to increase the stocks of emerging Asia in their portfolio.

There is yet another issue that might shed light on the limited ability of the Sharpe ratio to explain the evolution of regional preferences in investment allocation. Stock markets in major foreign industrial economies and in Eastern Europe have delivered similar returns adjusted by the volatility (they have roughly identical Sharpe ratios). However, investor perceptions about these markets might still be fundamentally different. The issue is that stock markets in Eastern Europe are likely considered more risky, but this aspect is not being captured by the data on average observed returns used to construct the Sharpe ratio. Specifically, investors might have anticipated that Eastern European markets would perform poorly—worse than stocks in major industrial countries—precisely during downturns in the U.S. business cycle. The objective of risk diversification might be playing a role in the differentiated preferences of U.S. investors toward assets in industrial countries and in emerging markets.

Summing up, neither institutional factors nor returns, as measured by the Sharpe ratio, can tell us why bias in U.S. investment has declined for some regions but not for others. A more compelling explanation may lie in risk diversification.

*The importance of risk diversification*

A third factor that could be driving the geographic pattern in U.S. foreign equity allocations is risk diversification. One would expect that the more important risk diversification is in investor behavior, the more attractive less risky assets will seem. Put differently, assets are more attractive to risk-averse investors if they are perceived as a good hedge against the consequences of adverse business cycle fluctuations. Therefore, one should observe a decline in the bias—and an increase in the weight in the U.S. portfolio—toward stock markets that offer such protection.

To understand the role of risk diversification, it is useful to return to the concept of a benchmark world portfolio, which was discussed in Section III. In this benchmark, the weight received by the stock market in each individual country is precisely its share in the world market capitalization. The returns of this world portfolio can be measured by the MSCI world stock market index.<sup>14</sup> As in the case of the benchmark market returns captured by the S&P 500, the returns on this world benchmark portfolio are uncertain. Hence, even in the case of this fully diversified portfolio, there is some risk exposure because returns can be negatively affected during bad times in the world economy.

The crucial point is that some foreign stock markets are *riskier* than the world benchmark portfolio. These riskier markets will still attract funds from investors who are less risk averse and who design their investment strategy to “beat” the market. Alternatively, more risk-averse investors will underweight risky assets and increase the share of safer assets in their portfolio.

To investigate whether the distinction between risky and safer assets can explain the geographic pattern in the growth of U.S. foreign stocks, it is necessary to look at indicators that measure the amount of risk in each foreign stock market. This can be accomplished by examining excess returns—that is, that part of the return that is above the return of a safe, risk-free asset—which can be interpreted as a compensation for risk. The riskier the asset, the larger is the expected return or compensation from holding that asset.

A relative measure of risk can then be devised by looking at the relationship between an individual market’s excess returns and the excess returns in the world benchmark portfolio. For instance, if the

excess return of an individual market is, on average, twice that of the world benchmark, then we can say that investors in that particular market are exposed to twice as much risk.

The factor that scales the amount of risk is what financial analysts call the *beta* of the asset or of a given equity market.<sup>15</sup> A beta equal to one means that by investing in a particular foreign stock market investors are exposed to the same amount of risk they would face by spreading their investments across a variety of markets, assigning the same weights as in the world benchmark allocation. A beta higher than one means that investors are deviating from the fully diversified benchmark and thus are exposing themselves to more risk by investing in that given market.

The betas of each country's stock market  $i$  are calculated by running the following ordinary least squares regression of the country-specific stock market return on the world stock market return (in both cases subtracting the risk-free rate):

$$R_{i,t} - R_{f,t} = \alpha_i + \beta_i(R_t^W - R_{f,t}) + \varepsilon_{i,t},$$

where  $\varepsilon_{i,t}$  is a random term with mean zero and uncorrelated with the world excess return  $R_t^W - R_{f,t}$ . With each country-specific beta in hand, weighted group-specific averages are computed and results are provided in column 4 of Table 5.

If risk diversification is an important factor driving investment decisions, then one would expect that the willingness to invest abroad should become particularly strong toward those markets with *lower* betas. A decline in the bias toward these safer markets should be observed. In fact, the data suggest a relationship between the evolution of the geographic bias and the level of betas, precisely along the lines described above. Specifically, the decline in the bias in U.S. investment was typically observed in those foreign stock markets with low quantities of risk or low betas.

There are some interesting points regarding the group-specific betas, as reported in column 4, Table 5. The betas of the groups of major foreign industrial countries (= 1.01), other advanced economies (= 1.06) and emerging Asia (= 1.06) are very close to one and in fact are not statistically significantly different than one. Therefore, by investing in these three markets, U.S. investors are achieving levels of risk diversification similar to that of the world benchmark, a fully diversified portfolio.

These results corroborate the interpretation that investors will favor foreign equity markets that offer better opportunities of risk diversification, captured by low betas. In particular, the findings provide at least a partial explanation for the conclusion that U.S. investors have increased the weight of Asian emerging markets in their portfolio, despite disappointing returns up to 2004. In the 1993-2004 period, the returns of these stocks were quite volatile but not exceptionally risky. They did not tend to perform more poorly than the global market as a whole during bad times of the world economy, precisely what is being captured by a low beta.

In contrast, regions like Latin America and especially Eastern Europe have very large betas (1.38 and 1.84, respectively). Investing exclusively in each of these regions' stock markets would be an investment strategy that is significantly riskier than diversifying according to the world benchmark portfolio. This feature provides some rationale for the evolution in the bias in U.S. investment toward these regions. Investors have either maintained the extent to which they underweight stocks (Latin America) or have decreased even further the share of these stocks in their foreign investment (Eastern Europe, an increase of 3.5 percent of the bias).

Summing up, the bias in U.S. foreign stockholdings—the extent to which the U.S. portfolio underweights foreign stocks—has declined for foreign markets that offer better opportunities of risk diversification, specifically for countries in the G7, other advanced economies, and Asian emerging markets. Thus, risk diversification may well explain the increased shares of major industrial countries, advanced economies, and emerging Asia stocks in the U.S. portfolio of foreign equity—as well as the decline in bias toward these groups of countries.

## V. CONCLUSIONS

This article discussed the recent trends in U.S. investment abroad, focusing on its fastest growing category, investments in foreign corporate stocks. Despite the increased willingness to invest in foreign assets, U.S. investors continue to underweight foreign stocks in their portfolio. Thus, there is still a bias against investing abroad. While home bias is not necessarily a sign of irrational behavior, strong empirical evidence suggests that investors would benefit from a further decline in bias. The

past performance of both domestic and foreign stock markets indicates that greater international portfolio diversification can lead to higher average returns that are less volatile.

Overall, the bias toward foreign markets has declined. But in some cases bias has remained stable (Latin America) or become even stronger (Eastern Europe). This article analyzed several factors that could help explain investor preferences and why their evolution has not been uniform across different regions.

Neither institutional factors nor the level of returns shed much light on the issue. Rather, the explanation seems related to the objective of diversifying risks. The recent trends in the geographic allocation of U.S. foreign equity investment can be at least partly explained by investors searching for assets that provide a good hedge against adverse turns in the U.S. business cycle. The empirical investigation showed that the foreign markets that offer better opportunities for risk diversification are in three economic regions of the world: major industrial countries (G7), other advanced economies, and emerging Asian markets.

It is perhaps a little surprising that foreign industrial economies are among those gaining the favor of U.S. investors because they provide good opportunities of risk diversification. After all, the business cycles of these countries are more synchronized with the U.S. business cycle than those of emerging markets. Hence, during bad times in the U.S. economy, stock markets in other industrial countries would most likely also perform poorly—and thus would not function properly as a hedge against adverse fluctuations in income.

The data show, however, that stock markets in industrial countries are quite resilient to adverse turns in the U.S. and world business cycles. More precisely, their relative performance during these events is better than that of emerging markets. In that sense, industrial countries assets do provide good opportunities for risk diversification.

These observations leave an open question: Why do emerging markets, despite their more differentiated economies, contribute less to risk diversification? The explanation could lie on the insufficient level of development of their domestic capital market. Or perhaps investors regard these assets as a source of short-term gain—hence their returns are negatively affected by the intrinsic volatility of capital flows to these regions. These issues deserve further research.

## APPENDIX

TABLE A.1 - COUNTRIES INCLUDED IN GEOGRAPHIC REGIONS IN CHART 4

<u>Africa</u>	<u>Asia</u>	St. Pierre and Miquelon	<u>Europe</u>
Algeria	Afghanistan	Tonga	Albania
Angola	Bahrain	Tuvalu	Armenia
Ascension Island	Bangladesh	Vanuatu	Austria
Benin	Bhutan		Azerbaijan
Botswana	Brunei	<u>Americas</u>	Belarus
Burkina	Burma	Canada	Belgium
Burundi	Cambodia		Bosnia and Herzegovina
Cameroon	China	<u>Caribbean</u>	Bulgaria
Cape Verde	East Timor	Anguilla	Channel Islands and Isle
Central African Republic	Hong Kong	Antigua and Barbuda	of Man
Chad	India	Aruba	Croatia
Comoros	Indonesia	Bahamas	Cyprus
Congo (Brazzaville)	Iran	Barbados	Czech Republic
Congo (Kinshasa)	Iraq	Bermuda	Denmark
Cote d'Ivoire	Israel	British Virgin Islands	Estonia
Djibouti	Japan	Cayman Islands	Finland
Egypt	Jordan	Cuba	France
Equatorial Guinea	Korea	Dominica	Georgia
Eritrea	Kuwait	Dominican Republic	Germany
Ethiopia	Laos	French Guiana	Gibraltar
Gabon	Lebanon	French West Indies	Greece
Gambia	Macau	Grenada	Hungary
Ghana	Malaysia	Haiti	Iceland
Guinea	Maldives	Jamaica	Ireland
Guinea-Bissau	Mongolia	Montserrat	Italy
Kenya	Nepal	Netherlands Antilles	Kazakhstan
Lesotho	North Korea	St. Kitts and Nevis	Kyrgyzstan
Liberia	Oman	St. Lucia	Latvia
Libya	Pakistan	St. Vincent and the	Lithuania
Madagascar	Philippines	Grenadines	Luxembourg
Malawi	Qatar	Trinidad and Tobago	Macedonia
Mali	Saudi Arabia	Turks and Caicos Islands	Malta
Mauritania	Singapore		Moldova
Mauritius	Sri Lanka	<u>Central America</u>	Monaco
Morocco	Syria	Belize	Netherlands
Mozambique	Taiwan	Costa Rica	Norway
Namibia	Thailand	El Salvador	Poland
Niger	United Arab Emirates	Guatemala	Portugal
Nigeria	Vietnam	Honduras	Romania
Reunion	Yemen	Mexico	Russia
Rwanda		Nicaragua	Serbia and Montenegro
Sao Tome and Principe	<u>Australia and Oceania</u>	Panama	Slovakia
Senegal	Australia		Slovenia
Seychelles	British Indian Ocean	<u>South America</u>	Spain
Sierra Leone	Territory	Argentina	Sweden
Somalia	Federated States of	Bolivia	Switzerland
South Africa	Micronesia	Brazil	Tajikistan
St. Helena	Fiji	Chile	Turkey
Sudan	French Polynesia	Colombia	Turkmenistan
Swaziland	Kiribati	Ecuador	Ukraine
Tanzania	Marshall Islands	Falkland Islands	United Kingdom
Togo	Nauru	Guyana	Uzbekistan
Tristan da Cunha Island	New Caledonia	Paraguay	Vatican City
Tunisia	New Zealand	Peru	
Uganda	Palau	Suriname	
Western Sahara	Papua New Guinea	Uruguay	
Zambia	Samoa	Venezuela	
Zimbabwe	Solomon Islands		

Note: Geographic regions are defined by the U.S. Treasury International Capital System.

## APPENDIX (cont.)

*Table A.2*

## COUNTRIES INCLUDED IN REGIONS BY ECONOMIC DEVELOPMENT IN CHART 5

Advanced economies

Australia	Italy
Austria	Japan
Belgium	Luxembourg
Canada	Netherlands
Denmark	New Zealand
Finland	Norway
France	Singapore
Germany	Spain
Hong Kong	Sweden
Iceland	Switzerland
Ireland	United Kingdom

Caribbean financial centers

Bahamas
Bermuda
British Virgin Islands
Cayman Islands
Netherlands Antilles
Panama

Emerging markets

All other countries for which data is available

Note: Cyprus, Greece, Israel, Portugal, South Korea, and Taiwan are included in advanced economies in 2004, as defined by the U.S. Treasury International Capital System.

## ENDNOTES

<sup>1</sup>By the end of 2004, private investment corresponded to 97 percent of the total U.S. foreign asset position.

<sup>2</sup>The countries included in each classification are listed in the appendix, Tables A.1 and A.2. A detailed description of cross-border investment in securities is available in Bertaut and Grier (2004).

<sup>3</sup>Lewis (1999) uses this methodology to examine home bias in equity investment using data that cover the period 1970-96.

<sup>4</sup>Notice that the average share of foreign stocks in the U.S. portfolio since 1970 is probably even lower than 12 percent, since investment in foreign stocks displayed sluggish growth until the 1990s. The computation of the actual average share is not possible due to lack of historic data on regional investment allocations.

<sup>5</sup>Karolyi and Stulz (2003) discuss the theoretical framework that underlies this approach.

<sup>6</sup>For example, in Table 2 the group of “major industrial countries” is the G7, excluding the U.S. The corresponding regional market capitalization—which by the end of 2004 reached 31 percent of the world market capitalization—is the sum of the market capitalization of Canada, France, Germany, Italy, Japan, and the UK. Likewise, the amount of funds that U.S. investors allocate to this group of countries is the sum of each individual country’s volume of U.S. investment in their stock market. The same methodology is used for the other regions.

<sup>7</sup>A similar approach is followed by Swiston (2005).

<sup>8</sup>The source of data for bias in 1997 is Ahearne, Grier, and Warnock (2004), who use the same methodology to compute the bias.

<sup>9</sup>Interestingly, by 2004 the level of bias toward stock markets in major foreign industrial countries (G7 excluding U.S.) was still larger than the bias toward emerging markets. In other words, according to this metric U.S. investors still underweight stocks in major foreign industrial countries by a larger amount than they underweight emerging market’s stocks.

<sup>10</sup>These statistics are weighted averages of data for individual countries. The weights are given by the share of each country in the market capitalization of the region to which it belongs.

<sup>11</sup>Data refer to 2004. Ideally, the change in the quality of property rights would be presented, but lack of time series data prevented this calculation.

<sup>12</sup>Bohn and Tesar (1996) investigate this issue.

<sup>13</sup>As in the case of institutional factors, the country weights are given by the share of each country in the market capitalization of the region to which it belongs.

<sup>14</sup>As explained before, this index is constructed as a weighted average of individual market returns, with stock markets with larger market capitalization (relative to the world capitalization) receiving a larger weight.

<sup>15</sup>For a detailed derivation and discussion of assets’ betas, refer to Cochrane (2001).

## REFERENCES

- Ahearne, A., Grier, W., and F. Warnock. 2004. "Information Costs and Home Bias: An Analysis of U.S. Holdings of Foreign Equities," *Journal of International Economics* 62, pp. 313-36.
- Bertaut, C., and W. Grier. 2004. "Recent Developments in Cross-Border Investment in Securities," *Federal Reserve Bulletin*, Winter.
- Bohn, H., and L. Tesar. 1996. "U.S. Equity Investment in Foreign Markets: Portfolio Rebalancing or Return Chasing?" *American Economic Review: Papers and Proceedings*, May, pp. 77-81.
- Britten-Jones, M. 1999. "The Sampling Error in Estimates of Mean-Variance Efficient Portfolio Weights," *Journal of Finance* 54, pp. 655 -71.
- Cai, F., and F. Warnock. 2006. "International Diversification at Home and Abroad," *NBER Working Paper Series* no. 12220, May.
- Cochrane, J. H. 2001. *Asset Pricing*. Princeton University Press: Princeton, New Jersey.
- Karolyi, G.A., and R. Stulz. 2003. "Are Financial Assets Priced Locally or Globally?" in *Handbook of Economics of Finance*, G. Constantinides, M. Harris, and R. Stulz, eds. North-Holland, Amsterdam.
- Lewis, K. 1999. "Trying to Explain Home Bias in Equities and Consumption," *Journal of Economic Literature* 37, pp. 571-608.
- Swiston, A. 2005. "A Global View of the U.S. Investment Position," *IMF Working Paper* 181.