

The factors that determine changes in asset allocation and, hence, capital flows across national borders and sectors have important implications for the conduct of surveillance of global financial markets. The fast growing importance of institutional investors, mostly in mature markets but increasingly in a number of emerging market economies, has two major consequences that are closely interrelated. On the one hand, these nonbank asset gatherers assume sizable market and credit risks, not the least through modern financial engineering, in the form of swaps, derivatives, and so on. Previous issues of the *Global Financial Stability Report* (GFSR) have examined the driving forces behind that development, potential vulnerabilities, and policies that could mitigate adverse consequences. On the other hand, institutional investors are not only exposed to market and credit risks emanating from financial markets, but their investment decisions increasingly “make markets.”

For the purposes of multilateral surveillance, specifically to spot vulnerabilities and potential fault lines at an early stage, it is critical to anticipate and analyze significant trends in the investment pattern of such large institutional investors. While such analysis must be very concrete—and, indeed, Chapter II of the recent issues of the GFSR has increasingly tried to capture the near-term impact of such trends—institutional investors are not a homogenous group. Their investment strategies follow different patterns for a number of reasons: not only are their internal procedures quite diverse, but they also generate capital flows across markets and asset classes. This has important implications for market regulation and related policies, such as the solvency requirement, investment restrictions, consumer protection, and financial stability issues more generally.

This chapter reviews a selection of issues, by no means a comprehensive listing, which directly affect global asset allocation and ultimately the corresponding capital flows. We employ four modules to assess how market discipline, regulation, and financial surveillance procedures may need to adapt to the growing importance and diversity of institutional investors.

Module 1 examines how different institutional investors follow vastly different procedures when allocating assets, reflecting various time horizons, liability structures, and “cultural backgrounds.” For example, when it comes to the purchase of emerging market bonds by international investors, it is important to be able to differentiate between an extensive investment process by a strategic investor with a long-term time horizon and a tactical investment by a “cross-over investor” looking for short-term gains. This module aims to provide some insight into the decision-making process of investors. Understanding the basis for investor decisions is useful when analyzing their asset allocation decisions and related capital flows across borders and asset classes. The increasing dominance of strategic asset allocations, driven more by long-term economic fundamentals, is an important development that should make some asset classes, such as emerging market debt, less prone to “boom and bust cycles.”

In addition, as Module 2 shows, traditional distinctions between different types of investment funds have begun to blur, and a wider range of investors has gained access to investment vehicles that combine traditional asset classes and financial instruments using complex strategies. Such developments may also pose new challenges for supervisors and regulators, who may have to adjust their traditional focus. It is important for multilateral surveil-

lance to not only monitor the asset allocation by a given institutional investor but also, increasingly, the movements “across families of funds” (not just traditional mutual funds) triggered by the household sector and also by other institutional investors (“fund of fund strategies”).

Given the institutional investors’ search for uncorrelated asset classes and the need for investors in areas with chronically slow growth for higher returns elsewhere, the issue of “home bias” has become highly relevant, as illustrated in Module 3. The implications for capital flows are self-evident. What is less known, however, is the degree to which, over the past 15 years, deregulation and the spread of modern portfolio management practices have contributed to a substantial decline in home bias among institutional investors throughout mature economies, particularly with regard to equities. The emergence of highly globalized corporations in a number of medium-sized and smaller countries has de facto led to a decoupling of the national equity index from developments in the national economy.

Finally, Module 4 discusses the implications for financial stability of proposals and potential changes in accounting policy. It addresses the powerful influences of accounting and financial reporting standards on market behavior and asset allocation. It asks whether some accounting policies may act to limit the financial stability gains of recent years that stem from the dispersion of financial risks by reducing the diversity of market behavior across different types of institutional investors.

Module 1. Global Asset Allocation

This module sheds some light on how institutional investors decide to allocate their

assets and how this decision has the potential to affect financial stability. At the center of this process are large institutional investors, mostly nonbanks, in particular, pension funds, insurance companies, mutual funds, and, increasingly, hedge funds.¹

This module outlines how different institutional investors follow vastly different procedures when allocating assets, reflecting different time horizons, liability structures, and “cultural backgrounds.” Understanding the decision-making process of investors is useful when analyzing the type of capital flows across borders and asset classes. Clearly, both the quantity and the quality of cross-border capital flows are important considerations in assessing financial stability.

Global Asset Allocators

Institutions

This section focuses on the institutions at the center of the international financial system that manage total financial assets exceeding \$45 trillion (i.e., 150 percent of OECD countries’ GDP). These include institutional investors in all OECD countries—such as pension funds (public and private, occupational, and personal), insurance companies (life and nonlife, and reinsurance), foundations and endowments, and banks and investment banks—and providers of investment vehicles (including mutual funds and hedge funds). The assets under management of these institutions have almost tripled since the early 1990s, with investment companies’ assets under management increasing by more than five times from 1990 to 2003 (Table 3.1).

Hedge funds have become an increasingly important investor group, with global assets

¹The discussion in this module does not include the household sector’s direct investment in a particular stock or bond. Indirectly, the household sector is behind much of the holdings of institutional investors and, as such, bears the ultimate financial risk (see IMF, 2005a). However, even in the case of mutual funds, which can also be viewed as an investment vehicle, many investment decisions still rest with the portfolio managers within the broad mandate of the funds rather than with the household sector. In particular, in the case of mutual funds with a global mandate, portfolio managers are expected to allocate funds across countries and to constantly review their exposures.

Table 3.1. Assets Under Management by Institutional Investors

	1990	1995	2000	2001	2002	2003	2004
	<i>(In trillions of U.S. dollars)</i>						
Institutional investors	13.8	23.5	39.0	39.4	36.2	46.8	...
Insurance companies	4.9	9.1	10.1	11.5	10.2	13.5	14.5
Pension funds	3.8	6.7	13.5	12.7	11.4	15.0	15.3
Investment companies ¹	2.6	5.5	11.9	11.7	11.3	14.0	16.2
Hedge funds	0.03	0.10	0.41	0.56	0.59	0.80	0.93
Other institutional investors	2.4	2.2	3.1	3.0	2.7	3.4	...
	<i>(In percent of GDP)²</i>						
Institutional investors	77.6	97.8	152.1	155.3	136.4	157.2	...
Insurance companies	27.8	37.8	39.4	45.3	38.4	45.4	44.0
Pension funds	21.2	27.8	52.6	50.1	42.9	50.4	46.4
Investment companies ¹	14.8	22.7	46.3	45.9	42.7	47.2	49.0
Hedge funds	0.1	0.4	1.6	2.2	2.2	2.7	2.8
Other institutional investors	13.6	9.1	12.3	11.7	10.1	11.5	...

Sources: International Financial Services, London; OECD; and IMF staff estimates.

Note: The data may reflect some double-counting of assets, such as those owned by defined contribution pension funds and managed by investment companies.

¹Investment companies include closed-end and managed investment companies, mutual funds, and unit investment trusts.

²Total GDP of OECD countries.

under management almost doubling since 2000, to about \$1 trillion in 2004. Globally, the assets of institutional investors are generally evenly distributed among the main institutional investor classes (insurance companies, pension funds, and investment companies/mutual funds). This is also the case in the United States, but significant differences exist across other countries (Table 3.2).

Insurance companies have a dominant role in Japan, Germany, and the United Kingdom (with pension funds also important in the United Kingdom), while investment companies are key asset gatherers in France and Italy, and pension funds are the main institutional investor class in the Netherlands.

The asset allocation decisions of these institutions have important implications for capital flows and asset prices across asset classes and national borders. Going forward, the size and influence of these institutions can be expected to grow, particularly as some of these institutions are still in their infancy in many countries.² Demographic trends and pension reforms will likely reinforce the

creation of more and larger asset gatherers. Relatively small changes in the portfolios of such institutions may increasingly affect global financial markets. Unlike financial markets dominated by banks, capital markets tend to transmit changes in risk appetite, credit assessments, or perceived economic fundamentals more broadly, much faster, and more directly. This is particularly relevant for small or narrow asset classes, such as emerging market external bond markets, which total about \$265 billion. This is no more than about 0.5 percent of the aforementioned \$45 trillion assets under management of institutional investors in mature economies.

Current Asset Allocations

Traditionally, many investors allocated assets primarily between equities and bonds, with some degree of geographical mix, and typically having a fairly strong home bias (Figures 3.1 and 3.2):

- Pension funds have traditionally invested significantly in equities (see IMF, 2004b). Even today, the average share of equities in their

²See, for example, European Commission (2005).

Table 3.2. Major Industrial Countries: Assets of Institutional Investors
(In billions of U.S. dollars)

	1990	1995	2000	2001	2002	2003	2004
United States							
Insurance companies	1,884.9	2,803.9	3,997.7	4,084.5	4,264.8	4,832.9	5,310.0
Life insurance	1,351.4	2,063.6	3,135.7	3,224.6	3,335.0	3,772.8	4,132.6
Nonlife insurance	533.5	740.3	862.0	859.9	929.8	1,060.1	1,177.4
Pension funds	2,427.3	4,196.9	6,479.3	5,881.4	5,036.6	5,994.2	6,545.3
Investment companies ¹	1,154.6	2,731.5	6,454.9	6,598.7	6,115.0	7,025.6	7,787.8
Japan							
Insurance companies	1,503.5	2,625.6	2,474.6	2,293.5	2,530.4	2,968.7	2,972.8
Life insurance	1,205.3	2,226.6	2,172.6	2,025.9	2,244.7	2,604.0	2,618.6
Nonlife insurance	298.2	399.0	302.0	267.6	285.7	364.7	354.2
Pension funds	371.4	705.6	748.7	696.6	705.9	928.2	872.1
Investment companies ¹	331.7	411.7	462.6	362.3	366.7	493.4	565.5
United Kingdom							
Insurance companies	472.3	838.0	1,475.7	1,420.1	1,492.5	1,736.2	...
Life insurance	387.7	715.9	1,334.2	1,271.4	1,313.4	1,550.3	...
Nonlife insurance	84.7	122.1	141.5	148.7	179.1	185.8	...
Pension funds	532.5	756.4	1,096.0	989.8	936.7	1,190.9	1,464.0
Investment companies ¹	124.4	238.0	441.0	393.2	384.3	547.3	492.7
Germany²							
Insurance companies ³	400.2	566.8	739.1	741.4	783.3	1,009.4	...
Pension funds	150.9	314.5	326.6	324.9	341.4	462.4	...
Investment companies ¹	188.9	369.5	773.9	711.4	799.1	1,062.9	1,184.1
France							
Insurance companies and pension funds	...	642.2	939.6	894.0	1,053.9	1,356.6	...
Investment companies	...	703.5	1,128.2	1,106.1	1,285.8	1,769.1	...
Italy							
Insurance companies	...	107.4	201.4	219.2	297.4	417.1	509.5
Life insurance	...	68.7	155.4	172.8	239.3	343.7	426.0
Nonlife insurance	...	38.7	46.1	46.4	58.1	73.4	83.5
Pension funds	...	39.0	48.8	35.0	50.9	48.7	54.4
Investment companies ¹	...	261.1	737.3	685.9	740.8	960.4	980.5
Netherlands							
Insurance companies	83.4	148.8	219.9	224.8	282.6	354.0	421.0
Pension funds	207.9	308.3	391.7	376.8	433.8	590.7	703.8
Investment companies ¹	32.1	53.8	87.0	72.8	71.5	95.0	105.1

Sources: National flow of funds data; Investment Company Institute; and Watson Wyatt.

Note: For some countries, the data may reflect some double-counting of assets, such as those owned by defined contribution pension funds and managed by investment companies.

¹Investment companies include closed-end and managed investment companies, mutual funds, and unit investment trusts.

²For 1990, data refer to 1991.

³Life insurance companies.

financial assets has remained close to 50 percent, with a convergence across countries in recent years (Figure 3.3).³ Bond holdings amounted to about 32 percent of total assets in 2003, and other assets (including real estate and alternative assets classes, such as private equity, commodities, and, increas-

ingly, hedge fund products and strategies) represent a growing share (about 18 percent, of which 3 percent is real estate).

- Insurance companies hold the highest proportion of fixed-income instruments. The average bond and equity shares remained rather stable between 1997 and 2003, at 57

³Including countries where equities have traditionally represented a large share of the pension fund portfolio, where equity holdings have declined from 60–80 percent to 50–60 percent today.

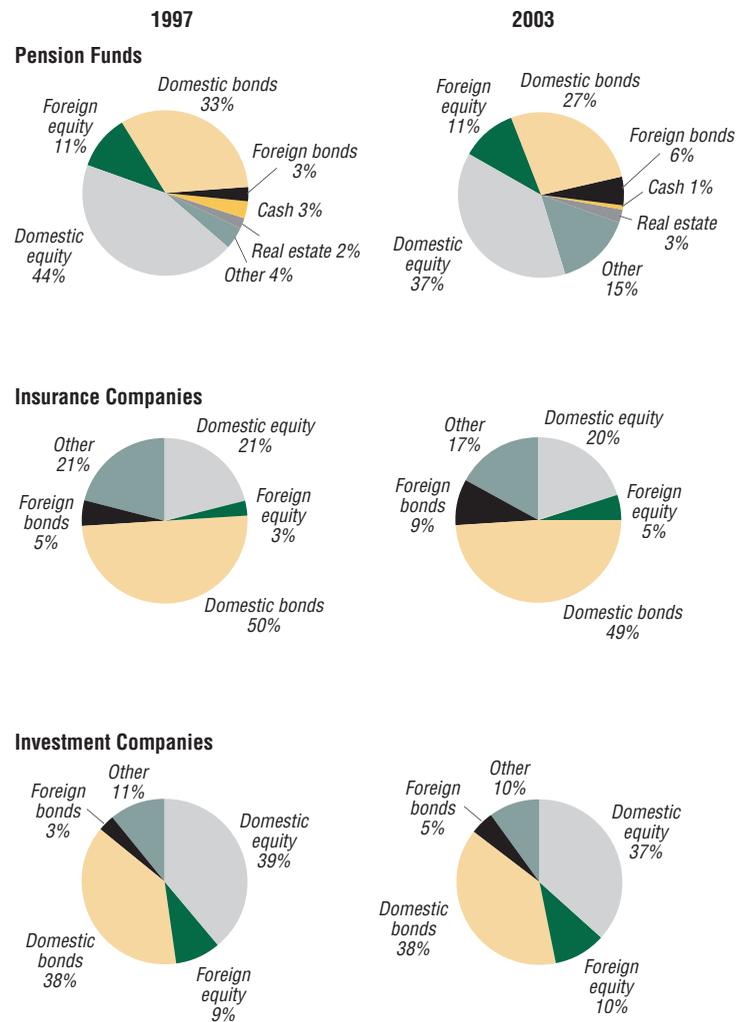
percent and 24 percent, respectively (see IMF, 2004a). However, the convergence described above for pension funds is also evident for insurance companies, as the U.S. insurers' large bond holdings are starting to be matched by large European and Japanese life insurers.

- Investment companies (mainly mutual funds but including other investment vehicles such as hedge funds) hold a fairly balanced portfolio of assets, with about 41–43 percent in bonds and 47–48 percent in equities. The split between bonds and equities did not change much between 1997 and 2003. In contrast with pension funds and insurance companies, the asset holdings of investment companies simply reflect the asset allocation decisions by their shareholders, who are mainly retail investors but also include institutional investors, corporations, and public entities.

In recent years, many global investors have shifted their investment strategies, showing greater interest in alternative asset classes. The falling equity market, and the low-inflation, low-yield environment since 2000, have prompted many institutional investors to seek returns from a more diversified range of asset classes. Moreover, a greater focus on asset classes, and their relative performance, correlation, and volatility characteristics, is increasingly influencing investment strategies. Correlation and diversification benefits are now of particular interest, and (particularly in the United States) have fueled interest in emerging markets and alternative asset classes (such as hedge fund products, commodities, and private equity). For example, in many countries, pension funds, a very conservative investor group, are increasingly placing mandates with broader guidelines, including alternative investments.⁴

The degree of home bias has declined, with foreign assets often reflecting a range of invest-

Figure 3.1. Asset Allocation of Institutional Investors
(In percent)

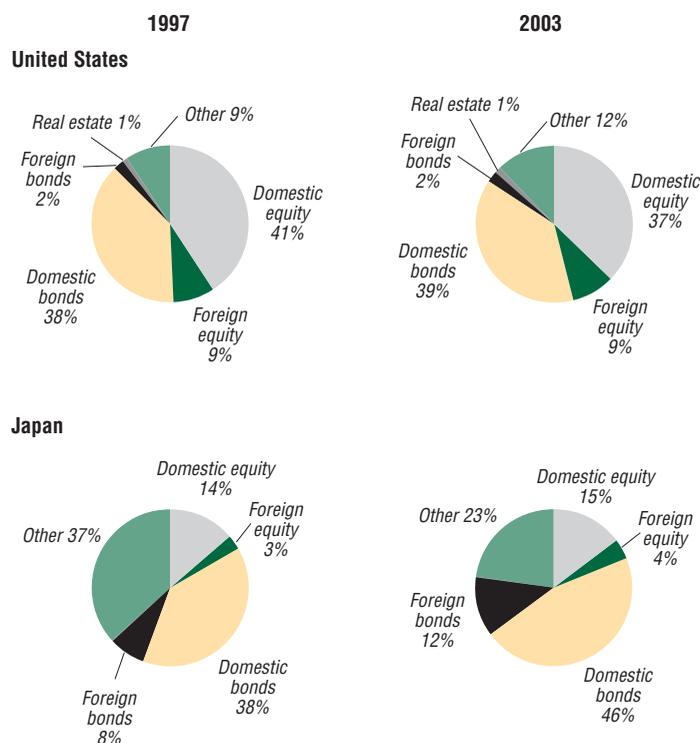


Sources: National flow of funds data; and IMF staff estimates.

Note: Shares computed as market-weighted mean shares of Germany, France, Japan, the United Kingdom, and the United States. "Other" includes commercial loans and credits; financial derivatives; short-term investments; investments in hedge funds, private equity, and commodities; and miscellaneous assets.

⁴See Greenwich Associates (2005); and UBS Global Asset Management (2005).

Figure 3.2. Global Asset Allocation of Institutional Investors by Country
(In percent)



ment objectives (see Module 3 on Home Bias). For all types of institutional investors, the share of foreign assets rose between 1997 and 2003 to an average of about 12 percent (Figure 3.4). Home bias remains somewhat higher for life insurers than for other institutional investors, owing in part to regulatory factors. However, the degree to which geography drives ex ante asset allocation varies across sectors, institutions, and regions. For some sophisticated investors, such as hedge funds, country or regional exposures are increasingly less significant factors in the allocation decision (of course, related national regulatory and tax considerations remain important), but may be implemented at the fund manager level (e.g., as part of global mandates). Nevertheless, many investors still allocate assets and, even more, continue to assess performance against country or regional benchmarks.

Key Influences on Asset Allocation

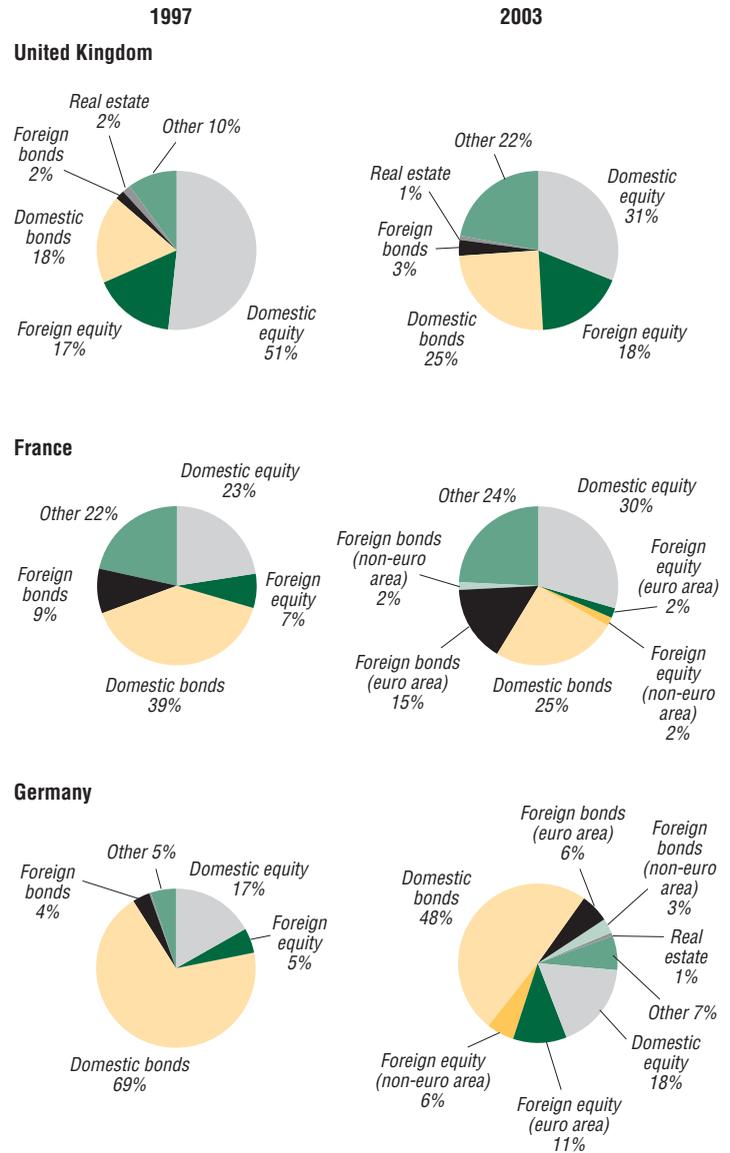
Historically for many investors, including pension funds, the allocation of their assets often did not reflect their liability structures. For example, pension fund managers frequently measured their investment performance against a market index or peer group benchmark. They also typically assumed that a long-term equity premium above bond yields would provide sufficient “excess returns” to address longevity and inflation risks embedded in their long-term liabilities. However, over time risk managers have begun to better understand the composition of their liability structures, ranging from the long-term promise of a defined benefit pension to the various options and guarantees embedded in a complex insurance product, or the less explicit lifetime objectives of an individual investor. For a number of reasons, including uncertainties regarding the liability side of the balance sheet—such as longevity risk—and a shortage of appropriate assets for investment, purely liability-driven asset-liability management (ALM) may never be a realistic option.

Nevertheless, a greater focus on ALM has gained prominence, not only among senior executives of most institutional investors, but also with regulators and supervisors. In reality, however, many other factors influence investors' behavior and asset allocation.⁵

Accounting and financial reporting standards increasingly influence the investment behavior of institutional investors, potentially making their behavior more procyclical. Together with certain regulatory changes, recent accounting changes may lead insurance companies and pension funds away from managing their portfolios in a manner that is consistent with their liability structures. Indeed, the earnings volatility associated with fair value accounting may not always accurately reflect the economic reality of institutional investors' balance sheets or their risk profiles; this may encourage more procyclical market activity, thereby reducing their traditional role as long-term, stable investors and the associated stabilizing effect on financial markets (see Module 4 on Accounting).

Tax rules can significantly influence the asset allocation strategies of institutional and retail investors. Tax policies designed to encourage long-term savings are often viewed as too complex and/or are too frequently adjusted to encourage investors to pursue long-term savings objectives. This is particularly relevant to the long-term needs of the household and pension fund sectors.⁶ In general, a relatively simple and stable tax regime may best encourage households, and their advisers, to develop long-term savings and investment plans. Similarly, in the pension fund industry, tax rules should not penalize firms for building up prudent funding cushions that would be consistent with meeting their long-term liabilities and their rather

Figure 3.2. (concluded)

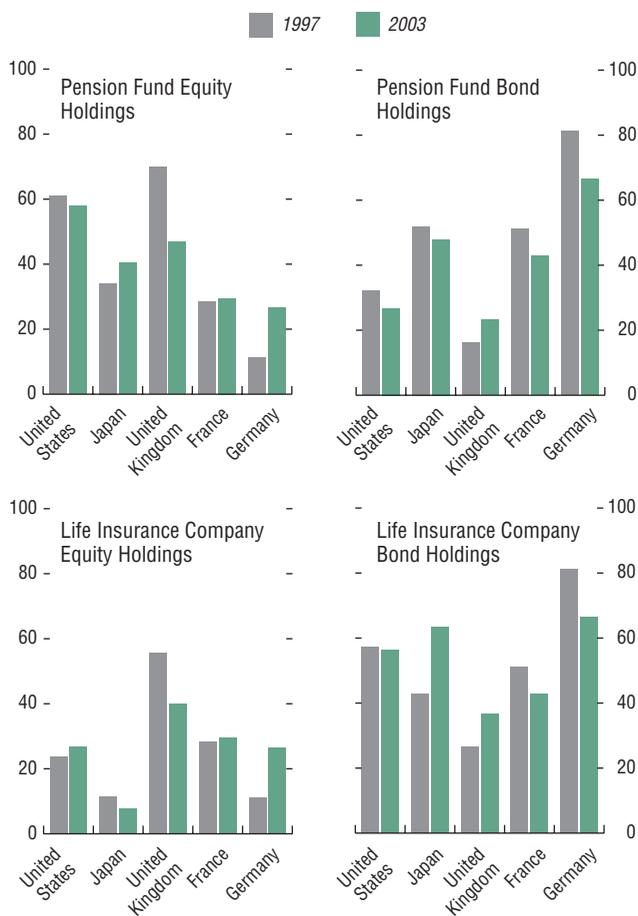


Sources: National flow of funds data; and IMF staff estimates.
 Note: "Other" includes commercial loans and credits; financial derivatives; short-term investments; investments in hedge funds, private equity, and commodities; and miscellaneous assets.

⁵See Moore (2004).

⁶See, for example, Committee on Investment of Employee Benefit Assets (CIEBA, 2004); and United Kingdom, Her Majesty's Stationery Office (2004, p. 237).

Figure 3.3. Equity and Bond Holdings of Pension Funds and Life Insurance Companies
(In percent of total financial assets)



Sources: National flow of funds data; Watson Wyatt; and IMF staff estimates.

stable asset allocation strategies. Recent proposals by the U.S. authorities on pension reform and more continuous funding are welcome in this regard.

Finally, rating agencies have a significant impact on asset allocation decisions in some sectors. This was particularly clear during 2000–02, when ratings pressure led some European insurance companies to sell portions of their relatively large equity holdings. In the pension fund industry, the influence of rating agencies has increased more recently, as the unfunded portion of pension obligations is being seen as a form of corporate debt obligations.

When assessing the factors influencing asset allocation, we should never underestimate important constraints, such as the availability of investments, vehicles, instruments, and adequately deep and liquid markets; or instruments tailor-made to meet specific objectives.

The Decision-Making Process

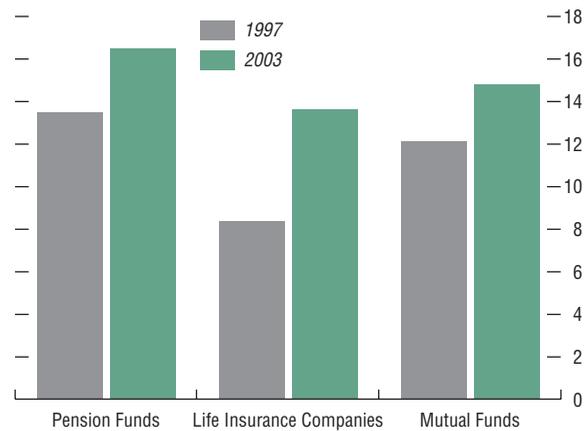
The asset allocation process (i.e., both its design and implementation) is strongly influenced by the institutional arrangements in which it takes place. Market participants have clearly recognized the internal and external factors that have different effects on asset allocation decisions. These include exposure limits set by various guidelines, compensation schemes of portfolio managers, and investment themes that may cause hedging behavior. To appreciate just how these and other factors affect investor groups, we must be clear about how investors differ.

- Bank (including investment bank) proprietary trading units and many hedge funds have short horizons for trading and investment decisions. They are active investors who sometimes employ leveraged investment strategies that capitalize on rapidly changing—sometimes intraday—relative values. However, hedge funds are a diverse investor group that employs a wide range of investment strategies across many asset

classes, and under varying time horizons for investment decisions and returns. While many fixed-income or commodity-trading hedge funds may employ relatively shorter horizons, some equity hedge funds may have holding periods on investments as long as five years. But, by and large, hedge funds and trading desks are able and willing to reach quick decisions and to reverse themselves rapidly if and when necessary. Apart from strategic positions, which are often held on behalf of third parties, such as other profit centers of the institution, trading desks and many hedge funds employ elaborate reporting and risk management systems. Automatic triggers, such as stop-loss orders, and other devices may limit the likelihood of engaging in long-term positions.

- Insurance companies typically have very large strategic holdings of financial assets, with a medium- to longer-term time horizon. They review strategic asset allocation on an annual basis, and rarely use external advisors. For most large insurance companies, meetings between portfolio managers, chief investment officers (CIOs), chief risk officers, and actuaries take place every six months or annually at the group and (frequently) country level. Of course, these managers are monitoring performance and, more important, changes in risk exposures, as measured by Value-at-Risk (VaR) on a much more frequent basis, providing senior management with risk reports on a monthly or weekly basis. At the semiannual or annual investment strategy review meetings, these teams seek to optimize the company's asset allocation strategy, taking into account local constraints such as tax and regulatory regimes, market structures, and broader strategic capital allocation goals that are often related to their different lines of business. Of course, top-down decisions at the group level can be quickly implemented to reflect strategic or significant market changes, such as reductions in global equity exposure driven by market and rating

Figure 3.4. Holdings of Foreign Assets by Type of Institutional Investor
(In percent of total financial assets)



Sources: National flow of funds data; Watson Wyatt; and IMF staff estimates.
Note: Shares computed as market-weighted mean of Germany, France, Japan, the United Kingdom, and the United States.

agency pressures in 2001–02. Insurance companies' increasing exposure to credit in recent years has also implied some convergence in their risk management practices with those of banks, including, in many cases, the hiring of bank risk managers.

- Defined benefit pension funds typically review their asset allocation annually, with a full asset and liability review only every three years, and generally rely more on external advice and expertise. While investment plans may be updated every year to reflect market developments, seldom do such adjustments reflect material reallocations. However, since many pension funds use outside fund managers, such managers generally have authority to alter allocations—based widely on relative judgment—more frequently, often within a predetermined range. Meetings with investment consultants are typically held on a quarterly basis, and tend to reflect a monitoring of established strategies. Key steps in the decision process include (1) an asset/liability study that quantifies the “excess return,” relative to targeted contributions or planned benefit increases, required to meet liabilities; (2) defining risk/return objectives, including accounting and other considerations; and (3) selecting an asset allocation strategy consistent with these objectives, for example, degree of active management or role of alternative asset classes.⁷ The process relies much more extensively on external consultants, particularly for new or more complex asset classes.
- With defined contribution pension schemes, households—rather than the sponsoring company—direct the asset allocation decision, often influenced by auto-enrollment mechanisms, default options, and plan investment options offered by the employer. Once the funds have been invested, the mutual fund manager makes the tactical investment decision.
- In a similar manner, investment companies develop and market a wide variety of funds, with mandates ranging from global asset allocation, and balanced funds, to equity or fixed-income funds, to more specialized funds dedicated to emerging bond markets, or to leveraged buyout companies. With different mandates also come various investment styles, including “top-down vs. bottom-up,” “growth vs. value,” or “active vs. passive.” Shareholders of these funds effectively decide on how to allocate their assets by buying the funds they view as most suitable for their needs. They then continue to adjust their asset allocation decisions by switching between different funds, either within the same family of funds (offered by one investment company) or to other funds.
- However, within the mandates of the funds, the portfolio managers have the responsibility for selecting securities and, in many cases, sector and country exposures. In the case of fixed-income funds, portfolio managers also select duration and credit quality exposures. Usually, in an investment company offering a family of funds in different asset classes, an investment committee develops a consistent global economic and financial view to guide the investment choices of the portfolio managers.
- The growth of different investment funds in various asset classes over time reflects the global asset allocation preferences of the shareholders and the performance track record of these funds.
- A growing priority for investment companies is to better serve the various investment needs of targeted clients, thereby securing a longer-term relationship. The desire for a longer-term relationship has led many mutual fund companies to offer more planning tools to individuals and, in some cases, to provide a variety of more tailored investment vehicles (see Module 2 on Investment Funds).

⁷See Urwin and others (2001).

- The boards of foundations and endowments generally meet on a quarterly basis to review various policy issues, including the asset allocation strategy. Quarterly, or sometimes monthly, meetings with the chief investment officer are used to keep abreast of portfolio performance and tactical deviations from the longer-term strategic asset allocation. Like pension funds, endowments and foundations frequently rely on consultants for investment advice and portfolio construction and monitoring.
- Private equity funds are quite different from other institutional investors insofar as they usually invest in illiquid assets. Private equity funds become strategic investors in companies that may benefit from a strategic redirection, injection of capital, and often new management. Typically, after five to seven years, private equity funds seek to liquidate and realize profits on these investments through public offerings or trade sales of the company.

Among certain institutional investors, particularly pension funds, and foundations and endowments, investment consultants play a significant role in the asset allocation process. Investment consultants advise institutional investors on the “appropriate” allocations, including the selection of portfolio managers and specific asset classes (e.g., small- or medium-capitalization stocks, private equity, real estate, and credit-spread products), based on their investment objectives, risk appetite, and a variety of models developed by such consultants. Even though the ultimate decision rests with the trustees or the board, and the larger and more sophisticated funds have in-house capabilities to decide, execute, and monitor allocations, consultants are often used by these institutions to perform due diligence and select managers, as well as to carry out analytical work related to risk-adjusted return targets

and portfolio construction. However, the incentives of consultants and fund managers are not always aligned with the objectives of investors.⁸ Consultants often rely on transaction-based fees that may encourage greater portfolio turnover. Similarly, the performance of external asset managers is often assessed on a monthly basis and against broad equity benchmarks or indices, which may lead to short-term performance bias and greater herding behavior, rather than a stricter ALM focus.⁹

In sum, in addition to institutional investors’ different liability structures, other differences, such as in investment time-horizon, in frequency of strategic meetings to review asset allocations, or in whether they rely on outside consultants, result in different investment behaviors by such investors. Most important for financial stability considerations are differences in the frequency and the internal effort required to change asset allocation, and whether the changes can be implemented in gradual adjustments.

Conclusions

As mentioned throughout this issue of the GFSR, the asset allocation of investors—mostly institutional investors—and global financial stability are closely connected. Most capital account crises over the last 10 years can be traced, at least in part, to abrupt changes in asset allocation, often in the form of sharp reversals of capital flows. Short-term considerations on the part of institutional investors have at times contributed to the boom and bust cycles that we have seen in emerging markets and elsewhere. Hence, the GFSR has increasingly focused its financial market surveillance on the different aspects of global asset allocation.

Over time, financial market prices and activity reflect and follow economic fundamentals,

⁸Bank for International Settlements (2003); and OECD (2005).

⁹In the United Kingdom, the Myners Review concluded that broad performance measures, such as peer group benchmarks, often incentivize fund managers to simply copy other funds. See Myners (2001).

but it is well known that, in the short run, market prices may deviate from fundamentals quite significantly. Sometimes driven by short-term considerations, such deviations can at times create various types of market turbulence and/or overshooting.¹⁰ Nonetheless, such investors as hedge funds or trading desks serve a useful purpose, not the least because they often provide liquidity and contrarian views just when markets need them the most, that is, when they tend to overshoot in one direction.

However, as a very general rule, if investors were guided by mostly long-term considerations—that is, more or less economic fundamentals—this alone would reduce somewhat the volatility and “noise” in financial markets, and probably some of their vulnerabilities to short-term developments. In other words, on balance, the financial system would be slightly better off if more investors took a long-term view and adhered to economic fundamentals rather than short-term considerations. Of course, financial markets could still suffer serious problems if the global economy, or some of its major parts, went into recession; there is obviously no way to prevent that, short of bringing fundamentals back on track. Equally, a multitude of different investment strategies on the part of different investors helps to avoid herd behavior and ultimately “contagion.”

Based on current trends, global financial markets may very well be on track to be more and more dominated by such investors with a long-term view. As was noted in previous issues of the GFSR, rapidly changing demographics, fundamental policy changes in pension systems toward funded systems, the continuing growth of already large asset gatherers, *ceteris paribus*, should raise the relative importance of long-term strategic, compared with short-term tactical, investors, so that strategic asset allocations by such long-term investors could ultimately have a greater impact on financial

markets over time. In this regard, these institutions’ long-term liabilities constitute a structural advantage, allowing them to act as a stabilizing force.

Against this backdrop, it is all the more important that these secular gains in investor behavior strengthening financial stability are not diminished or reversed through the introduction of financial accounting and reporting standards that may force long-term investors to adopt short-term time horizons—hence the importance of Module 4 in this context.

Somewhat separate, but equally important, is the issue of ensuring that “enough assets” exist for institutional investors, so they may address their duration gaps and meet their long-term investment objectives. Certain asset classes or investment vehicles are likely to be increasingly in demand going forward: long-term, index-linked, and annuity-like fixed-income instruments (to better match longer-term liabilities). In today’s fixed-income environment, the longer we go along the maturity spectrum, the more the market is dominated by government paper. Under these circumstances, two possible implications would be worth noting. First, because the principal supplier for closing the asset gatherers’ duration gap would be the public sector, there would be a likely secular strengthening of demand for such paper, which would raise securities’ prices, lower yields, and/or permit higher budget deficits without a rise in bond yields. Such an unintended consequence of asset liability management may, in turn, widen the scope for expansionary fiscal policy. Second, the predominance of government paper in the long maturities would potentially limit the diversity of the balance sheets of pension funds and insurers by overloading them with such paper. Although it would be highly desirable, the private sector has not stepped in to fill the supply shortage of longer-term paper to date. However, this may reflect the

¹⁰See, for example, Counterparty Risk Management Policy Group II (2005).

current strong liquidity position of the corporate sector worldwide and the relatively low investment returns perceived in many sectors (thereby reducing corporate borrowing needs), as well as the very low cost of short-term credit available to those seeking borrowed funds in recent years.

Module 2. Investment Fund Industry

Investment funds play an important role in the development and functioning of modern financial markets as institutional investors and vehicles channeling savings to capital markets. By broadening access to financial markets and helping investors reach their investment goals, investment funds play a major role in intermediating savings and investment. As such, they may contribute not only to a more efficient allocation of capital and investment but also to financial stability by diversifying investment styles and asset allocations among investor portfolios. This module will analyze the development of investment funds and how they serve the needs of retail and institutional investors. It will highlight some aspects of the transformation that the investment fund industry is experiencing and the tremendous growth potential that many envisage. Finally, it will discuss the challenges that these developments may present.

Development of Investment Funds

Dual Nature of Investment Funds

Investment funds are simultaneously institutional investors and investment vehicles. Their primary purpose is to invest savings using specific investment strategies to allocate assets. However, they are different from other institutional investors. Pension funds or insurance companies invest their own assets, while investment funds invest assets they hold on behalf of their shareholders. Hence, in contrast with other institutional investors, investment funds have no investment-linked

liabilities: gains and losses are transferred to the end-investors, their shareholders.

For investors, investment funds are vehicles, or conduits, that either actively or passively channel savings to financial markets. While different categories of investment funds have distinct characteristics and reflect varying degrees of liquidity, transparency, and cost structures, they share common features that, for investors, offer some advantages over direct investment in capital markets. In particular, they pool funds (savings) from various sources and, through economies of scale and scope, provide investors—both retail and other institutional investors—broader access to financial markets through professionally managed portfolios of financial assets. Investment funds cover numerous asset classes and offer a diversified menu of investment styles and risk profiles, including traditional mutual funds, real estate investment funds, hedge funds, and private equity funds. Combining various funds allows investors to build portfolios using “fund of funds” strategies and may be particularly suitable vehicles for investors seeking international diversification.

Investment Funds as a Source of Diversification

Mutual funds are the main investment vehicle for retail investors and households. Mutual funds offer attractive combinations of liquidity and transparency, and a wide range of investment styles. When associated with tax incentives, mutual funds have proved efficient structures to pursue specific investment objectives, such as life insurance, and education and retirement savings. From the \$12.9 trillion assets held by U.S. retirement accounts, 24 percent of such funds were invested in mutual funds in 2004, and half of those were held through employer-sponsored accounts, in particular 401(k) accounts. In various European countries, where reforms of retirement schemes have been launched recently, mutual funds are promoted as Pillar 2 and Pillar 3 vehicles. With the ongoing integration of European financial markets, a cross-border, portable “European personal pension

Table 3.3. Assets Under Management of Mutual Funds
(In percent of GDP)

	1998	1999	2000	2001	2002	2003	2004
	<i>(In billions of U.S. dollars)</i>						
United States	5,525.2	6,846.3	6,964.7	6,975.0	6,390.4	7,414.4	8,106.9
Japan	376.5	502.8	432.0	343.9	303.2	349.1	399.5
Europe	2,740.7	3,199.3	3,290.3	3,160.7	3,440.0	4,641.2	5,572.0
Emerging market countries							
Asia	305.3	426.9	384.9	392.0	431.6	535.8	703.3
Latin America	140.7	148.8	180.4	191.5	138.6	218.8	273.7
Europe	2.6	4.1	5.7	7.3	19.2	70.6	88.8
	<i>(In percent of GDP)</i>						
United States	63.2	73.9	70.9	68.9	60.9	67.4	69.1
Japan	9.5	11.2	9.1	8.3	7.6	8.1	8.6
Europe	30.5	35.6	39.5	37.8	37.6	41.9	43.8
Emerging market countries ¹							
Asia	13.2	16.4	13.7	13.8	13.8	15.6	18.0
Latin America	8.6	10.5	11.2	12.4	9.6	14.5	16.0
Europe	0.4	0.8	1.0	1.1	2.1	6.1	6.1

Source: Investment Company Institute.

¹Asia includes China, Hong Kong SAR, India, Korea, Malaysia, Philippines, Taiwan Province of China, Thailand, and Pakistan; Latin America includes Argentina, Brazil, Chile, Costa Rica, Mexico, Peru, and Venezuela; Emerging Europe includes the Czech Republic, Hungary, Latvia, Poland, Romania, Russia, the Slovak Republic, and Turkey.

account” is being proposed to complement existing domestic and insurance-based pension products.¹¹ In addition to retail investors, which are the primary investor base, mutual funds are also used by institutional investors, which typically have greater flexibility to tailor fund objectives and risk profiles to meet their particular investment goals, and are frequently held through separately managed accounts.¹²

The mutual fund industry is now a mature industry in the United States, and increasingly so in Europe. However, in Europe, the investment fund industry remains organized largely along domestic lines. European mutual funds are more numerous, but typically smaller in size, on average, than in the United States.¹³

Furthermore, while in most countries a few firms dominate their local market, only a handful of asset managers have a market share of more than 1 percent at the European level. As such, significant room for consolidation exists within the industry. The growth potential of the mutual fund industry is possibly most significant in Japan and certain emerging economies (Table 3.3).¹⁴

Real estate investment funds offer investors a source of diversification, and liquid and transparent vehicles to invest in a variety of real estate assets through companies that often actively manage properties. The U.S. market is the most developed market for real estate investment trusts (REITs), which man-

¹¹See European Fund and Asset Management Association (2005).

¹²An interesting development is the recent launch by a large European corporate of a pension-pooling vehicle, set up as a mutual fund and used by the supplementary pension schemes of its subsidiaries and affiliates.

¹³In early 2005, there were an estimated 28,500 mutual funds in Europe (EU-15), with total assets under management of \$5,132 billion. In the United States, 8,044 mutual funds represent \$8,106 billion of assets under management. For further developments on the situation of the European investment fund industry, see European Commission (2005).

¹⁴In Japan, households continue to exhibit a strong preference for savings products. However, since 1998, following the deregulation of distribution networks, households have started to invest in mutual funds (mainly foreign sovereign bond products). The share of their financial assets in mutual funds has risen to 2.7 percent at the end of March 2005, from 2.0 percent at the end of 1998.

aged \$330 billion assets as of end-2004 in a variety of property sectors. Among the EU-15 countries, assets under management by real estate funds represented around \$175 billion in early 2005. In Japan, J-REITs were introduced in 2001, and although they have expanded rapidly, their aggregate size is still relatively small (approximately \$13 billion).

Hedge funds and private equity funds are also pooled investment vehicles but offer investors access to alternative investment strategies. Their features distinguish them from other investment funds.¹⁵ Hedge funds and private equity funds routinely impose variable, sometimes multiyear, lock-up periods on investors. As a highly heterogeneous group, hedge funds seek investment opportunities across many asset classes and use innovative and often complex investment techniques. Private equity funds focus on venture capital and buyout financing, mostly among unlisted and start-up companies.

The private equity universe is dominated by U.S. and, to a lesser extent, U.K. funds and investors.¹⁶ Among institutional investors, pension funds, and foundations and endowments have traditionally invested in private equity and are estimated to represent 30 percent of private equity fund capital. European institutional investors have shown increased interest in private equity investment in recent years. Amounts raised in Europe in 2004 were nearly 50 percent higher than the previous year, and are expected to rise by about \$50 billion in 2005. To facilitate the broadening investor

base, funds of private equity funds have emerged, particularly in Europe.¹⁷

In Europe, the development of real estate funds, hedge funds, and private equity funds is relatively recent and has lacked a common approach. These funds are not “coordinated funds” (i.e., non-UCITS compliant) and, therefore, do not benefit from the passport that allows mutual funds to be freely sold across borders.¹⁸ Even more than mutual funds, these funds remain fragmented along domestic lines. Significant differences in national structures, tax regimes, and legal backgrounds may have limited the growth of real estate and private equity funds. In various countries, recent changes in the regulatory framework for hedge funds and real estate funds have been implemented, or are being contemplated, in an uncoordinated and heterogeneous way, thereby limiting the ability of these funds to realize greater size and efficiency.¹⁹

A Changing Industry

Changes in Demand

In mature economies, demographic trends and changing pension arrangements are likely to fuel an increasing demand for retirement solutions from institutional investors (i.e., pension funds, life insurance companies, and the investment fund industry), and also individuals, as they bear more direct responsibility to manage their financial affairs. In developing economies, further development of the invest-

¹⁵The performance-based fee structure is an important feature of these vehicles.

¹⁶Out of an estimated \$130–\$135 billion raised in 2004 by private equity funds (final closes, total commitments), more than 70 percent was raised among U.S. investors. Although growing, amounts raised in Europe represented less than 25 percent of the total, with U.K.-based funds accounting for close to 45 percent of private equity capital raised in Europe. See Private Equity Intelligence Ltd. (2005); and Almeida Capital (2005).

¹⁷In various countries, specific fund structures give retail investors access to private equity and venture capital vehicles: U.K.-listed Venture Capital Trusts were introduced in 1994; and in France, Fonds Communs de Placement à Risques and Fonds Communs de Placement dans l’Innovation are among the vehicles available to retail investors.

¹⁸Undertakings for Collective Investment in Transferable Securities (UCITS) are open-ended investment funds that comply with EU regulations, and are freely marketable across the EU.

¹⁹See recent issues of the GFSR for detailed analysis of recent changes in the regulatory framework of hedge funds. The recently announced new regulatory framework for investment funds in Spain will allow domestic sales of hedge funds. In France, the regulatory framework of real estate funds is being reviewed with the view to offering increased transparency and liquidity. Similar changes are expected in the United Kingdom and in Germany.

Table 3.4. Assets of Exchange-Traded Funds
(In billions of U.S. dollars)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
United States	0.5	0.4	10.1	2.4	6.7	15.6	33.9	65.6	83.0	102.1	151.0	226.2
EU-15	...	...	...	...	...	...	...	0.5	5.5	10.4	20.5	34.5
Japan	...	...	...	...	...	...	...	...	6.8	20.9	28.0	29.8
Total	0.5	0.4	10.1	2.4	6.7	15.6	33.9	66.1	95.3	133.4	199.5	290.5

Sources: Lipper; and Morgan Stanley.

ment fund industry would widen investment options available to domestic and international investors, and more generally contribute to an efficient global allocation of capital.

The growing demand for investment funds is also becoming more diverse and sophisticated. Investors increasingly seek investment products and strategies that maximize the likelihood of meeting specific investment objectives or asset and liability targets, including retirement. Consequently, renewed attention is being given in the investment process to asset allocation and diversification, absolute performance, and the stability of performance. This more sophisticated approach to investment is already significantly embraced by many institutional investors, but is evolving more slowly to include retail investors.

New Investment Products

Exchange-traded funds (ETFs) are rapidly growing cost-effective investment vehicles that offer increased diversification opportunities to a variety of retail and institutional investors. ETFs are investment companies, most often mutual funds or unit investment trusts invested in portfolios of equities and other instruments.²⁰ Total assets under management with ETFs are estimated to be about \$294 bil-

lion globally at the end of 2004, with U.S. ETFs accounting for more than 75 percent of the market. In Europe, ETFs developed with the introduction of the euro, giving investors access to euro area “blue chips” and industry sectors through euro area equity indices. In Asia, most ETFs are concentrated in the Japanese market (Table 3.4).²¹ Increased diversification possibilities are available with the launch of more equity ETFs tracking sectors, different investment styles and country indices, and with the supply of ETFs expanding to other asset classes, such as fixed-income securities. For institutional investors such as pension funds, bond ETFs may prove efficient vehicles to manage duration gaps and liquidity with reduced costs. New and increasingly complex forms of ETFs are also being developed, from commodity ETFs (e.g., gold) to leveraged, active, and even so-called “intelligent” ETFs (the active ETFs being managed by portfolio managers, and the “intelligent” ETFs adjusting their composition with market developments, according to proprietary investment algorithms).

The distinction between actively and passively managed funds is being increasingly blurred by the development of ETFs, which may have implications for financial stability.²²

²⁰In contrast with “traditional” mutual funds, ETF shares can be purchased and sold among investors intraday, allowing investors to trade a portfolio of underlying securities in a single transaction.

²¹In December 2004, the EMEAP group announced the launch of a second “Asian Bond Fund” initiative (ABF2), a set of nine index bond funds that will invest in sovereign and quasi-sovereign bonds denominated in the local currencies of participating countries: China, Hong Kong SAR, Indonesia, Korea, Malaysia, the Philippines, Singapore, and Thailand. Structured as ETFs, these funds are expected to be accessible to private investors in the coming months.

²²In the pension fund industry, passively managed portfolio components were estimated to represent around 35 percent in the United States, 30 percent in the United Kingdom, and 10–20 percent in continental Europe (Bank for International Settlements, 2003).

Fears have been expressed that increased use of index funds may reduce market efficiency, especially the price discovery process, facilitate the possible overshooting of markets through investment in procyclical fads or yesterday's winners, and fuel destabilizing price dynamics, particularly because ETFs can be sold short. These concerns are not necessarily misplaced, but they should not detract from the many benefits that ETFs can provide to a variety of investors as tax-efficient and cost-effective investment vehicles. Furthermore, by enabling investors to quickly rebalance portfolios and reallocate across specific sectors, ETFs also serve as a tool for a more active asset management.²³

Structured investment products have benefited from an environment where the search for yield and capital preservation remain dominant themes. Structured products can be broadly defined as financial products offering specific payout profiles, based on the performance of a basket of reference assets and/or indices (e.g., equities, bonds, currencies or commodities, and, more recently, hedge fund performance). Such products are usually constructed by banks and investment banks, and are often packaged into medium-term notes or investment funds, typically closed-end funds. The vast majority of these products can be described as combinations of two main investment objectives: capital preservation (at the cost of lower returns) and yield (income

enhancement (with higher risk on the capital invested). Structured investment products are now routinely offered to retail investors and, in the current low-yield environment, they have attracted significant demand, particularly in Asia, Australia, and Europe.²⁴ However, the complexity of the underlying structures and payout profiles is difficult to understand for most investors. In various European countries, concerns about possible mis-selling of such complex products to retail investors in the last few years have led regulators and market participants to focus more on providing investors with adequate information.²⁵ Increased transparency, particularly in the cost structure of the products, would represent a significant improvement and should be encouraged by product providers and regulators.²⁶

The growth of life-cycle funds reflects the increased attention given to asset allocation by the household sector. Life-cycle funds are investment funds, most often funds of mutual funds, offering investors a “prepackaged” asset allocation formula and an automatic rebalancing/reallocation facility.²⁷ In 401(k) and other individual retirement plans, these features give life-cycle funds an advantage over traditional default options (i.e., money market or “stable value”—typically government bond—funds). The growth of life-cycle funds is closely linked to the development of defined contribution pension plans.²⁸ Life-cycle funds also offer a solution to the acknowledged lack

²³See Amenc and others (2004).

²⁴In the United States, where a large variety of investment vehicles are available, investors have shown little interest in structured products. Globally, in 2004, issuance of structured products reached \$130–\$140 billion, according to market research, with European markets representing 59 percent of volume issued, Asia about 32 percent, and the United States a mere 9 percent. Among the EU-15 countries, assets under management with guaranteed/protected funds were estimated to represent 175 billion euros, and were concentrated among a handful of countries (France, Spain, Belgium, and Luxembourg).

²⁵The U.K. Financial Services Authority has updated its guidelines for the sale of a range of structured investment products. In Italy, a voluntary “transparency pact” is being implemented to address these issues.

²⁶See the report of the Counterparty Risk Management Policy Group II (2005).

²⁷Life-cycle funds are typically offered in two different forms. “Target-risk funds” are diversified portfolios built around a predefined risk/return profile and are rebalanced periodically to maintain this profile. “Target-date funds” assume an investor’s tolerance for risk declines as the target-date approaches and periodically reallocate the portfolio to reduce risk. See Porter and Garland (2005).

²⁸According to Lipper, more than 55 percent of defined contribution (DC) plan sponsors offer life-cycle funds in their 401(k) menu, and 37 percent of DC plan participants use these investment vehicles when they are available.

Table 3.5. United States: Growth and Net Assets of Life-Cycle Funds
(In billions of U.S. dollars)

	1999	2000	2001	2002	2003	2004
Assets under management	57.9	63.3	69.2	68.2	101.4	139.7
Net flows	4.7	5.5	6.7	6.8	21.4	24.2

Sources: Lipper; and Morgan Stanley.

of rebalancing in most individually directed investments, a recognized source of drift and failure to meet investment goals. Life-cycle funds are among the fastest growing vehicles in the U.S. mutual fund industry, and they have also started to develop in other countries (Table 3.5).²⁹

On the institutional side, the difficulties encountered by life insurers and defined benefit pension schemes in recent years have highlighted the importance of asset and liability management. The shift in focus, from outperforming a benchmark to minimizing asset and liability mismatches, has prompted the development of new primarily liability-driven investment products by banks and investment providers. Using corporate and government bonds (including index-bonds), and futures and swaps (including inflation swaps), pension funds and life insurers seek to match their projected liabilities. The real novelty lies in the use of lower costs and flexible suites of funds through which the targeted asset allocation is achieved.³⁰ More broadly, the fund structure allows the extension of this liability-driven investment approach to retail investors.

Challenges from the Growing Complexity of Investment Funds

The innovative products and strategies developed by the asset management industry raise a number of new challenges. For fund providers, the growing variety and complexity of investment products highlights the continuing chal-

lenge of providing appropriate investment advice and financial planning. For regulators and authorities responsible for market surveillance and financial stability, the unbundling of investment services, and the blurring of differences between regulated and unregulated investment funds, may call for new approaches in regulation and market surveillance.

Market Surveillance and Regulatory Framework

Regulated investment funds have traditionally not been considered systemically important entities, and have not attracted the attention that unregulated funds (e.g., hedge funds) have. However, as the menu of available funds and strategies grows, traditional distinctions between investment vehicles are becoming increasingly blurred, and as the providers of investment vehicles outsource more investment services, new approaches to market surveillance and possibly regulation may be required.

- Hedge funds and funds of hedge funds have grown rapidly and are becoming mainstream asset management products. Institutional investors seeking uncorrelated asset returns to diversify portfolios are turning to hedge funds and, while direct access remains limited, retail investors are increasingly turning to funds of hedge funds.
- Crossover activities and strategies are being seen among traditional hedge fund and private equity fund providers. Hedge fund managers have also begun to pursue strategies usually considered the core business of traditional asset managers (e.g., long-only equity strategies). More recently, they have also started to offer private equity strategies. Simultaneously, some private equity firms are entering the hedge fund business by establishing proprietary hedge funds, or through fund of funds.
- Faced with increased competition from ETFs and hedge funds, mutual funds are

²⁹In France, target-date funds are the default option in the new *Plans d'Épargne Populaire pour la Retraite*.

³⁰The funds in the suite cover successive duration buckets.

increasingly relaxing investment constraints. In the retail business, a growing number of investment fund providers offer hedge fund–like strategies (including the use of short sales) wrapped into “traditional” mutual fund vehicles.³¹

The outsourcing of key functions in the provision of investment services raises specific risk management and financial stability issues. Cost benefits, economies of scale, and greater efficiency in the conduct of core business activities are the prime drivers of the trend toward the unbundling of the provision of investment services and outsourcing.

- Investment funds are increasingly viewed as the combination of different building blocks, assembled and packaged to fulfill specific investment objectives. Modeling expertise and access to derivative markets are often provided by outside providers, and banks are frequently asked to provide guarantees to investment funds offering capital preservation or other structured product investment vehicles. Through these links, new dependencies and vulnerabilities may develop among institutional investors, market intermediaries, and providers of investment services that may deserve closer attention from regulators and supervisors.
- From a financial stability perspective, an important issue for regulators and investment companies that unbundled key administrative functions, such as custody and settlement services, valuation of assets, and performance measurement, is the ability of such companies to maintain adequate oversight of third party service providers to contain operational risks associated with the outsourced activities, especially when they are delegated to unregulated service

providers. For regulators, concentration risk associated with outsourcing (i.e., a large number of investment firms relying on a limited number of third party providers) is a specific form of operational risk, with possible stability or systemic ramifications.³² For example, as assets under management by investment funds grow, the failure of a custodian could affect a larger number of investment funds, as well as significant amounts of assets and securities, with rippling effects on other market participants. Similarly, as the complexity of financial products develops, third party providers of data and valuation services have increased responsibilities in the functioning of financial markets.

The emergence of a more complex and a potentially more opaque (or at least multi-layered) investment industry may raise new challenges for regulators and public authorities in charge of market monitoring.³³ When considering financial stability issues, it is increasingly important for policymakers and authorities responsible for market oversight and surveillance to be able to identify, track, and understand throughout the production process of investment products (i.e., across asset classes and markets); how various risk components are managed and transferred by investment strategies of both regulated and unregulated entities; and how capital flows are affected by reallocations within and between funds. The traditional supervisory and regulatory focus on investment products and investor protection issues may need to be complemented by a more risk-based/prudential-type monitoring and surveillance approach. Investment products offering similar risk characteristics and implementing similar financial techniques should be subject to

³¹In Europe, the UCITS III directive widens the range of investable assets accessible to mutual funds and increases their ability to use derivatives, and leverage, ultimately allowing regulated funds to implement new, more active and complex investment strategies previously reserved for unregulated vehicles. In various European countries, investment rules for mutual funds are also being relaxed to allow mutual funds to invest in hedge funds and private equity funds.

³²See IOSCO (2005).

³³See Financial Services Authority (2005).

Table 3.6. European Mutual Fund Distribution in 2002
(In percent of mutual fund sale by channel)

	France	Germany	Italy	Spain	Switzerland	United Kingdom
Bank networks	70	64	81	93	41	5
Insurance networks	22	18	9	3	9	12
Independent financial advisers	8	15	2	4	50	76
Others	n.a.	3	8	n.a.	n.a.	7

Source: FERI European Fund Market Yearbook 2003.

the same monitoring process, irrespective of the formal legal status of the investment vehicle. Such a risk-based approach to market surveillance of investment funds would need to take into consideration a wide set of factors, including the liquidity, volatility, and complexity of the underlying strategies and implied risks. With increasing globalization, more cooperation and exchange of information among supervisors and public authorities, as well as with market participants, may be required to effectively identify potential vulnerabilities.

Providing Advice to Investors

As more responsibilities are being transferred to households to directly manage their financial affairs, and new and more complex investment vehicles are available to address these investment needs, the role of investment funds in the provision of investment advice appears increasingly important.³⁴ The availability and scope of investment advice are set to expand but face a series of obstacles:

- The advice generally provided to retail investors rarely goes beyond simple counseling on the features of investment products, and seldom includes advice on asset allocation, and asset and liability management. Real and perceived liabilities from fiduciary responsibilities are typically cited by industry participants as constraints on the ability and willingness of advisors to

offer financial advice, frequently leading them to offer a standard variety of products and limiting their advice to only very general guidance.

- Technological developments offer an opportunity to provide new channels for advice. A growing number of asset managers and fund distributors offer sophisticated Internet-based asset allocation, and asset and liability management tools. These developments have been met with limited take-up thus far, mainly among the better-educated, younger, and moderately well-off professional cohorts. This may reflect investors' difficulties in formulating their long-term goals, and the complexity and excessive variety of the investment products offered.
- The organization of distribution networks, including distributors' compensation schemes, plays an important role in the provision of investment advice and the range of investment products offered to end-investors. Independent distribution networks offering a range of investment funds from different providers are prevalent only in the United Kingdom and the United States, and, to a lesser extent, in Switzerland (Tables 3.6 and 3.7).³⁵ In continental Europe, where asset management firms are often subsidiaries of large financial groups, and bank (and to a lesser extent insurance) networks are by far the main channels for

³⁴See IMF (2005a).

³⁵A feature of the U.S. situation is also the growing role of defined contribution retirement plans as a low-cost distribution channel for mutual funds. See Reid and Rea (2003).

Table 3.7. United States: Mutual Fund Distribution
(In percent of mutual fund assets)

	1980	1990	2000	2003	2004
Discount brokers and fund supermarkets	...	...	15	17	16
Defined contribution retirement plans	7	7	18	18	19
Direct from mutual fund companies	28	20	13	13	13
Professional financial advisers	65	73	54	52	52

Source: Investment Company Institute.

mutual fund distribution, open architecture (i.e., the opening of distribution networks to outside investment products) is expected to broaden the range of investment products and strategies, and foster competition by introducing new fund providers. In most jurisdictions, investors remain reluctant to adopt fee-based compensation schemes, and mutual fund distribution systems are overwhelmingly commission based. Industry participants recognize that these systems are more prone to conflicts of interest, possibly leading distributors and advisers to favor high margin products rather than “appropriate” products, and encourage high turnover, including by frequently offering “new” products.³⁶

Conclusions

Investment funds are likely to grow in size and utilize more complex investment strategies to meet future asset allocation needs of various end-users. As such, they can be expected to play an increasingly important role in shaping financial market dynamics and, therefore, financial stability considerations. This may require that supervisors and other public authorities complement their traditional investor protection approach to investment companies with increased market surveillance. For those regulators and public authorities responsible for financial stability,

new challenges will likely arise in monitoring investment funds, and their interactions with other institutional investors and financial market participants, and understanding the increasingly complex strategies embedded in the investment products they develop. Improving transparency to better assess the risk profiles and cost structures of investment funds would also likely contribute to strengthen market discipline.

Module 3. Home Bias

Recent evidence points to a significant increase in acceptance of foreign assets by investors in most mature market economies between 1990 and 2003.³⁷ Around 1990, the high degree of home bias in mature market portfolios represented an apparently unexploited potential gain in risk-adjusted returns that puzzled academics.³⁸ Part of the paradox has since dissipated. This reduction in home bias is an aspect of globalization that may have important consequences for financial stability across markets. To better understand these developments and their implications, this module assesses the causes and degree of home bias among institutional investors within major market economies.

The module discusses changes in regulation, financial innovation, asset allocation practices, and other factors that have contributed to the decline in home bias. It exam-

³⁶The lack of incentives to distribute lower-margin/low-turnover products may also explain the slow development of ETFs and life-cycle funds in some countries.

³⁷See, for example, IMF (2005b, p. 115).

³⁸See, for example, Tesar and Werner (1995); and Obstfeld and Rogoff (1996).

ines the role of aversion to currency risk as a source of home bias, focusing on the experience of the euro area. It also examines the potential gains and costs, with regard to both risk-adjusted returns and financial stability, of further reduction in home bias.

Factors driving the reduction in home bias include an increase in investor sophistication and an emphasis on achieving higher risk-adjusted returns. In some markets, notably Japan, financial deregulation has also played a role. Elsewhere, the impact of regulatory change has been more mixed, with changes, such as shifts to asset-liability matching, at times favoring domestic assets. Aversion to currency risk is a continuing source of home bias, as highlighted by the strong and growing preference of euro area investors for euro-denominated bonds, regardless of country of issuance. The gains in risk-adjusted returns from reduction in home bias have been substantial, and further gains are possible, but the degree of the potential future gains may be lower than what financial theory would predict. That is partly attributable to the high degree of diversification already provided by investment in domestically listed firms with significant global operations or exposure to global factors. Reduction in home bias should have a positive effect on financial stability, through diversification and market deepening, although there are some associated risks.

Home Bias and Institutional Investors

What Is Home Bias?

Home bias on the part of an investor is broadly defined as a tendency to select domestic over foreign assets, beyond relative

market weights. One useful index is the foreign asset acceptance ratio (FAAR), which measures the extent to which the share of foreign assets in an investor's portfolio diverges from the share of foreign assets that would be held in a "borderless" global portfolio.³⁹ By this standard, a ratio of 100 percent entails no divergence and therefore no home bias. A lower ratio means greater measured home bias. The term "home bias" itself may introduce some bias in the discussion. Some investors may have good reasons for preferring domestic to foreign assets under certain conditions. Another caution is that the FAAR measure only takes into account portfolio investment, not FDI, and only considers the market in which a firm is listed, even if the firm is global in scope. Accordingly, the FAAR may understate the overall degree of actual diversification of investors in highly internationalized markets, particularly smaller markets where a few global firms may dominate the market index.

Data needed to measure home bias are often inadequate, although there have been substantial improvements in recent years. Many statistical authorities have only recently begun to track international investment positions in enough detail to provide useful measures. Consequently, time-series data often extend back only a few years. Even in cases where aggregate information on foreign asset holdings for a particular country is available, the data on foreign asset holdings by important investor classes (e.g., pension funds) are often limited. While breakdowns of foreign assets between bonds and equities are the general rule, further detail is not usually available—for example, distinctions between foreign sovereign and foreign corporate bonds.

³⁹This is measured as $[(\text{foreign assets held by domestic residents}) / (\text{domestic market capitalization} + \text{foreign assets held by domestic residents} - \text{domestic assets held by foreign residents})] / [(\text{world market capitalization} - \text{domestic market capitalization}) / (\text{world market capitalization})]$. This measure is also used, for example, in Bertaut and Grier (2004). Optimal portfolio allocation under the international capital asset pricing model entails an FAAR of 100 percent.

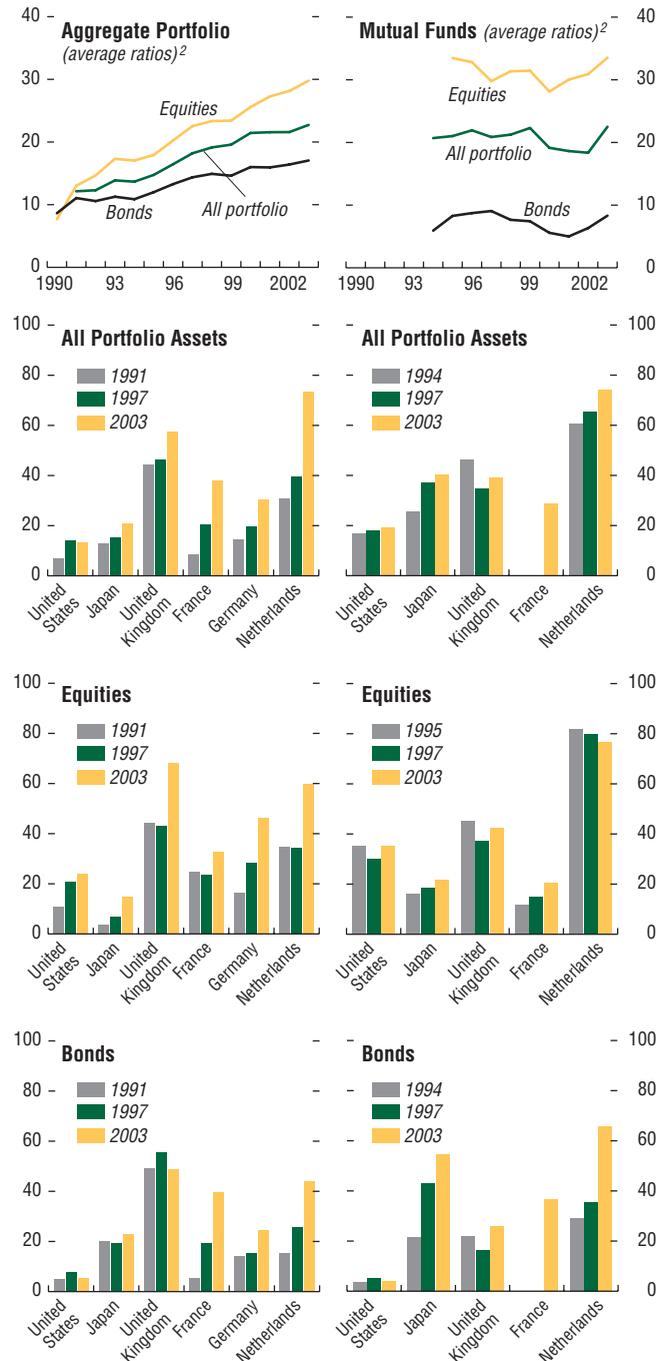
Home Bias Indicators in the Aggregate and by Type of Investor

Since 1990, there has been a steady increase in the share of foreign assets in domestic portfolios within major market economies (Figure 3.5). The increase has been most pronounced for equities, where the aggregate FAAR rose from 8 percent to 30 percent between 1990 and 2003.⁴⁰ Acceptance of foreign bonds has also risen, but at a slower pace. All six countries covered in this study saw significant declines in home bias between 1991 and 2003. The two countries most inclined to hold foreign assets in 1991, the United Kingdom and the Netherlands, also had the highest foreign asset ratios in 2003. France shifted from being relatively averse to holding foreign assets in 1991 to relatively accepting in 2003. Home bias in the United States also fell from 1991 to 1997, but has stayed roughly unchanged since that time. Acceptance of foreign equities in the United States has continued to rise, but U.S. interest in foreign bonds has declined since 1997.

Holdings of foreign bonds increased sharply between 1997 and 2003 in the three countries studied that adopted the euro in 1999—France, Germany, and the Netherlands. This development points to a currency effect that may be a significant and continuing driver of home bias among institutional investors in bond markets. (For countries in the euro area, foreign assets are defined, for purposes of this module, as including euro-denominated assets supplied by other euro area countries.)

Mutual fund foreign asset holding ratios are higher than those of some other investors, but they rose only slightly between 1994 and 2003

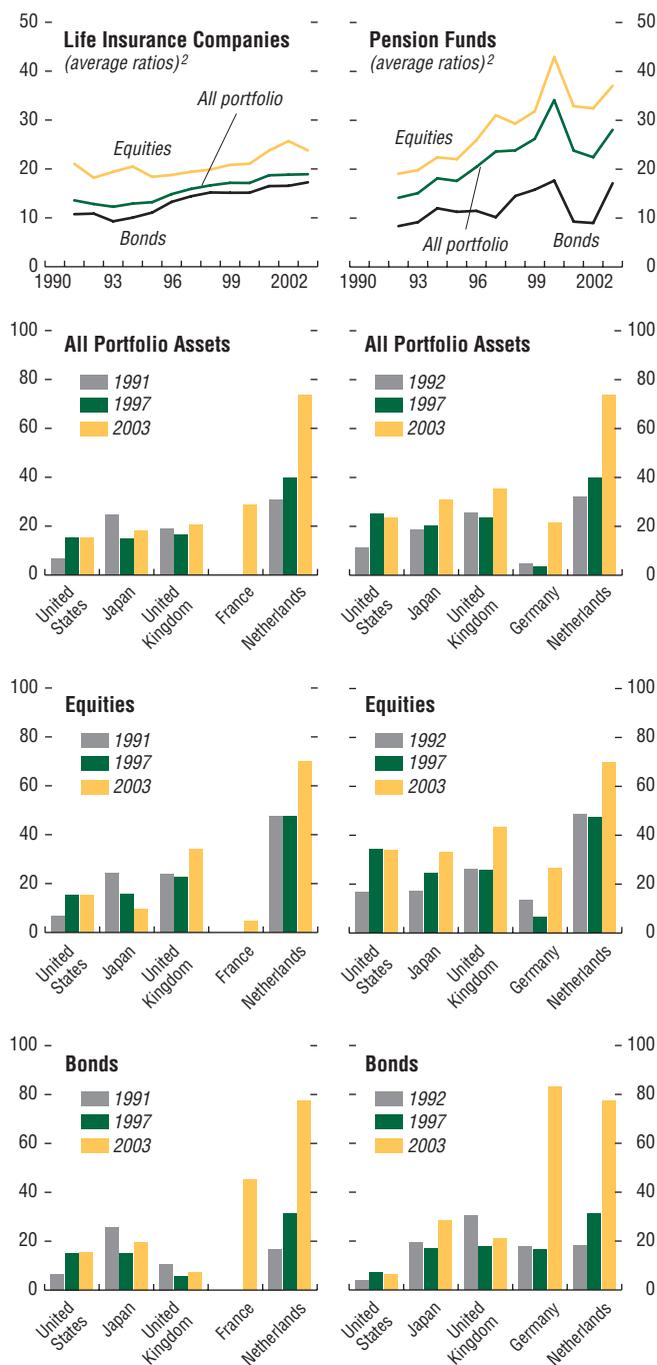
Figure 3.5. Foreign Asset Acceptance Ratios for Portfolio Assets¹
(In percent)



Sources: National flow of funds data; IMF, *Coordinated Portfolio Investment Survey and International Financial Statistics*; and IMF staff estimates.
¹A foreign asset acceptance ratio of 100 percent corresponds to zero home bias. The lower the ratio, the greater the degree of home bias.
²Market-weighted averages of foreign asset acceptance ratios for the United States, Japan, the United Kingdom, France, Germany, and the Netherlands.

⁴⁰Aggregate cross-country measures are market-weighted averages across six countries—the United States, Japan, the United Kingdom, Germany, France, and the Netherlands.

Figure 3.6. Foreign Asset Acceptance Ratios¹
(In percent)



Sources: National flow of funds data; IMF, *Coordinated Portfolio Investment Survey* and *International Financial Statistics*; Watson Wyatt; and IMF staff estimates.
¹A foreign asset acceptance ratio of 100 percent corresponds to zero home bias. The lower the ratio, the greater the degree of home bias.
²Market-weighted averages of foreign asset acceptance ratios for the United States, Japan, the United Kingdom, France, Germany, and the Netherlands.

(Figure 3.5), from 21 percent to 23 percent.⁴¹ More than most investors, owners of mutual funds have demonstrated a relatively greater willingness to hold foreign equities than foreign bonds. There have been steady increases in mutual fund holdings of foreign assets in the United States, the Netherlands, and, especially, Japan. Japan is an important exception to the mutual fund owners' tendency to focus on increasing foreign equities rather than foreign bonds. The share of foreign bonds among mutual funds in the Netherlands also increased sharply, with most of the increase accounted for by euro-denominated bonds.

Life insurers' foreign asset acceptance ratio increased from 13 percent in 1991 to 18 percent in 2003 (Figure 3.6), but remained somewhat lower than that of other classes of institutional investors. Because life insurers' portfolios are concentrated more heavily in bonds than those of other institutional investors (see Module 1 on the Global Asset Allocation Process), the overall FAAR closely tracks that for bonds alone. Life insurers in the United States, the United Kingdom, and the Netherlands increased their holdings of foreign assets between 1991 and 2003, while insurers in Japan reduced foreign holdings from 1991 to 1997, then raised them in 2003.

Private pension funds' foreign asset acceptance ratios increased more rapidly, and to a higher level, than those of the other major institutional investors examined in this section. Between 1992 and 2003, the average pension fund FAAR rose from 14 percent to 28 percent (Figure 3.6). Pension funds in the United States, Japan, the United Kingdom, the Netherlands, and Germany all had large increases in holdings of foreign assets between 1991 and 2003. In the United States and the United Kingdom, the increase was

⁴¹Cross-country comparisons of trends among mutual funds or other single investor classes should be regarded as more tentative than cross-country comparisons of aggregate investor trends, because of gaps in the institutional investor data.

concentrated in equities. In the two euro area countries, Germany and the Netherlands, there were increases in both foreign equity and foreign bond ratios, but the increases in foreign bonds were especially pronounced. Japanese pension funds raised holdings of foreign bonds and foreign equities in roughly equal proportions.

Structural Factors That Contribute to Home Bias

Regulatory Factors

Home bias in asset allocations may arise from a variety of sources. At times, regulators have indicated ceilings on holdings of certain types of foreign assets, as was informally the case for insurance companies and pension funds in Japan until 1998.⁴² There have also been reporting requirements or other restrictions that have raised the cost of acquiring foreign assets for all classes of investors, as was once the case in Japan and in the United Kingdom.

At present, authorities in the six countries covered in this module report no restrictions on outward portfolio investment for institutional investors, with some exceptions related to insurance companies. German insurers are bound by limitations on the concentration of insurance company assets by country and issuer, and by some percentage limits on holding of foreign equity. France limits the concentration of insurance company equity holdings by country and issuer and, in the United States, some state regulators impose percentage limits on insurance company holdings of foreign assets.

Differential regulatory treatment of domestic and foreign currency assets may also affect institutional investors' willingness to hold foreign assets. For insurers (and banks) that operate under risk-based capital regulatory regimes, the risk weighting attached to a for-

ign asset may be higher than the weighting for a similar domestic asset. That is the case in Japan and the United States for foreign bonds relative to domestic bonds, a factor that could serve as a disincentive to hold foreign bonds.

An additional potential regulatory source of home bias stems from accounting standards. Hedge accounting standards, such as those now in use in the United Kingdom, the United States, and, to some extent, Japan, encourage the selection of assets with durations and currency denominations closely matching those of long-term liabilities—examples of such liabilities include death benefits or expected pension payments. Such standards have not been as binding in continental Europe, but may become more so as European institutional investors implement the International Financial Reporting Standards (IFRS).

Other regulatory changes may also affect the share of foreign assets in domestic portfolios. In Japan, a change to allow the sale of mutual funds by banks has been an important factor in the growth of funds that specialize in foreign bonds. The imposition of limits on bank deposit guarantees also played a role in increasing the relative attractiveness of foreign assets to Japanese investors, according to a number of market participants.

Institutional Practices

Industry practices, including benchmarking and compensation, also may contribute to home bias. For mutual funds and defined contribution pension funds in particular, an asset manager's performance is often measured relative to a benchmark. Traditionally such benchmarks have been geared to domestic market indices, such as the S&P 500 in the United States. More recently, a growing proportion of funds and fund managers have adopted global benchmarks, indicating that benchmarking may be evolving from a source of home bias to a source of international

⁴²The widely understood limit for foreign asset holdings was 30 percent.

diversification. Some managers, not only of mutual funds but also of hedge funds and university endowments, have reported that they increasingly allocate assets with less focus on geographic mix than on other characteristics of the targeted asset class.

Transaction Costs, Market Risks, and Other Factors

Globalization and deregulation have steadily reduced the average costs of international trading of portfolio assets, to the extent that most asset managers report that costs are no longer major obstacles to investment in foreign assets. Nevertheless, the transaction costs of international asset trades are often higher than the costs of domestic asset trades. There may be extra costs associated with registering in, or otherwise gaining access to, a foreign market. In addition, foreign currency transactions typically require payment of a commission. Such costs raise the required return threshold of a foreign portfolio investment.

Information costs and asymmetries have also declined, particularly with advances in global communications and with the rapid increase in the availability of market information. However, market participants report that relative scarcity of information about some foreign markets may still be an important obstacle to certain investments, particularly where language differences are great, geographical separation is considerable, or disclosure standards differ substantially from home markets. Some asset managers cite the example of investment in smaller firms in emerging markets as an area where information limitations may lead to underweighting a market, or to herding behavior in which most foreign investors concentrate on the same few firms. Some impediments to inward foreign investment may be more than informational. Where legal systems and other market institutions are

less conducive to entrepreneurial activity (e.g., emerging markets with limited property rights or weak corporate governance), inward investment may be lower.

Aversion to currency risk continues to be an important source of home bias, particularly with regard to bond investments, according to a number of market participants. For example, asset managers in Japan have cited a decline in recent and expected yen volatility as one important factor in the continuing decline in Japanese home bias. While currency risk can generally be hedged, the availability of longer-term hedges may be limited. Moreover, covered interest parity implies that the cost of a full duration-matched hedge on a foreign fixed-income investment would offset the expected gain from the investment.

The experience of countries that adopted the common euro currency in 1999 gives credence to the importance of currency risk in bond investment. Investors in France, Germany, and the Netherlands all boosted the share of foreign bonds in domestic portfolios between 1997 and 2003 (Table 3.8), with most of the increased allocation going to bonds issued by other euro area countries.⁴³ Indeed, French investors reduced holdings of bonds from non-euro area issuers over this period while dramatically raising their holdings of bonds issued by the other 11 euro area countries. Investors in the Netherlands did raise the share of non-euro area bonds in their bond portfolios, but not by as much as they increased the share of euro area foreign bonds. The more limited data on Germany also point to an increasing share of euro area bonds. The fact that foreign euro area bonds became more attractive in each country as the currency union went into effect suggests that investors in each of the three countries had a relative preference for own-currency bonds and, presumably, an aversion to currency risk.

⁴³The tendency to switch into euro area bonds, rather than other foreign bonds, was particularly pronounced among life insurers, typically the most conservative of major institutional investors.

Table 3.8. Share of Foreign Bonds from Inside and Outside Euro Area*(As a percentage of total domestic bond market capitalization)*

	1997	2001	2003
Inside euro area¹			
France	8.4	29.3	34.1
Germany	...	13.7	15.0
Netherlands	17.5	24.7	28.3
Average ²	...	20.3	23.3
Outside euro area			
France	10.2	5.2	3.5
Germany	...	7.5	7.6
Netherlands	7.8	12.4	14.7
Average ²	...	7.5	7.3

Sources: National flow of funds data; IMF, *Coordinated Portfolio Investment Survey*; and IMF staff estimates.

¹Euro area excluding domestic market bond share.

²Market-weighted average of the three countries.

Cyclical factors may also influence measured home bias, in some cases working to reduce it. One example is the “search for yield” on the part of fixed-income investors in low-interest-rate countries. Investors, such as retired households, with a need for a steady flow of interest income may be impelled to venture abroad in search of yield when domestic interest rates fall too far. This appears to be occurring in Japan, where the popularity of foreign bond funds that are structured to provide a steady flow of yen income has risen rapidly.

Potential Benefits and Costs of Reduction in Home Bias

The gain to an investor from international diversification arises from the fact that foreign assets provide a natural hedge that the investor can exploit to reduce portfolio volatility while maintaining expected returns. Alternatively, the investor can achieve higher returns with the same ex ante volatility by taking advantage of diversification opportunities. In theory, increasing exposure to foreign assets when

one’s foreign asset allocation ratio is below 100 percent is always desirable.⁴⁴ The greater the cross-border difference between asset characteristics, the greater are the potential gains of diversification. A good example is the potential gains available to both countries from financial diversification between a demographically older mature economy and a more rapidly growing emerging economy. For some investors, diversification across asset classes (e.g., into commodities or real estate), even if it is not aimed primarily at increasing foreign asset holdings, may also have the effect of reducing home bias while raising risk-adjusted returns.

In practice, however, it is possible that expected returns on foreign assets are not high enough, and the volatility and correlation with domestic assets are not low enough, to justify increasing foreign asset holdings. It is even possible that an investor with an FAAR well below 100 percent would gain from reducing exposure to foreign assets. Box 3.1 illustrates one approach to estimating the potential gains available to investors in each of four countries—the United States, Japan, the United Kingdom, and Germany—from adjusting portfolios. The calculation, which is illustrative only, and includes too few classes of assets for precise measurement, suggests that Japanese investors still have much to gain from further diversification, while investors in the United Kingdom and Germany have already attained most of the potential benefits of diversification. The potential gain for U.S. investors is surprisingly small, given the extent of home bias still present in U.S. portfolios.

One crucial consideration not included in risk-adjusted return calculations is an investor’s institutional liability structure, which is important for life insurers and defined benefit pension providers. While such investors still prefer higher returns to lower returns, they also wish

⁴⁴Under the international capital asset pricing model, this is because the prices of different assets reflect expected returns and correlations (a condition not always met in practice).

Box 3.1. A Sample Calculation of Potential Gains from International Diversification

To provide a basis for assessing the costs of home bias, a standard portfolio optimization model is used to estimate the “best” available combinations of risk and return available to each of the four countries—the United States, Germany, the United Kingdom, and Japan.¹ Using an iterative optimization algorithm, the model estimates the potential gains in risk-adjusted returns available from portfolio adjustment, with the relevant asset class characteristics estimated from historical returns, volatilities, and correlations, converted into the domestic currency. For most assets, 25-year annual time series are used to calculate expected returns, volatilities, and correlations. Bond returns are calculated as annual ex post own-currency returns on a one-year bond. For Japan, Germany, and the United Kingdom, returns based on own currency—yen, DM/euro, pound—from U.S. equity and bond markets are used for the foreign bond and equity markets. For the United States, an optimally weighted average of the other three markets is used to calculate equity returns; fixed-income returns are calculated from German data.

¹For ease of computation, the model makes several simplifying assumptions, including consideration of a restricted set of assets for each country and the exclusion of emerging market assets. Inclusion of a wider range of assets, particularly assets that are not strongly correlated with domestic markets, could show greater gains to diversification.

Actual portfolios for each country are calculated in the aggregate. The first four rows of the table show the average shares of residents’ portfolios presently devoted to domestic equities, foreign equities, domestic bonds, and foreign bonds. Rows 5–8 show the expected return of the current portfolio and the standard deviation, in percent, together with the potential gain in returns from a portfolio adjustment (maintaining the same volatility). The bottom row describes the indicated portfolio adjustment to achieve the potential gain.

Because this calculation is abstracted from important portfolio features, including variation within the foreign portfolio mix, taxes, and dividends, the results must be interpreted with caution, and should be regarded as only suggestive. Nevertheless, the qualitative results are of interest. Of the four countries, Japan is shown to have the most to gain from further reduction in home bias, despite its recent rapid accumulation of foreign assets. By holding more foreign bonds and foreign equities, Japanese investors could raise expected average returns by almost 1 percent. In contrast, the United States stands to gain only a limited amount in expected returns, even though its FAAR is relatively low. Germany, which is already well diversified internationally, is on its risk-return frontier; it cannot raise expected return without increasing volatility. Based on historical returns, investors in the United Kingdom would potentially benefit from a small shift into their own equity market.

Potential Gains from Portfolio Adjustment

(In percent)

Current Allocation	United States	Germany	Japan	United Kingdom
Domestic equity	39	15	20	34
Foreign equity	6	12	3	16
Domestic bond	53	56	61	27
Foreign bond	2	17	16	22
Expected return	5.8	4.3	1.9	7.6
Standard deviation	7.0	7.4	5.3	9.8
Potential gain in return	0.3	0.0	1.0	0.1
Indicated portfolio adjustment	Higher share of foreign bonds, <i>lower</i> foreign equity share, more foreign assets overall.	No change; portfolio is already optimized for given risk level.	Higher shares of both foreign bonds and foreign equities.	Small <i>reductions</i> in foreign bonds and foreign equities.

Sources: National flow of funds; Bloomberg; and IMF staff estimates.

to hold assets that are duration- and currency-matched to their (usually long-term) liabilities.⁴⁵ Liability matching considerations are therefore a “legitimate” source of home bias, but it is not necessarily the case that currency-matched assets are always the most appropriate, particularly for pensions. Since pension beneficiaries are ultimately concerned with future consumption rather than nominal income, they may be better off with a portion of their benefits pledged in real terms. In this case, foreign currency assets may be better suited than domestic assets for providing the requisite inflation hedge.

Additional Sources of Foreign Exposure

Some of the diversification benefits of foreign portfolio investment may also be achieved through investment in global companies. Domestically listed firms that supply goods or services in foreign markets, or that compete with foreign firms in domestic markets, are exposed to foreign cyclical conditions. In the case of some emerging markets, investment in global firms (e.g., energy, financial, or consumer products companies) may be the most efficient means of gaining diversified exposure. For a retail investor, such an investment may even be superior to buying the shares of an unfamiliar foreign company. Investment in a global company, or in a firm with significant business interests in a few foreign markets, gives local investors exposure to foreign economic performance through professional management, substituting the firm’s own foreign direct investment for an investor’s purchase of foreign shares or bonds.

The case of Germany illustrates the possible gains available from such alternative channels of diversification. In the previous section, German investors are shown as having realized the full potential gains of diversification,

despite having 71 percent of their portfolio assets concentrated in the domestic market. To a degree, this is a consequence of the high correlation between the German equity market and foreign markets, reflecting the large share of global firms contained in the German DAX index.⁴⁶ Smaller countries with highly internationalized financial sectors, such as the Netherlands, Switzerland, or Singapore, may have a similar or even greater degree of “built-in” diversification.

The United States provides a different type of example. Domestic assets make up 92 percent of U.S. portfolios, and even the FAAR for the United States, which accounts for the size of the U.S. market, is the lowest of the six countries in the analysis, at 13.4 percent in 2003. Yet the potential gains to portfolio diversification for U.S. investors appear to be quite limited, according to the analysis of the previous section. A possible explanation is that, even though the foreign exposure available through the S&P 500 may be lower than what is available from domestic indices to domestic investors elsewhere, it is large enough so that much of the potential gain from exposure to foreign markets for U.S. investors has already been achieved through the direct foreign investments of U.S.-listed firms.

Other possible substitutes for foreign portfolio investment may include currency derivatives or structured products linked to foreign exchange rates. For some investors, domestic instruments that provide yields linked to the domestic currency return on foreign bonds offer useful diversification opportunities. However, a general increase in demand from a large domestic investor class (e.g., life insurers) for returns linked to foreign fixed-income instruments would still tend to result in net outward foreign portfolio investment, as the number of domestic counterparties willing to

⁴⁵The liability matching requirement can be incorporated in the risk-adjusted return calculation by taking account of the expected correlation between assets and liabilities.

⁴⁶For example, the correlation coefficient for returns from the DAX and German-currency-denominated returns from the S&P 500 for 1981–2004 is 0.79.

supply such instruments without themselves hedging overseas would likely be limited.

Conclusions

Changing institutional incentives, including elimination of restrictions on foreign portfolio investments, the adoption of global benchmarks, and greater emphasis on the importance of risk-adjusted returns, have led to a persistent decline in home bias over the past 15 years. While almost all countries have registered some decline in home bias, certain classes of investors—for example, owners of Japanese mutual funds, and British and continental European pension funds—have increased foreign asset allocation much more rapidly. In general, the pace of foreign asset acquisition appears to have depended on the possible gains available in risk-adjusted returns, and, in the case of euro area countries, on the redenomination of some foreign assets into domestic currency.

The trend in further reduction in home bias is expected to continue, particularly in markets where the potential gains are perceived as large, such as Japan. But there are some grounds for caution. Cross-border integration of asset markets also increases the likelihood that some asset price shocks will travel across borders. Should the domestic consequences of such a shock be severe, there may be pressure for some asset managers to reduce foreign asset holdings. Similarly, an increase in currency volatility could end the decline in home bias and diminish cross-border flows.

Continued reduction in home bias would benefit high-savings countries with aging populations, while encouraging countries with less-developed markets to upgrade their financial infrastructure. That could eventually make some developing countries more resistant to the destabilizing effects of short-term “hot money” flows. Higher exposure to foreign assets offers the prospect of raising returns on investment while reducing volatility, thereby supporting financial stability.

Authorities therefore have incentives to consider regulatory and other policy changes that may reduce home bias. However, the increase in cross-border capital flows associated with a continued reduction in home bias may increase the degree of correlation among asset markets, presenting new challenges for policymakers. In light of the anticipated increased demand for internationally diversified assets and portfolios, smaller and developing countries should continue to improve their local markets, as investors will likely favor markets with stronger infrastructures.

The financial internationalization entailed by reduction in home bias also poses challenges at the multilateral level. Efforts that promote transparency, such as the IMF-World Bank Standards and Codes Initiative, are likely to help reduce the danger of contagion between financial markets as a result of partial or erroneous information. Financial integration also raises the premium on strong multilateral surveillance from the IMF and other international organizations, both as an information source in its own right and as a means of improving public and corporate governance.

Module 4. Financial Stability Considerations Related to Trends in Accounting Standards

Our series on risk transfer in the previous issues of the GFSR highlighted how accounting standards (and regulations) may significantly influence investment and risk management behavior, as well as asset allocation among key institutional investors, such as pension funds and insurance companies. As part of this chapter’s theme of global asset allocation, this module steps back from detailed issues associated with recent or proposed accounting reforms to ask how accounting standards, particularly as applied to pension funds and insurers, may influence financial stability. Without a doubt, these are complicated issues, and the major standards

setters (the U.S. Financial Accounting Standards Board and the International Accounting Standards Board) are working to improve accounting principles in order to enhance the comparability and transparency of accounts, which deserves strong support. Indeed, many of the recently considered and proposed accounting standards are aimed at moving toward a broadly applicable best practice for measurement, and away from long-standing measurement methods that arguably contributed to or masked some of the recent problems experienced by pension funds and insurance companies. However, there has been very little commentary or analysis that broadly assesses the impact of these proposals on the larger issue of financial stability. This module presents a balanced review of the relevant policy issues, and raises questions related to financial stability that policymakers may consider as accounting standards are being reviewed.

Risk Transfer

In recent years, financial stability is generally viewed by authorities as having improved, in large part through more proactive risk management activities by banks and the related transfer and dispersion of risks from banks to diverse nonbanking institutions, which often have longer-term liability structures, and therefore may be more appropriate holders of such risks. As a result, systemically important banks are broadly recognized today as more financially stable and resilient. Banks are also currently viewed as leaders with regard to risk management practices, encouraged in part by regulatory and supervisory developments (e.g., risk-based capital requirements). This has encouraged the spread of

various risk management practices from banks to nonbanking institutions.

The risk management techniques increasingly being adopted in other sectors are often designed to control exposures to credit and market risks in an environment where asset prices and liquidity may change rapidly. While relevant to certain parts of their business and activities, such short-term risk tools may not be as relevant to all parts of the activities of insurers and pension funds as they are for commercial and investment banks. As such, this module asks whether certain risk management and related financial reporting standards typically applied to such banks are equally appropriate for all nonbanking sectors, particularly pension funds and insurers.⁴⁷ Clearly, numerous cross-sector benefits have emerged. However, the possible impact on financial stability may remain open, unless policymakers and standard setters consider fully the potential influence of such standards on the investment and risk management behavior of nonbanks.

Accounting Affects Behavior

There is widespread agreement that accounting, financial reporting, and other issues of measurement influence the behavior of market participants (i.e., managers, creditors, shareholders, and other stakeholders). In addition, researchers have analyzed and assessed different channels by which accounting standards influence a firm's management and various stakeholders' behavior.⁴⁸

It is also important to acknowledge a few practical considerations relevant to this discussion. First, markets may sometimes be imperfect, at least in the short run, and thus may

⁴⁷Some bank regulations and risk management practices are considered to have undesirable operational characteristics. For example, Clerc, Drumetz, and Jaudoin (2002) discuss how bank capital requirements, regulations, and risk management models have procyclical properties that must be moderated by proactive bank supervision.

⁴⁸For example, Plantin, Sapra, and Shin (2005) develop a model to demonstrate that accounting changes influence the actions of market participants. Hill and others (2005) and the Geneva Association (2004) highlight how changes in accounting standards could affect risk management practices in insurance companies.

not always reflect fundamental values or operate in a frictionless manner. As such, markets are frequently influenced by outside factors, such as accounting standards, that can contribute to procyclical behavior caused by a feedback mechanism from short-term price movements. In part, such market behavior may relate to the fact that many markets do not exhibit the depth and liquidity assumed in “perfect” markets, and therefore only in the longer term do markets “correctly” reflect fundamental values. Finally, and most important, many assets classes, and even more so balance sheet liabilities, lack a reasonably transparent and observable market price. Of course, this is an important impediment to any standards setter given the task of measuring financial performance. This is particularly true for many of the long-term liabilities (and related embedded options) on the balance sheets of pensions and insurers. Indeed, the inability to reliably measure and report liability values may represent the greatest source of “accounting volatility” as standards setters seek to develop measurement and valuation approaches.⁴⁹

As discussed in the first module of this chapter, pension funds and life insurance companies are each a very important and significant investor class, with pension funds the largest investor group in many countries. The liability structures of pension funds and insurance companies have historically allowed them to play a supportive role in financial stability by maintaining a longer-term investment horizon and an asset allocation strategy rarely

influenced by short-term market fluctuations. Indeed, from a financial stability perspective, the “acyclical” investment behavior of pension funds and (to a lesser extent) insurance companies has represented a relatively stable and steady source of investment capital.⁵⁰

The desire by the standards setters to increase the “accuracy” of financial reports has promoted the broader use of mark-to-market valuations for all companies, including their pension funds. However, fair value approaches require the existence of active and liquid markets, or some reasonable proxy, that can readily provide observed “value-in-exchange” prices. Moreover, to be implemented effectively, fair value approaches should require the same for liabilities. By comparison, “value-in-use” prices, which are meant to reflect the asset value to that particular business or purpose, are derived from projected future cash flows or the hedging value of a firm’s assets and liabilities. As such, both approaches present measurement challenges.

An important consideration is whether fair value accounting may shorten the decision horizons of market participants, both users and preparers of accounts. Recent studies, and discussions with company executives and investors, suggest that shifting to fair value accounting, with frequent adjustments to earnings, may reinforce incentives to engage in short-term, procyclical activities.⁵¹ Furthermore, many corporate officers have noted the rising tension between company sponsors and their defined benefit pension funds, as spon-

⁴⁹The measurement difficulties may represent the greatest obstacle to fair or market value principles, particularly longer-term assets and (even more so) liabilities. As such, in discussions with the standards setters, it was discussed that full fair value accounting standards (including reporting all value changes in the earnings statement) may be best applied to those assets and liabilities with a shorter remaining life (e.g., 5 or 10 years), in order to reflect the more pending and measurable financial requirements.

⁵⁰A recent example of this acyclical behavior was evident in the structured credit markets of April and May. Market participants widely commented on how insurers (especially) and pension funds during this volatile period did not sell into downward price swings, and frequently referred to their “non-mark-to-market behavior,” compared with the trading or “mark-to-market” behavior of hedge funds or investment banks.

⁵¹Burkhardt and Strausz (2004) present a model outlining how fair value accounting may provide incentives for increased procyclical behavior. They also show that there may be incentives for an intermediary to sell its higher quality assets, leaving lower quality assets on its books.

sors seek to manage down the potential earnings volatility from their pension funds. As such, pursuant to a full implementation of fair value accounting (i.e., whereby all valuation changes are reported through the earnings statement) companies with large pension funds may have greater incentives to procyclically sell assets during market downturns to limit valuation effects, and thereby exacerbate market swings. In other words, when the decision horizon is shortened, the recent experience or anticipation of price movements will affect a firm's decisions, which in turn may inject further volatility into markets and prices. Indeed, this may be more likely for longer duration assets and more illiquid asset classes and markets (e.g., structured credit, or smaller domestic or developing markets), which has particular relevance for pensions and insurers.⁵²

To be clear, pension funds and hedge funds are not expected to pursue similar trading strategies because of accounting policy, nor does volatility alone equal financial instability. However, extreme volatility or liquidity "black holes" can create disorderly markets and lead to financial instability.⁵³ As such, this module asks whether the financial stability gains in recent periods, due in large part to the dispersion of risks and the diversity of investor behavior in a variety of markets, may be reduced, and procyclical behavior increased, by such accounting or financial reporting policies.

Fair value accounting is certainly a useful measure and representation of financial activities under many circumstances, and is appropriate and desirable for a variety of uses. For example, management and regulatory

accounting should include all relevant and reliable market valuations for risk management and other purposes, and would clearly benefit from market or fair value measures. Fair value measures can also serve as an instrument of discipline for financial intermediaries, where senior executives in the past may have been slow to face the reality of persistently lower asset prices or inappropriate risk management systems. Valuation of assets and liabilities closer to market values would also make more explicit the amount of intertemporal risk sharing provided by life insurers. Risk sharing over time is a result of mismatches between an insurer's assets and liabilities, and is therefore linked to one of the key concerns expressed about fair value accounting: namely, the fact that reported earnings would likely become more volatile as values of assets and liabilities behave differently. To the extent that the higher earnings volatility stems from an asset and liability mismatch, it is in large part a real risk and is the result of risk sharing over time provided by the insurer. Fair value accounting will likely make this intertemporal risk sharing more explicit and apparent, and would reveal its costs more clearly. This type of risk sharing would therefore likely be priced by the market more appropriately.⁵⁴

Financial reports are used differently by different parties, and an accounting framework that mandates a single approach for valuing assets and liabilities may not reflect the economic fundamentals or reality for all stakeholders, including regulators. These differing requirements may depend on whether the user is assessing the credit quality (e.g., estimating the probability of default) or the long-

⁵²Plantin, Sapra, and Shin (2005) demonstrate that, influenced by accounting treatment, managers may sell assets following price swings or market shocks that they would otherwise have retained, particularly longer-duration assets. Moreover, they also highlight conditions under which such actions may amplify the effects of market shocks. See also Hann, Hefflin, and Subramanyam (2004).

⁵³Liquidity black holes are extreme situations where selling activity increases the incentives or pressures for other market participants to sell into declining markets (i.e., a one-sided market develops), and the process becomes self-reinforcing. See Morris and Shin (2004); and Plantin, Sapra, and Shin (2005) for a more detailed analysis.

⁵⁴See Häusler (2003).

run value (e.g., equity price) of a firm.⁵⁵ For example, certain public bodies, such as the U.S. Pension Benefit Guaranty Corporation or the U.K. Pension Protection Fund, may require current market valuations (including liquidation or run-off values) in forming their regulatory or prudential assessments. By comparison, equity investors may focus more on the value of assets in the business, including as held against certain pension or insurance liabilities, as they evaluate the longer-term performance of a firm.⁵⁶ In this latter case, separating the short-term or transitory effects from the more permanent changes in value may be very difficult in a full fair value system. In such a situation, fair value accounting principles may induce a much greater focus on short-term (e.g., quarterly) earnings management, and thus produce more active rebalancing or trading of the investment portfolios of pension funds and insurers in the financial markets.

Efforts by Accounting Standards Setters

Standards setters, such as the FASB and the IASB, are currently considering a variety of accounting and reporting standards with the goal of reflecting economic reality, maintaining or enhancing comparability and use, and improving the transparency of the financial affairs of the business. They are guided by principles such as relevance and reliability, and utilize tools such as measurement,

disclosure, and presentation to accurately reflect a company's underlying fundamentals. Policymakers and regulators have also sought to ensure that changes in international accounting standards work to enhance transparency and improve the understanding and comparability of accounts, and thereby promote efficient cross-border investment and company access to capital.⁵⁷ These are clearly appropriate and necessary goals and conditions for the functioning of financial markets.

The current "mixed attributes" model of accounting and financial reporting has attempted to recognize different investment periods, where some assets are valued at market prices and others are carried at historical cost (e.g., "hold-to-maturity" versus "assets available for sale," and trading assets). The banking industry illustrates requirements for using different reporting frameworks even within a single institution—a practice that can be accommodated with the "mixed attributes" model. Bank earnings often stem from a variety of activities. Trading activities by banks are driven largely by the buying and selling of securities, where assessments of rapidly changing relative values are critical. Fair value accounting seems an appropriate framework in this case, since it mirrors the information and decision process of the business activity. By comparison, banks often hold loans to maturity. Under these circumstances, historical or amortized cost accounting may be appropriate where the value of the loan

⁵⁵Hann, Heflin, and Subramanyam (2004) discuss the different information requirements of creditors compared with equity investors. They present evidence that, under certain market conditions, the increased earnings volatility in fair value reporting may make it more difficult for investors to separate transitory from permanent changes in a company's earnings potential.

⁵⁶The importance of financial reporting and the disclosure of relevant information for financial stability is emphasized in Michael (2004). Allen and Gale (1998) discuss some of the literature on the impact of stakeholder perceptions of bank asset valuations, and develop a model of bank runs induced by changes in perceived bank asset values. Bank industry groups have long called for an accounting and financial reporting framework that allows for a variety of valuation methodologies for measuring balance sheets and reporting performance (e.g., Joint Working Group of Banking Associations, 1999).

⁵⁷Bies (2004) and Large (2004) are two recent examples of central bank policymakers recognizing the important influence accounting has on investors, creditors, and other market participants, and offering potential guidelines for accounting standards to promote efficient capital allocation and sound banking standards. In addition, the desire to improve transparency and promote comparability recently led the Securities and Exchange Commission (SEC) staff to recommend continued efforts to facilitate the implementation of fair value accounting (see SEC, 2005).

depends more on credit quality and the cost of servicing the loan.⁵⁸

Despite the efforts of standards setters to improve accounting and financial reporting standards, financial officers and other market participants frequently highlight how new or proposed standards may influence their decision making. Some accounting conventions (e.g., hedge accounting) may cause listed companies to forgo economically beneficial decisions to avoid increased earnings volatility and potentially adverse investor reactions, even if the increased reported volatility does not reflect the firm's underlying business or risk profile.⁵⁹ The standards setters are aware and sensitive to these issues and concerns. Indeed, at present, a potentially very important joint FASB and IASB project is under way, called "Financial Performance Reporting by Business Enterprises." In short, the project seeks to preserve the measurement benefits of using market or fair values wherever possible, while addressing concerns about transitory or nonrecurring volatilities through a variety of presentation frameworks. For example, one possibility is that short-term, transitory value effects may be reported "below the line," and as such be included in a "comprehensive income" figure for the period, but more easily separated for an analysis of longer-term value effects on a firm and (possibly) certain widely used earnings figures (i.e., net income, earnings per share, etc.). While this may represent an attractive way forward, it does not reconcile the difficulty of objectively measuring all balance sheet items, particularly liabilities, which may eliminate any reasonable concerns with fair value standards.

Preserving Financial Stability Gains

An important financial stability consideration is the depth of markets and the related

diversity of investors, targeting a healthy mix of investors with a variety of investment behaviors, often related to liability and liquidity structures. However, as discussed above, different accounting and financial reporting standards that have historically facilitated such diversity are being reviewed. An important question is whether, in light of evolving accounting standards for pension funds and insurers, we may reduce the diversity of investment behavior, particularly as it relates to their long-term, stable investment behavior. In other words, would full implementation of fair value accounting lead to more procyclical market behavior among these large and important investors?

Our market surveillance produces an uncertain answer to these questions, at least in the near term. On the one hand, risk managers of insurance companies and pension funds repeatedly describe such accounting changes as increasing their need to more actively trade their investment portfolio to avoid accounting volatility. However, particularly for pension funds, such increased market activity would represent a significant change from their historical behavior. Indeed, their traditionally patient investment behavior, stemming in part from their longer-term liability structure, has enhanced financial stability. As such, if accounting changes cause these large and important investors to become more proactive and short-term focused, financial stability may also suffer.

There is strong support among company treasurers, financial officers, and regulators for designing financial accounting and reporting frameworks for shareholders and other stakeholders (i.e., external reports) that reflect the economic reality of an enterprise as a going concern in a full and transparent manner. Moreover, much of the "accounting volatility" that industry participants highlight,

⁵⁸This banking example was adapted from Bies (2004).

⁵⁹See Weinberg (2003).

particularly as it concerns the potential influence on pension funds and insurers, would either not exist or, alternatively, would correctly reflect asset-liability mismatches, if liabilities could be reliably measured and reported in the accounts. However, liability measures are broadly viewed as more problematic than asset values, so standards setters continue to struggle with a variety of “mixed” measurement frameworks. Therefore, in an imperfect world, policymakers need to consider whether proposed accounting reforms may not diminish the diversity of investment behavior and the long-term orientation of important institutional investors, which has typically enhanced financial stability.

Standards setters are currently considering a variety of accounting and reporting standards with the goal of better reflecting economic reality, maintaining or enhancing comparability and use, and improving the transparency of the financial affairs of the business. These are very desirable and appropriate goals, and important progress and improvements have been made in recent years related to these efforts. However, as standards setters and other policymakers reassess accounting and reporting standards, they should consider the broader financial stability issues, and the benefits from risk dispersion and investor diversity. As in other areas, we need to consider the consistency of various policies with the intended goals, as well as trying to understand the consequent flows of risk and behavioral effects related to such policies and standards.

References

- Allen, Franklin, and Douglas Gale, 1998, “Optimal Financial Crises,” *The Journal of Finance*, Vol. 53, No. 4 (August), pp. 1245–84.
- Almeida Capital, 2005, *Fundraising Review 2004: A Preview for 2005* (London: Almeida Capital Limited, April). Available via the Internet: <http://www.altassets.com/2005review.php>.
- Amenc, Noël, Jean-René Giraud, Philippe Malaise, and Lionel Martellini, 2004, *Be Active with Your Bond Trackers* (EDHEC Risk and Asset Management Research Centre, October).
- Bank for International Settlements (BIS), Committee on the Global Financial System (CGFS), 2003, *Incentive Structures in Institutional Asset Management and Their Implications for Financial Markets* (Basel: BIS, March). Available via the Internet: <http://www.bis.org/publ/cgfs21.pdf>.
- Bertaut, Carol C., and William Giever, 2004, “Recent Developments in Cross-Border Investments in Securities,” *Federal Reserve Bulletin* (Winter), pp. 19–31.
- Bies, Susan Schmidt, 2004, “Challenges Facing the Accounting Profession Today,” speech delivered to the Cincinnati Chapter of the Ohio Society of Certified Public Accountants, September.
- Burkhardt, Katrin, and Roland Strausz, 2004, “The Effect of Fair vs. Book Value Accounting on the Behavior of Banks” (unpublished; Berlin: Free University of Berlin).
- Clerc, Laurent, Françoise Drumetz, and Olivier Jaudoin, 2002, “To What Extent Are Prudential and Accounting Arrangement Pro- or Counter-Cyclical with Respect to Overall Financial Conditions?” in *Bank for International Settlements Papers No. 1* (Basel: BIS, March), pp. 197–210.
- Committee on Investment of Employee Benefit Assets (CIEBA), 2004, *The U.S. Pension Crisis—Evaluation and Analysis of Emerging Defined Benefit Pension Issues*, (Bethesda, Maryland: Association for Financial Professionals, March).
- Counterparty Risk Management Policy Group II, 2005, *Toward Greater Financial Stability: A Private Sector Perspective* (July). Available via the Internet: <http://www.crmpolicygroup.org/docs/CRMPII.pdf>.
- European Commission, 2005, *Green Paper on the Enhancement of the EU Framework for Investment Funds* (Brussels, July). Available via the Internet: http://europa.eu.int/comm/internal_market/securities/docs/ucits/greenpaper_en.pdf.
- European Fund and Asset Management Association, 2005, *The European Personal Pension Account* (Brussels, May). Available via the Internet: <http://www.efama.org/30Documents/80Pensions/1025Regulation/EFAMA%20Documents/eppareport/documentfile>.
- Financial Services Authority, 2005, “Wider-Range Retail Investment Products,” Discussion Paper No. 05/3 (London, June). Available via the

- Internet: http://www.fsa.gov.uk/pubs/discussion/dp05_03.pdf.
- Geneva Association, 2004, "Impact of a Fair Value Financial Reporting System on Insurance Companies: A Survey," *The Geneva Papers on Risk and Insurance Issues and Practice* (Geneva: International Association for the Study of Insurance Economics).
- Greenwich Associates, 2005, "For U.S. Funds, Asset Allocation Strategies Feature International Equities and Alternative Investments" (March 11).
- Hann, Rebecca, Frank Hefflin, and K.R. Subramanyam, 2004, "Fair-Value Based Pension Accounting" (unpublished; Los Angeles: Leventhal School of Accounting, University of Southern California).
- Häusler, Gerd, 2003, "The Insurance Industry, Fair Value Accounting and Systemic Financial Stability," speech delivered to the 30th General Assembly of the Geneva Association, London, June 13.
- Hill, Andrew, Alexander Dieter Hofmann, Francesco Nagari, and Erica Nicholson, 2005, "The Implications of IFRS for General Insurers," IFRS Global Reporting Revolution (Pricewaterhouse Coopers, June).
- International Monetary Fund, 2004a, "Risk Transfer and the Insurance Industry," *Global Financial Stability Report*, World Economic and Financial Surveys (Washington, April).
- , 2004b, "Risk Management and the Pension Fund Industry," *Global Financial Stability Report*, World Economic and Financial Surveys (Washington, September).
- , 2005a, *Global Financial Stability Report*, World Economic and Financial Surveys (Washington, April).
- , 2005b, "Globalization and External Imbalances," *World Economic Outlook*, World Economic and Financial Surveys (Washington, April).
- International Organization of Securities Commissions (IOSCO), 2005, *Principles on Outsourcing of Financial Services for Market Intermediaries* (Madrid, February). Available via the Internet: <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD187.pdf>.
- Joint Working Group of Banking Associations, 1999, "Accounting for Financial Instruments for Banks" (October). Available via the Internet: http://www.aba.com/aba/pdf/GR_tax_va4.PDF.
- Large, Andrew, 2004, "Financial Instrument Accounting," speech delivered to the 13th Central Banking Conference, London, November 22.
- Michael, Ian, 2004, "Accounting and Financial Stability," *Financial Stability Review* (London: Bank of England, June).
- Moore, James F., 2004, *Changing Paradigms in Asset Allocation for Pension Plans* (Newport Beach, California: PIMCO, May).
- Morris, Stephen, and Hyun Song Shin, 2004, "Liquidity Black Holes," *Review of Finance*, Vol. 8, No. 1, pp. 1–18.
- Myners, Paul, 2001, "Institutional Investment in the United Kingdom: A Review" (London: Her Majesty's Treasury, March). Available via the Internet: <http://www.hm-treasury.gov.uk/media/2F9/02/31.pdf>.
- Obstfeld, Maurice, and Kenneth Rogoff, 1996, *Foundations of International Macroeconomics* (Cambridge, Massachusetts: MIT Press).
- Organization for Economic Cooperation and Development (OECD), 2005, "White Paper on Governance of Collective Investment Schemes (CIS)," *Financial Market Trends*, No. 88 (March).
- Plantin, Guillaume, Haresh Sapra, and Hyun Song Shin, 2005, "Marking-to-Market: Panacea or Pandora's Box" (London: London School of Economics, March).
- Porter, Michael, and Lucas Garland, 2005, "Life Cycle Funds: Fit for Life," *Lipper Insight Reports* (March).
- Private Equity Intelligence Ltd., 2005, *The 2005 Global Fund Raising Review* (London).
- Reid, Brian, K., and John, D. Rea, 2003, "Mutual Fund Distribution Channels and Distribution Costs," *Perspective*, Vol. 9, No. 3 (Investment Company Institute, July).
- Tesar, Linda L., and Ingrid Werner, 1995, "Home Bias and High Turnover," *Journal of International Money and Finance*, Vol. 14., No. 4, pp. 467–92.
- UBS Global Asset Management, 2005, "Pension Fund Indicators 2005: A Long-Term Perspective on Pension Fund Investment" (London, May).
- United Kingdom, Her Majesty's Stationery Office, 2004, "Pensions: Challenges and Choices, The First Report of the Pensions Commission" (London). Available via the Internet: <http://www.pensionscommission.org.uk/publications/2004/annrep/index.asp>.

United States Securities and Exchange Commission (SEC), 2005, "Report and Recommendations Pursuant to Section 401(c) of the Sarbanes-Oxley Act of 2002 on Arrangements with Off-Balance Sheet Implications, Special Purpose Entities, and Transparency of Filings by Issuers" (Washington, June 15). Available via the Internet: <http://www.sec.gov/news/studies/soxoffbalancercpt.pdf>.

Urwin, R.C., S.J. Breban, T.M. Hodgson, and A. Hunt, 2001, "Risk Budgeting in Pension Investment," *British Actuarial Journal*, Vol. 2, No. 3, pp. 319–64.

Weinberg, John A., 2003, "Accounting for Corporate Behavior," *Economic Quarterly*, Vol. 89, No. 3 (Richmond: Federal Reserve Bank of Richmond).