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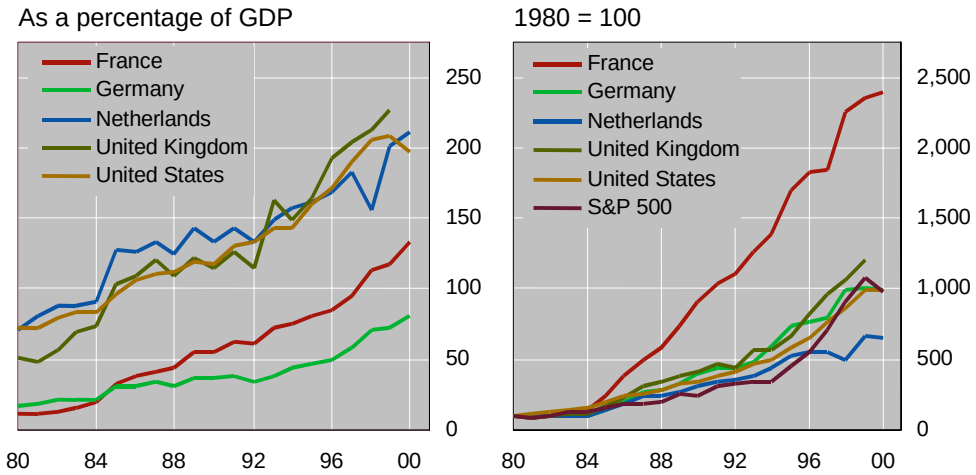
Institutional asset managers: industry trends, incentives and implications for market efficiency[1]

In recent years, investors have increasingly delegated the management of their investment portfolios to institutional asset managers. The scale of such delegated investing and its development over time are apparent from the growth in the size of assets under management by different types of institutional investors across various countries (Graph 1). Moreover, demographic trends can be expected to sustain the industry's growth well into the future.

Institutional asset management has grown in size and importance ...

The distinguishing characteristic of the industry is that asset management activities involve a series of delegated processes, linking the "triangle" formed by invested funds, fund owners and fund managers. As a result, contractual structures that seek to align the incentives of fund owners with the incentives of those charged with the management of these funds are an integral part of the business – and are bound to change as the industry continues to evolve.

Total financial assets of institutional investors



Sources: Bloomberg; OECD.

Graph 1

[1] This article summarises the main findings of a report published by the Committee on the Global Financial System; any errors and omissions are those of the author. The views expressed in this article do not necessarily reflect those of the BIS.

... and industry trends may matter for financial markets

Asset allocation is not independent of the context in which decisions are taken. Current industry trends, to the extent that they affect asset managers' incentives, therefore have an obvious potential to change investor decision-making and investment behaviour.[2] This, in turn, may matter for global financial markets – an issue that has attracted particular attention against the background of the recent phenomenal increase and subsequent collapse in the values of world equity market indices.

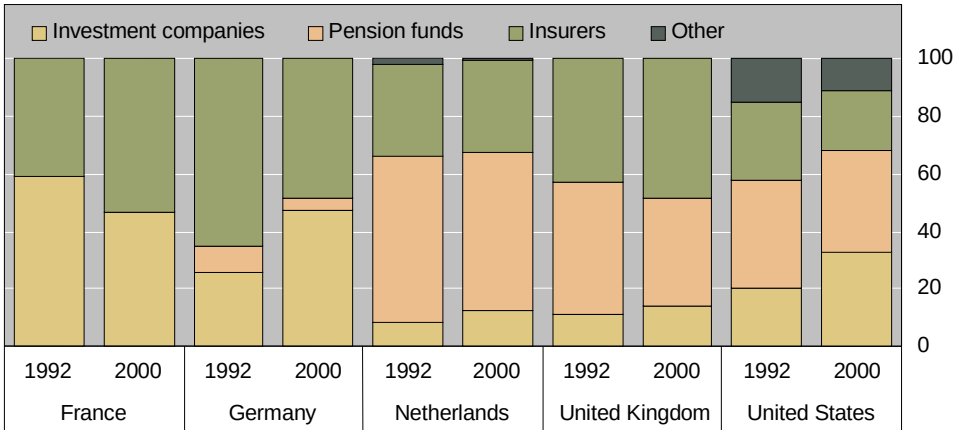
Realising the asset management industry's increasing importance for financial markets, the Committee on the Global Financial System (CGFS), which monitors global financial markets for the central bank governors of the G10 countries, established a working group to investigate these issues. This article provides an overview of the group's work and highlights some of its principal findings, which have recently been published in a report.[3]

Evolving industry structure

Institutional asset managers consist largely of *collective investment vehicles*, *pension funds* and *insurance companies*. All of these entities construct and maintain investment portfolios on behalf of their customers, both individual investors and companies. The management of these investments may either be performed in-house or be delegated to external asset managers. As a result, pension funds and insurance companies may make use of outside asset managers to manage the assets entrusted to them or may themselves offer asset management services to third parties.

Relative importance of industry sectors

As a percentage of total financial assets



Note: "Other" includes foundations and endowment funds.

Sources: OECD; national data. Graph 2

[2] See BIS (1998).

[3] The Working Group on Incentive Structures in Institutional Asset Management was chaired by Michel Cardona of the Bank of France. The report (CGFS (2003)), is available online at www.bis.org.

The worldwide growth of institutional asset management, supported by demographic changes, financial liberalisation and technological advances, has been accompanied by a fundamental restructuring of the industry. Notably, this has included a shift in the importance of different industry sectors over time (Graph 2). It has also meant that traditional sectoral distinctions among industry players have become increasingly blurred. Insurance companies, for example, have launched their own investment funds and have become involved in pensions provision, while banks are acquiring money management and insurance companies, bridging different industry sectors.

While the specifics of these developments have differed across countries, there are three broad industry trends common to the entire institutional investor business: the growing importance of indexed portfolios; increasing numbers of distinct asset classes; and the industry's consolidation and specialisation.

Indexing

Indexing has become more important ...

The increasing popularity of passively managed, ie index-tracking, portfolios is perhaps the most significant of these industry trends. Index funds emerged in 1971, when the first such fund, designed to track the S&P 500 Index, was created by Wells Fargo Bank with initial funding of $6 million from the Samsonite Co pension fund. Since then, indexed portfolios have steadily gained in importance, with global passive assets under management growing by some 70% between 1998 and 2001. Regional differences, however, remain large. Indexed investment funds now account for about 30% of combined equity and bond allocations in the United States and 20% in the United Kingdom. By contrast, across Europe as a whole, only some 5% of total assets and about 10% of equity assets are managed on a passive basis (Table 1).

The trend towards indexing has been driven by the development of capitalisation-based benchmark indices and the recognition that, at least in the largest and most informationally efficient markets, actively managed funds do not, on average, earn returns sufficient to offset their costs.[4] Index-tracking funds, given their low fees, were therefore seen to offer investors a means of obtaining a high degree of diversification, indeed the possibility of holding "the market", at a relatively low cost. Until recently, the attractiveness of passive funds was further supported by rising stock markets, as passively managed portfolios presented a cost-effective way of assuming equity exposure in an environment of rapidly rising market valuations.

Among passive funds, enhanced passive strategies have recently gained prominence. Such strategies, based on the realisation that ensuring tracking errors[5] close to zero involves considerable transaction costs, allow for some

[4] See Sharpe (1966) and Jensen (1968). While individual portfolio managers might earn excess returns, these are typically not found to be persistent when controlling for risk and survivorship bias (Carhart (1997)).

[5] *Tracking error* is defined as the standard deviation of a portfolio's excess returns over a sample period and is thus a measure of the divergence of a portfolio's return from that of the selected benchmark. Limits on allowable tracking error are now a standard feature of investment mandates, even if the underlying portfolios are actively managed.

Institutional asset allocation in 2001

In percentages

Asset class	European asset allocation	US asset allocation
Public equity	44	54
of which: active	90	64
of which: passive	10	36
Fixed income	43	32
of which: active	98	87
of which: passive	2	13
Money markets	8	9
Real estate	4	2
Other (including hedge funds)	1	3

Sources: UBS Warburg/Oliver, Wyman & Company (2002); *Pensions and Investments* (2002).

Table 1

flexibility in replicating a given index. This, in turn, enables the necessary transitions to be managed more smoothly when indices are being reweighted. In part, interest in enhanced passive strategies can also be explained by the past practice of basing benchmarks on total market capitalisation rather than free float.[6] This meant that shares of companies with large capitalisations but small free floats, such as spun-off businesses, tended to be very volatile, with shortages being created as index weightings were based on the entire market capitalisation.

... but its popularity differs across markets

At the same time, indexing remains much less popular in the bond markets than in equity markets. This is for two reasons. First, while idiosyncratic risk is very important for individual stocks, this is much less the case for individual bonds, as interest rates are very highly correlated. This may limit the attractiveness of indexing for bond portfolios, as the diversification advantage is less pronounced. Second, bond indices, especially those for corporate issues, are more complex to replicate. Adjustments are required, for example, on major coupon redemption dates and to take account of maturing issues and auctions. In addition, it is difficult to weight a bond index accurately by market value because the amounts outstanding of each component could be unclear due to coupon stripping (on government bonds), prepayments (on mortgage securities) and call features (on corporates).

Increasingly, the trend towards indexing is encompassing not only wholesale funds managed, for example, on behalf of a pension fund, but also the retail part of the institutional asset management business. While index-tracking mutual funds have been around for some time, so-called exchange-traded funds (ETFs) are a relatively new phenomenon. ETFs are passively managed baskets of stocks or, in some cases, bonds that mirror a particular index and are traded on stock exchanges on an intraday basis, ie like ordinary shares. The first of these funds was launched in 1993, tracking the S&P 500.

[6] *Free float* measures the market value of the outstanding amount of a security that is free to trade among institutional and individual investors.

By late 2002, net ETF assets, as measured by the top 50 funds, amounted to $159 billion or about 6% of total indexed assets, with some $70 billion managed by the 10 biggest funds alone (Table 2). One advantage of these funds is that they can be bought on margin and sold short, possibly enabling investors to quickly adjust their equity market exposures. Other advantages of these contracts for retail investors include low annual expenses, although commissions have to be paid to trade ETFs, and tax efficiency. This is because, as ETFs do not redeem shares for cash, they do not need to hold cash in anticipation of redemptions or sell securities (possibly realising capital gains) for redemption purposes.

Asset classes

More distinct asset classes and styles ...

The second important development has been the notable increase in the number of distinct asset classes offered to ultimate investors. That is, the overall increase in professionally managed assets, both in absolute terms and as a share of GDP, has gone hand in hand with rising interest in non-traditional markets and instruments. This has included private equity and venture capital funds and has also led to an acceleration in the rate of growth of funds placed with unregulated asset managers. As a result, global hedge fund[7] assets are reported to have risen from $120 billion to around $600 billion between 1994 and 2002.

Hedge fund strategies and other alternative investments were seen to offer diversification benefits based on presumed low or negative correlations with more traditional asset classes. On this basis, hedge fund investments can be viewed as the natural reaction to the ongoing trend towards indexing and the scope for arbitrage that might be opened up in the process. Yet, despite

Top 10 exchange-traded funds in 2002

In billions of US dollars

Fund	Index tracked	Net assets
SPDR Trust Series 1	S&P 500	30.45
Nasdaq 100 Trust Series 1	Nasdaq 100	18.85
Midcap SPDR Trust Series 1	S&P Midcap 400	6.19
Diamonds Trust Series 1	Dow Jones Industrial Average	3.84
iShares S&P 500	S&P 500	3.54
iShares Russell 2000	Russell 2000	2.64
Vanguard Total Stock VPR	Wilshire 5000	1.17
iShares S&P Smallcap 600	S&P Smallcap 600	1.09
iShares Russell 1000 Value	Russell 1000 Value	0.87
iShares Russell 2000 Value	Russell 2000 Value	0.83
Sum: top 10 assets		69.47
Memo: top 50 assets		*158.90*

Source: *Pensions and Investments* (2002), as of 30 August 2002. Table 2

[7] See Tsatsaronis (2000).

Top 10 managers of indexed assets in 2001				
Asset manager	Total assets ($ billions)	Equity (% of total)	Fixed income (% of total)	Enhanced indexed (% of total)
Barclays Global	768.0	77.2	22.8	13.0
State Street Global	641.2	69.4	30.6	3.0
Vanguard Group	234.6	87.1	12.9	0.0
Deutsche AM	145.0	88.3	11.7	4.0
TIAA-CREF	85.6	100.0	0.0	90.0
Mellon Capital	79.7	82.5	17.5	5.0
Fidelity Investments	69.4	90.3	9.7	39.0
Northern Trust	62.6	73.0	27.0	0.4
JPMorgan	52.4	100.0	0.0	100.0
Dimensional Fund	32.8	98.8	1.2	96.0
Sum: top 10 assets	2,171.3			
Memo: top 60 assets	*2,600.0*			
Source: *Pensions and Investments* (2002), as of 31 December 2001.				Table 3

their recent growth, alternative investments, such as hedge and private equity funds, continue to account for only a small overall fraction of institutionally managed portfolios (Table 1).

Consolidation and specialisation

… and indexing have fostered consolidation and specialisation

The third broad trend is the industry's tendency towards increasing consolidation and specialisation. Consolidation has been encouraged mainly by increased indexing and the fact that, owing to scale economies, index funds tend to outperform their active counterparts, particularly in periods of rising markets. This has tended to eat into assets under management at the more traditional active funds, putting pressure on their fee incomes and pushing forward inter- and intragroup concentration. In addition to the usual effect based on fixed costs, scale economies arise, in particular, from lowered transaction costs. These are due to the reduced overall need for transactions, the *crossing of trades* (ie the simultaneous off-market sale and purchase of assets for different customers), and the fact that passive management avoids *churning* (unnecessary trading activity to generate commissions). Reflecting these effects, passive asset management is now dominated by a relatively small number of asset managers, with the major three accounting for a large share of the global market (Table 3). Even as the pace of consolidation has accelerated, specialisation has become more pronounced among active asset managers as the industry has branched out into research-intensive, non-core asset classes. Consequently, the number of highly specialised, non-traditional asset management firms has been growing.

Trends in incentive structures

Incentive structures for asset managers have changed …

The broad, underlying structural trends reviewed above have also been reflected in changing incentives for institutional asset managers. These

changes are, potentially, of particular importance, as they apply to the very core of the asset management industry, ie the separation between ownership and control of financial wealth. This separation, and the associated existence of agency relationships, has given rise to certain contractual arrangements to encourage prudent behaviour by the asset manager.

In practice, incentive structures tend to be based on sets of simple, easily verifiable rules, which are made up of three core components:

- a *profit-sharing rule/fee structure*, used to align incentives in terms of returns (eg fund management fees based on assets under management with or without performance-based bonuses);
- a *relative performance component*, measured against a benchmark that serves as a basis for monitoring performance, comparing returns and controlling for common uncertainty (ie shocks that affect the entire market); and
- *checks on risk-taking*, such as maximum allowable tracking error, reporting requirements, and constraints on available investment choices and strategies.

Three main developments in incentive structures can be identified: more stringent contractual arrangements; an increased emphasis on the investment processes; and changes in the importance of different compensation schemes.

... as investment mandates have become more tightly defined ...

Through more tightly defined contractual arrangements, responsibility for strategic asset allocation has increasingly been shifted back to fund owners. Examples include the decomposition of investment portfolios into a bigger number of separate specialist mandates and an increasing focus on specific investment strategies and styles, such as growth and value-oriented equity investments.[8]

This tiering and narrowing of investment mandates is also reflected in more stringent rules for tactical day-to-day management. Such contractual features include tighter tracking errors and more pervasive use of other investment constraints, for instance diversification rules and limits on investments in specific securities. It is common, for example, for fixed income investment mandates to restrict the manager's investment choices to investment grade credits. This serves to limit monitoring costs, while defining a broad maximum level of portfolio risk. At the same time, tracking error is now widely used as a measure of and constraint on portfolio risk. Accordingly, even actively managed portfolios tend to be based on limits on allowable tracking error around the benchmark, with the error bounds increasing in the riskiness and expected return of the benchmark portfolio. Contractual and regulatory investment constraints, when used together with such limits on tracking error, can significantly restrict the asset manager's room for manoeuvre, potentially converting actively managed into quasi-passive funds. Consequently, as

[8] Growth-oriented strategies seek above average returns by investing in companies whose earnings are expected to grow at an above average rate relative to the market, ie stocks with high price/earnings (p/e) ratios. Value-oriented funds target stocks with lower than average price-to-book or p/e ratios, seeking to select stocks that trade below their intrinsic value.

enhanced passive funds[9] have recently gained prominence among indexed portfolios, the dividing line between active and passive management has tended to blur somewhat.

… and as investors increasingly focus on processes and style consistency

In addition, ultimate investors are increasingly focusing on investment processes and investment style consistency. As a result, investors, usually aided by investment consultants, will monitor and evaluate asset managers against appropriate style benchmarks and perform detailed operational reviews concerned with those procedural aspects of the investment manager's activities that are thought to produce superior long-term performance. Among these, risk controls and risk management systems are gaining prominence. Historical performance, although part of the evaluation process, is therefore no longer regarded as the sole driving factor in manager selection and evaluation.

Fees are now largely based on fixed percentages of assets under management

Finally, the importance of different compensation schemes has been changing. In particular, the industry appears to increasingly favour arrangements in which management fees are a fixed percentage of assets under management, as opposed to performance-based management fees. Fee levels will differ across management styles and asset classes. Although not performance-based as such, schemes based on fixed percentages of assets indirectly reward the relative performance of asset managers (with the return on a market index or, now less common, investment returns generated by a peer group of asset managers used as performance benchmarks), with the nexus between performance and fund inflows acting as an implicit incentive structure. Notably, however, this trend away from explicitly performance-driven fee structures[10] has excluded hedge funds and other alternative investment vehicles, which have retained their focus on absolute, rather than relative, returns.

Institutional investors and the efficiency of financial markets

The above-mentioned trends in the institutional asset management industry point to a number of potential implications for financial markets. One set of implications relates to market efficiency and volatility and is discussed below. Additional influences emanating from changing incentive structures in asset management can be highlighted with regard to market liquidity and the risk management needs of households as well as asset managers. These, along with a number of policy-related implications, are discussed in detail in CGFS (2003).

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[9] Market commentary suggests average tracking errors for *actively managed* fixed income portfolios at around 1% and in the 2–6% range for *active* equity portfolios. Portfolios with tracking errors at around 0.25% and 2% for fixed income and equities, respectively, will be regarded as *enhanced passive*, those with smaller tracking errors as *passive*.

[10] Industry practitioners tend to highlight possible adverse incentive effects inherent in particular in asymmetric performance fees, arising from the option-like payoff structure of these schemes. In addition, asset managers appear to have themselves actively discouraged explicit performance fees as these tend to induce high earnings volatility.

Due to their size and potentially long investment horizons ...

The efficiency of financial markets relies on the capacity of certain investors to act on, and correct, apparent "pricing errors". These investors will tend to sell or short overvalued securities while taking an offsetting long exposure in close substitutes of these securities in order to hedge their risks. If close substitutes are not available to establish such an offsetting exposure or if investors opt for an open, contrarian position, such arbitrage operations are inherently risky. Not only are mispricings difficult to identify, but they can also become worse before disappearing. That is, even when prices ultimately converge with certainty, such trades may generate substantial temporary losses. This, in turn, raises the question of whether the investor is prepared to hold out in the face of these temporary losses and whether there is enough capital to allow for such a strategy. Under risky arbitrage, therefore, market efficiency requires the existence of investors with enough capital and sufficiently long investment horizons to maintain a given position until all available information is fully incorporated into prices.[11]

... institutional investors may help correct pricing errors

Institutional investors, owing to their size and potentially long investment horizons, could be well placed to play this role. Their existence favours, in principle, a faster, more comprehensive and thorough investment process, ranging from improved information gathering and analysis to more consistent decision-making. That is, assuming they invest on the basis of fundamentals and provided they have the ability to maintain their positions long enough, arbitrage by large institutional investors could stabilise asset prices by making sure that prices do not substantially deviate from fundamentals. For much the same reasons, institutional investors would be expected to serve as structural providers of market liquidity, particularly in times of stress.

In practice, however, questions must be raised as to whether there are features in the evolving incentive structure of institutional asset managers that might affect their ability to use their size and, in principle, relatively long investment horizons to serve the various functions outlined above. For example, if the effective investment horizon of institutional investors were to be shortened, prices might not converge quickly enough for their risky arbitrage positions to be sustained. This would prevent or further delay the correction of any misalignments.

But industry practice may limit their ability to do so ...

One often cited explanation of why this might happen is based on the observation that fund managers tend to end up being evaluated against each other.[12] This is because investment performance is now largely measured relative to a benchmark. To avoid falling behind the benchmark, managers may then have incentives to herd, ie close an existing or refrain from establishing a new arbitrage position, to avoid the reputational risk of acting differently from their peers. Such effects can occur for portfolios that formally rely on peer groups in terms of reviewing performance, but can also be compensation-based. In these cases, when fee structures are implicitly based on returns relative to a market index, managers may want to avoid underperformance and

[11] See Shleifer and Vishny (1997).

[12] See Scharfstein and Stein (1990).

fund outflows by staying close to the benchmark. Accordingly, fund managers can become most constrained precisely when they have the best opportunities to profit from contrarian positions, ie when the mispricing they are trying to adjust widens further. By implication, the fear of this happening will make asset managers more cautious in the first place, when putting on their initial trades. As a result, arbitrage-based incentives might be particularly ineffective in extreme circumstances, contributing to potential instability.

... by restricting asset managers' room for manoeuvre

In fact, some of the ongoing industry trends reviewed above do seem to suggest that the ability of institutional investors to engage in risky arbitrage strategies might have been reduced. Examples of such trends are the general tendency towards a narrowing of investment mandates, the adoption of established market benchmarks in evaluating performance, and the reduction of permissible tracking error (see the box).

Performance measurement, tracking error and investor behaviour

Investors need to evaluate carefully their managers' performance using objective criteria. The criterion most commonly used for this purpose is performance relative to established market indices, such as those in the MSCI and S&P families. During the working group's interviews, industry representatives commented that the increasing use of core market indices, along with the recent tendency to impose somewhat tighter limits on tracking errors, might lead to convergence in investor behaviour. In particular, interviewees referred to three different factors that might, at times, encourage such effects and that are associated with the use of market benchmarks:

- overvalued stocks or big issues of highly leveraged debtors tend to find their way into major indices, which are generally capitalisation-weighted and, thus, more likely to include overvalued securities than undervalued securities. Asset managers may therefore need to buy these assets even if they regard them as overvalued, as otherwise they risk violating agreed tracking errors;[①]
- once a given asset is included in an index, scope for underweighting is limited by the allowable tracking error. Both effects together lead to a trade-off between the risk of increased tracking error and the risk of holding overvalued securities. The problem is most severe for more narrowly defined indices that may be dominated by a relatively small number of individual securities;
- assuming an index is only partially replicated, feedback effects might be generated as asset managers are forced to increase their holdings of the main drivers of the index when rising index values coincide with underperformance of these index components against the index.[②] This last effect is likely to arise for broad indices and those that are difficult to replicate, eg corporate bonds, while smaller indices tend to be fully replicated.

As the market indices used for indexing are now largely based on market capitalisations (as defined by the free float), portfolios that fully replicate the underlying index will be self-rebalancing. That is, the value of the portfolio will change in line with the index, obviating the need for the asset manager to make adjustments, provided the index constituents remain unchanged. The effects mentioned above are, therefore, much more subtle than they would be if the market indices used for indexing had static, adjustable weights or if weights were not based on market capitalisation. Furthermore, all three effects may be subject to negotiation between asset manager and customer, who might agree on some degree of customisation, say, through putting limits on particular assets. This, in turn, could limit any adverse implications.

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① Alternatively, asset managers can be forced to sell assets they might have liked to hold on to. One example for such a case arises when benchmark indices, as is common with bond benchmarks, are based on ratings-related criteria, such as the exclusion of sub-investment grade bonds. A downgrade to below investment grade would thus remove the respective issue from the index, though with a certain lag, triggering a rebalancing of investment portfolios and the forced selling of the downgraded bond. Similar effects can occur if asset managers' mandates contain ratings-based investment constraints. ② It should be noted that, in principle, such feedback can also be negative, depending on the structure of the covariances between the principal components (index drivers) and the overall index.

However, as other industry trends suggest offsetting effects ...

Other developments, however, suggest offsetting effects. At the strategic level, the increased number of different asset class and investment style choices should permit individuals to take on greater or less risk. Given the shift of strategic asset allocation back to owners of funds, individual investors can hence allocate their investments across more broadly defined asset classes and strategies according to their personal views of future market trends. In addition, the rising proportion of assets managed by alternative investment vehicles may serve to enhance the role of institutional investors that are not as strictly constrained by benchmarks or limits on tracking errors as their more traditional counterparts. At the tactical level, the declining reliance on (explicitly) peer-based benchmarks may alleviate reputational pressures on individual asset managers, thus limiting incentives to "trade with the crowd". Furthermore, with increasing emphasis being put on investment processes, ultimate investors may be inclined to maintain effective performance assessment periods at times of underperformance, encouraging fund managers to assume and retain more long-lived investments in assets that seem inappropriately priced relative to fundamentals.

... the overall impact remains uncertain

Unfortunately, reconciling the overall impact of the various effects highlighted above is a demanding exercise, particularly given their at least partially offsetting nature. Therefore, it is perhaps not surprising to find, on balance, no clear-cut empirical support for the hypothesis that aggregate market efficiency (and volatility) are unduly affected by ongoing industry trends or that institutional investors systematically contribute to or consistently fail to correct large-scale misalignments. Hence it is uncertain whether or to what extent changes to the incentive structure of institutional asset managers have affected their overall ability to counter asset pricing errors. While, at times, asset managers might find their performance horizons shortened, profit opportunities and relatively free entry suggest incentives to help correcting pricing inconsistencies over the medium term, once misalignments grow too large. That is, while some aspects of the industry structure in institutional asset management may suggest scope for influencing market outcomes, robust evidence on these effects is not available.

References

Bank for International Settlements (1998): "Asset prices and the asset management industry", *68th Annual Report*, Basel, pp 76–97.

Carhart, M M (1997): "On persistence in mutual fund performance", *Journal of Finance*, 52, pp 57–82.

Committee on the Global Financial System (2003): *Incentive structures in institutional asset management and their implications for financial markets*, Bank for International Settlements, Basel, March.

Jensen, M C (1968): "The performance of mutual funds in the period 1945–1964", *Journal of Finance*, 23, pp 389–416.

Pensions and Investments (2002): various issues.

Scharfstein, D and J Stein (1990): “Herd behaviour and investment”, *American Economic Review*, 80, pp 465–79.

Sharpe, W F (1966): “Mutual fund performance”, *Journal of Business*, 34, pp 119–38.

Shleifer, A and R W Vishny (1997): “The limits of arbitrage”, *Journal of Finance*, 52, pp 35–55.

Tsatsaronis, K (2000): “Hedge funds”, *BIS Quarterly Review*, November, pp 61–71.

UBS Warburg/Oliver, Wyman & Company (2002): *Global industry research: the future of asset management in Europe*, September.