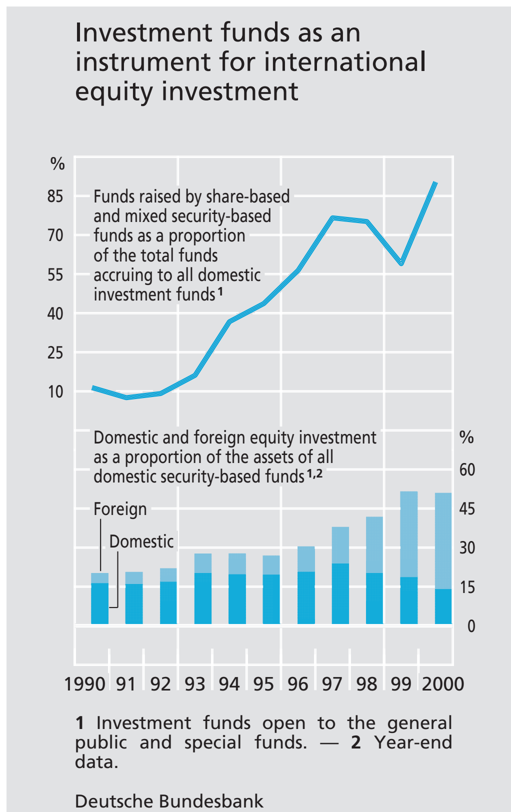
The role and behaviour of German fund managers on the equity market

Institutional investors are playing an increasingly important role on the equity markets. In Germany – as in many other OECD countries – there is a clear trend towards the institutionalisation of asset management, a trend which has become even stronger since the start of the 1990s. This article analyses the role and behaviour of German fund managers on the equity market. It is based on a representative written questionnaire to which most German equity fund managers responded. The results show that fund managers tend to base their decision-making mainly on enterprise-related data. Their investment behaviour is thus able to contribute to a more efficient price formation on the equity markets. On the other hand, there are clear limits to the use of arbitrage by institutional investors. Herding can also lead to instability on the equity markets.

Introduction

Increasing influence of institutional investors on the equity market

Institutional asset management has long played only a relatively minor role in Germany. But this is gradually changing. At the end of 1999 German credit institutions, insurance companies and investment funds – the main components of the group of institutional investors – already accounted for 43 % of total domestic assets invested in shares, as compared with 26 % at the start of the 1990s. By contrast, direct equity investment



1 Investment funds open to the general public and special funds. — 2 Year-end data.

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by households fell from 26 % to 21 %. Between 1990 and 1999 the growth recorded by investment companies was well above average. This was accompanied by a generally stronger inclination to invest in shares. The share of security-based funds' assets invested in equities rose from around one-fifth in 1990 to more than one-half at the end of 2000. Owing to the relative changes in asset prices in favour of shares, this may overstate the underlying trend. However, the above-average growth in receipts of share-based and mixed security-based funds underlines the greater significance assumed by this form of investment (see the above chart).

Two levels of institutionalisation

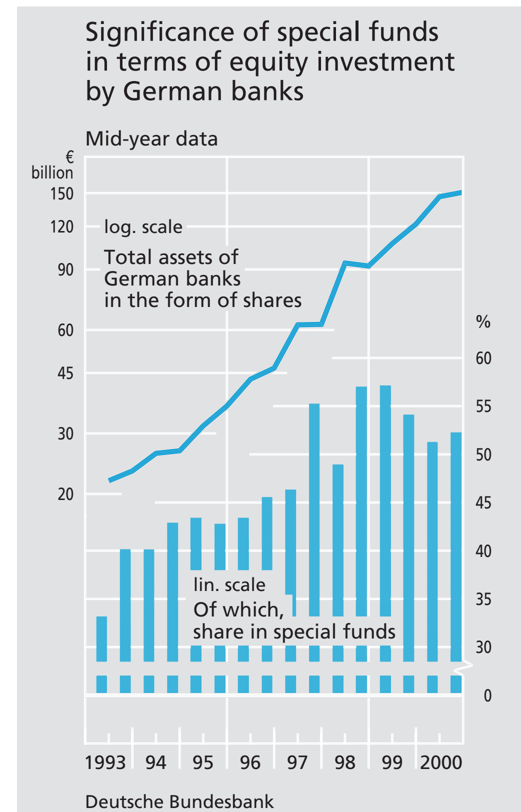
"Institutionalisation" on the equity market is being driven on two levels: private investors are increasingly resorting to investment funds instead of investing directly, and institutional investors such as banks and insurance companies are engaging in "institutionalisation in the narrow sense" by expanding their investment in special funds as opposed to direct equity purchases. At the end of 2000 the special funds certificates held by credit institutions and insurance companies amounted to € 81 billion and € 196 billion respectively. By comparison, the reported portfolio investment of credit institutions in equities amounted to € 74 billion and that of insurance companies to € 33 billion. These figures emphasise the high ranking that investment in special funds has meanwhile attained in the financial industry as compared with direct equity holdings. Since the implementation of the first Financial Market Promotion Act in 1990, it has been easier to take advantage of investment opportunities in special funds, with the result that banks and insurance companies have increasingly favoured this investment instrument – also with regard to tax and balance-sheet advantages.

Advantages of fund-based investment

An explanation needs to be found for the clear trend towards the intermediation of capital market investments, and especially of equity investment, as in recent years the information and transaction costs of direct portfolio investment have fallen drastically in some cases, owing to rapid progress in the field of information and communications technology and the interlinking and computerisation of trading procedures. Evidently, however, conditions on the capital markets favour professional fund management. Institutional asset management can create added value by reducing risk. The potential of invest-

ment funds to secure value added is multifaceted. By outsourcing asset management, investors can offset the problems caused by lack of time, information and know-how. Investment funds can generally achieve economies of scale when analysing and trading securities. This enables investment strategies which use diversification as a means of largely neutralising unsystematic risks related to individual equities to be devised and implemented far more favourably. By investing in funds, private savers are thus able to invest indirectly in a number of shares from a broad range of investment opportunities. This includes capital markets that were previously difficult or impossible to access. In addition, consolidating investment money is often the only way to permit complex and otherwise generally prohibitively expensive hedging strategies involving the use of derivatives. A further advantage of fund-based investment is derived from the facility to exchange certificates for liquidity as required, without having to liquidate specific assets, thereby changing the composition of the portfolio itself. Not least, the consolidation of investment money enables investment fund managers to exert pressure on public limited companies.

Marketing strategies adopted by investment funds are often linked to the notion that fund managers are in possession of superior information, valuation models or investment techniques. It is thus, for example, the explicitly stated aim of a whole class of funds – hedge funds – to track down distortions on the market and to turn them into profit by implementing investment strategies with special risk-return profiles.[1] In fact, investors may use



fund-based investment services primarily because they believe that the equity market provides special profit-making opportunities and presume that portfolio managers are able to realise above-average returns by drawing on their experience of the capital market and their analytical research activities in order to exploit undervaluations and overvaluations effectively. If this were so, fund managers would actively help to forge a stronger link between prices on the financial market and their underlying economic fundamentals.

For major institutional investors such as credit institutions and insurance companies, risk-return advantages due to economies of scale

1 See also Deutsche Bundesbank, Hedge funds and their role on the financial markets, Monthly Report, March 1999, page 29 ff.

are unlikely to be of any great significance. The increase in "institutionalisation in the narrow sense", i.e. the outsourcing of asset management within the financial industry to special funds, is better accounted for by tax and balance-sheet advantages.[2] In addition, special funds offer institutional investors such as insurance companies greater flexibility in terms of portfolio design – for instance, by using options and futures to hedge asset items.

Risks arising from the ongoing institutionalisation of equity market investment

The involvement of professional asset managers can, however, also lead to information asymmetries. Therefore, agreements about incentives for fund management that are consistent with its objectives together with measures to enhance product transparency, such as standards governing the presentation of investment results, are necessary to boost investor confidence. Moreover, diseconomies of scale may also occur. Clustering of investment money, especially if it is accompanied by herding on the part of asset managers, could lead to a thinning-out of the corresponding trading side, thus jeopardising market depth and causing prices to fluctuate widely. Moreover, institutional investors most probably prefer shares with particular features – for example, blue chips with a high market capitalisation. Consequently, there can be undesirable side-effects for smaller enterprises with low market capitalisation or new enterprises that do not have appropriate access to equity market financing. Institutionalisation also entails the risk of short-termism on the part of institutional investors.

Focus on professional equity fund management

Systematic study of professional investment processes based on a written questionnaire

The rapid, huge increase in the importance of institutional investors would suggest the advisability of adopting a systematic approach to obtaining information about the investment behaviour of this group of investors. We will focus here on some key features of this behaviour. The results of our investigations are based on a broad representative written survey which was conducted in summer 2000, involving most of the fund managers dealing in equities (i.e. 278, or 52 %) at virtually all relevant investment companies located in Germany (60 out of 62 companies). Total assets managed by the survey's respondents amounted, at the time of the survey, to some € 400 billion, or 70 %, of all assets held in share-based and mixed security-based funds. Careful analysis of the data, including the examination of subgroups, reveals structures and patterns that are economically plausible and coherent. Since the fund managers surveyed were granted anonymity, there is no reason to assume that they did not respond to the best of their knowledge, offering their own subjective assessments as well. Nor is there any indication that the survey results are distorted by selectivity in the responses.[3]

2 For example, when investing in special funds, price losses for some items can be offset against price gains in others, whereas in the case of direct portfolio investment the principle of the lower of cost or market is applied strictly to each individual item.
3 See Torsten Arnswald, "Investment Behaviour of German Equity Fund Managers – An Exploratory Analysis of Survey Data", Discussion paper 08/01, Economic Research Centre of the Deutsche Bundesbank (2001) for a detailed examination and interpretation of the results of the survey.

Details of the survey results

Typical profile of an equity fund manager

The typical German equity fund manager is 35 years old and has been working in that field for more than five years. He manages some € 850 million worth of equities. Most of the fund managers who took part in the survey (59 %) had a university degree in economics or business administration and more than half (54 %) had completed two to three years of professional training in banking or a comparable training programme. Over one-quarter (27 %) had also qualified as financial analysts. Almost 71 % of fund managers have full responsibility for taking decisions, although these must be in keeping with the investment strategy prescribed by the investment company or group; a further 14 % make joint decisions with their colleagues. As a rule, 15 % make fully independent decisions, i.e. without any investment strategy constraints imposed by the investment company. In the context of their investment mandate, fund managers generally focus first and foremost on blue chips. They therefore define their investment strategy as targeting growth rather than value.[4] Furthermore, they claim to follow more of a bottom-up than a top-down approach, i.e. they tend to analyse individual shares independently of one another rather than to review markets and sectors before assessing individual shares in the sectors concerned. According to the information provided by the respondents in the survey, index-tracking plays a substantial role.

Market efficiency and investment philosophy

The main investment objective – above-average performance

Whether fund managers pursue a more active or a more passive investment style depends on their philosophy. Passive investment strategies such as index-linked investment policies are likely to be based on the view that significant pricing errors on equity markets are a rare occurrence.[5] According to this criterion, the value added which passively managed funds are able to offer their investors consists primarily in reducing price risks by means of broad risk diversification and possibly by hedging strategies related to portfolio items. By contrast, active fund management aims at realising above-average returns on equity investment, i.e. at "beating the market". The type of value added that active funds offer their investors is thus derived from the deliberate exploitation of supposed information advantages. The survey responses confirm the fact that German equity fund managers generally perceive their main task as being to pursue above-average share price increases. Measured on a scale ranging from 0 (irrelevant) to 5 (criterion plays a major role), this objective received an average score of 4.6. Value added achieved by implementing diversification strategies evidently plays a significant, if subordinate, role.

4 A value-oriented investment approach favours shares with a relatively low valuation, while a growth-oriented approach favours shares with a significant potential for earnings growth. This is more of a practical distinction and indicates, in each case, a basic preference for certain risk categories.
5 Owing to the legally established ceiling for portfolio investment in individual stocks, in Germany it has been possible to introduce index funds which fully replicate stock market indices such as the DAX only since the entry into force of the third Financial Market Promotion Act *(Finanzmarktförderungsgesetz)* in September 1998.

This applies both to diversification as a direct investment objective (3.3) and indirectly in terms of the replication of indices (2.5). Dividends or other strategic considerations, such as tax or balance-sheet advantages, are, as a rule, largely of minor significance (1.1 and 0.5 respectively).

Broad agreement on investment opportunities on the equity market

With regard to the nature of equity markets, virtually all fund managers (92 %) agree that information efficiency is inadequate. A clear majority of 70 % are of the opinion that pricing errors will also persist in the longer term because the market takes full note of new trends and developments only after some time has elapsed. Rather than new information being immediately reflected in market prices, its impact is only gradual. The notion that short-term share price distortions might be introduced as a result of initially inappropriate responses to new information on the part of investors is considered by 58 % of the respondent fund managers to be of secondary importance. Only a few investors (8 %) ascribe a comparatively high degree of efficiency to the equity market and consider shares to be valued correctly on the whole. On balance, German fund managers see active asset management as having considerable potential.

Ways of acquiring information

Information advantages – the key to successful investment

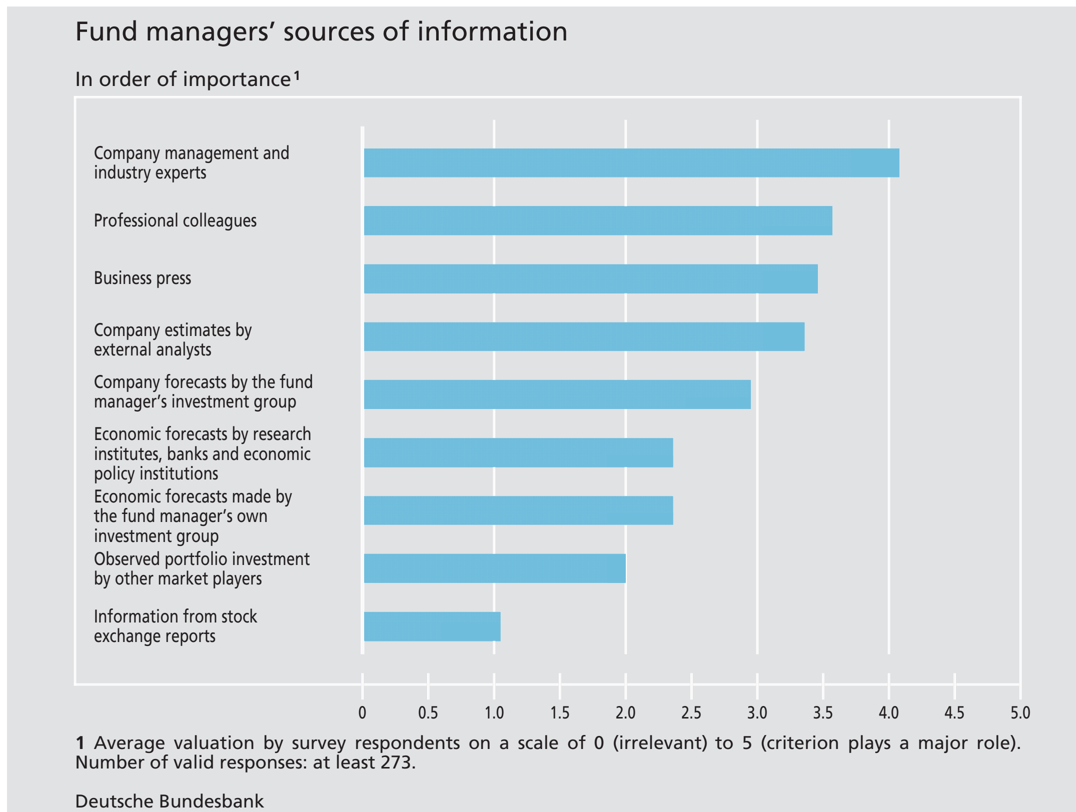
Active fund managers who perceive opportunities for profit in inappropriately assessed share prices have to analyse the data and information available to them as a basis for devising profit-making strategies. On the other hand, they may also endeavour to secure information advantages. According to the results of the survey, most fund managers consider the key to successful fund management as lying in the appropriate analysis of the information available (43 %) and, to a slightly lesser extent, in their own research activities (40 %). However, it is not clear which of these two is the preferred option. This may be because it can be relatively expensive for fund managers to conduct their own analyses and research and they are therefore dependent on the capacities of the investment company concerned.

Information channels contain contagion potential

The way in which information is disseminated among market players is significant for the stability of the financial markets, as it can produce exaggerated and unbalanced reactions which it is difficult to counter, even in part, by fundamental arbitrage. The potential for contagion among institutional investors may be examined by investigating fund managers' preferences in terms of sources of information. According to the survey, fund managers consider their discussions with management and industry experts to be the most important source of information for their work (see the chart on page 49). At the same time, "second-hand" information is also of relatively major importance, with colleagues and the media being ranked second and third. This increases the likelihood of contagion deriving from information exchanged by investors or groups of investors. In addition, profit projections for public limited companies generally play a greater role than macroeconomic forecasts – which is hardly surprising as investment decisions on the equity market, as already indicated, are based primarily on bottom-up analyses. It is mainly the "second-

Fund managers' sources of information

In order of importance[1]



1 Average valuation by survey respondents on a scale of 0 (irrelevant) to 5 (criterion plays a major role). Number of valid responses: at least 273.

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hand" forecasts which are consulted – primarily those made by analysts from other investment firms. Moreover, to observe portfolio investments by other market players is considered less significant, but not irrelevant. Thus, in the fund managers' own estimation, there is an inherent tendency to pursue investment strategies which are tuned to the trading activities of other players.

Methods of equity market analysis

Appropriate analytical methods for consistent portfolio management

If active portfolio managers are consistent in their analysis of the equity market, they gravitate towards those methods of analysis which are in keeping with their basic conception of how the equity market functions, i.e. of how price-efficient it is. They may therefore regard technical analysis as profitable, especially for markets for which, in their view, the adjustment of prices to fundamental supply and demand factors is relatively inelastic or where overreactions occur. Other quantitative analytical approaches help to determine efficiently diversified portfolios based on risk-return forecasts as well as to make econometric estimates of equity returns using single and multi-factor models. By contrast, fundamental analysis, by nature, aims at determining the intrinsic value of an equity investment solely on the basis of economic determinants. Such determinants are not based on past price trends but on criteria such as corporate profits, dividends and interest rates. Those who use fundamental analyses are entitled to assume additional returns only if their evaluation schemes indicate that market prices do not fully reflect generally accessible, relevant information.

Fundamental analysis clearly to the fore

In practice, portfolio managers tend to employ different evaluation strategies in parallel. For instance, quantitative instruments may be used to pre-select securities from a range of investment opportunities, while individual choices are ultimately made in accordance with the results of fundamental analysis. However, on balance, fundamental analysis plays by far the most important role. On a scale of 0 to 5, it scored an average of 4.2, whereas technical analysis scored only 2.6. Only just under one-half of all fund managers refer to econometric and portfolio optimisation models; in general, they are considered relatively unimportant (1.2 and 1.1 respectively). With regard to the forecast horizon, fundamental analyses are evidently considered particularly suited to identifying the yield potential of equity investment over the medium term. The choice of a time horizon of roughly one year suggests that fund managers concentrate on corporate earnings estimates for the financial year to come. Quantitative methods seem to be used primarily in the analysis of short-term fluctuations; the forecast horizon for technical analysis averages just eight weeks, while that adopted for portfolio optimisation approaches and econometric models is roughly six months.

Decision-making methodology

Little use of structured portfolio management

A major task in institutional asset investment is to position the decision-making process between a rules-bound and a purely discretionary investment policy. For example, independent investment consultancy firms, which are increasingly being commissioned by credit institutions and insurance companies to choose suitable investment managers, place great emphasis on consistent and rigorously implemented investment strategies. The advantage of a rule-based decision-making procedure, which in practice is generally referred to as structured portfolio management, is that it enables the establishment of a systematic, comprehensible and relatively objective investment process. However, reduced decision-making flexibility and a narrower discretionary latitude have their drawbacks. Such approaches invariably lead to non-optimal decisions if unexpected factors and discontinuities originating in the structure of the firm or in the economy as a whole intervene.

The survey results show that only 23 % of fund managers engage in systematic, standardised analysis and then apply a fixed decision rule. By contrast, 47 % reserve for themselves the greatest possible degree of flexibility when taking an investment decision. They tend to analyse equities in a manner dependent on the current market situation, making a general judgement only after a personal appraisal. Of the managers surveyed, 30 % also make investment decisions after a final personal appraisal, albeit only after systematic equity analysis.

Hedging and risk management strategies

Cash share of the portfolio – the most important management tool

Further investment decision rules may be inferred from strategies designed to limit market risks. Only those funds which gear their investment strategies consistently to indices can probably afford to disregard this objective. The results of the survey indicate that fund managers make only limited use of op-

tions or futures as hedging strategies (average score 2.2). Rather, depending on their reading of the general market situation, they adjust the ratio of equities to cash in their portfolios (3.1). Dynamic hedging strategies are intended to limit losses in the portfolio's value in the event of a general market downturn by tying the ratio of equities to cash and bonds to the general stock market trend. Especially since the stock market crash of 1987, these rules have been held responsible for exerting a destabilising effect on stock market price trends on account of their implied pro-cyclical orientation. To judge from the data supplied by the fund managers surveyed, such hedging strategies do not currently play a major role in Germany (1.0). Stop-loss strategies are sometimes used to protect the value of individual equities, meaning that a drop in market price to or below a pre-determined level leads to the abandonment of the corresponding investment position. Stop-loss strategies are thus static and linked to the general development of the stock market. It is not the analysis of new fundamental information which prompts the decision, but rather the market development itself. Generally speaking, the fund managers surveyed also considered this rule to be of only minor relevance (1.6).

Remuneration incentives and performance control

Opportunities and risks as seen by fund managers

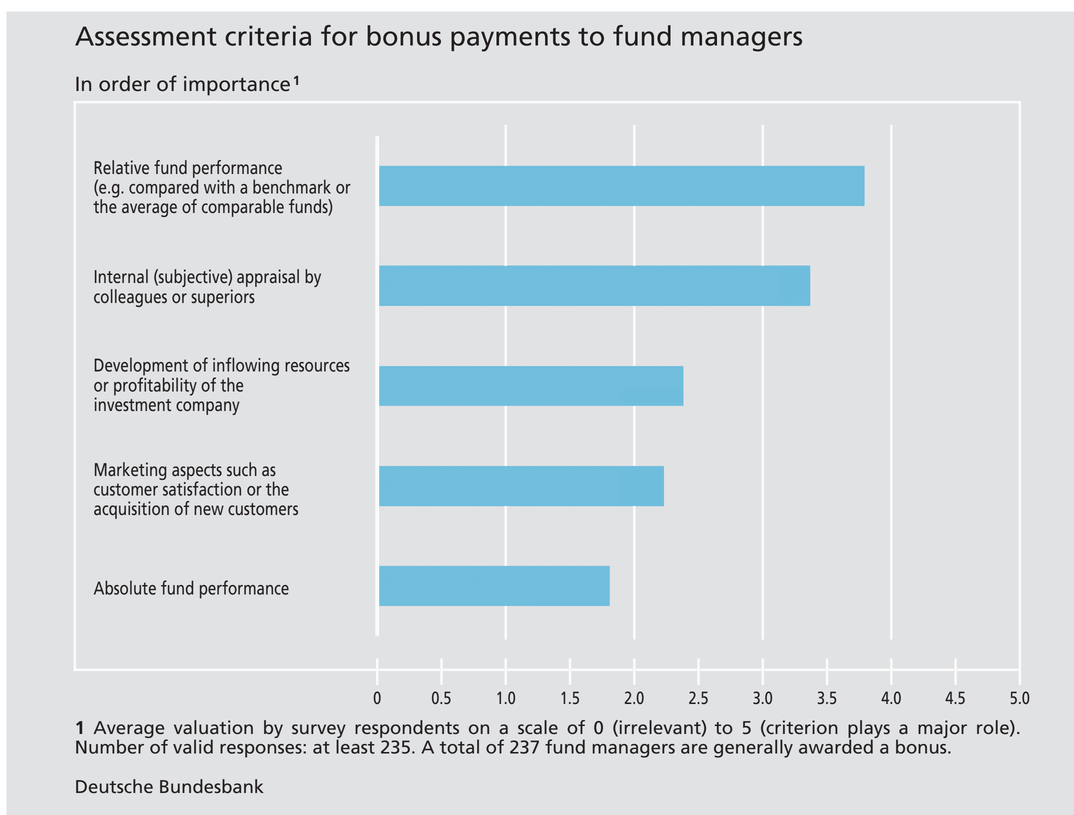
Remuneration incentives and control measures in the investment companies are likely to influence fund managers' investment decisions. The optimal solution for institutional investors may well be to adapt, by and large, to the general market trend. Such behaviour is logical if the risks and opportunities involved in the investment decisions are viewed from the fund manager's perspective. If the invested money entrusted to him achieves above-average performance, he can look forward to increased job security, possibly a bonus and/ or other professional advantages. By contrast, performance that is significantly under par would reduce the likelihood of a bonus and quite possibly also jeopardise the manager's professional prospects.

Relative investment success determines appraisal and bonuses

The survey results indicate that, within investment companies, the performance of fund managers is appraised, on average, once every three months in the light of the growth in value of the investment sums entrusted to them. However, the average is misleading in that it masks considerable differences. Whereas 44 % of the fund managers surveyed are appraised on the basis of their fund performance no more than once a year, one-third have a monthly appraisal. Benchmark indices are clearly the preferred means of comparing fund performance (average score of 4.5). Measurements of fund performance which aim to take explicit account of price risks incurred rarely use formal measures (1.7). Instead, it is apparently far more usual to take comparable funds as a measure (3.2). Absolute fund performance also plays a role, albeit a subordinate one (2.2). Moreover, the salaries of almost all fund managers include performance-based components; for the vast majority of these managers, they are in the order of up to 60 % of their gross basic annual salary, with 30 % being the median. Normally, the primary criterion for bonus awards

Assessment criteria for bonus payments to fund managers

In order of importance[1]



1 Average valuation by survey respondents on a scale of 0 (irrelevant) to 5 (criterion plays a major role). Number of valid responses: at least 235. A total of 237 fund managers are generally awarded a bonus.

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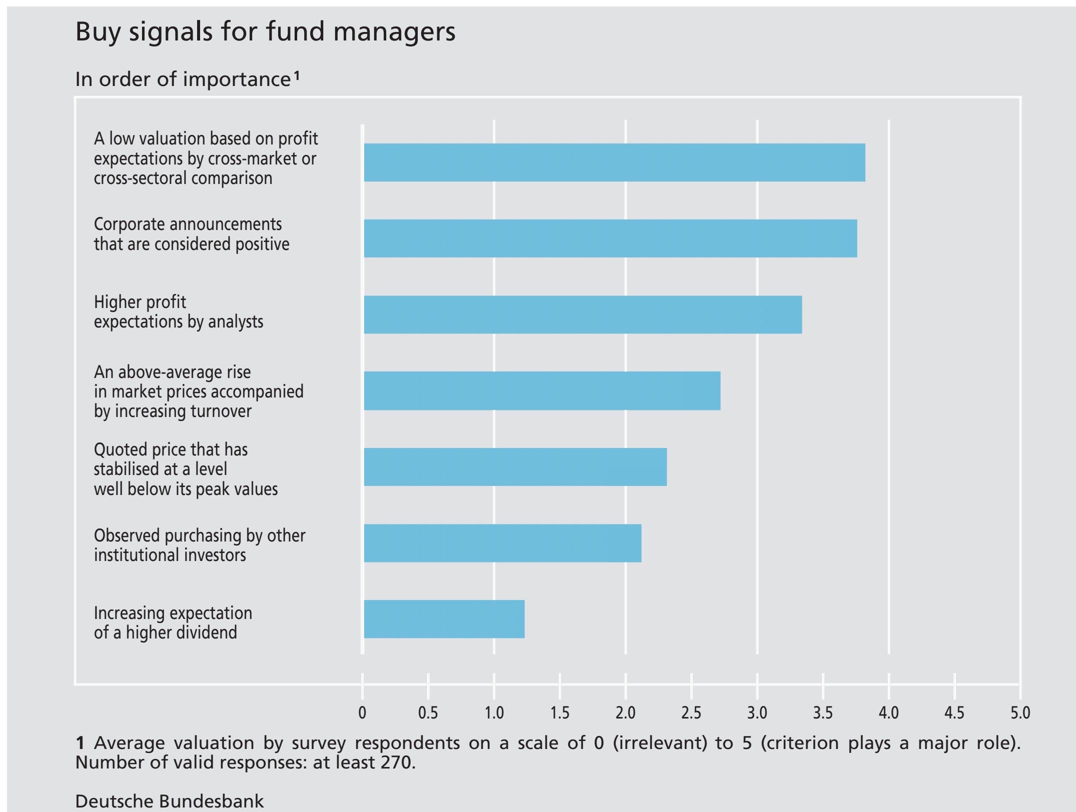
is relative performance (see the above chart). However, a subjective evaluative criterion, in-house appraisals by colleagues and superiors, is of relatively high significance, too. Criteria which are more closely linked to the marketing success of the investment company's products, such as corporate profit, influx of investment monies, customer satisfaction, or the acquisition of new customers, are less frequently used as a basis for assessment.

Pro-cyclical investment behaviour

Do institutional investors reinforce or curb price fluctuations?

The question of whether fund managers tend to act pro-cyclically, thereby reinforcing the market momentum is currently being debated at length. One area of research has focused on herding behaviour. As a general observation, herding is to be understood as investor behaviour that is at times independent of the fundamentals and unidirectional. Herding reinforces market trends and thus pro-cyclical tendencies. Conventional empirical investigations using market data have, to date, failed to distinguish adequately between spurious and intentional forms of herding among institutional investors. Unidirectional investment behaviour clearly leads to correlated trading, but evidence of correlated trading is not necessarily evidence of consciously imitative patterns of investment. The survey results yield helpful supplementary information in this respect. They show that equity fund managers – albeit to differing degrees – largely take one index as a kind of benchmark, which effectively synchronises investment behaviour. The results from various categories of response in the survey on invest-



1 Average valuation by survey respondents on a scale of 0 (irrelevant) to 5 (criterion plays a major role). Number of valid responses: at least 270.

ment objectives, monitoring and remuneration arrangements emphasise the relevance of indices for the work of fund managers.

With a view to consciously imitative investment behaviour – in other words, herding – which is based on other market players' supposed information advantages, fund managers were asked to appraise various buy signals (see the above chart). On balance, observed purchasing activity by other institutional investors plays only a minor role. Technical buying signals – such as an above-average rise in market prices accompanied by increasing turnover, or a quoted price that has stabilised at a level well below its peak values – which ultimately likewise imply gearing to other market players' trading activities, are considered to be rather more important. However, fund managers, as a rule, attach significantly less importance to these market-driven buy signals than to criteria of a fundamental nature. This is not altogether surprising, given that the fund managers interviewed thought fundamental analysis far more relevant.

Strong reaction to the arrival of fundamental news

An explanation of pro-cyclical behaviour invokes the fact that investors undertake revaluations only gradually. Momentum strategies, i.e. shifts into those stocks for which positive fundamental news is coming in, might then bring the quoted prices closer to the "fundamentally justified" value. Pro-cyclical tendencies do not therefore need to be contrary to fundamentals. Rather, they can be triggered by independent, yet similar, responses to the arrival of new information.

A common concern regarding the ongoing institutionalisation of portfolio investment decisions presupposes an implicit trend towards largely standardised patterns of investment behaviour or investment strategies. If that were the case, price adjustment processes would be speeded up, entailing an increase in short-term volatility. If, however, the arrival of information itself provides the basis for momentum strategies and supersedes a fundamental assessment independent of market dynamics, overreactions on the equity market may occur. According to the information supplied by the fund managers, their investment decisions are strongly influenced by such factors as corporate announcements which are judged to be positive (average score of 3.8) and higher profit expectations on the part of analysts for a certain public limited company (average score of 3.3). By contrast, their strategies take almost no account of dividend expectations (see the chart on page 53). A trading alternative is that fund managers regard a fundamentally low valuation by cross-market or cross-sectoral comparison as a signal to buy. This is the only option determined by the valuation level itself and not the direction of movement. Strictly speaking, only this type of response is likely to be adopted by investors who are pursuing a wholly fundamentalist approach. In point of fact, this criterion does, on average, have just a narrow lead over the others in terms of fund managers' decisions to purchase equities (3.8). Fund managers therefore appear to react just as readily to positive news itself as to its implications for the relative pricing of equities.

Further valuation criteria governing investment decisions

Preference for shares with a high market capitalisation

If institutional investors have other investment preferences than private investors, the trend towards using funds to invest indirectly in shares will also have a corresponding effect on relative share prices. Several studies on institutional investment behaviour suggest that fund managers make a deliberate effort to meet certain secondary criteria. There is, for example, a marked preference for large, liquid shares. High liquidity in securities trading reduces transaction costs. If derivatives are also available as liquid tradable equity contracts, this may enable risk transformation and offer additional information on market expectations and uncertainty. Whether certain types of shares display such key stock characteristics or not probably only begins to be important when the large volume and the more complex trading and hedging strategies of institutional investors have been reached. Even so, the fund managers surveyed attributed only minor significance to both trading costs, as measured by the bid/offer spread, and derivatives (average score of 1.9 and 1.5 respectively). Although the bid/offer spread is regarded as an indirect measure of secondary market liquidity, adverse trading effects arising from a lack of market depth might perhaps have been subsumed under the more general criterion of market capitalisation, which is deemed very relevant (3.7).

Unidirectional investment behaviour could also be explained by the fact that fund managers are keen to protect their reputation. "Lone" decisions could turn out to be bad.

Important selection criteria: flow of information, attention paid to particular stocks and market acceptance to date

Pro-cyclical behaviour may be the result of investor preferences for certain selection criteria which are considered indicative of superior stock quality. Unlike private investors, fund managers have to offer immediate justification for their decisions as part of an internal control and evaluation process; at the same time, the law prescribes that they "administer the trust for the joint accounts of the shareholders (i.e. holders of certificates) with the caution of a responsible business man".[6] Hence they may choose to apply conservative stock selection criteria. Besides market capitalisation, which can be conceived as indicating the size and popularity of a public limited company, fund managers regard the frequency of public disclosure and the availability of independent analysts' valuations as very important (3.5). This shows that the amount of attention paid to particular stocks and the flow of information about them may have an impact on their value. Finally, although past corporate trends and market performance have no predictive value per se, general market acceptance can be regarded as a quality category. According to the survey, fund managers attribute, on balance, high importance to this criterion (3.6).

The limits of fundamental arbitrage

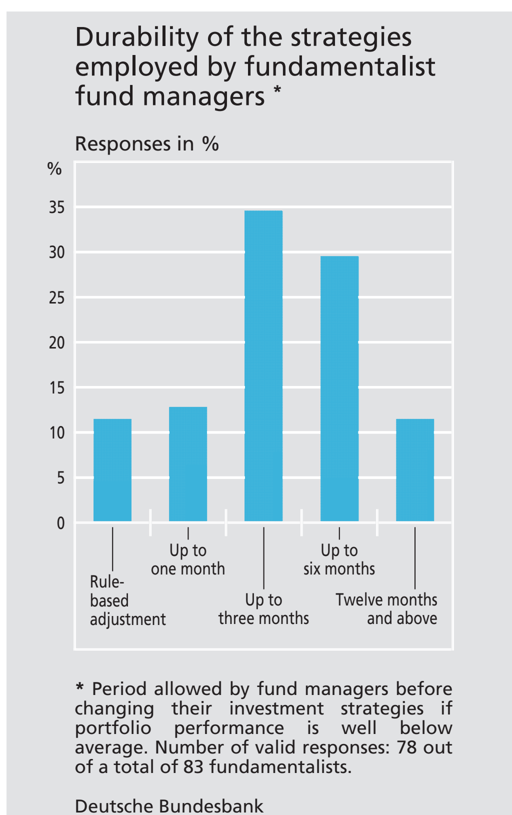
"Noise trader" risk for fundamentalist fund managers

The extent to which investors contribute to the price efficiency of the equity market is often dependent on the methods of financial analysis that are used to justify their investment decisions. This is unrelated to the potential forecasting advantages of one method of analysis over another. For example, the more non-fundamental factors determine the share prices, the more appropriate the application of technical analysis tools seems to an investor. However, such methods reveal a marked tendency not to take account of underlying economic data and to gear to market development itself. It cannot therefore be assumed that the use of non-fundamental techniques contributes to a systematic correction of pricing errors on the equity market. By contrast, fundamental investors take it as a signal to buy if the prices of the shares of a public limited company fall below their fundamental value and as a signal to sell if they are above it. The fact that there are many mainly fundamental investors does not, however, adequately determine financial market stability. Fundamentalist fund managers could deter from arbitrage because they perceive a risk of further incorrect valuation arising from the dominance of endogenous market forces released by non-fundamentalists ("noise-trader" risk). Furthermore, fund managers run the risk of enforced liquidation if customers start to withdraw their money. If "fundamentalists" take advantage of arbitrage possibilities anyway, and if they do not promptly record a success, liquidations can result in worse pricing errors on the markets or financial crises.

Fundamentalists' limited sticking power

The survey results help to gauge the potential for fundamental arbitrage. Of the fund managers surveyed, 30 % could be seen as primarily fundamentalist. More than 85 % of them hold the view that investors take too long to recognise new trends and develop-

6 Federal Law Gazette of September 17, 1998, No. 62, part 1, section 10 (1) of the Act on Investment Companies *(Gesetz über Kapitalanlagegesellschaften)*.



* Period allowed by fund managers before changing their investment strategies if portfolio performance is well below average. Number of valid responses: 78 out of a total of 83 fundamentalists.

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ments and hence prices only gradually reflect new information. Thus, one necessary condition for fundamental arbitrage is obviously satisfied. However, when these fund managers were asked how long they would hold on to a portfolio strategy if the markets turned against them and underperformance became significant, the response was just over three months on average. Less than one-quarter of fundamentalists indicated they would maintain it for six months, and less than one-eighth referred to at least one year (see the above chart). The survey results cast further doubt on whether fundamentalists could last the course.

All survey participants were asked to rank different scenarios in terms of their potential for generating particular tension during professional decision-making. Almost all fund managers cited market dynamics as the most likely source of nervousness – especially if prices are sliding rapidly but even, to a considerable extent, if they are rising rapidly. Fundamentalists were the only group to have "voted" with a slight majority for economic and company-related news as the second-ranked source of nervousness. Fund managers therefore primarily follow market dynamics, including those who adhere strictly to fundamentals when investing. All in all, these empirical observations support the view that there are limits to institutional investors' use of arbitrage on the equity markets. This is in keeping with approaches based on behavioural financial theory.

Conclusion

As increased use is made of investment funds for the purpose of investing in stocks and shares, professional asset managers have moved to centre stage on the equity markets. At the same time, periods of high volatility on the markets seem to have become more frequent, although there is no clear evidence of higher volatility over the longer term. The debate over the impact of institutional investors on financial market stability is gaining ground, attracting not least the attention of central banks. Therefore, this article has made use of a representative survey to analyse key aspects of institutional investment processes. The results endorse the view that institutional investors can generally contribute to more efficient stock market pricing. Fund managers demonstrate a clear prefer-

ence for stock analyses based on company-related and underlying economic factors. On the other hand, institutional investors can make only limited use of arbitrage. Unidirectional trading, too, can lead to instability on the equity markets. This indicates that market dynamics can persist well beyond economically justified equilibrium levels.