The Use of Momentum, Contrarian and Buy-&-Hold Strategies: Survey Evidence from Fund Managers

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Abstract:

This study provides evidence from a questionnaire survey of fund managers. We find that the majority of respondents rely on momentum, contrarian and buy-&-hold strategies to some degree. Although there were few applicants who exclusively rely on a single trading strategy, clear preferences emerged. All kinds of predetermined trading strategies are preferred by younger and less experienced professionals. Moreover, contrarian traders show signs of overconfidence, disposition effect and reliance on non-fundamental information. A more conventional contrast is provided by fundamentally oriented and risk averse buy-&-hold traders, whereas momentum traders appear as the least risk averse professionals who may aim for exploiting the sub-optimal behavior of others.

1.   Introduction

Transactions of fund managers have been extensively studied in the recent past but our understanding of their behavioral patterns remains relatively weak. At the same time, there is a large amount of behavioral finance literature demonstrating the severe limitations of the mainstream paradigm. This motivates the demand for more background information on fund managers' actions (Hirshleifer, 2001, Barberis and Thaler, 2002). It has become obvious that the simplified notion of perfectly rational behavior and the derived buy-&-hold strategy reflect only part of the fund managers' world. In this vein, academic literature has been flooded by examinations of momentum and contrarian strategies. Who is using these trading strategies? In which way are they applied and do users share common characteristics? This study provides exploratory survey evidence, and finds that elements of all of these strategies are used in a complementary manner by the majority of fund managers. At the same instance, specific attributes can be allocated exclusively to the momentum, contrarian and buy-&-hold strategies. One may thus speculate that the composition of dominating trading strategies either reflects or impacts the behavior of asset prices.

Recent empirical research has lent considerable credibility to trading strategies which have been used for a long time in financial markets. During the 1970s only the buy-&-hold strategy seemed to be justified by theoretical and empirical work (see Shiller, 2003). In the 1980s, an influential challenge arose in the work of De Bondt and Thaler (1985), which claimed that a contrarian strategy would be profitable over a time period of several years (see also Lakonishok, Shleifer and Vishny, 1994). Finally, Jegadeesh and Titman (1993) and other studies led to research in the 1990s, proving the remarkable and stable profitability of momentum strategies at horizons of around six months (see the update by Jegadeesh and Titman, 2001). Results for the US markets have been mirrored in many other markets in the world as well (e.g. Rouwenhorst, 1998, Griffin, Ji and Spencer, 2003, Forner and Marhuenda, 2003).

This variety in trading approaches seems to be reflected in fund managers' behavior. The influence from buy-&-hold considerations is most obvious in the dominating benchmark orientation, where benchmarks are mostly defined as indexes of whole markets or market segments. Explicit contrarian strategies that are profitable in the longer run, however, are less visible, possibly due to the rather short-term competition in the fund management industry. A variant is the value-orientation of

many fund managers, which is for many proponents another form of buying undervalued assets, i.e. a kind of fundamentally oriented behavior. The momentum strategy is by contrast quite fashionable, as it promises excess returns as well as an avoidance of positions which are against market trends. It is thus no surprise that the effective behavior of most US funds can be empirically identified as momentum trading (Grinblatt, Titman and Wermers, 1995). It is then puzzling, however, how the success of momentum strategies reliably found in the literature can be reconciled with the notorious underperformance of the funds which seem to utilize momentum strategies (see e.g. Malkiel, 1995, Carhart, 1997, Wermers, 2000).

So, various strategies are applied in practice, but it is not clear who is using them, how they relate to each other, nor what motivates proponents to rely on these strategies. Our study aims to shed light on these questions by way of a questionnaire survey that was sent to managers of all professionally run stock and bond funds in Germany at the end of 2002. The sample comprises 117 responses from managers of mutual as well as specialized funds, such as pension funds.

We find that most fund managers rely on all three strategies to some degree, indicating that proponents of certain exclusive trading strategies are rare. However, most professionals have clear preferences regarding these strategies, which can be related to personal characteristics, information sources and behavioral patterns. It appears from our data that all three predetermined trading strategies are preferred by younger and less experienced professionals. Moreover, each trading strategy is clearly related to specific plausible preferences for the kinds of information, and is also related to behavioral patterns. Contrarian traders are less often in governing positions in fund management, show signs of overconfidence, disposition effect and reliance on non-fundamental information. A more conventional contrast is provided by buy-&-hold traders, who rely more on fundamental analysis, whereas momentum traders appear as less risk-averse professionals who may aim for exploiting the sub-optimal behavior of others.

The remainder of the paper is structured as follows: Section 2 presents the hypotheses to be tested by the questionnaire and Section 3 describes the data from the questionnaire. Results on the use of trading strategies are presented in Section 4, and Section 5 covers information on some attributes and beliefs of the users of certain strategies. Section 6 concludes the work.

2.   Hypotheses

Modern finance literature leaves much room for heterogeneous agents on financial markets, such as the distinction into "arbitrageurs" and "noise traders" (De Long et al., 1990). So what can we expect from users of the different trading strategies? First of all, it is an outstanding question whether the strategies we have addressed by name are really used by different individuals. The even more fundamental question: are all of these strategies of importance to some fund managers or are there clear favorites implying that other strategies are of more theoretical importance than practical? It seems plausible ex ante that the buy-&-hold strategy has high relevance in the professional markets. Secondary importance can be expected for momentum strategies due to their clear outperformance as shown by the academic literature. According to this reasoning, contrarian strategies would only place third. Regarding the relation of these strategies to each other, a plausible ex ante hypothesis should expect exclusivity, as this follows from the nature of a strategy. Note, however, that foreign exchange market research reveals the parallel reliance on several forms of information by the same persons, also indicating the parallel use of different kinds of "strategies" (see early Taylor and Allen, 1992). This leads to our hypotheses one and two:

H1   Among competing trading strategies in fund management, buy-&-hold is most prominent, being followed by momentum strategy and a contrarian strategy coming in third.

H2   The three strategies being considered here as well as possible other strategies are basically applied in exclusive form.

Based on the assumption that a strategy matters at all, the next question to be raised is who is using it? Can any personal or institutional characteristics be related with certain strategies? One might for example expect that the buy-&-hold users are those who have properly understood the true functioning of financial markets and are thus those who are comparatively senior in the market, in the sense of having longer experience (being older), holding more often governing positions in fund management or receiving a higher share of variable compensation. By contrast, the application of momentum or contrarian strategies may be related with just the opposite characteristics. We are aware that empirical studies have shown these latter strategies' potential to generate excess returns but we stick to the most conventional expectations.

H3   Users of the buy-&-hold strategy are associated with signs of seniority whereas momentum and contrarian traders are not.

The associations may even be more self-evident and obvious when it comes to used sources of information. Buy-&-hold traders can be expected to rely heavily on fundamental facts, whereas momentum and contrarian traders prefer competing sources of information, such as technical analysis.

H4   Users of the buy-&-hold strategy give fundamentals a high importance as a source of information whereas momentum and contrarian traders rely more on other sources.

Finally, the body of behavioral finance research has established several "anomalies" in behavior. If one regards these findings as indications of less than fully rational behavior, one may also expect that buy-&-hold traders are less "infected" by these anomalies.

H5   Users of the buy-&-hold strategy are less prone to anomalies than generally indicated in the behavioral finance literature.

Before we discuss empirical findings on these five hypotheses, the next section describes the methods employed in the survey as well as information gained about the respondents.

3.   Data

The survey encompassed all relevant fund management companies in Germany between August 15 and December 12, 2002. In total, 64 companies that were believed to manage equity and/or bond funds were approached. Of this total, five companies declared that they did not belong to our target group. Of the remaining 59 companies, 35 participated in the survey, with at least one appropriate questionnaire each. This resulted in a response rate of 59% concerning participating fund management companies.

To put this figure in perspective there are several possible viewpoints: in a similarly conceptualized survey of the foreign exchange management by fund managers in Germany, Gehrig and Menkhoff (2002) acquired the participation of 29 companies, resulting in a somewhat lower response rate of 51%. When the Deutsche Bundesbank conducted a survey of the same group of companies, all except one participated (Arnswald, 2001). Other surveys on financial matters that cannot rely on the authority of a central bank – and which are thus better comparable with our

approach – have realized response rates such as 45% (Shiller and Pound, 1989, for institutional investors), approximately 20% for non-financial firms in Belgium and in other countries (De Ceuster et al., 2000, p.305), 21% for large US firms and 50% for Dutch firms (Bodnar, de Long and Macrae, 2003) or 8% regarding foreign exchange dealers in the US (Cheung and Chinn, 2001).

The survey was conducted in several "phases". The first was carried out in August. Thereafter we followed-up with three more phases of mail, telephone and/or e-mail contacts with fund management companies that were not responding. As some of this communication was done by e-mail, unfortunately, we cannot report a useful response rate regarding the number of questionnaires sent and received. A rough estimate capturing only those companies which were basically addressed by paper questionnaire indicates a respective response rate of 30-40%. Compared with the above mentioned rates, this provides another indicator of acceptance by the target group.

A further measure to ensure reliable responses were many intensive interviews in advance of the survey. They served to formulate appropriate questions in the language of fund managers and to ensure a common understanding of such broad concepts as momentum trading versus alternatives. Moreover, in later stages the questionnaire was used in a pretest with several fund managers as a final check of its acceptance and appropriateness. In summary, the individual feedback as well the 117 questionnaires received indicate that the response was useful for our research purposes.

More information on the fund managers can be drawn from the descriptive statistics in Table 1. The typical person is roughly about 35 years old, has 10 years of professional experience, is male, receives a bonus of 25%, holds a university degree, has responsibility in active fund management and manages stocks rather than bonds. This data is largely consistent with the information from similar surveys in Germany such as Arnswald (2001) or Gehrig and Menkhoff (2002).

4.   Evidence on the use of different trading strategies

This section analyzes the use of trading strategies by asking several questions: are the strategies outlined above really important to practitioners when they have to make a decision on relative importance? Which of these trading strategies is then

most important? If several strategies are used, are they used exclusively? These are the issues addressed by our hypotheses 1 and 2.

First, we calculate the mean of the responses given to the question on the intensity of use. Figure 1 presents the mean values as the first bar for each of the four categories distinguished. This figure is 26% for the momentum strategy, 29% for contrarian, 31% for buy-&-hold and 14% for others. The three strategies explicitly mentioned are obviously of particular importance and together they account for 86% of the responses. We can thus give an answer to our first question: it is quite obvious that all three strategies examined are extensively used by practitioners.

Also of significance, one can see that the differences between the mean values do not appear to be of major importance. To find out more about the use of trading strategies we have analyzed the intensity of use. This ranges from using a certain strategy at all, i.e. giving it more than 0% (represented as second bar in Figure 1), to preferring a certain strategy to all others, i.e. giving it a higher percentage figure than others plus allocating at least 40% to this strategy. The outcome of the latter examination is presented in the most right-hand bar for each strategy of Figure 1 and shows interesting differences between the use of trading strategies.

Whereas momentum trading receives the highest attention among all strategies, this attention is often comparatively weak. More than 90% of respondents use momentum strategies to some extent but only 11% prefer this trading strategy, according to our measure. Evidence for the contrary is found for buy-&-hold: only 79% pay some attention to it but a remarkable 38% prefer to rely on this trading strategy. The contrarian strategy is placed between the two other strategies. Finally, the "others" category receives only minor attention, though it is clear to see that 15% follow a trading strategy that is not included in our three explicitly mentioned strategies.

Summarizing the evidence regarding hypothesis 1, the answer concerning which strategy is most prominent depends on how the numbers are interpreted. If one relies on the mean value, the three strategies are largely equal. If one focuses on the number of participants paying any attention at all to a strategy, momentum ranks first and buy-&-hold only third. If one, however, relies on the intensity of use – i.e. percentage values of 30% and more – buy-&-hold is first and momentum third by a large margin. We conclude that hypothesis 1 is confirmed to some degree, as the buy-&-hold strategy is preferred by 38%.

The presented evidence has an obvious implication for hypothesis 2, which states an exclusive reliance on strategies. One can easily note that respondents in our sample are users not of exclusive but of mutual strategies. As an indication, one may add up the values in Figure 1 of those who state that they use a strategy to more than 20% – the sum of 190% shows that the vast majority relies on at least two strategies. A further examination of this issue draws on the rank correlation between the strategies distinguished. Here and in all further correlations full information is used by considering all values between 0 and 100%. Table 2 shows the plausible finding that strategies are in general negatively related, which also holds for foreign exchange markets (Taylor and Allen, 1992, Gehrig and Menkhoff, 2002). It is thus quite interesting that – despite the forced choice involved here – momentum and contrarian strategies are positively related. This indicates that users of these trend-following strategies tend to rely on either both or none. The implication of these several kinds of analyses is that there is no support for hypothesis 2, i.e. evidence rather contradicts the exclusive use of strategies.

As a side-aspect (not shown here), one may not be surprised by the fact that buy-&-hold is positively related to passive fund managers. The opposite plausibly applies to momentum and contrarian strategies as following these strategies implies deviation from the market average that underlies active fund management.

Moreover, the information gained suggests a possible answer to the puzzling combination of the widespread use of momentum trading by funds, high profitability of the momentum strategy and generally low fund profitability. Our findings indicate that the funds use this potentially profitable strategy to some extent, but not to a degree that would imply that this strategy dominates fund returns. It could be a consequence of this marginal use of a profitable strategy that profitability does not disappear in the market. Note that the findings expressed in Figure 1 conform with this explanation, as 91% of the participants use momentum trading but only 11% really prefer it, according to our definition of preference. According to the suggestion made, the 91% figure causes fund returns that are partially influenced by momentum trading, but the 11% figure indicates that funds only appear to be momentum traders but do not truly behave as momentum traders (who would prefer the momentum strategy to others).

Summing up, all three trading strategies under examination are widely used among fund managers in Germany. Buy-&-hold trading is the most important

strategy, as indicated by the mean value, momentum is the most widespread and momentum and contrarian trading are the only ones whose use is positively correlated. As these very different strategies appear to have importance for professionals' decision making, it would be interesting to know more about the respective users.

5.   Evidence on attributes related with trading strategies

This section is based on the guiding idea that those professionals who rely more on the buy-&-hold strategy behave more like the arbitrageurs in models with heterogeneous agents. So, they are more successful, more fundamentally oriented and less affected by behavioral anomalies. These three hypotheses of Section 2 will be confronted with our data. Findings for all respondents being reported below hold for subgroups too: stock managers drive the results and bond managers are tentatively in line.

Regarding the seniority of fund managers, a first approximation could be indicated by older age and longer professional experience. This is motivated by the fact that age and experience help to build up human capital that in turn provides better career opportunities. Or to apply the opposite perspective: those who are less successful will be gradually moved out of the market over the years leading to a kind of survival of the fittest. The rank correlation coefficients between the use of momentum strategy and experience etc. in Table 3 provide a clear finding in this respect as all the tentative users of predetermined trading strategies – i.e. momentum or contrarian or buy-&-hold strategies – show rather slight negative relations with professional experience whereas those who rely more on other strategies are significantly positively related. If, in another exercise (not documented here), we control professional experience for age we find no significant relations anymore, indicating that both dimensions are highly positively correlated. We find, moreover, that the sign for contrarians (i.e. those who tend towards contrarian strategies) turns positive and the sign of traders relying on other strategies stays positive, so users of these two strategies may be a bit more experienced when compared to others of the same age group. This is in agreement with Chevalier and Ellison's (1999) finding of incentives for younger managers to herd, represented here tentatively by preferences for the momentum and buy-&-hold strategies.

Adding information from the indicator which seemed to be most promising ex ante, i.e. holding a governing position, such as being head of a team or chief investment officer, does not give strong results, although findings are still in line. If we control these correlations for the related influences of age and experience (not documented here), the negative sign shows up only for contrarians and the probability value moves towards significance. It may thus be comforting to see that the indicator of a higher share of variable compensation by and large also results in the same signs as above. Overall, the users of "other strategies" are those who behave as had been expected from the buy-&-hold fraction. The opposite pole are the contrarians. Neither buy-&-holder nor momentum traders can be easily related to any positive or negative indication of seniority. The evidence is thus not in accordance with hypothesis 3.

As seniority does not seem to be a very clearly discriminating factor regarding our strategies, we turn to hypothesis 4 relating trading strategies with certain preferred sources of information. The respective question presented at the top of Table 4 allowed for possible answers with varying degrees of agreement. It can be seen that indeed, and exclusively, the more intensive use of a buy-&-hold trading strategy is significantly related with a greater reliance on fundamentals. The other correlation coefficients are all far away from significance, thus hypothesis 4 receives support in this respect. The picture changes, however, when we focus on the reliance of "technical indicators" and "other market participants". Both information sources receive a response that is of a similar kind. Momentum strategy is the only one being significantly positively related to both information sources. Contrarians seem to have just some sympathy to technical analysis whereas buy-&-hold traders tend into the opposite direction. There emerges thus the picture that users of the buy-&-hold and momentum strategies form the contrary poles with regard to information sources. Users of the contrarian strategy tend a bit towards momentum traders whereas the users of "other strategies" seem to behave eclectic. Consequently, hypothesis 4 receives quite a bit of support.

Building on these findings one could imagine that the users of different strategies do not only prefer different sources of information but also show different behavioral patterns. First of all, we asked about the preference to take profits in case of unexpected liquidity demand, a question that aims for identifying the well established disposition effect (see Shefrin and Statman, 1985, Odean, 1998, Weber

and Camerer, 1998, Shapira and Venezia, 2001). The response given in <u>Table 5</u> reveals that contrarians and tentative buy-&-hold users mention comparatively stronger behavior being consistent with the disposition effect. As this could be related to the general attitude towards risk taking, we further asked about the degree of risk acceptance in a financial lottery environment. The second item in Table 5 shows that buy-&-hold traders and to some degree contrarians – i.e. the same groups as above – reveal more risk averse preferences whereas momentum traders behave in an opposite manner. Both questions taken together provide the picture that the users of buy-&-hold as well as contrarian strategies show a similarity which seems surprising when compared to earlier findings: the behavior of both kinds of fund managers is different from other fund managers as they reveal a stronger disposition effect and risk aversion. The opposite pole here is formed by the users of the momentum strategy. Momentum traders reveal a significantly lower degree of risk aversion than other fund managers.

It seems to be almost obvious to speculate whether momentum traders in particular are thus a group showing greater signs of overconfidence (Odean, 1999). When we ask for a self-assessment of relative performance, we are not interested in the outright answer but in the relation of optimistic self-assessment to the preference for certain strategies. Item 3 in Table 5 gives a somewhat surprising result: contrarians express considerable self-confidence, as do users of other strategies, whereas users of the buy-&-hold strategy hold rather modest views on their own performance.

What is by itself interesting becomes even more revealing when compared to the more "objective" indicators of seniority discussed in connection with Table 3. Users of other strategies seemed to be – if anything can be said at all – a group of comparatively senior fund managers and this conforms with their self-assessment. Users of the buy-&-hold strategy cannot be related to seniority and are modest, possibly too modest. The clear contrast is provided by users of contrarian strategies who show the fewest signs of seniority but strongly believe in their superiority – if there is any overconfidence, this is the group revealing it. By contrast, users of momentum strategy are neutral in both categories of interest here.

Finally, in search of a possible motivation for momentum trading, we asked for an evaluation of possible selective representation of news by others. It is shown by item 4 in Table 5 that only momentum traders hold this kind of belief.

In an effort to develop a set of motivations favoring the use of certain trading strategies, the evidence from Table 5 may help to come up with some synthesizing thoughts:

- Buy-&-hold traders (i.e. those who tend towards buy-&-hold strategies) are quite risk averse, which corresponds to an attitude of going along with the market. If the risk of a fund manager is mainly to divert from other fund managers, this strategy is a rational choice (e.g. Scharfstein and Stein, 1990).

- Contrarians are also comparatively risk averse but experience different consequences. They may be particularly averse towards the realization of losses so that they prefer to hold on to loss positions, i.e. they show a clear disposition effect. This implicitly requires a strong belief that they will be better off than others in the long run. Disposition effect plus overconfidence motivates them to take positions against the market, the essence of contrarian trading. The evidence from above indicates, however, that the belief of one's own superiority may be misguided, which corresponds to the empirical finding that the disposition effect is a cause of underperformance in the market (see Odean, 1998).

- By contrast, momentum traders are clearly less risk averse than the two other groups discussed. They do not really show overconfidence, they believe in miscalculations by others and they thus prefer a strategy of aggressively going with the market.

- Finally, the group that is comparatively neutral in its risk attitude – the only one demonstrating a smaller disposition effect and that is comparatively self-confident – are the users of other strategies. This group, which is characterized by some attributes of seniority and could be the ones who perform the role of fundamentally oriented arbitrageurs, do in fact use information sources in an eclectic manner, just as their strategy implies.

Summarizing on hypothesis 5, stating that the users of the buy-&-hold strategy would be less affected by anomalies found in the behavioral finance literature, the evidence provides some support. It can be said in addition, that those who show the greatest affinity to anomalies seem to be users of the contrarian strategy.

6.   Conclusions

This paper provides – according to the best of our knowledge – the first survey information on the use of three popular trading strategies in fund management, i.e. momentum, contrarian and buy-&-hold trading. We analyze the responses from fund managers of German mutual and pension funds who seem to be largely representative of the market.

We do find that all of the strategies mentioned above are of significance for fund managers. We find moreover that the buy-&-hold strategy is the most important one, whereas momentum trading in particular is widely used but less relied on. Finally, it is only momentum and contrarian trading that seem to be used in a complementary fashion, whereas all other signs of correlations between the intensity of use are negative.

Taking the intensity of use as a preference for a particular strategy, this raises the question about the attitudes and beliefs of its users. In this respect, we analyze three fields: indicators of seniority in the market, reliance on specific sources of information and behavioral patterns. We find interesting relations that help to shape an idea of the respective types of traders: buy-&-hold traders are comparatively risk averse and not self-confident, which motivates them to go along with the market. Contrarians are strongly influenced by the disposition effect, forcing them to go against the market. Moreover, they are overconfident, enabling them to hold on against the trend. Momentum traders are least risk averse, believe in the miscalculations of others and rely on technical analysis. They thus seem to go aggressively with the market. Finally, those following other strategies fit best to the expected characteristics of arbitrageurs but, unfortunately, their sources of information are eclectic.

Overall, we do not want to overemphasize the findings as they are based on a questionnaire survey and need not fully reveal true opinion and behavior. However, the evidence corresponds nicely with "hard" facts of other approaches being taken in the literature. It has been learned from this earlier work that there are strong incentives to go rationally with the market, however, also to differentiate one's own behavior and that most funds lag the market's performance. We might want to speculate that those who are characterized as buy-&-hold traders form the herd of the market. Momentum traders have some chances as they are less risk averse. However, this force is not really strong in the market when it comes to the bottom-line

in decision making. Contrarians, as they are revealed in our sample, are probably not the long-run arbitrageurs to outwit the market but may tend to perform even worse than the crowd. Finally, there is a smaller group of experienced "others" who might be able to perform the role of rational arbitrageurs but do not seem to behave like these arbitrageurs (see also Shleifer and Vishny, 1997). Possibly, this is a sign that rational speculators also take the risk from noise traders into account.

In summary, the results of this survey complement other findings on behavior in financial markets which do not correspond easily to the expectation of efficient markets (recently e.g. Shiller, 2003). Trading strategies seem to be widespread among fund managers and there is little evidence that they would generate excess returns in practice (Malkiel, 2003). Evidence suggests, moreover, that the use of trading strategies might be related to behavioral anomalies. These findings demand further research examining links between the behavioral patterns of fund managers, the use of trading strategies and their impact on fund performance as well as market prices.

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TABLE 1.   Descriptive statistics on the survey respondents

Item asked	Reponses (in percentage)						Number of responses
Age (in years)	< 35:	50.9%	35-45:	46.5%	> 45:	2.6%	114
Profess. experience	< 5:	22.3%	5-15:	59.8%	> 15:	17.9%	112
Gender		male:	92.1%	female:	7.9%		114
Share of variable compensation		mean:	25.8%	std. dev.:	14.5		85
University degree		yes:	84.8%	no:	15.2%		112
Governing position		yes:	36.9%	no:	63.1%		103
Kind of fund management (primarily)		active:	93.7%	passive:	6.3%		111
Kind of securities managed*		stocks:	66.5%	bonds:	33.5%		115

* 4.2% of the respondents managed stocks and bonds to the same degree. These respondents were added with half weight to stocks as well as bonds, so that the sum adds up to 100%.

FIGURE 1.   The use of several trading strategies

Question: "How intensively do you use several strategies? Please, allocate 100%." Answering categories:
"...... % Momentum strategy, ... % Contrarian strategy (Value strategy), ... % Buy-&-Hold strategy, ...
% Others"
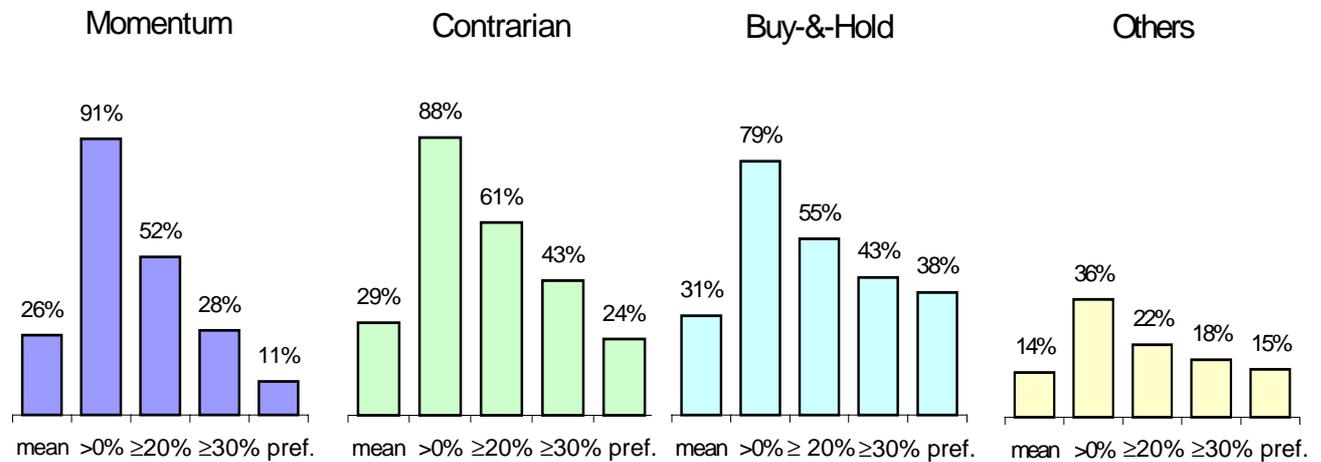
Note: The mean value represents the average intensity of use on the four answering categories. The other percentage figures give shares of answers in relation to the total number of 108 responds on this question. For example, the first percentage figure given says that 91% of all respondents allocate more than 0% to the momentum strategy. The last bar on "preferred" gives the share which unanimously prefers this certain strategy to all others. There remain 12% of respondents who do not voice a clear preference but choose two or more strategy as equally high ranking, such as 40%-40%-20%-0%.

TABLE 2.   Correlation coefficients on the use of trading strategies

Strategies	Momentum strategy	Contrarian strategy	Buy-&-Hold strategy	Other strategies
Momentum	-	0.344***	-0.515***	-0.202**
Contrarian		-	-0.355***	-0.309***
Buy-and-Hold			-	-0.449**

This table is based on 108 responses. For the exact question see Figure 1.
Stars refer to level of significance of the Spearman rank correlation coefficient between the use of momentum strategy and the use of contrarian strategy etc., *: 10 per cent, **: 5 per cent. ***: 1 per cent

TABLE 3.   Persons' characteristics and trading strategies

Characteristics [number]	Spearman rank correlation coefficients (and p-value)			
	Momentum strategy	Contrarian strategy	Buy-&-Hold strategy	Other strategies
Longer professional experience [104]	-0.007 (0.943)	-0.006 (0.956)	-0.120 (0.227)	0.251*** (0.010)
Governing position [97]	0.065 (0.526)	-0.134 (0.191)	-0.115 (0.261)	0.133 (0.196)
Higher share of variable compensation [80]	-0.044 (0.697)	-0.186* (0.099)	0.127 (0.262)	0.042 (0.711)

Note: The exact questions and response categories are given in Table 1 and Figure 1. There is no statis-tically significant relation of trading strategies with the following characteristics: gender, university degree and kind of securities managed. The coefficients for age are very similar to those for experience.
Stars refer to level of significance, *: 10 per cent, **: 5 per cent. ***: 1 per cent

TABLE 4.   Information sources and trading strategies

Request: "Please, asses the importance of the following sources of information for you."
Answering categories: "Fundamental facts about the company/market", "Technical indicators", "Colleagues from the own company", "Other market participants". 6 answering categories from "high importance" (coded as 6) to "no importance" (coded as 1).

Characteristics [number]	Spearman rank correlation coefficients (and p-value)			
	Momentum strategy	Contrarian strategy	Buy-&-Hold strategy	Other strategies
Fundamental facts [107]	-0.104 (0.284)	0.080 (0.412)	0.178* (0.066)	-0.122 (0.210)
Technical indicators [106]	0.281*** (0.003)	0.149 (0.128)	-0.150 (0.124)	-0.056 (0.572)
Market participants [107]	0.191** (0.048)	-0.021 (0.830)	-0.073 (0.457)	-0.077 (0.432)

Note: The relation of trading strategies with "colleagues from the own company" are far from being significant.
Stars refer to level of significance, *: 10 per cent, **: 5 per cent. ***: 1 per cent

TABLE 5.   Behavioral patterns and trading strategies

Statement: "I prefer to take profits when I am confronted with unexpected liquidity demands."
6 answering categories from "complete approval" (coded as 6) to "complete contradiction" (coded as 1).

Question: "Imagine someone offers you a bet and the odds are fifty-fifty. You will have to pay € 100, if you lose. What would be the minimum amount to win to lure you into accepting the bet?" Answer "___ €".

Question: "How do you evaluate your own performance compared to other asset managers?" Answering categories: "much better (coded as 5), slightly better (coded as 4), equally good (coded as 3), slightly worse (coded as 2), much worse" (coded as 1).

Statement: "My colleagues pay particular attention to confirmatory news/information after having made an investment decision". 6 answering categories from "complete approval" (coded as 6) to "complete contradiction" (coded as 1).

Characteristics [number]	Spearman rank correlation coefficients (and p-value)			
	Momentum strategy	Contrarian strategy	Buy-&-Hold strategy	Other strategies
I prefer to take profits [107]	0.036 (0.716)	0.246** (0.011)	0.154 (0.113)	-0.158 (0.104)
Lower minimum amount to win [103]	0.216** (0.028)	-0.134 (0.177)	-0.189* (0.055)	0.060 (0.548)
Better performance than others [105]	0.131 (0.183)	0.266*** (0.006)	-0.334*** (0.001)	0.211** (0.031)
Attention to confirmatory information [106]	0.217** (0.026)	0.007 (0.945)	0.012 (0.903)	-0.028 (0.776)

Stars refer to level of significance, *: 10 per cent, **: 5 per cent. ***: 1 per cent