

# Hedge Fund Transparency: Where Do We Stand?

Felix Goltz  
David Schröder

Felix Goltz, Head of Applied Research, EDHEC-Risk Institute, EDHEC Business School, 393-400 Promenade des Anglais, BP 3116, Nice Cedex 3, France. Tel: +33 (0)4 93 18 99 66  
E-mail: felix.goltz@edhec-risk.com

David Schröder, Lecturer in Finance, Birkbeck College, University of London, Department of Economics, Mathematics and Statistics, Malet Street, London WC1E 7HX, UK, Tel: +44 (0)20 76316403 E-mail: d.schroeder@bbk.ac.uk

We thank Newedge for support of our research. We are grateful to an anonymous referee, Noël Amenc, Stéphane Daul, Laurent Favre, Walter Géhin, Jean-René Giraud, Adina Grigoriu, Philippe Malaise, Lionel Martellini, and Mathieu Vaissié for helpful comments. We thank Amélie Jean and Lucie Liversain for research assistance.

## **Abstract / Summary**

This study presents the results of a comprehensive survey of hedge fund managers and investors on current hedge fund reporting practices. We find that the quality of hedge fund reporting is considered an important investment criterion. In analysing the spectrum of opinions, we identify critical points of conflict between investors and product providers. Investors consider disclosure insufficient. They are especially dissatisfied with the quality of information on liquidity and operational risk exposure. The survey also reveals that inappropriate performance measures are prevalent.

Like any group of investors, investors in hedge funds are interested in knowing how hedge fund managers allocate their initial investment, and whether this allocation yields positive returns or not. It is not only information on past returns that is of particular interest to investors; of equal interest to investors are prospects for future gains or losses. But unlike mutual funds, hedge funds are reluctant to provide detailed information on their investment portfolios. Since hedge funds may use specific investment strategies in narrow market segments, fund managers fear that thorough disclosure of their portfolio holdings—which are important to assessing future returns—would decrease their chances of their winning their bets.<sup>1</sup> But incomplete disclosure can have some undesirable side effects. It might pave the way for hedge fund managers to change their investment strategies or to include investments in the portfolio that are riskier than provided for by the manager's mandate. Investors even risk fraudulent behaviour, since the actions of hedge fund management might be detected only when a fund has failed.

In this light, it is clear that hedge fund reporting can be a source of tension between investors and hedge fund management. In many economic frameworks, such conflicts of interest are resolved by government regulation, as is the case for standard mutual funds, which are subject to detailed disclosure rules. However, these rules do not apply to hedge funds. In essence, the hedge fund industry is not regulated, and consequently hedge fund reporting is not subject to legislative rules, leaving the conflict with the investors and managers. The remarkable rise of the hedge fund industry over the last decade has aggravated the problem. In the past, the typical hedge fund investor was a wealthy private client, but more recently institutional investors have increased their stakes in hedge funds. These investors, such as pension funds or insurance companies, have more sophisticated investment objectives by definition and therefore require greater disclosure, in part because they they must render accounts to their own investors. Although recent years have seen attempts to create standards for voluntary hedge fund reporting, the industry has yet to agree on a standard.

The objective of this survey, then, is to describe current industry practices and to establish a European benchmark for hedge fund reporting. A substantiated view of the multiple facets of hedge fund reporting is essential to a better understanding of the conflicts between hedge fund managers and their investors. Only by detecting differences in the perception of hedge fund reporting on both sides of the equation, as it were, is it possible to surmount the existing barriers to hedge fund investment. Moreover, this survey aims to compare the status quo of hedge fund

reporting and recent advances as described in the academic literature. Recent years, after all, have seen a tremendous increase in the number of hedge fund performance and risk measures. Many of these new measures address the weaknesses of traditional measures, and our objective is to determine whether practitioners actually share the concerns of researchers and adopt alternative risk and performance measures. Finally, the results of this survey might serve as an industry benchmark for current reporting standards. After all, in the absence of government regulation, the reporting quality of one's competitors can serve as a standard. Hence, it is our hope that this study can serve as a source of information on appropriate hedge fund disclosure.

Since hedge funds played only a minor role in the overall asset management industry until recently, there are very few studies that look into hedge fund disclosure and hedge fund transparency. Anson [2002] discusses the conflicting interests of managers and investors in optimal information disclosure.<sup>2</sup> Rahl [2003] looks more specifically at the transparency of hedge fund risk and provides a comprehensive overview of the means to improve a fund's risk disclosure; Liang [2003] assesses the impact of external audits on the accuracy of reported returns. Finally, Brown et al. [2008] investigate the impact of mandatory disclosure of hedge funds on operational risk. They find that additional disclosure of operational risks is a signal of quality for a fund, although many investors apparently have access to material information even without mandatory disclosure.

This study also relates to the abundant literature on hedge fund returns and hedge fund performance measures. The first works include the papers by Elton et al. [1987], Brown et al. [1999], and Ackermann et al. [1999], papers that use standard equity performance measures to evaluate hedge fund returns. However, subsequent papers by Agarwal and Naik [2000], Fung and Hsieh [2001], Lo [2001], and Brooks and Kat [2002] have shown that hedge funds have some characteristics that make them very different from standard equity investments: hedge fund returns are not normally distributed, and they are non-linear with respect to the standard market factors, such as equity and bond markets. These findings led many authors to advocate performance measures that are better suited<sup>3</sup> to evaluating hedge fund performance.

Finally, this study also complements previous surveys of hedge fund industry practices. As far as we know, this study is the first devoted to the views of both hedge fund managers and investors on the delicate issue of hedge fund disclosure practices. Unlike, say, the PWC survey of

alternative assets [Scott, 2008], our survey does not attempt to provide a general industry analysis; it focuses instead on hedge fund disclosure.<sup>4</sup>

This survey was taken with the help of an online questionnaire sent to European professionals in the hedge fund industry. For a comprehensive view of industry practices, the survey targets the three main professional groups of the hedge fund business: hedge fund managers, fund of hedge fund managers, and hedge fund investors. To shed light on hedge fund reporting, the questionnaire contained sections devoted to issues of particular interest to hedge funds. Whereas the first section asked more general questions on the importance of and satisfaction with current hedge fund reporting, the other sections addressed very specific topics, such as appropriate performance measures, liquidity and leverage risk indicators, or the difficulty of sensitive operational risk reporting.

We find that hedge fund reporting is primordial. 92% of all industry practitioners believe that the quality of hedge fund reporting is an important signal of a fund's overall quality, and thus pivotal to investors' decisions about hedge fund investment. However, information disclosure is viewed as inadequate by investors. Although they are satisfied with the information on past hedge fund returns, information on their fund's liquidity and operational risk exposure is regarded as incomplete. This study also reveals that inappropriate performance measures predominate in the hedge fund industry. Although many empirical studies have shown that the Sharpe [1966] ratio, for example, is unsuitable for reporting risk-adjusted hedge fund returns [Lo, 2002], many respondents still rely on it. Likewise, most funds that indicate their factor exposure to investors rely on standard linear factor models, though empirical research has shown that non-linear factor exposure plays an important role in hedge fund returns (Fung and Hsieh [1997, 2000], Amenc et al. [2008]). Finally, the survey shows that managers and investors have diverging views of the quality of current hedge fund reporting – as well as of its objectives and what it should include. Hedge fund managers have much rosier views of the quality of the information they disclose than do their investors.

This paper proceeds as follows. Section 2 presents the survey methodology and data used in this survey. The results of the survey are shown in section 3, where we draw a comprehensive picture of the status quo of hedge fund reporting. The conclusion in section 4 offers some implications of our research for the hedge fund industry.

## **Methodology and Data**

### **Survey Design and Methodology**

The questionnaire consisted of three sections with roughly twenty-five multiple choice questions each. In the first series of questions, survey participants are asked for their general views of the importance of and their satisfaction with current hedge fund reporting. The next set of questions turns to the central issue of this survey: appropriate performance measures and performance risk indicators. In the final set of questions, we ask participants for their views of specific issues regarding hedge fund reporting such as liquidity risk and leverage risk reporting, as well as the level of disclosure of operational risks in hedge fund reports.

To read the conflicting views and opinions of hedge fund reporting in the industry, this survey targeted three groups of professionals. First, it targeted hedge fund managers, since they ultimately decide how their funds will report. Next, and in counterpoint, it invited hedge fund investors to respond. The third group of survey participants, finally, is made up of fund of hedge fund managers. This professional group is perhaps the most interesting, since it is involved in both sides of the hedge fund industry. Funds of hedge funds are investors and fund managers at the same time, and their views can thus provide comprehensive insights into hedge fund reporting. For a balanced view across all three professional groups, our target was to obtain equal numbers of responses from each of these three groups. Next, to draw reliable conclusions from this survey, we set the intended total sample size to a minimum of 150 answers, fifty responses for each of our three target groups.

The survey was taken with an online questionnaire that was distributed through electronic mail and through a link on a website devoted to asset management research ([www.edhec-risk.com](http://www.edhec-risk.com)). Respondents were asked to submit responses by filling out the online questionnaire and leaving their contact details. The survey was taken in the summer of 2008. The first response was received on July 4, 2008, the last on October 1, 2008. In all, we collected 214 responses. Since, like any survey, this survey might suffer from some problems, the appendix includes a brief discussion of these possible problems.

## Data

Nearly 90% of the respondents to the survey are based in Europe, many of them in the United Kingdom, Switzerland, and France. The exact breakdown is shown in Exhibit 1. It is important to stress that our sample reflects fairly well all three target groups of this survey; each group is almost equally represented: sixty-five of the respondents are hedge fund managers (corresponding to 30.4% of the total sample), eighty-two are fund of hedge fund managers (38.3%), and ninety-seven are hedge fund investors (31.3%). We thus more than attain our targeted sample size of 150 respondents and elicit more than fifty responses per profession.

61.2% of the investors are institutional investors (pension funds, insurance companies). The remainder are either private bankers or private investors. Many of the survey respondents occupy high-ranking positions: 20.1% are CEOs of their companies, and 51.8% are CIOs, CFOs, heads of departments and so on. Finally, we examined the assets under management of the companies for which the survey respondents work. As was to be expected, there are some very large firms in the hedge fund industry that have more than EUR 10bn in assets under management (22.2%). However, our survey mainly reflects the views of medium-sized companies, with assets under management of between EUR 100mn and EUR 10bn (59.9%). We capture the opinions of small firms as well, as 17.9% have assets under management of less EUR 100mn. With regional diversity as well and the fair balance of the hedge fund professionals, we believe that the survey is representative of the European hedge fund industry.

## Results

In this section, we present the survey results. First, in section 3.1, we take a general look at the industry's perception of hedge fund reporting, its importance, objectives, and the industry's most important information sources for good hedge fund disclosure. In section 3.2, we turn to the key indicators of hedge fund performance and hedge fund risk. Finally, section 3.3 examines the industry's opinion of specific risks hedge funds are generally exposed to, such as liquidity, leverage, and operational risk.<sup>5</sup>

## Hedge Fund Reporting: the Big Picture

First, we look into the overall importance of hedge fund reporting. The result is clear-cut: over 90% of all participants indicate that the reporting quality of a hedge fund is an important signal of the fund's overall quality (see Exhibit 2). Put differently, investment decisions can hinge on reporting quality: if it is not sufficient, many potential investors are likely not to materialize. In fact, this survey reveals that between 70 and 80% of investors have internal disclosure standards that must be met before they actually invest in a hedge fund.

We then examine what industry practitioners' view as the main objectives of hedge fund reporting. Exhibit 3 shows the results. Most practitioners (61%) think that the main objective of hedge fund reporting is to assess the risk/return profile of the hedge fund under consideration. Risk information for the investors' total asset allocation (47%) and performance attribution (45%) are also viewed as important objectives of hedge fund reporting. These findings stand in contrast to other cited objectives of hedge fund reporting: only 17% perceive reporting as a means of advertising the funds' quality and 12% see hedge fund disclosure as a way for investors to ensure that scrutiny will reveal no improprieties.

Although those in the industry largely agree on the objectives of hedge fund reporting, they diverge remarkably in some aspects. For example, whereas fund of hedge fund managers consider reporting a major means of controlling managers' behaviour (46%), hedge fund managers themselves regard this aspect of reporting as rather unimportant (15%). Instead, hedge fund managers consider reporting a useful fund selection device (51%) and a means of advertising their products (26%). Investors, by contrast, find that advertising is a negligible component of hedge fund disclosure (7%).

Against the backdrop of the survey respondents' views of the main objectives of hedge fund reporting, we analyse what they believe to be the keys to achieving these objectives—and whether these objectives are met.<sup>6</sup> Exhibit 4 compares the perceived importance of several aspects of hedge fund reporting and investors' satisfaction with these aspects. We can draw several conclusions from this comparison. First, hedge fund reporting should be consistent, clear, and timely (upper part of the graph). In addition, information on the fund's liquidity risk, absolute risk, and portfolio composition is considered important. Second, the graph shows that



investors are most satisfied with their fund's information on past returns, information they consider excellent. The consistency, clarity, and frequency of their hedge funds' disclosure are also viewed positively by investors (right side). By contrast, investors express concerns about the quality of the disclosure on liquidity and operational risks (left side).

The scatter plot makes it possible to identify the elements of hedge fund reporting that respondents deem crucial but with whose quality they are dissatisfied (upper left part of the plot). Disclosure on liquidity risks has the worst quality-to-importance ratio, followed by operational risk reporting. Frequency of reporting and information on past returns have the best such ratio.

### Key Indicators: Performance and Risk Indicators

In this subsection, we take a closer look at the key performance indicators and risk measures used in hedge fund reporting. Essentially, all indicators can be classified into one of four groups: return analysis, extreme risk measures, risk-adjusted performance analysis, and correlation (or beta) tests. First, we ask all industry practitioners to rank these four elements of performance and risk analysis by order of importance. The results, as shown in Exhibit 5, reveal major differences in the relative importance of these key indicators. Hedge fund managers believe in the importance of risk-adjusted performance measures, whereas investors and fund of hedge fund managers consider them the least important. These two professional groups report that return analysis and extreme risk measures are the most important means of evaluating a hedge fund's performance. However, there is some agreement that correlation or beta analysis is a rather unimportant part of overall hedge fund performance disclosure.

Our first detailed look is at the industry's opinion of extreme risk indicators. The results are striking: more than two-thirds of respondents believe that stress tests are the most important means of assessing a hedge fund's extreme risk exposure (see Exhibit 6). This overwhelming approval of stress tests is found industry-wide; investors and hedge fund managers agree on their importance.

This nearly unanimous embrace of stress tests is not surprising, as they are designed to assess possible outcomes in extraordinary circumstances. Stress tests may use historical scenarios or

invented scenarios to simulate extreme conditions (Dupacova and Polivka [2007]). They therefore make possible assessments not strictly limited by the returns data available for a given hedge fund. It may be for this reason that they are popular with survey respondents. Stress tests, however, can assess the impact only of problems that are known in advance, although they make it possible to assess scenarios that have never occurred. For reporting purposes, stress tests have additional shortcomings. There is no clear definition of a stress test and the term may encompass approaches of very different natures. Jorion [2001] points out that stress tests can be quite opaque: the assumptions behind the stress tests are not always obvious, and they can differ substantially from one fund to another. So, if they are to improve transparency, reports on stress tests should include not only results but also information on their methodology.

Value-at-Risk is also very important to the hedge fund industry. That advanced Value-at-Risk models, such as those based on non-normal Monte Carlo simulations, are seen as superior to simple parametric implementations is very encouraging. Conditional VaR, closely related to VaR, is also very popular in the industry.

Exhibit 7 shows the most important risk-adjusted return indicators, as perceived by the industry. The Exhibit shows that more than 67% of all respondents—regardless of their profession—consider the Sharpe [1966] ratio the best means of measuring a fund's risk-adjusted return. Although this popular ratio has the advantage of being easy to calculate, it is not appropriate for evaluating hedge funds, since it is based on the (mistaken) assumption that returns are normally distributed.<sup>7</sup> It is therefore at least encouraging that the Sortino [1994] ratio, which is more suitable for hedge funds, comes next for assessing hedge fund returns (55%). Other important measures include the information ratio, the Omega ratio, and the modified Sharpe ratio. Given the multitude of indicators, it is not surprising that many are not widely used. Moreover, many of the indicators, such as Calmar and Sterling ratios, are interchangeable.

The fourth component of a hedge fund's risk and performance analysis is correlation or beta analysis, i.e., using factor models to account for hedge fund returns by their systematic risk exposure. First, survey participants are asked for their opinion of both linear and non-linear factor models. The results are shown in Exhibit 8. The graph emphasises that beta analysis using factor models is considered important, with non-linear models slightly preferred. This finding underscores that industry participants are well aware of the shortcomings of simple linear

approaches to modelling hedge fund returns.<sup>8</sup> The Exhibit also shows that investors are much more convinced of the usefulness of this approach than are managers, especially hedge fund managers.

Against this backdrop, we turn to hedge fund managers and look into whether they actually disclose factor exposures to investors. For investors, the answers are disappointing. Only some 15% of all hedge funds—an unacceptably low percentage—disclose this important information (Exhibit 9).

Finally, we take a look at those managers who offer their investors an analysis of beta. Although investors who benefit from these analyses are in a better position than their uninformed peers, many receive information on factor exposure using only simple, non-linear models (see Exhibit 10). As argued above, such models have inherent deficiencies when applied to hedge fund returns, so the information obtained is insufficient. The reporting of beta exposures, in short, is likely to remain a bone of contention.

Alpha is simply the intercept of the factor models used to calculate beta exposure. Given its widespread interpretation as risk-adjusted or abnormal return, it is often included in hedge fund reports and treated separately. Exhibit 11 shows the industry's opinion of the use of alpha in hedge fund reporting. The result is clear. Regardless of the professional group, alpha analysis is considered very important. We then ask which methods should be used to calculate a fund's alpha. The answers are striking. The most frequent measure of alpha is the hedge fund's return difference compared to a peer group (see Exhibit 12). In a similar vein, many respondents also report that the return difference to a hedge fund index would be appropriate for estimating alpha. Only about half of the respondents argue that factor models—either linear or non-linear—should be used to estimate alpha.

In principle, alpha refers to the return in excess of a “normal return” on a reference portfolio. Using a hedge fund index or a peer group as this reference portfolio would require that both hedge fund indices and peer groups be good proxies for the risk exposure of the hedge fund under consideration. In general, however, they are not, since the risk exposure can vary significantly from one hedge fund to another. Consequently, the alpha thus obtained is not an abnormal return, but a mere difference from a return on a portfolio that does not accurately

reflect the fund's risk exposure. Our results suggest that too little attention is paid to the construction of a proper reference portfolio. Peer groups are the most widely used reference portfolios though they provide only a very crude approximation of the risk exposures of a managed portfolio (see Sharpe [1991] or Blake and Timmermann [2002]). Another interesting finding is that investors prefer non-linear models, while hedge fund managers prefer linear models.

## Specific Hedge Fund Risks Reconsidered

In the final set of questions, we examine practitioners' views of risks and issues of particular importance to the hedge fund industry.

It is widely accepted that hedge fund returns are not normally distributed (Agarwal and Naik [2004]). Non-normality can have considerable consequences on the risk and performance evaluation of hedge funds, since standard measures are based on the assumption of normality, and are thus unsuitable for hedge funds. Exhibit 13 indicates that most industry professionals, largely regardless of their exact professional role, agree that non-normality is an important issue for the hedge fund industry.

However, the respondents' knowledge of this issue seems to come to an end at this point. As Exhibit 14 shows, more than 60% of those responding to the survey do not know how to measure non-normality. Only about 30% of the respondents express an opinion of the appropriate tests. The remaining 10% argue that no test is needed, perhaps a valid viewpoint, given the abundant empirical evidence for the non-normality of hedge fund returns. To conclude, there is a significant gap between theory and practice: evidence shows that the industry is well aware of non-normality, but does not always draw the right conclusions; after all, the Sharpe ratio is still preferred for measuring risk-adjusted returns (see Exhibit 7).

The smoothing of hedge fund returns is another delicate issue investors commonly face.<sup>9</sup> As Exhibit 15 shows, more than 70% fully or largely agree that return smoothing is a significant problem for measuring hedge fund performance risk. When asked what they consider the main reasons for the observed smooth returns of hedge funds, most practitioners indicate that the problems inherent in valuing illiquid assets are the main reasons (Exhibit 16). However, almost

30% of respondents indicate that smooth returns are a sign that hedge fund managers use illiquid assets to manipulate their fund's returns. This confirms empirical findings by Bollen and Pool (2008), who find that returns smoothing is partly the result of hedge funds' hiding losses from investors. What's more, the hedge fund managers in our survey are no less likely than their investors to say that they themselves—or their colleagues—misstate the prices of some assets to achieve smoother (i.e., less volatile) returns.

We then turn to possible solutions to the problem of smoothed returns, the so-called smoothing-robust performance measures. However many industry participants appear not to be convinced by the usefulness of these measures. Most respondents argue that these measures are very complicated (52%) or express concerns that even these sophisticated measures could be manipulated (55%). Again, there are no significant differences from one industry profession to another.

Exhibit 17 shows that smoothing-robust measures are rarely used. Less than 5% of the fund managers state that they disclose smoothing-robust performance, and less than 20% of the investors receive such measures from their funds.<sup>10</sup> This low proportion might reflect the industry's critical view of such indicators. That up to 30% of investors do not even know whether they receive such information is perhaps an indication that many survey respondents are unaware of the existence of robust measures.

Next, we turn to risks that are of particular importance to hedge funds. First, we examine the industry's view of the relevance of the liquidity risks to their business (see Exhibit 18). The answer is unequivocal: liquidity risk is considered a major source of risk for hedge funds, especially for hedge fund investors, more than 80% of whom classify this source of risk as "very important". Yet this clear view contrasts sharply with the industry's satisfaction with the current coverage of liquidity risk in hedge fund disclosure. Some 80% of all respondents state that liquidity risk is not sufficiently captured in hedge fund reporting (Exhibit 19). There is no difference across the three professional groups; even hedge fund managers admit that disclosure of information on the liquidity risks run by hedge funds is poor.

As Exhibit 20 shows, survey respondents also agree that leverage risk is a major risk component for hedge fund investment strategies: more than 96% state that leverage risk is either an

important or a very important source of risk for hedge funds, and is thus considered as crucial as liquidity risk. However, leverage-related risks appear to be better reflected in current hedge fund reports than are liquidity risks. Exhibit 21 indicates that between 31% and 39% of industry participants consider the quality of leverage risk reporting sufficient. Even so, 54% of all end investors are dissatisfied with leverage risk reporting; only 30% of hedge fund managers report similar dissatisfaction—again a sign that investors overestimate the quality of their reporting.

Finally, we examine the practitioners' perception of one of the most intangible risks for hedge funds, operational risk. Since it is even harder to read than liquidity risk, we attempt to identify industry views of the most important elements of operational risk reporting. As Exhibit 22 shows, it is the pricing and the valuation of hedge funds (identified by more than 76%) that the industry views as the most crucial elements of operational risk reporting. Information on internal risk management and internal controls is also seen as a major component of operational risk reporting. As with the analysis of other risks, we then ask those surveyed whether the information provided on operational risk is sufficient or meets their demands (as investors). The answers, shown in Exhibit 23, reveal that exactly those aspects that are considered most important are those that are considered most insufficient; that is, information on a fund's valuation framework and on the internal controls a fund puts in place. Hedge funds, as one might expect, rate their information disclosure more highly than do fund of hedge fund managers and investors. Very clearly, these two key elements of hedge fund reporting require substantial improvement.

## **Conclusion**

This study presents the results of a comprehensive survey of hedge fund professionals on current hedge fund reporting practices. In analysing the industry's spectrum of opinions, we identify critical points of conflict in the alternative investment business. First, we find that the quality of hedge fund reporting is perceived to be an important signal of a fund's overall excellence and a crucial investment criterion. However, investors consider overall disclosure inadequate. Investors are especially dissatisfied with the quality of information on liquidity and operational risk exposure. Finally, this study also shows that inappropriate performance measures prevail in the

hedge fund industry. Although empirical studies have shown that the Sharpe ratio, for example, is not suitable for reporting risk-adjusted hedge fund returns, many respondents still rely on it.

The results of this survey have a number of implications for the hedge fund industry. First, great differences between hedge fund managers' perceptions of relevant information disclosure and their investor's needs suggest that the industry should rethink its overall disclosure practices. Hedge fund managers should take their investors' demands for more information seriously and improve disclosure on liquidity risks, leverage risks, portfolio composition, and valuation frameworks. In principle, hedge fund managers should be ready to provide such information, since they already share their investors' views that hedge fund reporting is inadequate. Although there might be sensible reasons not to disclose the portfolio composition of hedge funds in too much detail, other aspects of risk reporting could easily be improved without endangering a hedge fund's investment strategy.

Second, hedge funds and funds of funds should move to more appropriate risk and performance measures when disclosing their returns to investors. Many academic studies show that many of the most commonly used risk measures are not up to the task of reporting the true risks of investing in hedge funds. The problem is not that there are no meaningful indicators but that they are not actually used. So it might be useful to make both hedge fund managers and investors more aware of the specific risks of their industry.

Improving the quality of hedge fund reporting is a key to creating a more transparent industry. And greater transparency is likely to have many advantages. First, greater transparency will lead to better informed investors and thus increased investor participation—and less capital flight during financial crises. Second, better-informed investors may contribute to greater disclosure discipline on the part of hedge fund providers, thereby improving the hedge fund industry as a whole. Finally, a better marketplace for hedge funds is likely to make a positive impact on financial innovation and overall market efficiency.

## **Appendix: Limitations**

Of course, like any survey, this survey may be imperfect. First, the sample of survey participants was not taken randomly from the target population for this study, but is based on a database of contacts in the hedge fund industry and visitors to an asset management research website. Since this sample might differ from the total population of the hedge fund industry, this procedure could lead to sample-selection bias. Still, given the variety of respondents, the results of this study are applicable to other sub-groups of the hedge fund industry with similar characteristics.

Participation was also entirely voluntary, so there is a non-response (or self-selection) bias. Practitioners who responded to the questionnaire could have views different from those of the industry as a whole. The most obvious reason for such a bias is the respondent's awareness of problems related to hedge fund disclosure: any professional who is familiar with the ongoing debate on hedge fund transparency is more likely to respond to the questionnaire than someone to whom this issue is of secondary interest. Although practitioners who are interested in hedge fund transparency might be more heavily represented in our sample than in the industry as a whole, the results are interesting: professionals who care about investment transparency might have a greater impact on reporting practices through their collaboration in designing industry guidelines.

Non-response could involve other biases as well. Professionals from smaller companies, for example, may have been more (or less) likely to respond to our questionnaire. As a consequence, the results of the study could be biased in one direction or the other. Although a non-response bias is not detectable as such, we can analyze the possible effects of non-responses on the results by comparing responses from large companies and those from smaller companies.<sup>11</sup> If there are significant differences, a non-response bias correlated to firm size would affect the survey results. So, for each question, we test whether the responses of larger companies (defined as companies with assets under management above EUR 1bn) differ from those of smaller companies. The survey has ninety-two questions. The average answers for "large" and "small" responses are statistically different for twenty-one (thirteen) of these questions at a 10% (5%) level. Since the relative frequency of significant differences is only slightly higher than the significance levels, a possible non-response bias caused by the assets under management of the company would have only a minor effect on the results.



Since significant differences between the answers of large and small companies do not tell anything about the direction of a possible bias and its implications for the results, Exhibit 24 provides an overview of the significant differences at the 1% and 5% levels. On average, respondents from smaller companies put less emphasis on more sophisticated risk and performance measures, such as non-linear factor models, or advanced risk-adjusted return and extreme risk measures. Consequently, if the survey were biased towards smaller companies, the industry as a whole would use more sophisticated risk and return measures than suggested in this study.

Finally, survey respondents had no economic incentive to report their true beliefs, especially since the survey was not anonymous. But we see no compelling reason to hide these beliefs, and we find no empirical evidence that respondents did so. Indeed, the very critical statements about the respondents' own profession (see Exhibit 19) suggest that, on average, the survey results reflect the respondents' true beliefs.

## References

- Ackermann, C., R. McNally, and D. Ravenscraft. "The Performance of Hedge Funds: Risk, Return, and Incentives." *Journal of Finance*, 54 (1999), pp. 833-874.
- Agarwal, V., and N.Y. Naik. "Performance Evaluation of Hedge Funds with Option-based and Buy-and-Hold Strategies." Working paper, London Business School, 2000.
- Agarwal, V., and N.Y. Naik. "Risks and Portfolio Decisions Involving Hedge Funds." *Review of Financial Studies*, 17 (2004), pp. 63-98.
- Amenc, N., W. Géhin, L. Martellini, and J.C. Meyfredi, "Passive Hedge Fund Replication: A Critical Assessment of Existing Techniques", *Journal of Alternative Investments*, (2008).
- Amenc, N., P. Malaise, and M. Vaissié. "EDHEC Funds of Hedge Funds Reporting Survey." EDHEC publication, 2005.
- Anson, M. "Hedge Fund Transparency." *Journal of Wealth Management*, 5 (2002), pp. 79-83.
- Asness, C.S., R.J. Krail, and J.M. Liew. "Do Hedge Funds Hedge?" *Journal of Portfolio Management*, 28 (2001), pp. 6-19.
- Blake, D., and A. Timmermann, "Performance Benchmarks for Institutional Investors: Measuring, Monitoring and Modifying Investment Behavior", in: John Knight and Steve Satchell (eds): *Performance Measurement in Finance*, Pages 107-141, Butterworth-Heinemann Finance, Oxford (2002).
- Bollen, N., and V.K. Pool, "Do Hedge Fund Managers Misreport Returns? Evidence from the Pooled Distribution.", *Journal of Finance*, forthcoming
- Brooks, C., and H. Kat. "The Statistical Properties of Hedge Fund Returns." *Journal of Alternative Investments*, 5 (2002), pp. 26-44.
- Brown, S.J., W.N. Goetzmann, and R.G. Ibbotson. "Offshore Hedge Funds: Survival and Performance, 1989-95." *Journal of Business*, 72 (1999), pp. 91-117.
- Brown, S.J., W.N. Goetzmann, B. Liang, and C. Schwarz. "Mandatory Disclosure and Operational Risk: Evidence from Hedge Fund Registration." *Journal of Finance*, 63 (2008), pp. 2785 – 2815.
- Brunnermeier, M.K., and L.H. Pedersen. "Predatory Trading." *Journal of Finance*, 60 (2005), pp. 1825-1863.
- Cox, C. "Testimony Concerning the Regulation of Hedge Funds before the US Senate Committee on Banking, Housing and Urban Affairs."  
<<http://www.sec.gov/news/testimony/2006/ts072506cc.htm>>, 2006.

- Dupacova, J., and J. Polivka, “Stress Testing for VaR and CVaR”, 7 (2007), pp. 411–421.
- Eling, M., and F. Schuhmacher. “Does the Choice of Performance Measure Influence the Evaluation of Hedge Funds?” *Journal of Banking and Finance*, 31 (2007), pp. 2632-2647.
- Elton, E.J., M.J. Gruber, and J.C. Rentzler. “Professionally Managed, Publicly Traded Commodity Funds.” *Journal of Business*, 60 (1987), pp. 175-199.
- Fung, W., and D.A. Hsieh. “Empirical Characteristics of Dynamic Trading Strategies: The Case of Hedge Funds.” *Review of Financial Studies*, 10 (1997), pp. 275-302.
- Fung, W., and D.A. Hsieh. “Performance Characteristics of Hedge Funds and Commodity Funds: Natural versus Spurious Biases.” *Journal of Financial and Quantitative Analysis*, 35 (2000), pp. 291-307.
- Fung, W., and D.A. Hsieh. “The Risk in Hedge Fund Strategies: Theory and Evidence from Trend Followers.” *Review of Financial Studies*, 14 (2001), pp. 313-341.
- Getmansky, M., A.W. Lo, and I. Makarov. “An Econometric Model of Serial Correlation and Illiquidity in Hedge Fund Returns.” *Journal of Financial Economics*, 74 (2004), pp. 529-609.
- Géhin, W. “The Challenge of Hedge Fund Performance Measurement: A Toolbox Rather Than a Pandora’s Box.” EDHEC publication, 2006.
- Jorion, P. *Value at Risk - The New Benchmark for Managing Financial Risk*. New York: McGraw-Hill, 2001.
- Jorion, P. “How to Resolve Hedge Fund Transparency”. *Pensions & Investments*, (June 9<sup>th</sup>, 2008).
- Le Sourd, V. “Performance Measurement for Traditional Investment.” EDHEC publication, 2007.
- Lhabitant, F.S. *Hedge Funds—Quantitative Insights*. Chichester: John Wiley & Sons, 2004.
- Liang, B., “Hedge Fund Returns: Auditing and Accuracy”, *The Journal of Portfolio Management*, 29 (2003), pp. 111-122.
- Lo, A. “Risk Management for Hedge Funds: Introduction and Overview.” *Financial Analysts Journal*, 57 (2001), pp. 16-33.
- Lo, A. “The Statistics of Sharpe Ratios.” *Financial Analysts Journal*, 58 (2002), pp. 38-52.
- Rahl, L. *Hedge Fund Risk Transparency*. London: Risk Books, 2003.
- Scott, J. “Transparency versus Returns: The Institutional Investor View of Alternative Assets.” PricewaterhouseCoopers, 2008.
- Sharpe, W.F. “Mutual Fund Performance.” *Journal of Business*, 39 (1966), pp. 119-138.

Sharpe, W.F. "The Arithmetic of Active Management." *Financial Analysts Journal*, 47 (1991), pp. 7-9.

Sortino, F.A., and L.N. Price. "Performance Measurement in a Downside Risk Framework." *Journal of Investing*, 3 (1994).

Wallace, R., and Mellor, C. "Nonresponse bias in mail accounting surveys: a pedagogical note." *British Accounting Review*, 20 (1988), pp.131-139.

## Exhibits

Exhibit 1: County of survey participants

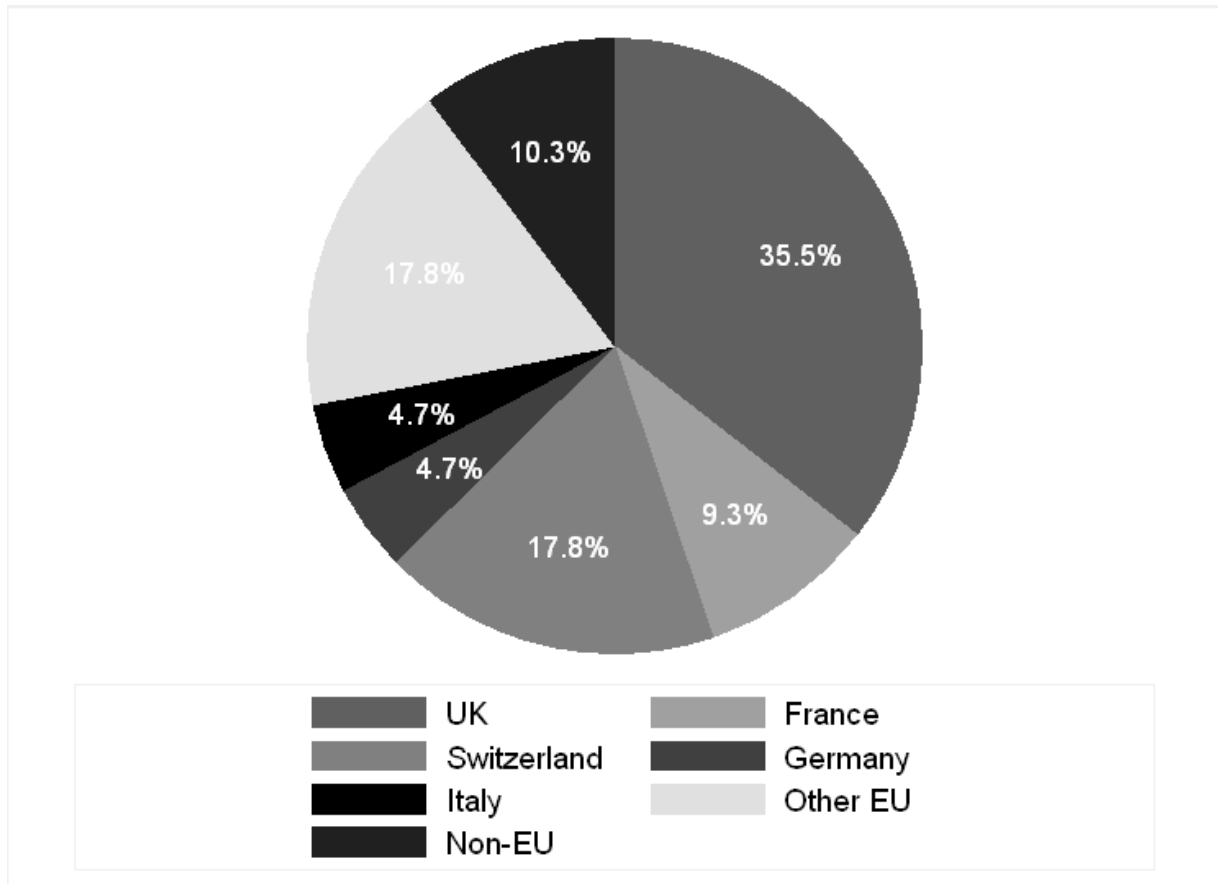


Exhibit 2: Is hedge fund reporting an important signal for a hedge fund's overall quality?

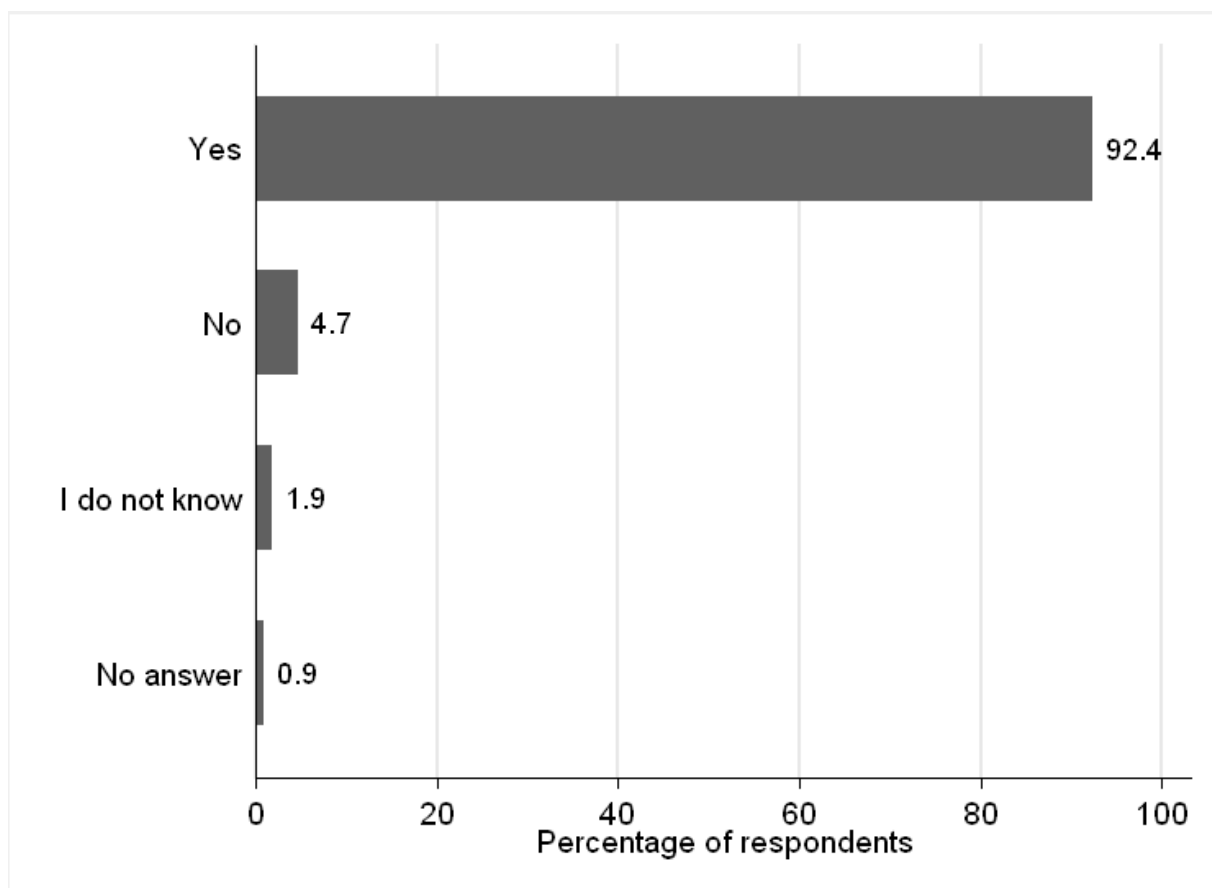


Exhibit 3: Objectives of hedge fund reporting

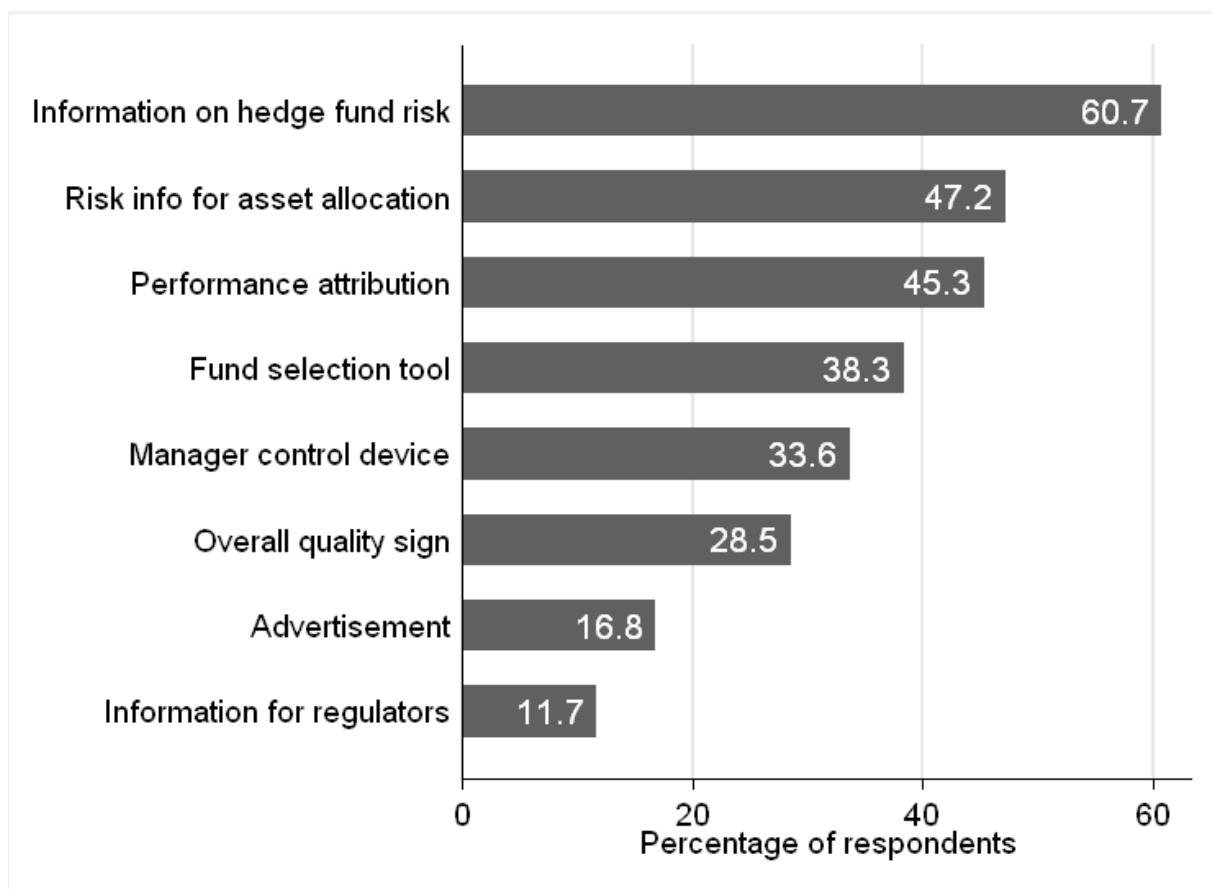


Exhibit 4: Hedge fund reporting – wishes and reality. Answers from fund of hedge fund managers and hedge fund investors

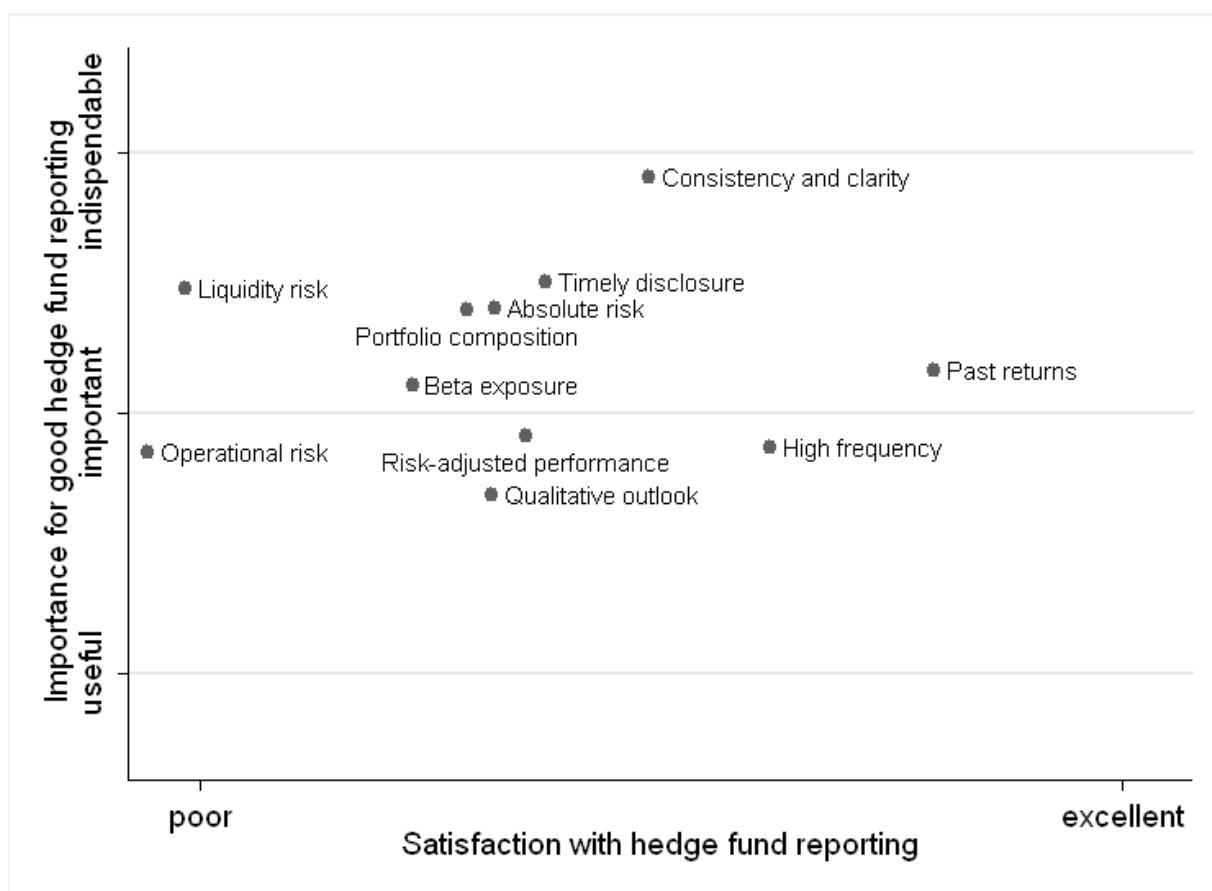




Exhibit 5: What risk measures are important for a good hedge fund report? Answers by professional group

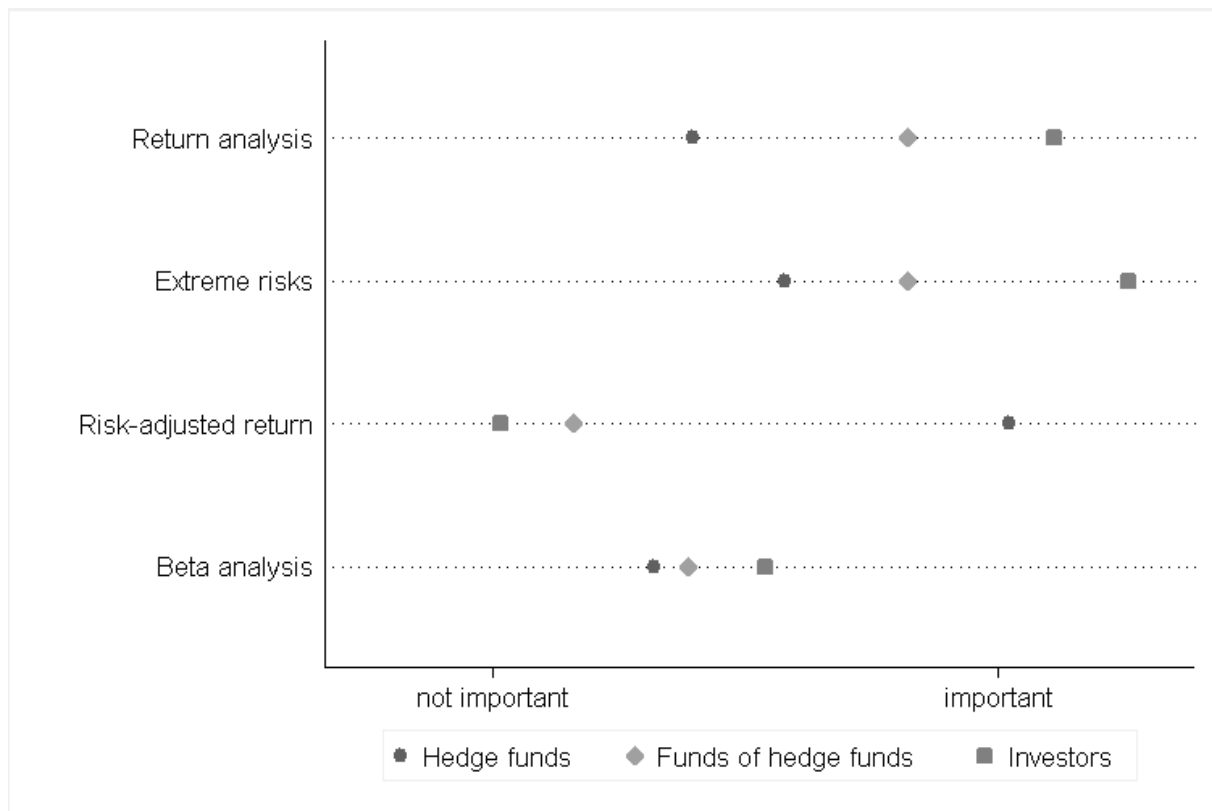


Exhibit 6: Important extreme risk measures for good hedge fund reporting

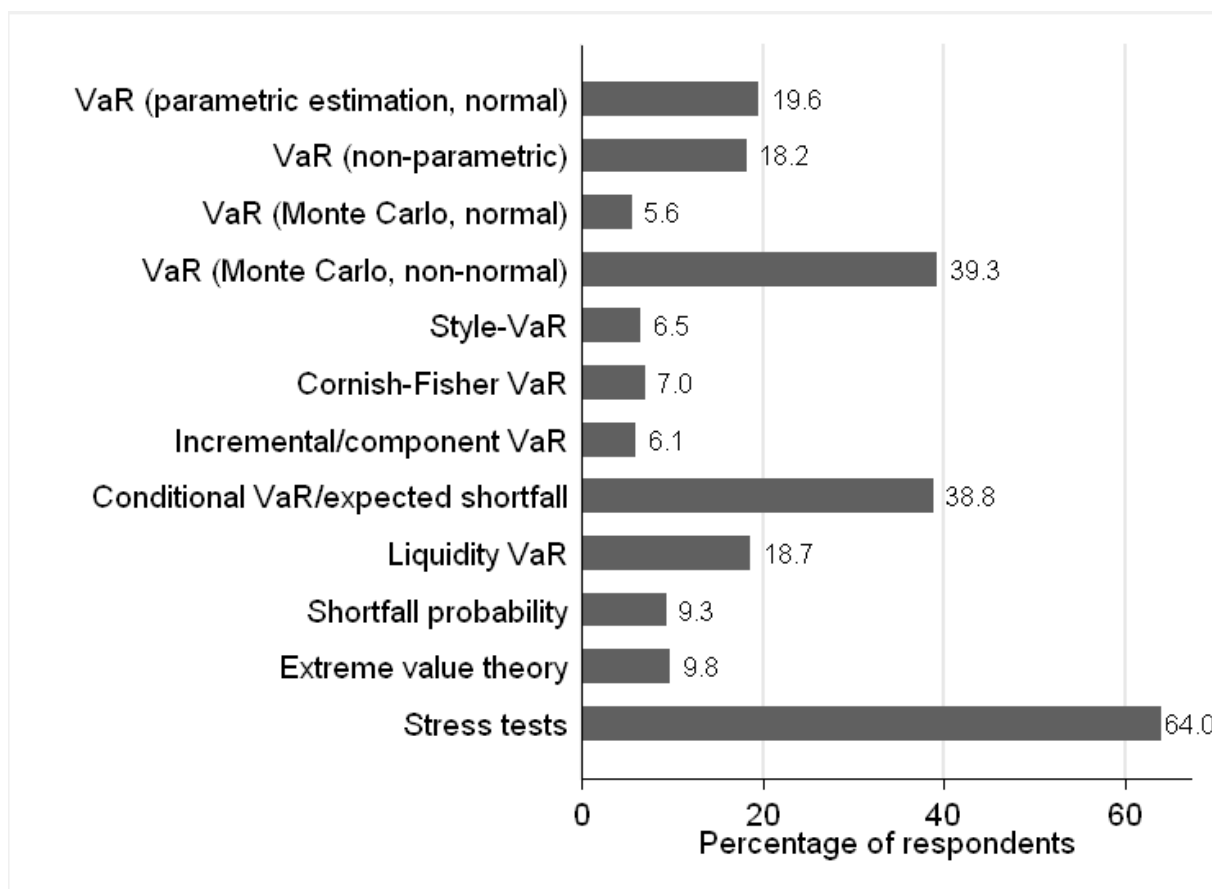


Exhibit 7: Important risk-adjusted performance measures for good hedge fund reporting

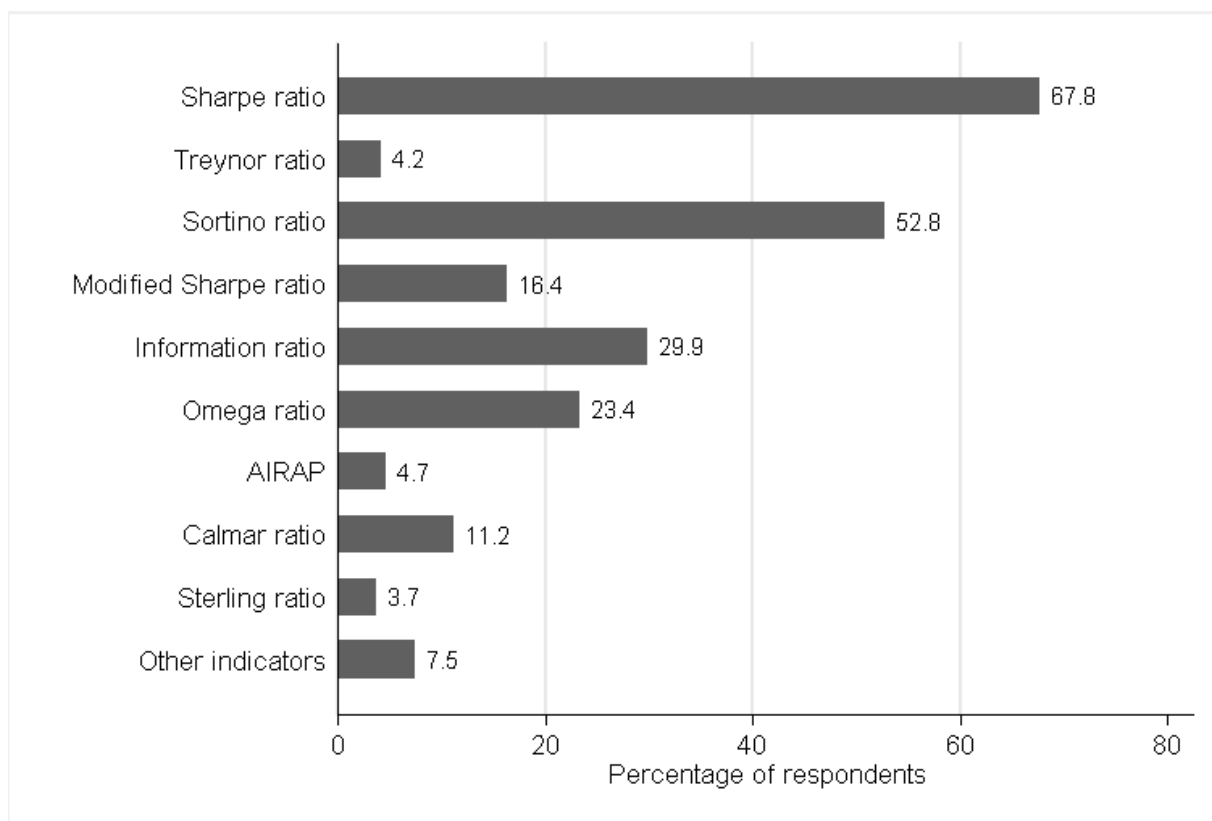


Exhibit 8: Importance of factor models. Answers by professional group

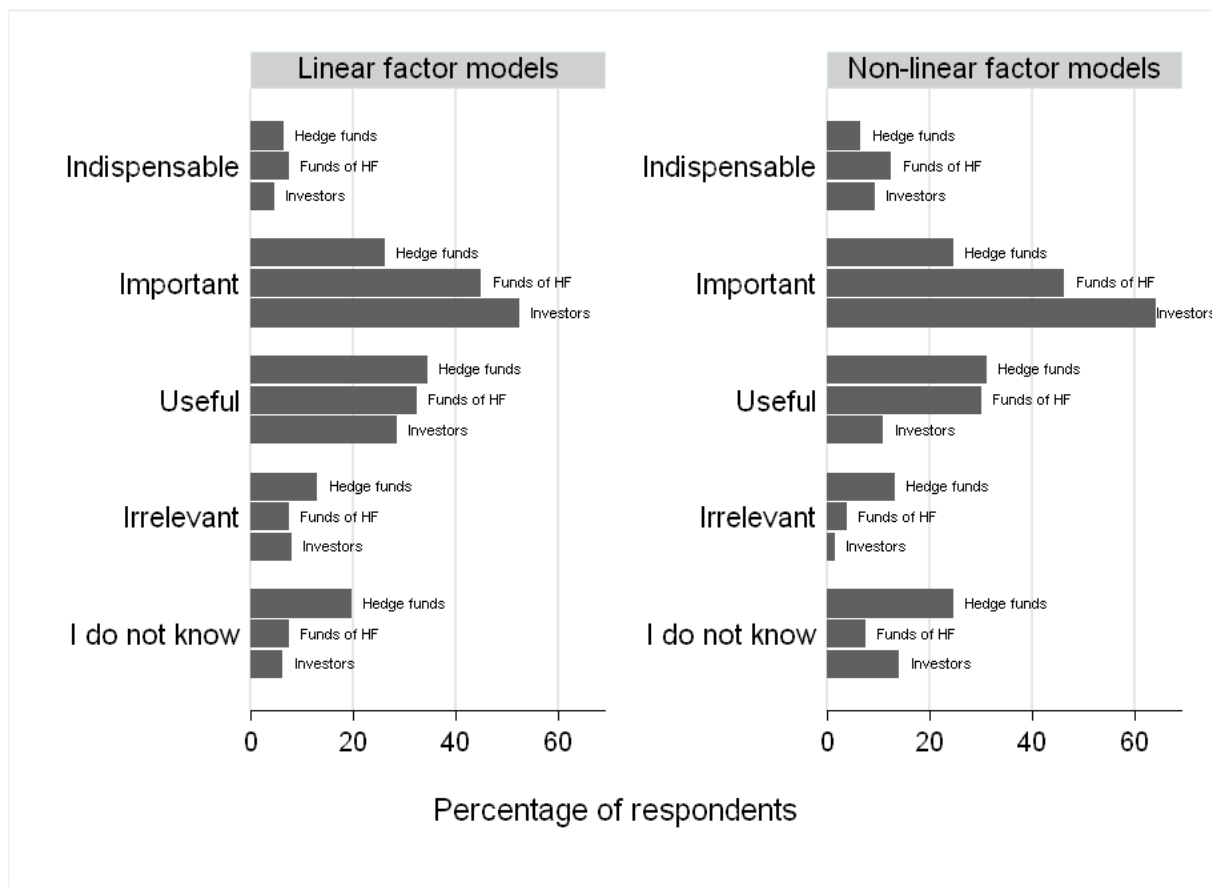


Exhibit 9: Do you publish the factor exposure of your hedge fund? Answers by professional group

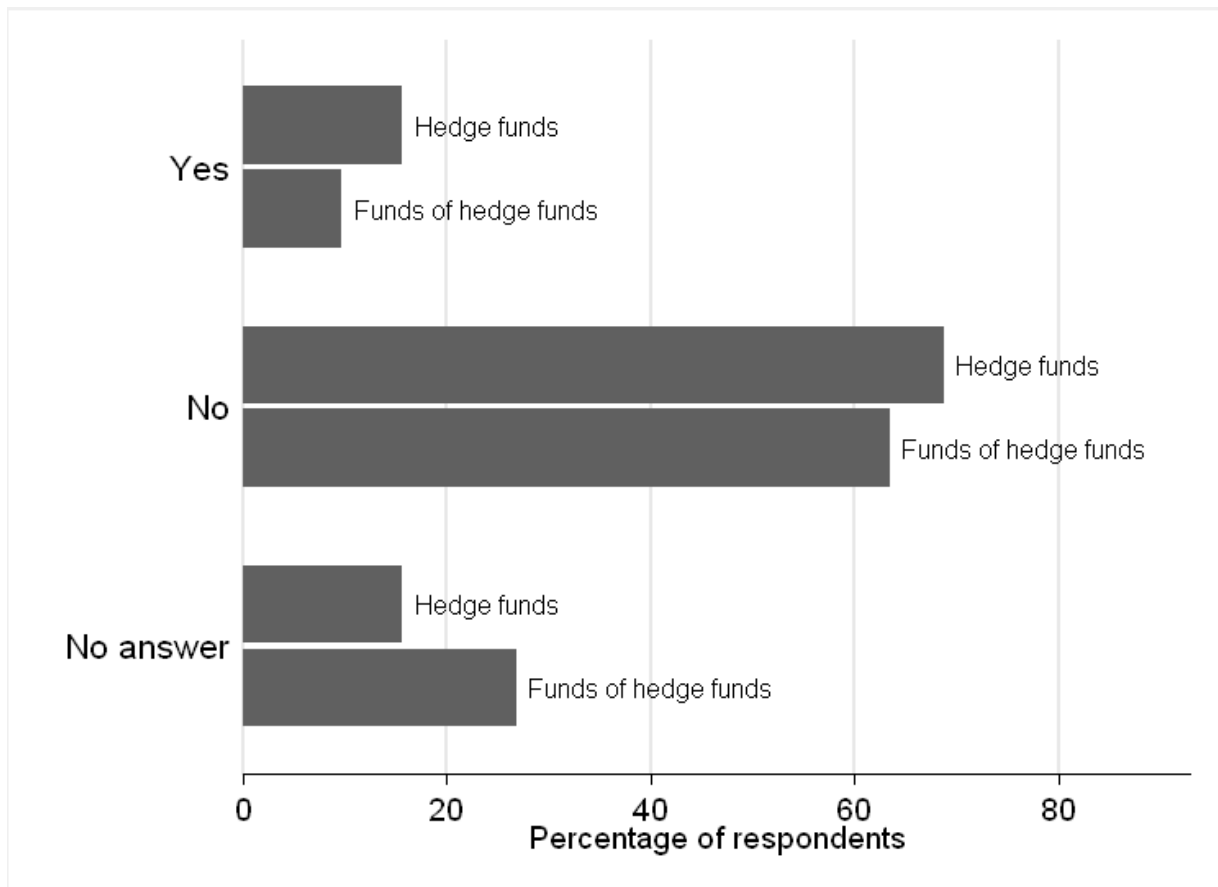


Exhibit 10: Which factor models do you publish? Answers of all respondents that publish factor exposure

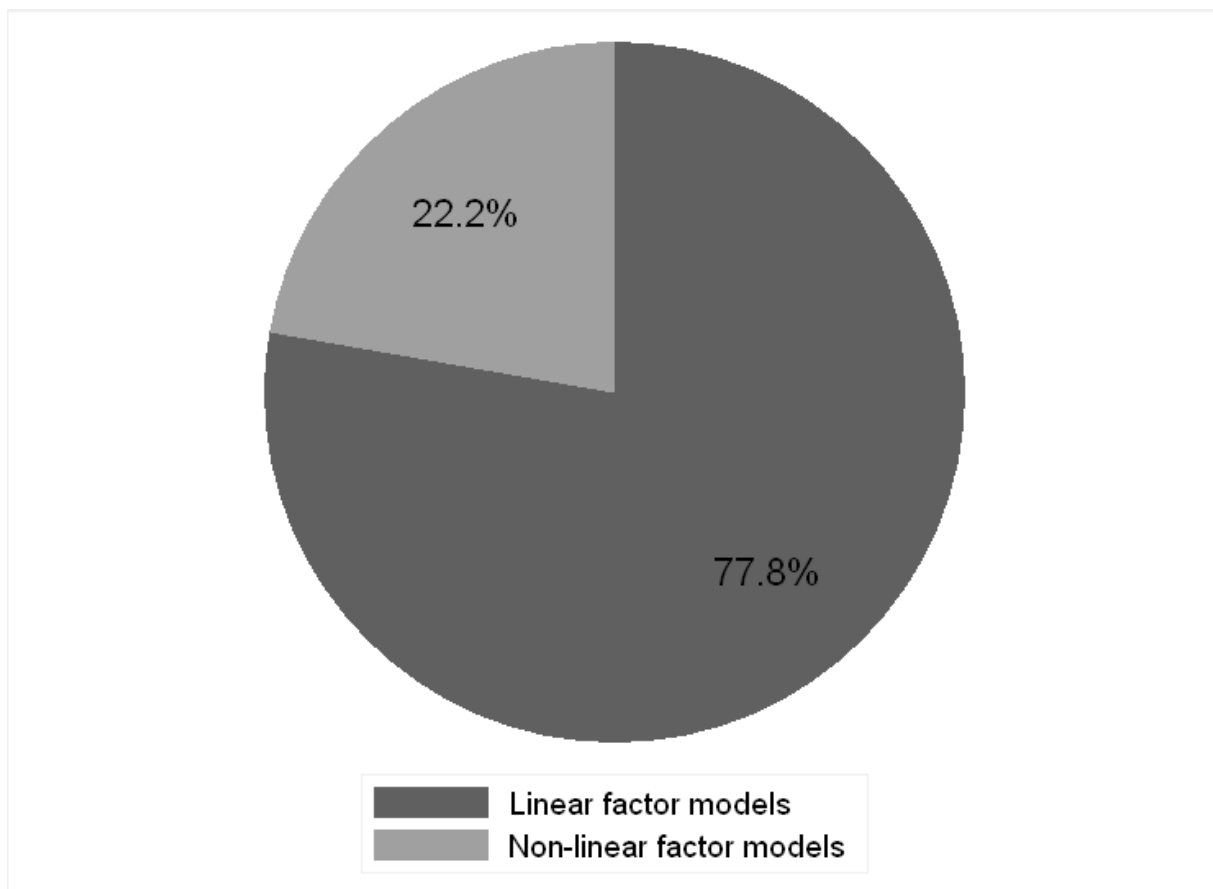


Exhibit 11: Is alpha analysis important? Answers by professional group

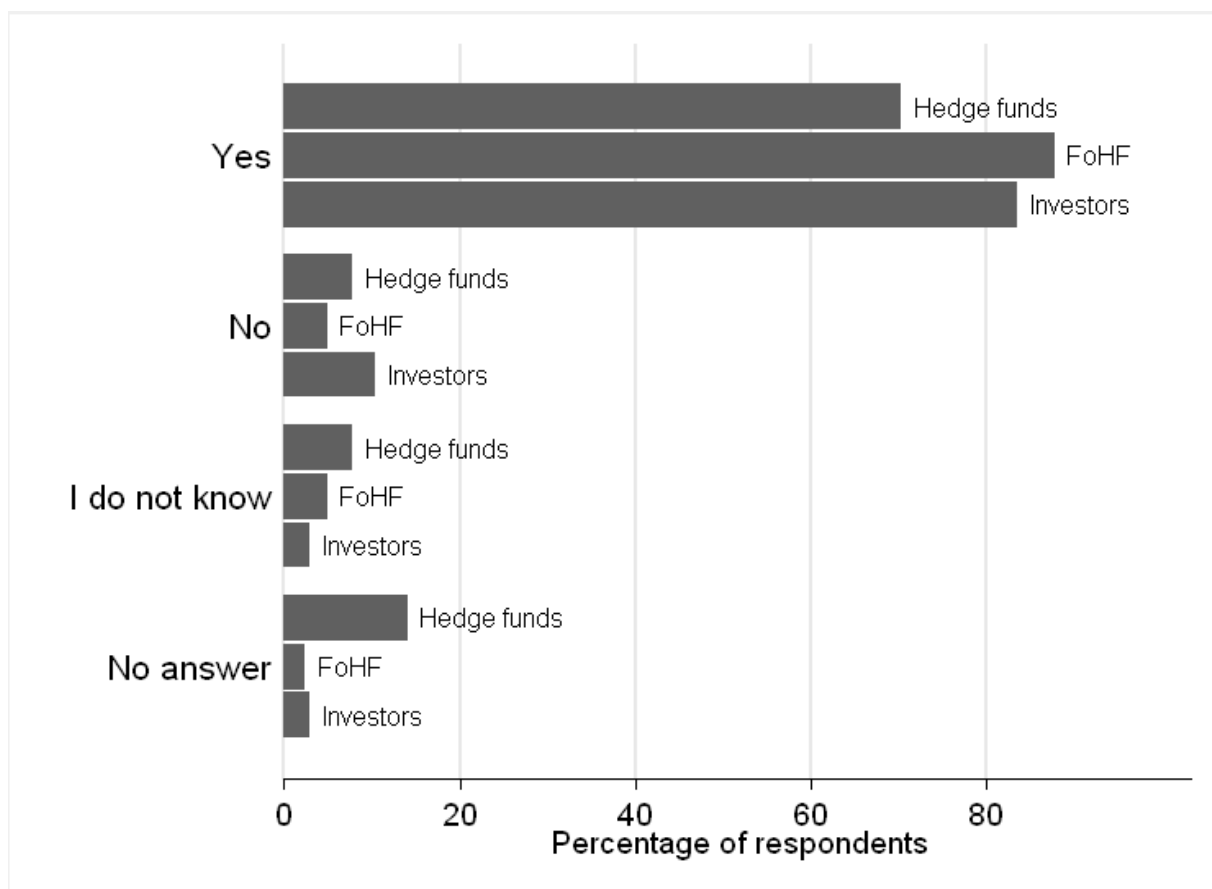


Exhibit 12: Which methods should be used to calculate alpha?

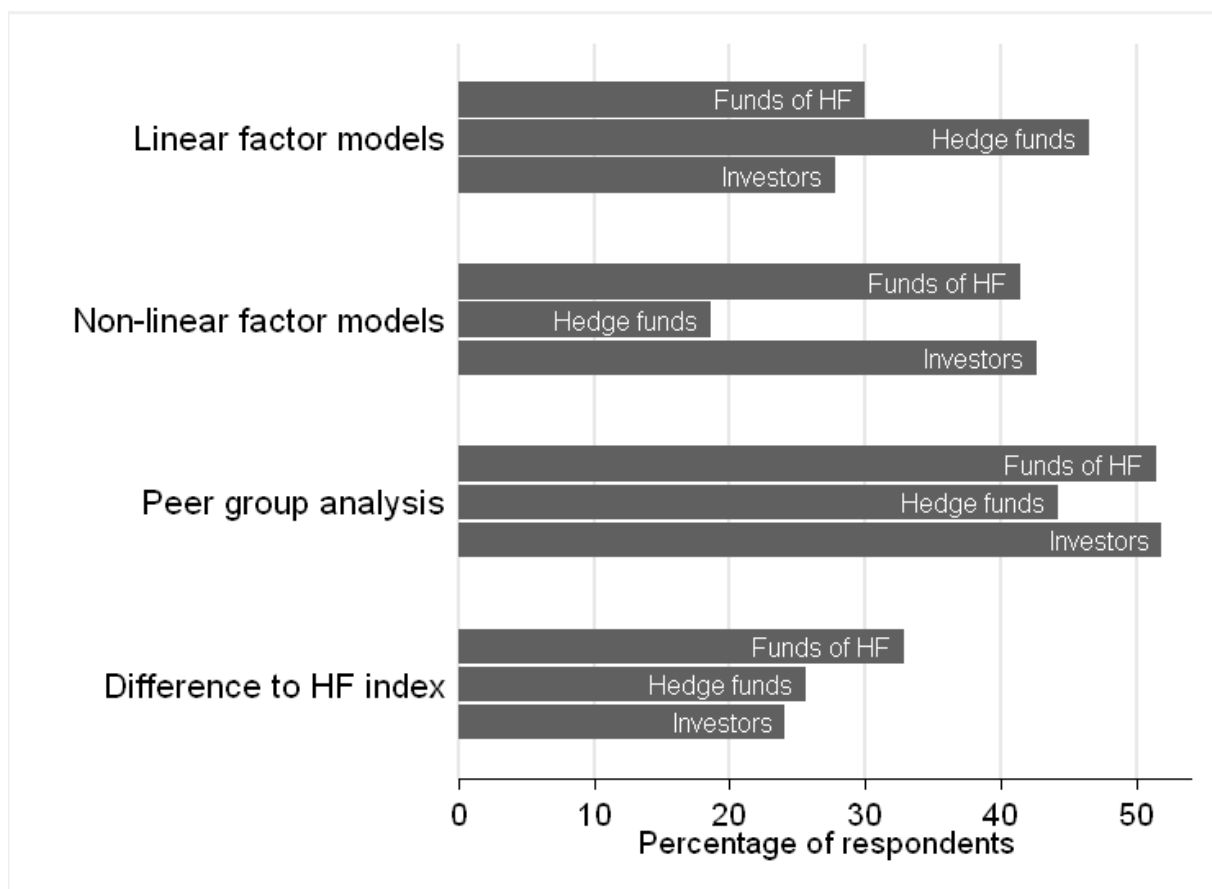




Exhibit 13: Non-normality of hedge fund returns is an important issue for measuring hedge fund performance. Answers by professional group

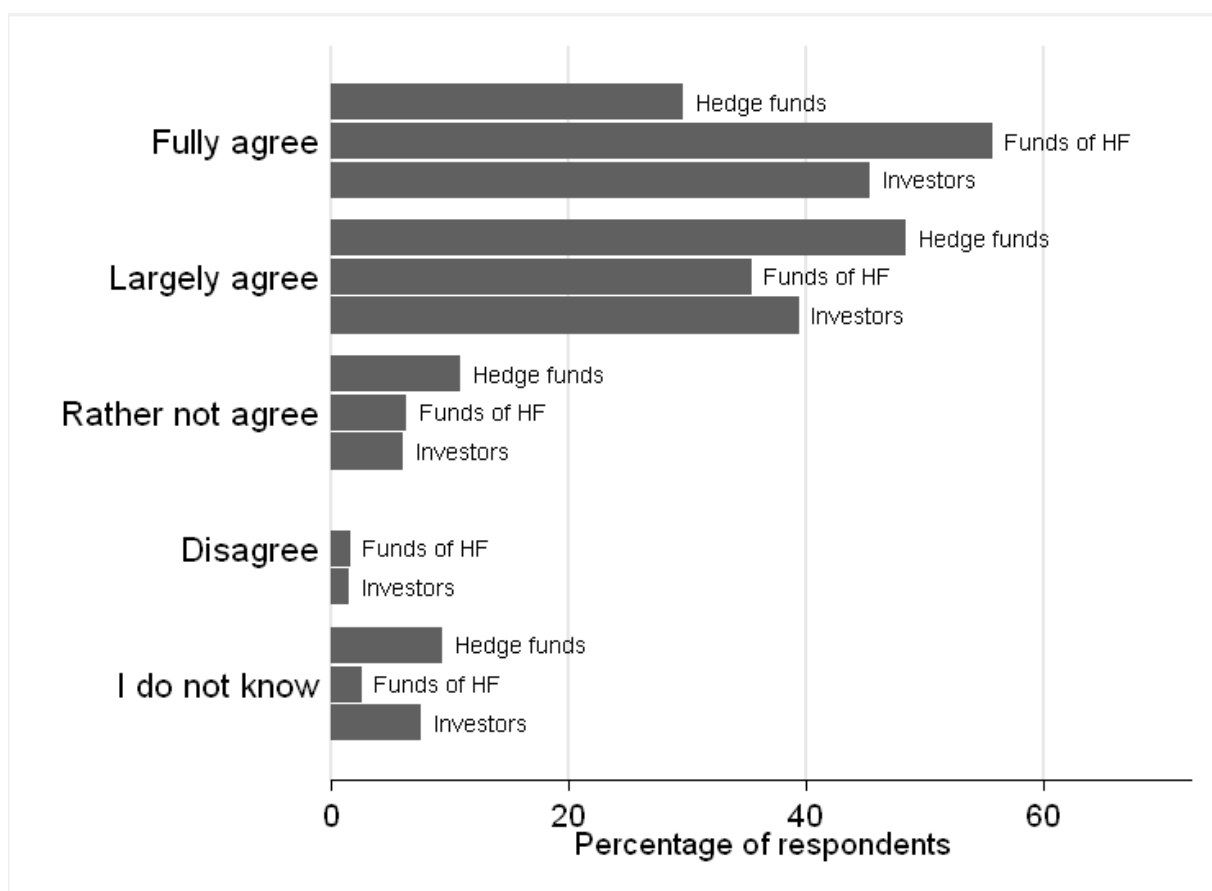


Exhibit 14: What test should be used to detect non-normality of hedge fund returns?

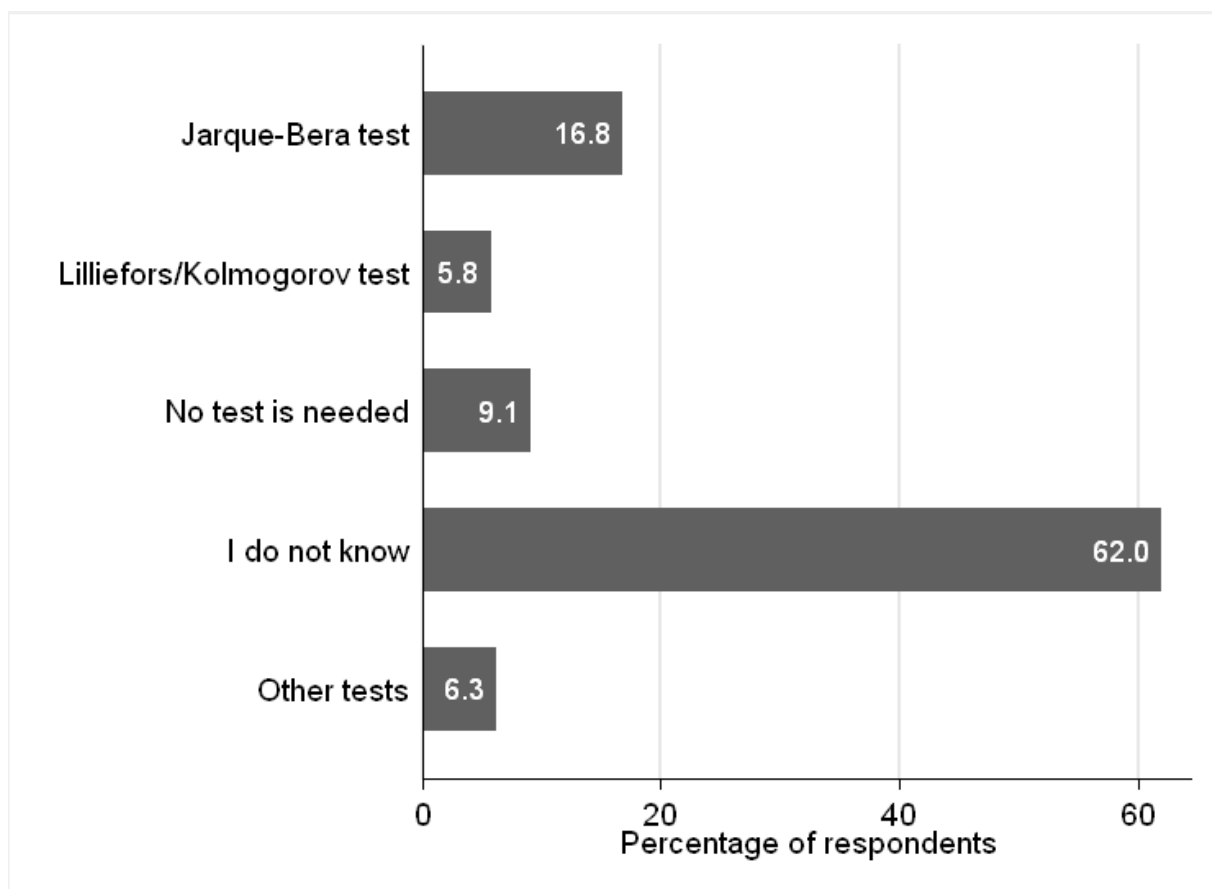


Exhibit 15: Return smoothing is a significant issue for measuring hedge fund performance

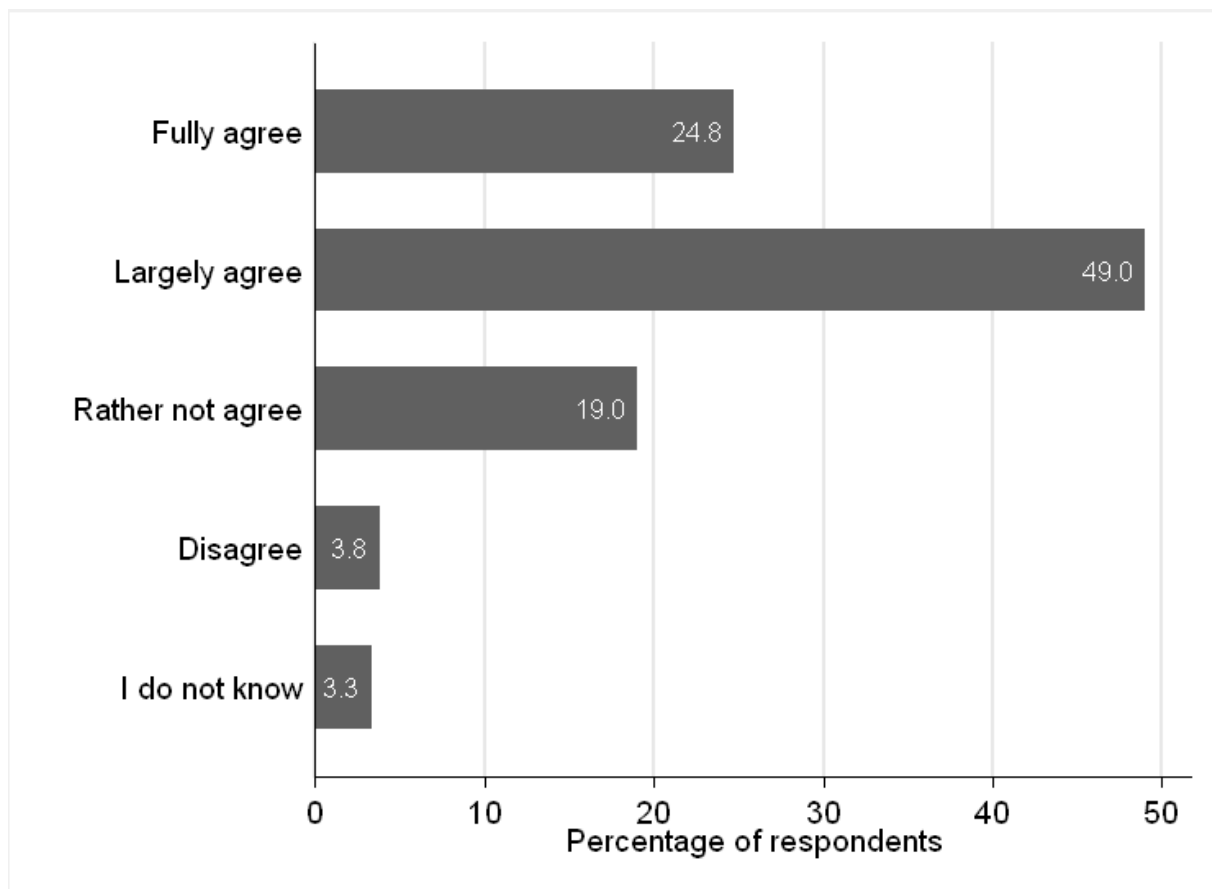


Exhibit 16: Reasons for return smoothing

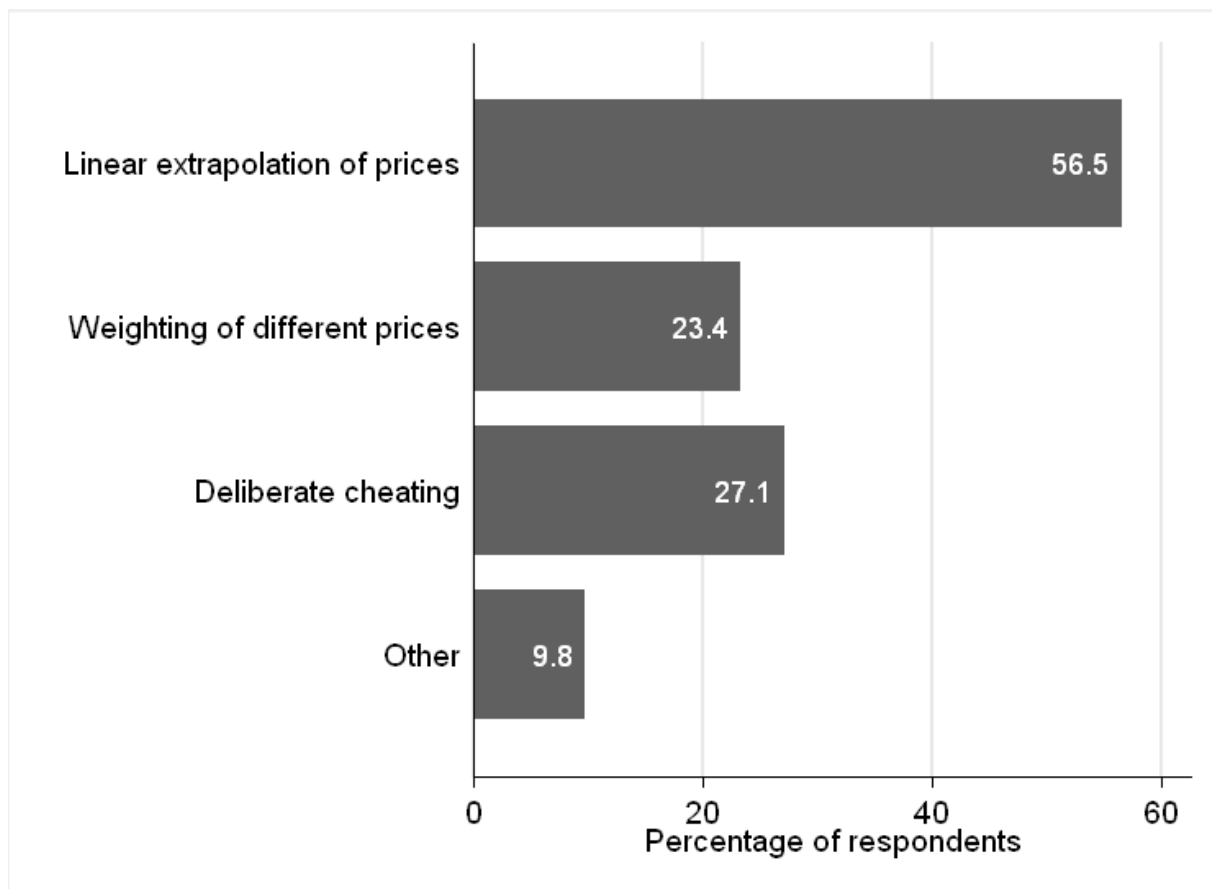


Exhibit 17: Do you publish or receive return-smoothing robust performance measures? Answers by professional group

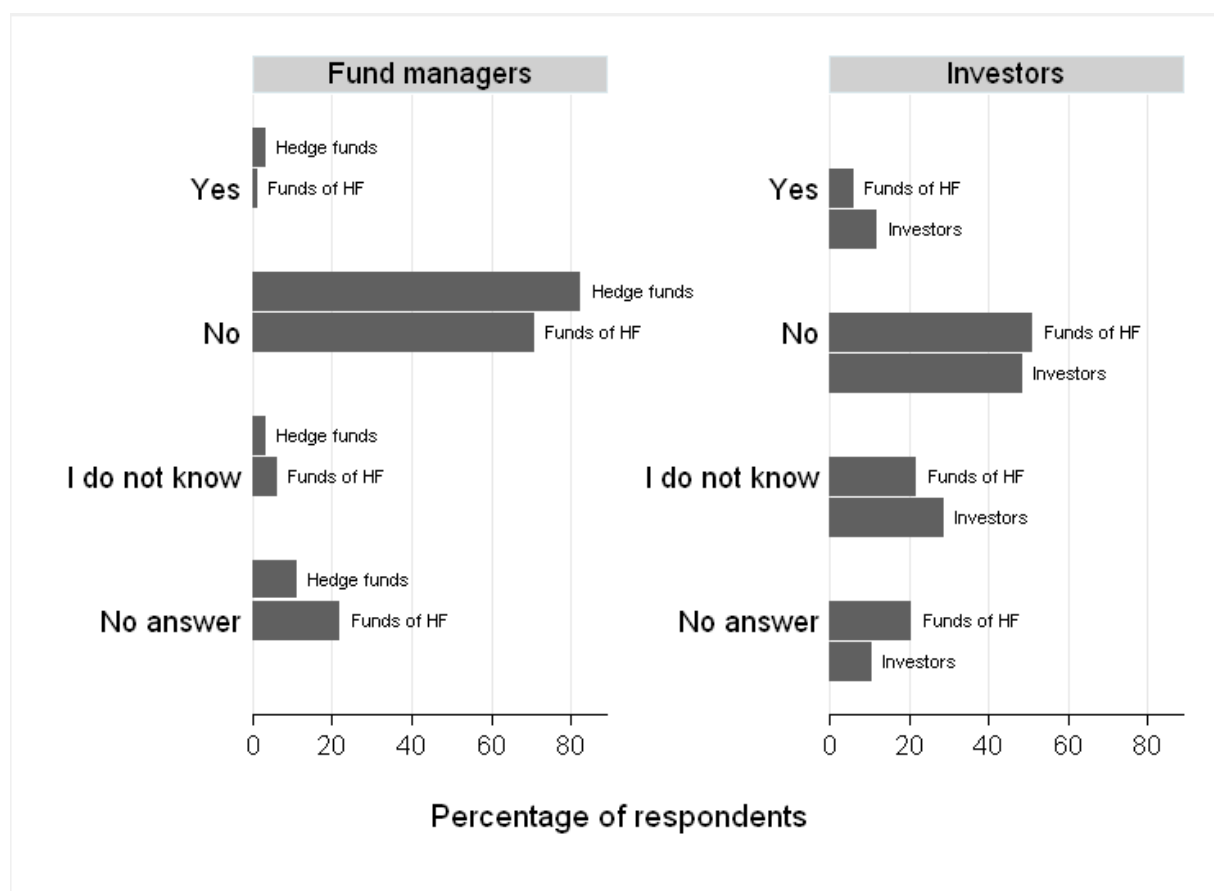


Exhibit 18: Is liquidity risk an important source of risk for hedge funds? Answers by professional group

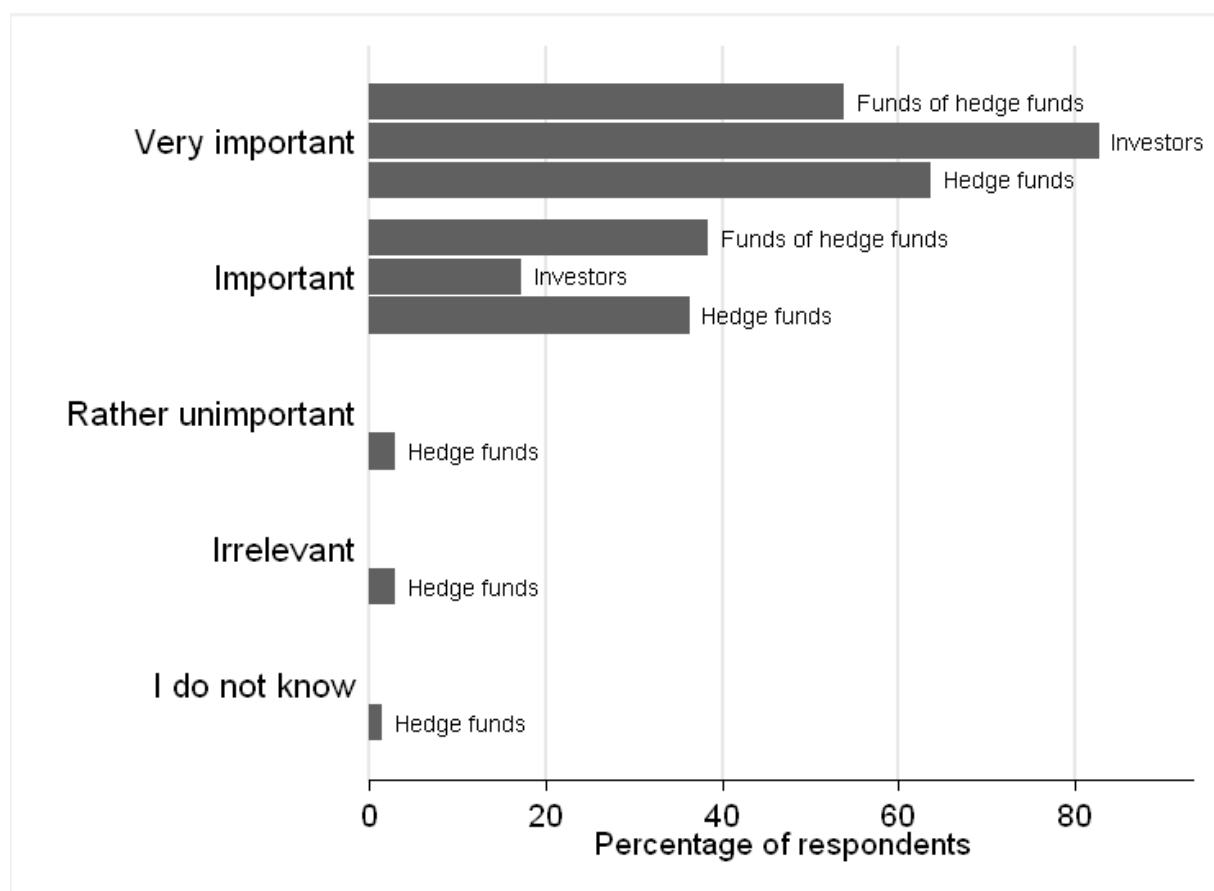


Exhibit 19: Is liquidity risk well captured by current hedge fund reports? Answers by professional group

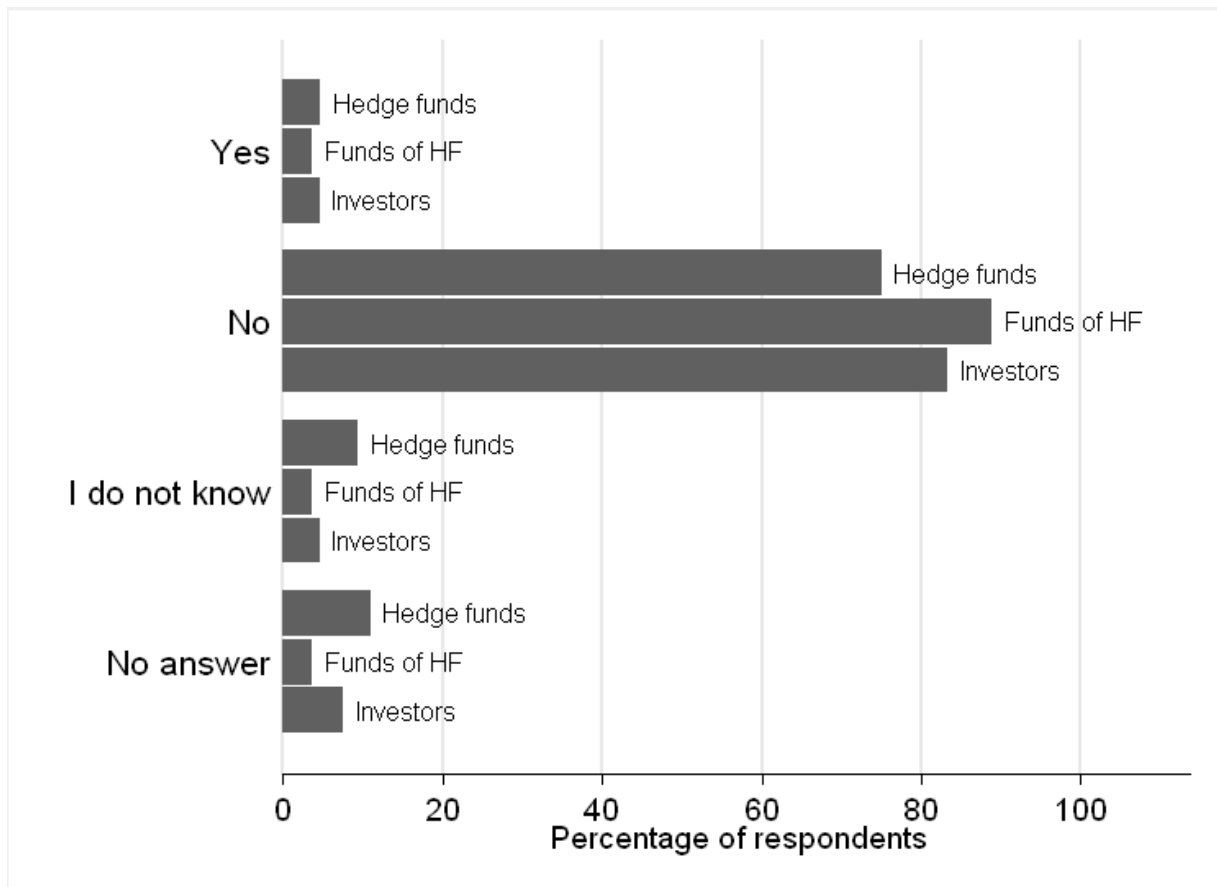


Exhibit 20: Is leverage risk an important source of risk for hedge funds?

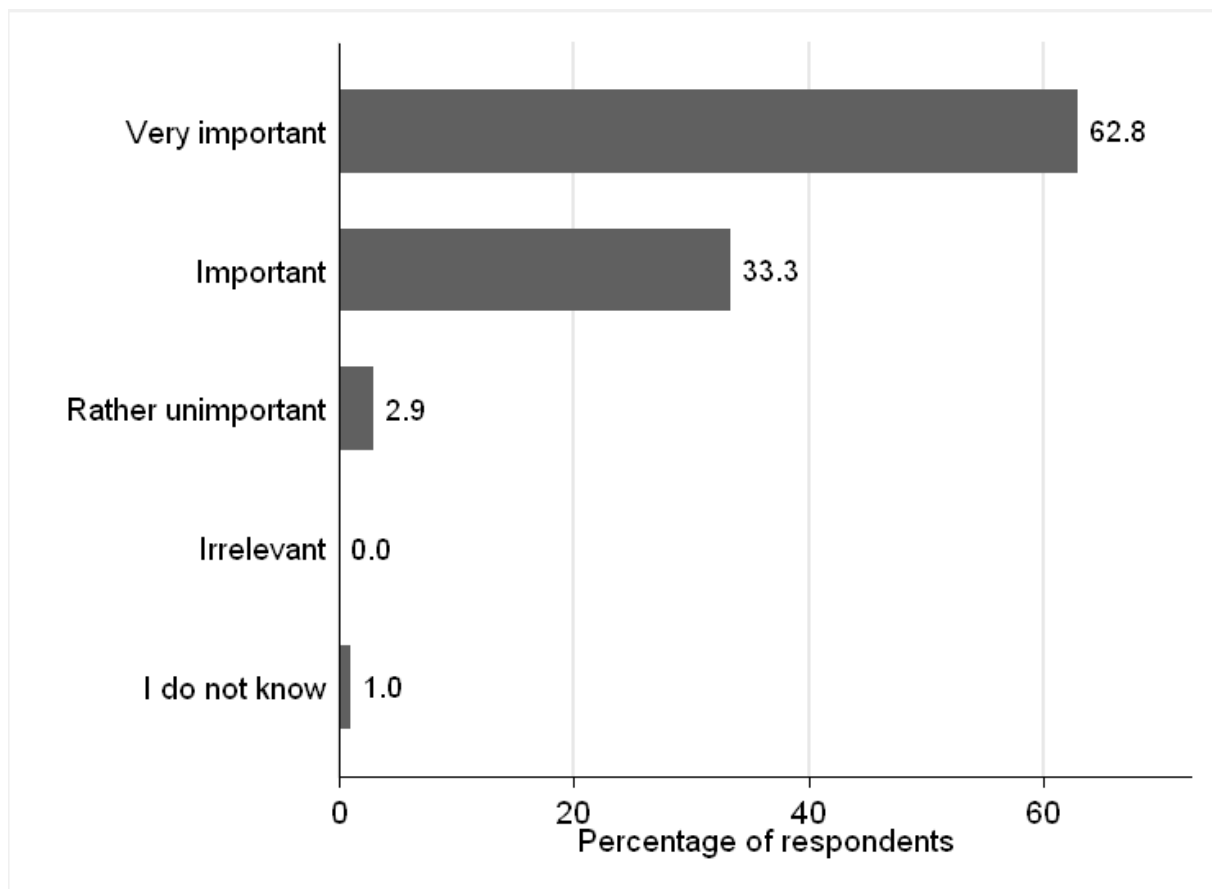




Exhibit 21: Is leverage risk well captured by current hedge fund returns? Answers by professional group

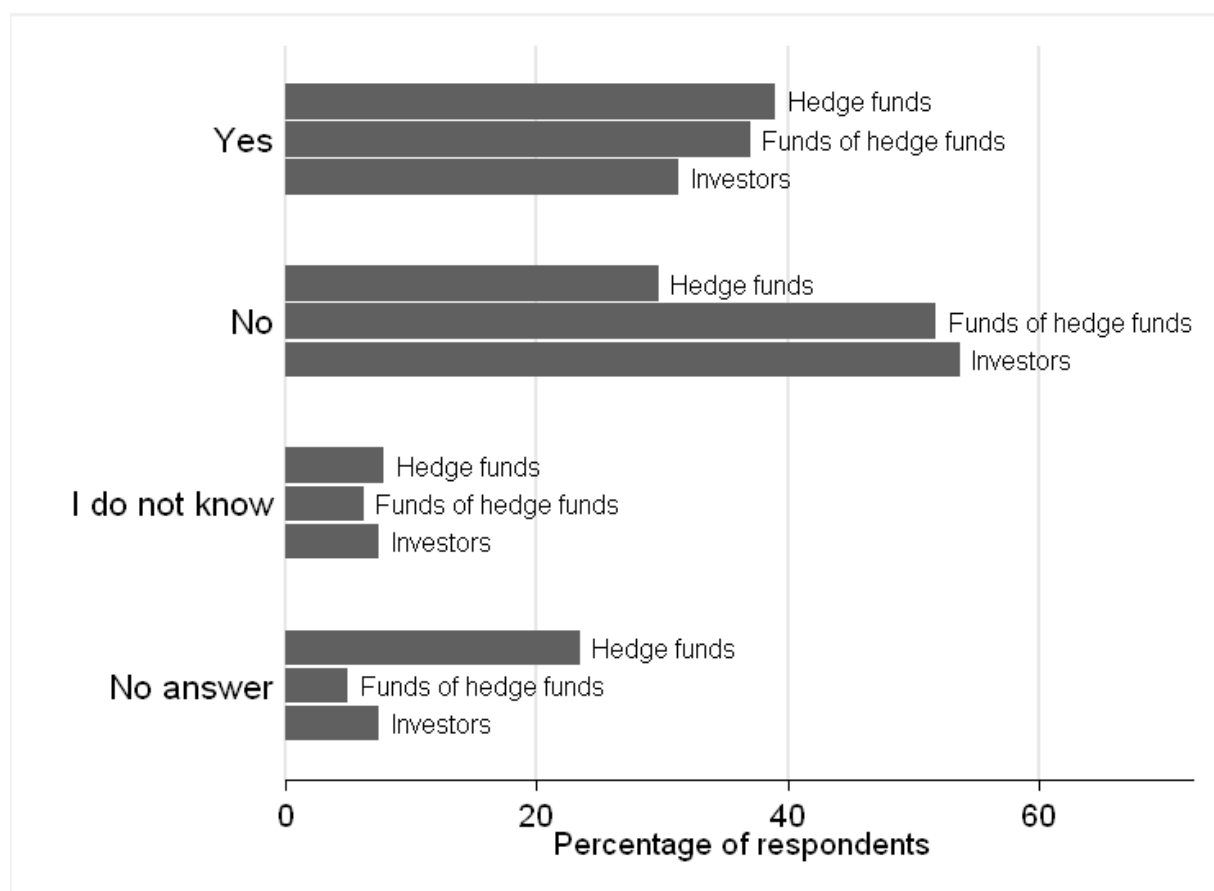


Exhibit 22: Important aspects of operational risk reporting

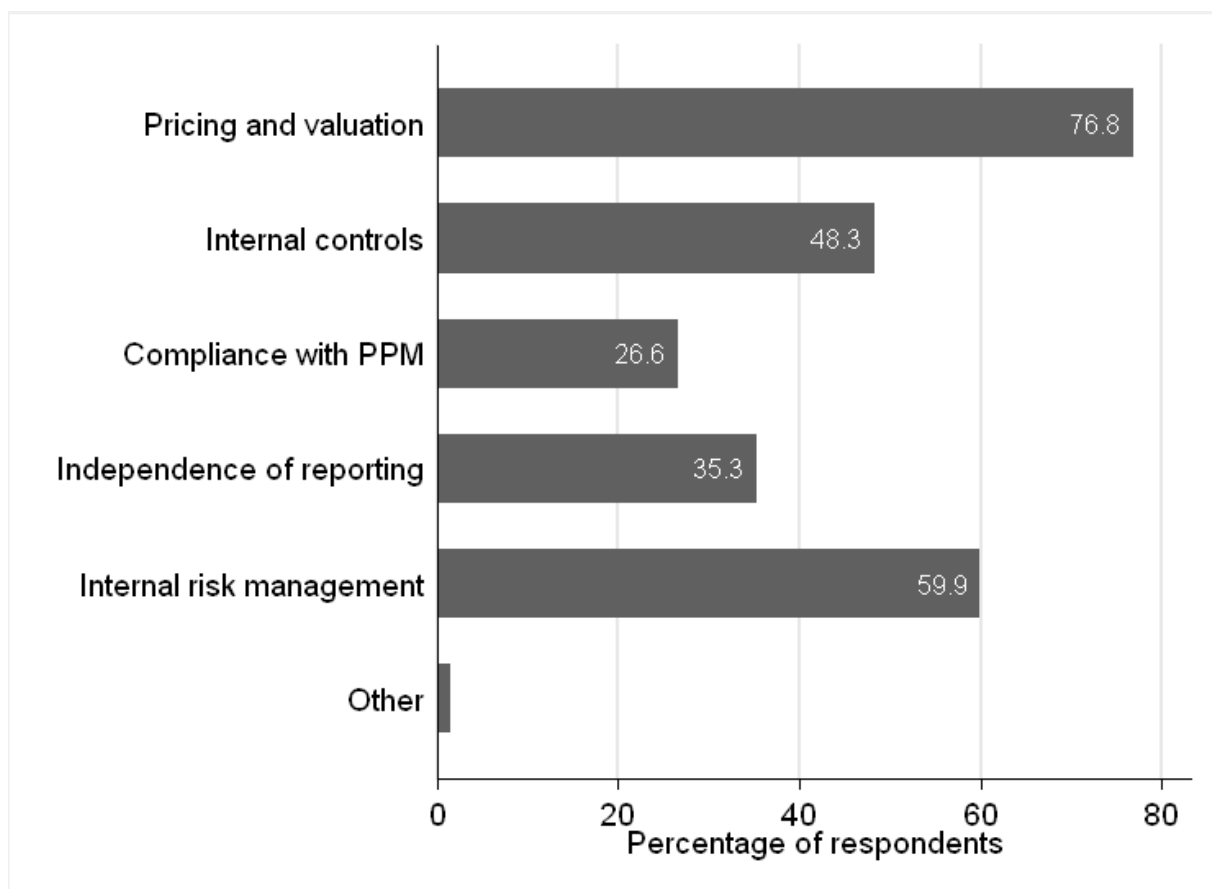
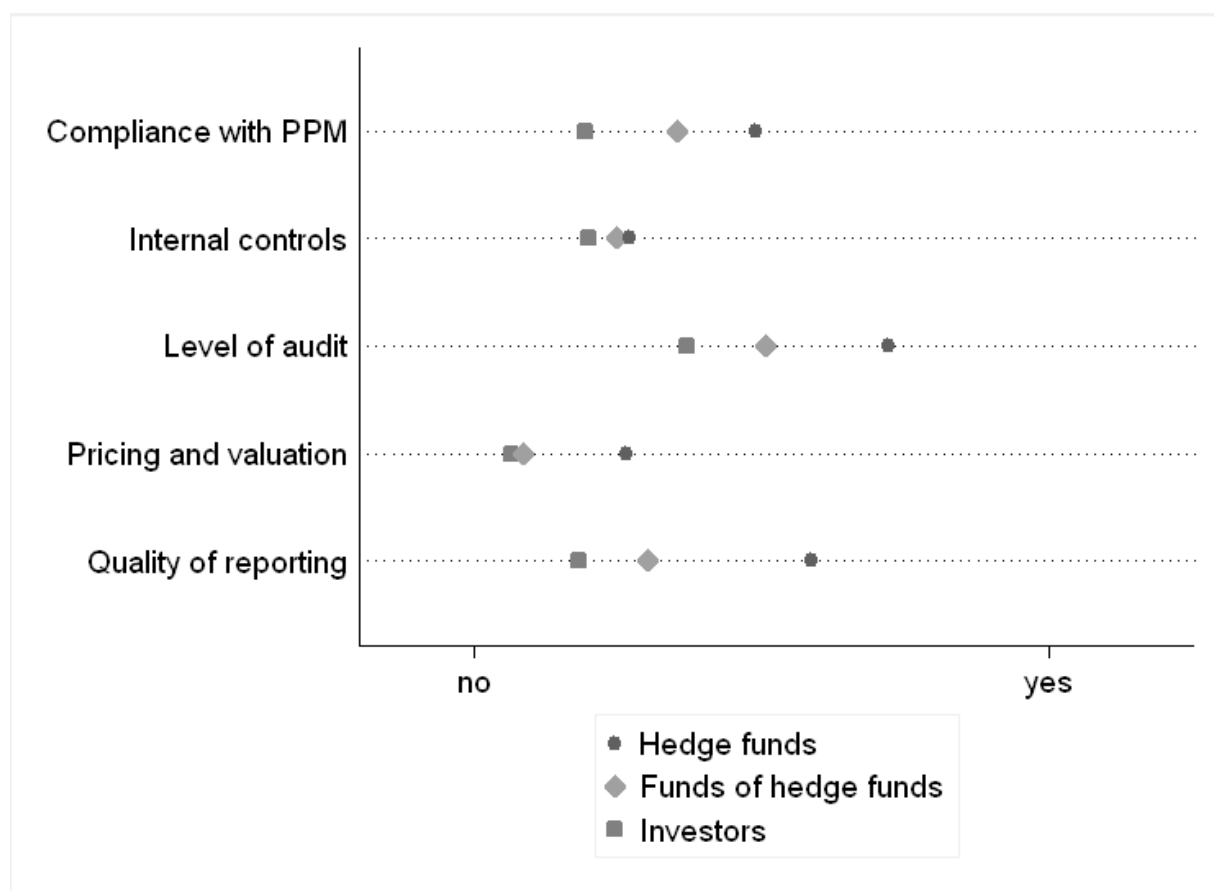


Exhibit 23: Does hedge fund reporting provide investors with sufficient information on...?  
Answers by professional group



## Exhibit 24:

Significant differences in the answers of respondents from larger firms and those from smaller firms.

	Compared to larger firms, respondents from smaller firms consider...
at the 1% level	<ul style="list-style-type: none"> <li>- hedge fund reports more as advertising</li> <li>- information on a hedge funds' portfolio composition less important</li> <li>- the conditional VaR more important</li> </ul>
at the 5% level	<ul style="list-style-type: none"> <li>- hedge fund reports less as a control device for managers</li> <li>- a hedge fund's absolute risk exposure less important</li> <li>- the information of a hedge fund's beta exposure of better quality</li> <li>- a hedge fund's risk-adjusted return more important</li> <li>- the Cornish-Fisher VaR less important to assess extreme risk exposure</li> <li>- stress tests less important to assess extreme risks</li> <li>- the Treynor ratio less important to measure risk-adjusted returns</li> <li>- non-linear factor exposure less important</li> <li>- alpha measures based on non-linear factor models less important</li> <li>- leverage risk less important for hedge funds</li> </ul>

<sup>1</sup> The disclosure of short positions can lead to dangerous counter-strategies by competitors; see Brunnermeier and Pedersen [2005]. Regulators such as the SEC largely agree on this view (Cox [2006]); adding that such disclosure could harm market efficiency.

<sup>2</sup> A more recent article on this topic is by Jorion [2008].

<sup>3</sup> Lhabitant [2004], Amenc et al. [2005] and Géhin [2006] provide comprehensive surveys of most of the measures currently used by hedge funds. An empirical comparison of these measures is by Eling and Schuhmacher [2007]. Le Sourd [2007] reviews the measures aimed at traditional investment universes, but used by hedge funds as well.

<sup>4</sup> For an earlier industry survey on hedge fund reporting, see Amenc et al. [2005].

<sup>5</sup> Note that in the following—if not otherwise stated—fund of hedge fund managers are sometimes considered investors, other times fund managers, depending on the question.

<sup>6</sup> Since the level of satisfaction with hedge fund reporting is meaningless to hedge fund managers, this question covers only the answers of fund of hedge fund managers and investors.

<sup>7</sup> Hedge fund returns are in general not normally distributed. For a reference, see Agarwal and Naik [2004].

<sup>8</sup> Fung and Hsieh [1997] have shown that hedge fund returns are non-linear with respect to the standard market factors, such as equity and bond markets.

<sup>9</sup> Hedge fund returns are smoother than they ought to be, given their risk exposure. There are two main reasons: investment in illiquid assets (no price available) and deliberate cheating by the manager (so that a fund will appear less volatile than it is). For further references, see Asness et al. [2001] and Getmansky et al. [2004].

<sup>10</sup> The proportion of investors who receive robust performance information (20%) should be more or less equal to the percentage of funds that disclose such information (5%). The divergence can be explained either by a mismatch of the samples (investor respondents are investing preponderantly in funds that disclose more information than those of our sample) or by badly informed investors (they consider the returns they got robust, when in fact they are not).

<sup>11</sup> Wallace and Mellor [1988] attempt to detect a possible non-response bias in their study by comparing the sample of respondents who returned the questionnaire on time and that of those who were late.