A Long Road Ahead for Portfolio Construction: Practitioners' Views of an EDHEC Survey

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About the author

Felix Goltz is head of applied research at the EDHEC Risk and Asset Management Research Centre. He conducts research in empirical finance and asset allocation, with a focus on alternative investments and indexing strategies. His work has appeared in various international academic and practitioner journals and handbooks. He obtained a PhD in finance from the University of Nice Sophia-Antipolis after studying economics and business administration at the University of Bayreuth and EDHEC Business School.

Executive Summary

Executive Summary

In early 2008, the EDHEC Risk and Asset Management Research Centre published survey results on the investment management practices of European investors and asset managers. The EDHEC European Investment Practices Survey 2008 sheds light on current practices in the industry and compares these practices with the state of the art as described in the investment literature. The first objective of the present document is to summarise the results of the survey dealing with portfolio construction. The second objective is to assess the opinion of practitioners on the findings.

The results of the original survey show that European investment managers use a wide range of asset allocation techniques, many inspired by the academic and professional investment literature. However, the results also show that in many respects current practice falls short of the state of the art in portfolio management techniques.

For example, despite the oft-mentioned importance of benchmarks, absolute definitions of risk prevail and portfolio optimisation often fails to involve relative risk objectives (35% of respondents do not set such objectives). Likewise, while risk measures like VaR and CVaR are commonly used, most practitioners rely mostly on the assumption of a normal distribution when computing such measures. The fact that returns data are usually subject to non-trivial skewness and kurtosis is thus ignored. The EDHEC survey also shows that advanced techniques for covariance estimation and portfolio optimisation are not widely used (less than 20% of respondents report that they use them), though they may provide useful solutions for dealing with estimation risk.

For feedback from the industry on these findings, we distributed a questionnaire asking for explanations for the current situation and possible ways to encourage the use of more advanced techniques.

The feedback received from practitioners shows that they largely agree with the findings. 95% share EDHEC's opinion that improvements must be made on the front of portfolio construction practices. Practitioners acknowledge the value-added of advanced techniques and their responses show that there is room for significant improvement in all areas, i.e., relative risk management, advanced portfolio construction techniques, and, most of all, VaR calculation and covariance estimation.

When asked to identify the reasons for the insufficient application of portfolio construction research to practice, more than half of our respondents (industry professionals) report that it is the lack of knowledge in the industry that constitutes the major barrier. They view implementation objectives and a lack of client interest (chosen by only a quarter of respondents each) as less important reasons for this failure to take full advantage of the advances highlighted by portfolio construction research. 86% of the professionals responding to the questionnaire report that further education and effort on the part of investment managers are highly important means of closing the gap between real-word practice and ivory-tower research. But 79% of these professionals also say that better explanations of the practical applications of academic research are also highly important.

Introduction

Introduction

The EDHEC European Investment Practices Survey 2008 (EDHEC 2008) sheds light on current practices in the industry and compares these practices with the recent state of the art as described in the investment literature.

The results of the survey show that the industry does not fully exploit a number of proven portfolio optimisation techniques that research has made readily available, such as management of extreme risks, improved covariance estimation or Bayesian and resampling techniques.

We called for reactions to these results; the objective was to get feedback from the European industry on the results of the survey. This feedback seems important to us for two reasons. First, we would like to know how the results of the survey and their usefulness are perceived by industry practitioners. Second, we are interested in explanations and perspective on our results.

We find that practitioners are in broad agreement with our conclusion that a greater effort should be made to make recent advances in portfolio construction an integral part of current portfolio processes. After all, it is acknowledged that advanced portfolio choice techniques are extremely useful tools for practical investment management. Furthermore, practitioners largely blame a lack of knowledge in their own industry for the current situation.

The first section of the present document provides an overview of the initial survey results concerning portfolio construction. In the second section, we analyse the feedback received from practitioners on these findings.

1. Survey Results on Portfolio Construction
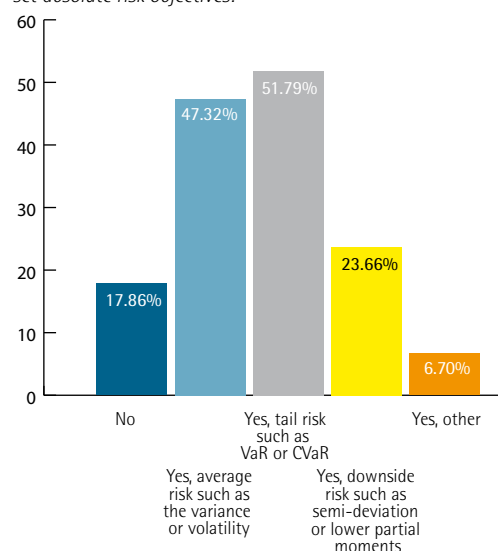
1. Survey Results on Portfolio Construction

The part of the survey dealing with portfolio construction first addresses the definition of a risk measure as absolute, relative, or extreme risk. It then discusses the results concerning estimation issues with the covariance matrix and expected asset return inputs to standard portfolio models.

Our first set of questions deals with the definition of the objective in portfolio optimisation. It is well known that portfolio optimisation amounts to minimising some risk measure for a given a level of "value" or to maximising "value" for a given level of risk (Sarin and Weber 1993). While "value" is defined predominantly as the expected return of the portfolio, there are many definitions of risk. This heterogeneity reflects the heterogeneity of investor preferences. To identify the types of risk measures in use for portfolio optimisation, we ask one question about each of the three forms of risk measurement: absolute, relative, and extreme. The most basic approach to measuring a portfolio's risk is to measure the absolute risk, an approach that supposes that the portfolio constitutes the entire wealth of the investor and that he does not have a benchmark portfolio. The second risk definition, relative risk, is also known as tracking-error risk and refers to deviation from a benchmark reflecting the strategic allocation or liability constraints of an investor. Extreme risk refers to the behaviour of the tails of the return distribution, and is often summarised in the form of a Value-at-Risk (VaR) measure, the maximum loss that is not exceeded with a given probability (the confidence level) over a given period of time. However, we will see below that, in practice, the methods used to assess

VaR do not necessarily capture the tail behaviour of portfolio returns.

It turns out that the absolute risk definition is widely used in setting portfolio optimisation goals. In fact, not even 20% of the 224 respondents to this question report that they do not set such objectives. For the large majority who do set an absolute risk objective, tail risk measures (VaR/CVaR), used by 51.79% of survey respondents, and volatility, used by 47.32%, are the most commonly used measures. It should be noted that measures such as VaR or CVaR are used a little more widely than volatility. Clearly, this widespread use indicates that the industry is well aware of the importance of taking tail risk into account, rather than just optimising weights for minimum volatility. Nearly a quarter of respondents use downside risk measures such as semi-deviation. These measures, however, are not nearly as popular as the VaR-type measures. Another 6.7% of respondents mention other absolute risk objectives, mainly using less common measures of loss risk.

Exhibit 1: When implementing portfolio optimisation, do you set absolute risk objectives?

1. Survey Results on Portfolio Construction

It is often stated that the risk relative to a benchmark, often a market index, is the primary concern in the fund management industry. We ask respondents whether they use relative risk measures when setting the objective for portfolio optimisation. Again, we obtain 224 replies. As it happens, slightly more than one-third of those responding to the question do not set relative risk objectives. So these replies reveal that the relative risk definition is actually less widely used than the absolute risk definition. Of the relative risk objectives used by respondents, tracking error volatility with respect to a benchmark, used by approximately half of the respondents (50.89%), is the most popular. Measures of tail risk with respect to a benchmark such as Value-at-Tracking-Error-Risk account for nearly one-fifth of responses, followed by benchmark-relative downside risk, used by no more than approximately one in eight institutions. Slightly fewer than 3% of those responding to the question use other relative risk objectives, including measures such as the beta with respect to a benchmark.

For portfolio allocation, absolute risk measures are more widely used than relative risk measures, a finding that weakens the claim that the definition of risk as relative risk is now the industry standard. However, when it comes to performance measurement, as opposed to portfolio optimisation, this claim may not be weakened at all. Remarkably, tail risk is not commonly taken into account when relative risk is being assessed, but it is when absolute risk is being assessed. To all appearances, the industry has not yet drawn on academic research results in the areas of asymmetric risk and tail

risk and used it in the context of tracking error. The failure to do so is surprising, as it is straightforward to apply these concepts not just to simple returns but also to the returns in excess of a benchmark.

Exhibit 2: When implementing portfolio optimisation, do you set relative risk objectives with respect to a benchmark?
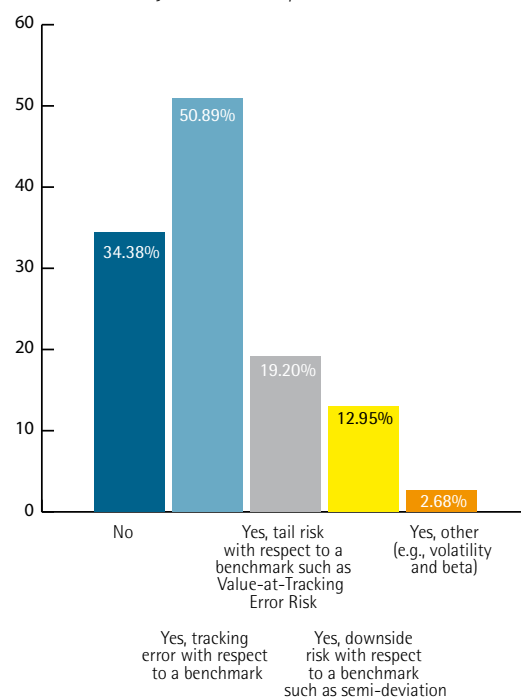

While we have made it clear that extreme risk measures such as VaR and CVaR are widely used in portfolio optimisation, an interesting question is how extreme risk is assessed. As it happens, of the 219 respondents to this question, slightly more than a quarter (25.75%) report that they do not account for extreme risk at all. The most common method of calculating extreme risk measures (mentioned by 43% of respondents) is a method based on a normal distribution. It is likely that this method owes its popularity to its simplicity and convenience. However, asset returns are generally not normally distributed. In addition, on the assumption of a normal distribution, a VaR calculation does not

1. Survey Results on Portfolio Construction

add any information to the information on the mean return and the volatility, since the distribution is completely characterised by these two parameters. Consequently, incorporating deviations from normality into the VaR measure is critical. However, our survey shows that only a small minority of respondents account for the deviations from normality of portfolio return distributions: 17.35% use a VaR calculation that accounts for higher moments through approximations and less than 10% use VaR calculations based on explicit modeling of the tail distribution through extreme value theory. Conditional Value-at-Risk (CVaR)—for technical reasons it is often seen as a preferred risk objective—is considerably less likely to be used (chosen as it is by 23.29% of respondents) than VaR. CVaR is a more convex objective, as noted by Rockafellar and Uryasev (2000). Also note that CVaR may provide a more appropriate characterisation of investor risk preferences, as it takes into account the magnitude of losses beyond VaR. Roughly 13% of respondents report that they use other methods to calculate extreme risk. Among them are stress-testing, the most common answer, followed by methods such as scenario-based, historic, Monte Carlo, and filtered bootstrapping Value-at-Risk.

Exhibit 3: When implementing portfolio optimisation, how do you calculate extreme risk measures?
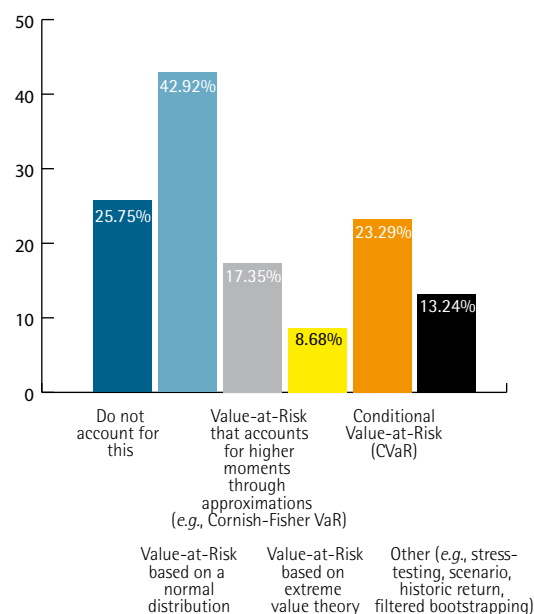
The recognition of extreme risk as an objective in portfolio optimisation is a major development for the industry, but the methods for assessing extreme risk are often inconsistent with an appropriate definition of extreme events. In particular, the use of the normal distribution as the most popular method for Value-at-Risk calculation casts doubt on the ability of current practices to integrate the risk of extreme events into portfolio optimisation. Using a Value-at-Risk objective may well be appealing for marketing reasons, but the fundamental question of how to evaluate this measure has yet to receive sufficient attention.

A central task in portfolio optimisation is to obtain the input necessary to compute both the level of portfolio risk, however defined, and that of expected returns. We turn now to issues linked to the estimation of input necessary to compute these measures. First, we look into estimation techniques for the covariance

1. Survey Results on Portfolio Construction

matrix of asset returns. Second, we will turn to methods that incorporate uncertainty as to estimates of expected asset returns into the portfolio selection process.

The estimation of the covariance matrix of asset returns is critical to the calculation of portfolio variance, as the latter depends solely on portfolio weights and on this matrix. Covariance estimation has received a great deal of attention in the portfolio choice literature. In the first question on estimation issues, we ask respondents which of the methods discussed in the literature they actually use. Of the 204 respondents to this question, a clear majority—67.16%—use the sample covariance matrix. Thus, the simple sample estimator is by far the most common estimator of the covariance matrix. This practice obviously leads to very high sample risk. Most ways of dealing with this estimation risk rely on imposing some structure on the covariance matrix. This structure may be imposed by a single-factor model, by the constant correlation approach, or by a multifactor forecast. Exactly one-third of respondents adopt one of these three methods, a rate of adoption that shows that they have made significant inroads in the industry, although the use of the sample estimator is far more common. Implicit factor models are used by approximately one in seven respondents (14.22%), while optimal shrinkage techniques are used by about 4.5%. Other methods, consisting mainly of more advanced econometric techniques such as dynamic models of the covariance matrix, are used by some 7% of survey respondents.

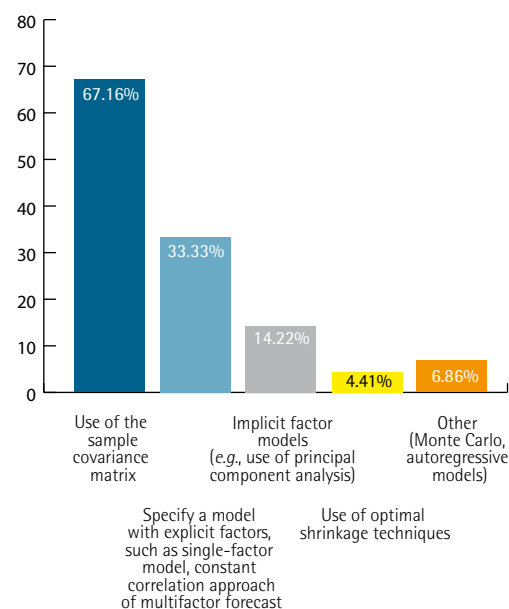Exhibit 4: When implementing portfolio optimisation, how do you estimate the covariance matrix?

Exhibit 4 shows clearly that despite the availability (since the 1970s) of well known techniques for structural estimation the use of the sample covariance matrix remains the industry standard. The failure to adopt these newer techniques at greater rates is a surprise, as estimation problems have been highlighted by practitioners and are addressed by a large body of academic literature. In particular, the use of optimal shrinkage techniques is limited to a small minority of less than 5% of those responding to the survey. The use of more advanced econometric models, indicated by some respondents, is not an answer as such to the problem of estimation risk. In fact, time series models of a dynamic covariance matrix with many assets typically involve the estimation of a large number of parameters (Tsay 2005, chapter 10).

Of course, the most crucial parameter in portfolio optimisation may be the expected return of the assets. Since it is often not feasible to estimate expected returns with

1. Survey Results on Portfolio Construction

precision, it is common to try to address this problem by using the estimated parameters in a careful manner. We ask those taking the survey how they deal with parameter uncertainty and received 209 responses. Some three-quarters (74.16%) choose to impose constraints on the portfolio weights. This choice is without a doubt the most straightforward of the alternatives for dealing with an optimiser that does not behave well, in the sense that it results in high variations in weights for small changes in the expected return input, a problem Cochrane (2005) refers to as "wacky weights". Imposing constraints, however, is somewhat arbitrary, as no clear guidance can be given on how these constraints should be imposed. More advanced methods of dealing with parameter uncertainty are not as widely used. None of the three most common is used by more than 20% of respondents: 18.66% calculate global minimum risk portfolios. This procedure does not require input of the estimated mean returns. Slightly more than one in six respondents (16.75%) use the Black-Litterman approach or similar Bayesian techniques. Portfolio resampling techniques are used by about 15% of respondents. 6.70% report that they use other methods. However, analysis of these answers reveals that these respondents use more econometrically advanced models to estimate parameters, a practice that does not explicitly address the problem of dealing with parameter uncertainty, or that they rely on additional judgement for reasonable parameter estimates. It is clear that the advances in dealing with parameter uncertainty that have been proposed in the academic literature have not been widely taken up by the industry; the widely cited Black-

Litterman (1992) approach, for example, is used by less than 20% of respondents. Portfolio resampling is even less common. Although it may be that the industry has failed to take advantage of these advances both because it is unaware of them and because they can be impractical, it is clear that, in this context, at any rate, greater fluidity of dialogue between academia and the industry would not be unwelcome.

Exhibit 5: How do you deal with estimation risk/problems of estimating the expected returns?
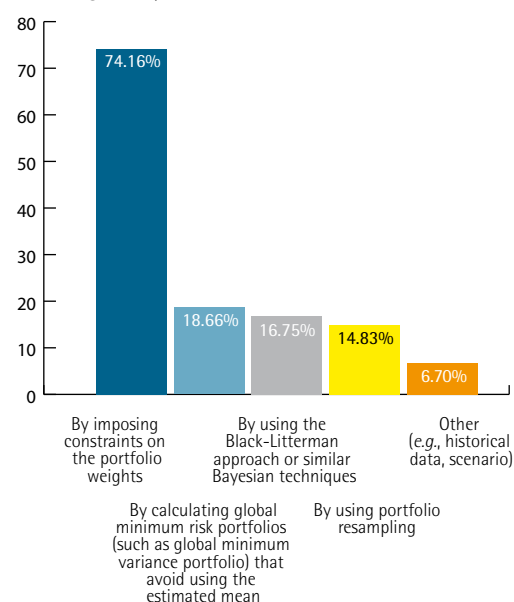
2. Practitioners' Views

2. Practitioners' Views

Practitioners' views of the results of the EDHEC European Investment Practices Survey were solicited during the summer of 2008. To this end, a summary of the results on portfolio construction was featured on the Centre's website (www.edhec-risk.com), along with a questionnaire asking for comments on these results. Fifty-seven investment management professionals sent us the completed questionnaire.

Our first objective was to establish whether there is any agreement with our conclusion that enhanced portfolio construction techniques are not sufficiently used in the industry today. Almost 95% of respondents agreed with this statement, as indicated in exhibit 6. One respondent plainly summarises the overall perception of respondents when writing that "many of the improvements found in the literature are not used by the industry". The need to make progress is also acknowledged because the value-added of portfolio construction tools is recognised. "Decent and intelligent portfolio construction is an active source of performance and gives relief on forecast power, which is weak anyway", says one respondent.

However, a small fraction of 5% of respondents disagrees with the conclusion of the EDHEC European Investment Practices Survey concerning portfolio construction. One of the respondents in this group states that he does "not believe in modern portfolio theory based on optimisation using statistics". This statement suggests that respondents disagreeing with our conclusions may do so because they see no value in portfolio construction techniques, not because they believe current practice

in the industry fully integrates state-of-the-art concepts.

Exhibit 6: Do you agree that the industry has to make progress on integrating state-of-the-art portfolio optimisation techniques?

- 5.36%
- 94.64%
- Yes
- No
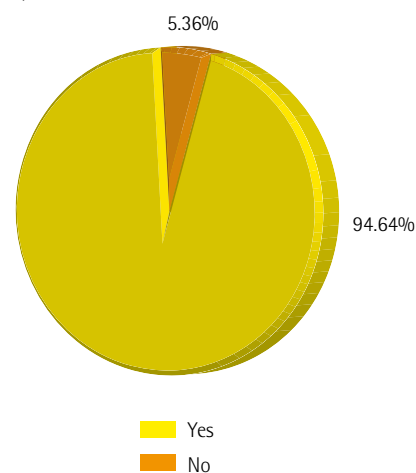
Interestingly, there seems to be a common view among respondents that investment managers often use *ad-hoc* decision making rather than quantitative portfolio construction processes. As one respondent puts it, "very often portfolios are built in a qualitative way because people do not trust the optimiser or do not know quant tools". Another respondent states that "many firms—even those that claim to have consistent asset allocation techniques—implement them arbitrarily or chaotically". Of course, there are many potential reasons for these practices. The objective of our call for reactions is, as it happens, to shed light on these reasons. From there, the means of improving the situation—if there are any—may become clearer.

We were interested in identifying the priority assigned by practitioners to techniques for improving portfolio construction. Exhibit 7 shows the results of the call for reaction by order of importance. From the results described in section 1, we formed four groups of techniques

2. Practitioners' Views

that could be improved; these groups, listed below, will be used throughout the analysis.

- Computation of VaR
- Covariance estimation
- Bayesian and resampling techniques
- Use of relative risk measures

As exhibit 7 shows, the respondents to our call for reaction believe that improvements in all four groups are important. When asked to identify the need for improvements to these techniques on a scale of 1 (not important) to 4 (extremely important), respondents to our call for reaction clearly state that improvements are important across the board. For example, no more than 20% of respondents think that improvements to any one of the four groups are not important. Likewise, the average score is at least 2.5 for the four groups, showing that respondents tend to attach rather high importance to improvements in any one group. VaR computation and covariance estimation, however, are considered in greater need of improvement than are Bayesian and resampling techniques or relative risk measures, as shown by their average scores (2.87 and 2.79 vs. 2.50 and 2.51), as well as by the percentage of respondents who believe that improvements are extremely important (36% and 30% vs.

22% and 23%). Overall, exhibit 7 shows that practitioners actually do see progress on the conceptual front as important; that the four groups highlighted by the EDHEC survey are of relevance to them is also confirmed.

Although improvements to all four groups are considered important, it may be interesting to find out why practitioners do not use of state-of-the-art techniques in the first place. After all, the results of research in financial economics that apply to investment management are available free of charge to anyone, including practitioners in the industry. In principle, then, there could be a number of reasons for the failure to take advantage of these results, despite their ready availability. It may be, first, that research advances simply do not add significant value in a practical context. Another possibility is that clients express no interest in state-of-the-art techniques and investment managers make no effort to make them an integral part of their day-to-day activity. Or it may be that investment managers themselves lack knowledge of existing techniques, so they are not used even though they may add value and clients may raise no objections. Finally, the use of portfolio construction concepts may simply be too difficult or costly, even if the concepts themselves do not pose a problem.

Exhibit 7: For which of the current practices do you think it is most urgent to see improvement in the industry?

	Not important 1	... 2	... 3	Extremely Important 4	Average score
Improve computation of VaR to take into account non-normality	16.07%	16.07%	32.14%	35.71%	2.87
Improve covariance estimation	12.28%	26.32%	31.58%	29.82%	2.79
Increase use of Bayesian and resampling techniques	17.86%	35.71%	25.00%	21.43%	2.50
Increase use of relative risk measures	19.30%	33.33%	24.56%	22.81%	2.51

2. Practitioners' Views

We ask the respondents to our call for reaction to state why they believe new portfolio construction concepts are not widely used. The results are shown in

going to get informed consent for a mandate including such a technique". However, some respondents argue that the duty of drawing on existing financial

Exhibit 8: In your opinion, why are the following portfolio optimisation techniques not widely used?

	Doesn't add significant value	No interest from clients or difficult to explain	Lack of knowledge in the industry about these techniques	Difficult and/ or costly to implement	Other
VaR computation accounting for non-normality	15.79%	28.07%	52.63%	29.82%	14.04%
Bayesian and resampling techniques	12.28%	33.33%	63.16%	28.07%	-
Improved covariance estimation (shrinkage, structural estimators, etc.)	12.73%	27.27%	63.64%	32.73%	-
Relative risk measures as portfolio optimisation objectives	16.67%	20.37%	35.19%	14.81%	48.15%
Average percentage	14.37%	27.26%	53.66%	26.36%	

exhibit 8. The percentages do not add up to 100% across every line of the table, as multiple answers were possible.

The average percentage of respondents for every explanation across the four groups is indicated in the bottom line of exhibit 8. Across the four groups, 14% of respondents raise the issue of limited value-added. As one respondent writes, "when focusing on these techniques, you lose focus and miss good investment opportunities". However, while there are differences across the various areas of portfolio construction techniques, overall, only a minority of respondents claim that the advanced techniques in our four groups do not add significant value.

On the other hand, 27% of respondents find that clients may be to blame for the limited use of advanced portfolio construction techniques. One respondent arguing in favour of this explanation states that "if the client isn't comfortable with a technique, his fund manager isn't

knowledge lies with the asset manager, not with his client: "It is neither necessary nor useful to try to explain sophisticated techniques systematically to clients". For this respondent, it is also up to the investment manager "to be able to explain complex techniques in a simple way to clients".

26% believe that the difficulty or cost of implementation is responsible for the relative neglect of sophisticated techniques. Indeed, it may be that academic studies present portfolio construction techniques in highly stylised environments, making it difficult to draw on the insights directly. "Going from academic concept to implementation requires many iterations of playing with real data", says one respondent. "There is little research on which technique adds value under which circumstances".

It should be stressed that none of these reasons—lack of value, lack of client interest, and implementation difficulties— are subscribed to by much more than a quarter of respondents. The majority

2. Practitioners' Views

of respondents (54%) hold the lack of knowledge among investment managers in the industry responsible for the failure to use these portfolio optimisation techniques. As one respondent writes, "the advantages and potential pitfalls of portfolio optimisation techniques are understood properly by only a handful of industry participants". Another practitioner has harsher words for his colleagues: "there are too many people in our industry who have no interest in constant learning and improving their methodologies. Therefore, the funds suffer from several layers of vintage knowledge".

There may be other explanations for the industry's failure to use some of the mentioned improvements. Relative risk considerations may in fact be used as a constraint rather than as the objective function in portfolio optimisation. For 48% of respondents, it is for this reason that relative risk objectives are not more frequently taken into account in portfolio optimisation. In addition, only 35% of respondents attribute the low use of relative risk objectives to a lack of knowledge among industry professionals; for the three other groups of techniques, this number comes to more than 50%. In VaR computation, 14% of respondents indicate that considerations of non-normality may not enter the decision process more often because, in the presence of scarce data (low frequency or short history), it may be difficult to estimate parameters for models incorporating non-normality. It is interesting that Bayesian and resampling techniques and improved covariance estimation are considered of little value-added by the lowest percentage of respondents and victims of practitioner ignorance, as it were,

by the highest percentage of respondents. This combination of relatively positive views of the techniques themselves and relatively pessimistic views of practitioner knowledge of said techniques suggests that practitioners refrain from implementing techniques when they lack in-house competence, even though they are convinced of the value-added of these techniques.

Obviously, the means of fostering the adoption of advanced portfolio construction techniques depend on the cause of the current failure to use these techniques at acceptable rates. We ask the practitioners who respond to our call for reaction for their views on how to improve matters. If, as one respondent suggested, "vintage knowledge" is to blame for the reluctance to adopt advanced techniques, education, either of investment managers or of clients, may be an appropriate response. At the same time, it may be that research must better respond to practitioners' needs by addressing issues of practical relevance and by giving clear directions on practical applications. For a view on practitioners' thoughts on potential remedies, we ask them to state the importance they attribute to better education of clients, of investment managers and to greater efforts by academics to render their research applicable. The results are shown in exhibit 9; again, respondents were asked to rate importance on a scale from 1 (not important) to 4 (extremely important). The bottom line of exhibit 9 shows the average score for each potential remedy for the failure to adopt advanced portfolio construction techniques.

2. Practitioners' Views

Exhibit 9: Which steps do you think are needed in order to increase the use of the above-mentioned portfolio construction techniques? Indicate importance from 1 (not important) to 4 (extremely important)

Importance	Education of clients	Education of practitioners	Effort of academics (applicability)
1 (Not important)	15.79%	3.51%	5.26%
2	33.33%	10.53%	15.79%
3	22.81%	35.09%	31.58%
4 (Extremely important)	28.07%	50.88%	47.37%
Average score	2.63	3.33	3.21

Exhibit 9 shows that the education of investment management professionals is regarded as the most important step to take to increase industry uptake of advanced portfolio construction techniques. Indeed, half the respondents think that the education of practitioners is "extremely important". The education of clients is considered of less overall importance, although 28% of respondents still believe it is "extremely important". Respondents clearly think that academic research also has a part to play in improving things. 47% of the respondents to our call for reaction say an effort on the part of academics to render their results more applicable is "extremely important". One respondent says: "academic research often seems to ignore the real practical constraints of the business. The difference between a single study and a robust system with good data capture over time and robust implementation is enormous". At the same time, the value-added of concrete research advances is clearly acknowledged. For example, exhibit 8 shows that none of the advanced techniques mentioned is perceived to suffer from a lack of value-added. Indeed, one respondent states that even though "research material is not always practical for the industry, professionals should try anyway to exploit these new techniques to gain a competitive advantage". Other respondents, to the contrary, do expect more effort from academics, saying that "it would be very helpful for the industry to get some practical guidelines from the academics on how to apply the results in the real world".

Conclusion

Conclusion

The EDHEC European Investment Practices Survey sheds light on current practices in asset management and points to numerous shortcomings in the area of portfolio construction. In particular, current industry practices in Europe largely ignore readily available improvements, such as sophisticated VaR computation, improved covariance estimation, and advanced portfolio construction methods that make it possible to incorporate estimation uncertainty with respect to the input parameters.

The objective of the present call for reaction was to gather feedback from industry participants on these findings. This feedback confirms that industry practitioners are largely convinced of the benefits of advanced portfolio construction techniques. In their view, the main barrier to widespread adoption of these techniques is the lack of knowledge in the industry, not implementation costs or a lack of client interest. Practitioners think that education of investment management teams and perhaps education of clients are the steps most likely to lead to increased adoption of these techniques. Furthermore, although practitioners readily admit that they could use more education, they also demand more effort from academics. In particular, while concepts put forward by research attract significant interest, the feedback we get from practitioners suggests that more detailed guidance on how these concepts can be applied in their investment process would not be unwelcome.

All but a minority of practitioners acknowledge the benefits of advanced portfolio construction techniques. However, there appear to be inefficiencies in the transfer of knowledge from research to application. As stated by the respondents to our call for reaction, eliminating these inefficiencies will likely require effort on the part of both researchers and practitioners.

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# About the EDHEC Risk and Asset Management Research Centre

EDHEC is one of the top five business schools in France. Its reputation is built on the high quality of its faculty (110 professors and researchers from France and abroad) and the privileged relationship with professionals that the school has been developing since its establishment in 1906. EDHEC Business School has decided to draw on its extensive knowledge of the professional environment and has therefore focused its research on themes that satisfy the needs of professionals. EDHEC is also one of the few business schools in Europe to have received the triple international accreditation: AACSB (US-Global), Equis (Europe-Global) and Association of MBAs (UK-Global).

EDHEC pursues an active research policy in the field of finance. The EDHEC Risk and Asset Management Research Centre carries out numerous research programmes in the areas of asset allocation and risk management in both the traditional and alternative investment universes.

The choice of asset allocation

The EDHEC Risk and Asset Management Research Centre structures all of its research work around asset allocation. This issue corresponds to a genuine expectation from the market. On the one hand, the prevailing stock market situation in recent years has shown the limitations of active management based solely on stock picking as a source of performance.

Percentage of variation between funds
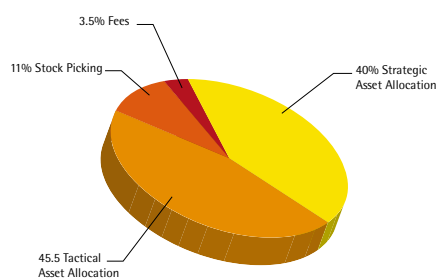
Source: EDHEC (2002) and Ibbotson, Kaplan (2000)

On the other, the appearance of new asset classes (hedge funds, private equity), with risk profiles that are very different from those of the traditional investment universe, constitutes a new opportunity in both conceptual and operational terms. This strategic choice is applied to all of the Centre's research programmes, whether they involve proposing new methods of strategic allocation, which integrate the alternative class; measuring the performance of funds while taking the tactical allocation dimension of the alpha into account; taking extreme risks into account in the allocation; or studying the usefulness of derivatives in constructing the portfolio.

An applied research approach

In an attempt to ensure that the research it carries out is truly applicable, EDHEC has implemented a dual validation system for the work of the EDHEC Risk and Asset Management Research Centre. All research work must be part of a research programme, the relevance and goals of which have been validated from both an academic and a business viewpoint by the Centre's advisory board. This board is made up of both internationally recognised researchers and the Centre's business partners. The management of the research programmes respects a rigorous validation process, which guarantees the scientific quality and the operational usefulness of the programmes.

To date, the Centre has implemented six research programmes:

Asset Allocation and Alternative Diversification
Sponsored by SG Asset Management and Newedge
The research carried out focuses on the benefits, risks and integration methods of the alternative class in asset allocation. From that perspective, EDHEC is making a significant contribution to the research conducted in the area of multi-style/multi-class portfolio construction.

Performance and Style Analysis
Part of a business partnership with EuroPerformance
The scientific goal of the research is to adapt the portfolio performance and style analysis models and methods to tactical allocation. The results of the research carried out by EDHEC thereby allow portfolio alpha to be measured not only for stock picking but also for style timing.

Indices and Benchmarking
Sponsored by Af2i, Barclays Global Investors, BNP Paribas Investment Partners, NYSE Euronext, Lyxor Asset Management, and UBS Global Asset Management
This research programme has given rise to extensive research on the subject of indices and benchmarks in both the hedge fund universe and more traditional investment

About the EDHEC Risk and Asset Management Research Centre

classes. Its main focus is on analysing the quality of indices and the criteria for choosing indices for institutional investors. EDHEC also proposes an original proprietary style index construction methodology for both the traditional and alternative universes. These indices are intended to be a response to the critiques relating to the lack of representativeness of the style indices that are available on the market. In 2003, EDHEC launched the first composite hedge fund strategy indices.

Asset Allocation and Derivatives

Sponsored by Eurex, SGCIB and the French Banking Federation

This research programme focuses on the usefulness of employing derivative instruments in the area of portfolio construction, whether it involves implementing active portfolio allocation or replicating indices. "Passive" replication of "active" hedge fund indices through portfolios of derivative instruments is a key area in the research carried out by EDHEC. This programme includes the "Structured Products and Derivatives Instruments" research chair sponsored by the French Banking Federation.

Best Execution and Operational Performance

Sponsored by CACEIS, NYSE Euronext, and SunGard

This research programme deals with two topics: best execution and, more generally, the issue of operational risk. The goal of the research programme is to develop a complete framework for measuring transaction costs: EBEX ("Estimated Best Execution") but also to develop the existing framework for specific situations (constrained orders, listed derivatives, etc.). Research also focuses on risk-adjusted performance measurement

of execution strategies, analysis of market impact and opportunity costs on listed derivatives order books, the impact of explicit and implicit transaction costs on portfolio performances, and the impact of market fragmentation resulting from MiFID on the quality of execution in European listed securities markets. This programme includes the "MiFID and Best Execution" research chair, sponsored by CACEIS, NYSE Euronext, and SunGard.

ALM and Asset Management

Sponsored by BNP Paribas Investment Partners, AXA Investment Managers and ORTEC Finance

This research programme concentrates on the application of recent research in the area of asset-liability management for pension plans and insurance companies. The research centre is working on the idea that improving asset management techniques and particularly strategic allocation techniques has a positive impact on the performance of asset-liability management programmes. The programme includes research on the benefits of alternative investments, such as hedge funds, in long-term portfolio management. Particular attention is given to the institutional context of ALM and notably the integration of the impact of the IFRS standards and the Solvency II directive project. It also aims to develop an ALM approach addressing the particular needs, constraints, and objectives of the private banking clientele. This programme includes the "Regulation and Institutional Investment" research chair, sponsored by AXA Investment Managers, the "Asset-Liability Management and Institutional Investment Management" research chair, sponsored by BNP Paribas Investment Partners and the "Private Asset-Liability Management" research chair, in partnership with ORTEC Finance.

About the EDHEC Risk and Asset Management Research Centre

Ten research chairs have been endowed:

Regulation and Institutional Investment

In partnership with AXA Investment Managers

The chair investigates the interaction between regulation and institutional investment management on a European scale and highlights the challenges of regulatory developments for institutional investment managers.

Asset–Liability Management and Institutional Investment Management

In partnership with BNP Paribas Investment Partners

The chair examines advanced asset-liability management topics such as dynamic allocation strategies, rational pricing of liability schemes, and formulation of an ALM model integrating the financial circumstances of pension plan sponsors.

MiFID and Best Execution

In partnership with NYSE Euronext, SunGard, and CACEIS Investor Services

The chair looks at two crucial issues linked to the Markets in Financial Instruments Directive: building a complete framework for transaction cost analysis and analysing the consequences of market fragmentation.

Structured Products and Derivative Instruments

In partnership with the French Banking Federation (FBF)

The chair investigates the optimal design of structured products in an ALM context and studies structured products and derivatives on relatively illiquid underlying instruments.

Financial Engineering and Global Alternative Portfolios for Institutional Investors

In partnership with Morgan Stanley Investment Management

The chair adapts risk budgeting and risk management concepts and techniques to the specificities of alternative investments, both in the context of asset management and asset-liability management.

Private Asset–Liability Management

In partnership with ORTEC Finance

The chair will focus on the benefits of the asset-liability management approach to private wealth management, with particular attention being given to the life cycle asset allocation topic.

Dynamic Allocation Models and New Forms of Target Funds

In partnership with Groupe UFG

The chair consists of academic research that will be devoted to the analysis and improvement of dynamic allocation models and new forms of target funds.

Advanced Modelling Techniques for Hedge Fund Returns

In partnership with Newedge

The chair involves a three-year project whereby academic research dedicated to hedge funds and to the analysis and modelling of their returns will be conducted.

Asset–Liability Management Techniques for Sovereign Wealth Fund (SWF) Management

In partnership with Deutsche Bank

The chair will introduce a formal dynamic asset allocation model that will incorporate the most salient factors in sovereign wealth fund management and

About the EDHEC Risk and Asset Management Research Centre

propose an empirical analysis of the risk factors impacting the inflows and outflows of cash for various sovereign funds.

Core-Satellite and ETF Investment

In partnership with CASAM
The research chair consists of conducting academic research dedicated to Exchange Traded Funds (ETFs) and their use within the framework of a Core-Satellite approach.

The EDHEC PhD in Finance

The PhD in Finance at EDHEC Business School is designed for professionals who aspire to higher intellectual levels and aim to redefine the investment banking and asset management industries.

It is offered in two tracks: a residential track for high-potential graduate students who will hold part-time positions at EDHEC Business School, and an executive track for practitioners who will keep their full-time jobs.

Drawing its faculty from the world's best universities and enjoying the support of the research centre with the most impact on the European financial industry, the EDHEC PhD in Finance creates an extraordinary platform for professional development and industry innovation.

Research for Business

To optimise exchanges between the academic and business worlds, the EDHEC Risk and Asset Management Research Centre maintains a website devoted to asset management research for the industry: www.edhec-risk.com, circulates a monthly newsletter to over 235,000 practitioners,

conducts regular industry surveys and consultations, and organises annual conferences for the benefit of institutional investors and asset managers. The Centre's activities have also given rise to the business offshoots EDHEC Investment Research and EDHEC Asset Management Education.

EDHEC Investment Research supports institutional investors and asset managers in the implementation of the Centre's research results and proposes asset allocation services in the context of a core-satellite approach encompassing alternative investments.

EDHEC Asset Management Education helps investment professionals to upgrade their skills with advanced risk and asset management training across traditional and alternative classes.

EDHEC Position Papers and Publications from the last 3 years

EDHEC Risk and Asset Management Research Centre

2008 Position Papers

• Amenc, N., and S. Sender. Assessing the European Banking Sector Bailout Plans (December).

• Amenc, N., and S. Sender. Les mesures de recapitalisation et de soutien à la liquidité du secteur bancaire européen (December).

• Amenc, N., F. Ducoulombier, and P. Foulquier. Reactions to an EDHEC Study on the Fair Value Controversy (December). With the EDHEC Financial Analysis and Accounting Research Centre.

• Amenc, N., F. Ducoulombier, and P. Foulquier. Réactions après l'étude. Juste valeur ou non : un débat mal posé (December). With the EDHEC Financial Analysis and Accounting Research Centre.

• Amenc, N., and V. Le Sourd. Les performances de l'investissement socialement responsable en France (December).

• Amenc, N., and V. Le Sourd. Socially Responsible Investment Performance in France (December).

• Amenc, N., B. Maffei, and H. Till. Les causes structurelle du troisième choc pétrolier (November).

• Amenc, N., B. Maffei, and H. Till. Oil Prices: the True Role of Speculation (November).

• Sender, S. Banking: Why Does Regulation Alone Not Suffice? Why Must Governments Intervene? (November).

• Till, H. The Oil Markets: Let the Data Speak for Itself. (October).

• Amenc, N., F. Goltz, and V. Le Sourd. A Comparison of Fundamentally Weighted Indices: Overview and Performance Analysis. (March).

• Sender, S. QIS4: Significant Improvements, but the Main Risk for Life insurance is Not Taken into Account in the Standard Formula. (February).

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• Amenc, N., L. Martellini, and V. Ziemann. Alternative Investments for Institutional Investors: Risk Budgeting Techniques in Asset Management and Asset-Liability Management (December).

• Goltz, F. and D. Schröder. Hedge Fund Reporting Survey. (November).

• D'Hondt, C., and J.-R. Giraud. Transaction Cost Analysis A-Z: A Step towards Best Execution in the Post-MiFID Landscape. (November).

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• Amenc, N., F. Goltz, and D. Schröder. Reactions to an EDHEC Study on Asset-Liability Management Decisions in Wealth Management. (September).

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• Amenc, N. Three Early Lessons from the Subprime Lending Crisis (August).

• Amenc, N., W. Géhin, L. Martellini, and J.-C. Meyfredi. The Myths and Limits of Passive Hedge Fund Replication (June).

• Sender, S., and P. Foulquier. QIS3: Meaningful Progress towards the Implementation of Solvency II, but Ground Remains to be Covered (June). With the EDHEC Financial Analysis and Accounting Research Centre.

• D'Hondt, C., and J.-R. Giraud. MiFID: the (In)famous European Directive (February). Hedge Fund Indices for the Purpose of UCITS: Answers to the CESR Issues Paper (January).

• Foulquier, P., and S. Sender. CP 20: Significant Improvements in the Solvency II Framework but Grave Incoherencies Remain. EDHEC Response to Consultation Paper n° 20 (January).

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• Goltz, F., and G. Feng. Reactions to the EDHEC Study "Assessing the Quality of Stock Market Indices" (September).

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Notes