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Answer to CESR Consultation Paper (CESR/07-045)
"Clarification of the definitions concerning eligible assets for investment by UCITS: can hedge fund indices be classified as financial indices for the purpose of UCITS?"

EDHEC Risk and Asset Management Research Centre

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***Q1**: If you believe that there should be additional guidelines relating to diversification for HFIs, please explain what they should be and why the requirements for HFIs should be higher than those for 'traditional' indices in this respect?*

Since any index has to fulfil sufficient diversification in the sense that "the index is composed in such a way that price movements or trading activities regarding one component do not unduly influence the performance" (see CESR /06-530, p. 9), an additional requirement in terms of a minimum number of components seems to be redundant. It should also be noted that increasing the number of funds does not necessarily lead to better diversification or better representativity, depriving such a criterion of its sense.

In addition, Learned and Lhabitant (2002) show that there is a risk of "diversification overkill"; in fact, the authors show that by increasing the number of hedge funds in a portfolio, the correlation with the general stock market increases. This indicates that such "over-diversification" reintroduces dependence on the stock market and thus reduces the risk-reduction benefits of mixing such portfolios with traditional asset classes. The authors argue that 5 to 10 hedge funds are sufficient in order to reap the benefits of diversification without falling into the pitfalls of "over-diversification."

Instead, the properties of the funds used have to be taken into account. The table below borrowed from Amenc and Goltz (2006) shows that hedge funds show less co-movement than the components of a broad stock market index. Hence, one can conclude that even with a low number of funds, significant diversification can be achieved.

Co-movement between index components: hedge funds vs. stocks

	CISDM Funds	Stoxx 600 Index Components
Average Correlation	0.17	0.25
Variance explained by PC1	0.24	0.29

The data used are monthly returns data for the period 01/1999 to 12/2005 for the hedge funds from the CISDM database and for components of the Stoxx 600 index for European stocks.

In addition, it has been shown that even with a small number of components, truly representative hedge fund indices may be constructed. Recent research (Goltz, Martellini and Vaissié, forthcoming 2007) examines how modern portfolio theory and factor analysis techniques can be used to build investable, yet representative, hedge fund indices. The results suggest that designing sound (i.e., both representative and investable) hedge fund indices is a feasible task given the specific features of the industry, provided that funds are suitably selected and an optimally designed portfolio is designed with the objective of replicating the common trend in hedge fund returns for a given strategy. Amenc and Goltz (2006) contains a summary of the results.

***Q2**: Should the definition of what the index is trying to represent be available to the public as a whole, just to the UCITS, or to UCITS investors as well? Is there a need for a guideline to state that the information should be available free-of-charge to UCITS investors? Do you have any comments on how the information would be made available in practice (e.g. the index provider's website)?*

The definition of what the index is trying to represent should be made available to the public free of charge, for example through publication on a website. The regulations regarding the

disclosure of the representation target of the index should in fact be comparable to the regulations for indices for other asset classes, such as stock market indices.

BOX 1
In respect of a hedge fund index, the criterion of "representing an adequate benchmark" will not be met unless the UCITS:
1. verifies that the index provider clearly defines, and makes publicly available, an explanation of what the index is trying to represent. This definition should include a narrative description of what the index is trying to track and not merely list underlyings;
2. assesses whether the methodology of the index construction means the representativeness for the market to which it refers is likely to be achieved.

Q3: *Do you have any other comments on these proposed level 3 guidelines?*

We agree with these proposed level 3 guidelines.

Regarding the quantitative assessment of the coverage of the HFI, respondents' views were mixed. Some thought that it was not necessary due to diversification requirements; others were of the opinion that quantitative measures may help determine the appropriate number of index constituents and the representativeness of the index, but that these measures should not be mandatory. In CESR's view, although it may be helpful for a statistical measure to reflect the "breadth" of coverage of the HFI, the difficulty of mandating an appropriate measure must be acknowledged. An ideal figure might be the percentage of the "total" defined market constituted by the HFI's underlyings; although in the context of hedge funds, calculating the total size of the whole market is problematic.

However, at each index calculation point the index provider could simply be required to also publish the total disclosed or estimated monetary value of the assets of (each of) the index components. This figure would at least allow the UCITS to make a judgment about how representative an HFI was, compared to estimated figures for the total market assets for particular hedge fund strategies, for example.

Q4*: Respondents are invited to provide their comments on the above, taking into account that the UCITS always needs to properly value its portfolio and assess the risks therein.*

The percentage of total assets represented by the constituents of the index does not allow for any conclusions on the indices' representativeness. Therefore, we would argue that the publication of such information would be misleading rather than helpful.

In fact, the logic of capitalisation-weighting in order to achieve representativeness originates from a theoretical reasoning on equilibrium conditions in capital markets (i.e. the Capital Asset Pricing Model). However, it should be noted that this elegant theory is faced with a number of problems in practice. First, the capitalisation-weighted market portfolio of the CAPM should include all (traded or non-traded) assets. In practice, this true market portfolio is not observable, since we do not have information on non-traded assets such as human capital (see Roll 1977). Second, proxies for the market portfolio have been found to be an inefficient portfolio (see e.g. Stambaugh 1982), which contradicts the theory of an efficient market portfolio. Market-capitalisation weighted indices are in fact faced with the problem of being heavily concentrated in a few large cap stocks and thus insufficiently diversified. In addition to these problems concerning stock market indices, with respect to hedge fund

indices that are actually indices of actively managed funds, market-capitalisation completely lacks any theoretical background. Therefore, coverage in terms of market capitalisation should not be a criterion for hedge fund indices' eligibility.

The question of interest is whether a given hedge fund index is representative of the entire hedge fund universe – e.g. all funds in a given strategy. Representativeness can be measured by statistical criteria, such as Principal Component Analysis (PCA). In fact, starting with a large database of hedge fund returns, one may extract the combination of individual funds that capture the largest possible fraction of the information contained in the data. Technically speaking, this amounts to using the first component of a PCA of fund returns as a candidate for a pure style index. One may use the method to describe each variable as a linear function of a reduced number of factors. To that end, one needs to select a number of factors, such that those factors capture a large fraction of asset return variance, while the remaining part can be regarded as statistical noise. By choosing just one factor, this method can be used to generate "the best one-dimensional" summary of a set of individual funds. Once the common factor has been extracted, the correlation coefficient of the hedge fund index with that common factor can be calculated and can be used in order to assess the tracking quality of the hedge fund index with respect to the broad non-investable portfolio.

High correlation with the common factor may be achieved through carefully selecting funds and by constructing a portfolio that maximises the representativeness objective. Such a portfolio may contain funds that only represent a low percentage of total assets managed by hedge funds in a given strategy. On the other hand, a portfolio that has constituents that represent a large percentage of the total asset value in a given universe may not necessarily be representative. In fact, such a criterion on the size of the assets included in the index may lead to biases, since the largest funds will be preferred. These largest funds often operate in trades that have a high degree of liquidity and capacity and preferring such funds for an index may lead to under-representation of less liquid aspects of a hedge fund strategy.

BOX 2
In respect of a hedge fund index, the criterion of "representing an adequate benchmark" will not be met unless the UCITS verifies that the methodology of the index requires the selection of index components to be made using pre-determined rules, on the basis of objective criteria.

BOX 3
In respect of a hedge fund index, the criterion of "publication in an appropriate manner" will not be met unless the UCITS:
1. confirms that the index provider makes publicly available the full methodology of the index, including weighting, the treatment of defunct components, and where applicable, the classification of components;
2. verifies that the methodology of the index does not allow retrospective changes to previously published index values ("backfilling").

Q5*: Please provide your comments on these proposed level 3 guidelines.*

We agree with these proposals on systematic selection and transparency. Transparency of the construction methodology is an obvious requirement. In fact, it seems somewhat surprising that there are some index providers, and not only in the hedge funds industry, that refuse to publish details regarding how their index is constructed. In our opinion, and in coherence

with the general requirements for an index, we would argue that anyone who does not publish a construction methodology cannot claim to provide an “index.”

Stemming from some respondents' views and after reflecting upon the issue, CESR has concerns about the conflicts of interest that could arise if hedge funds are making payments ("fee-sharing") to HFI providers to be selected as index components. This could result in selection bias of the index components. An index constructed in such a way would not seem to represent an adequate benchmark for the market to which it refers, and so would be unacceptable from the point of view of eligible assets regulation.

There are different views as to whether there should be an explicit intervention from CESR in this respect. CESR could propose a level 3 guideline which had the practical effect of preventing UCITS from gaining exposure to HFIs which receive payments from hedge funds. In particular, this may depend on the circumstances in which payments are made by hedge funds to index providers (including their level and structure).

***Q6**: Respondents are invited to provide their comments on the above.*

We agree with these proposals to avoid selection bias.

BOX 4
In respect of a hedge fund index, the criterion of "publication in an appropriate manner" will not be met unless the UCITS verifies that the index will be subject to an independent audit at least annually. The audit can be conducted by either a third party, or an internal unit within the index provider (e.g. an "audit committee") which is independent of the department in charge of managing the index. The summary audit opinion must be available to the UCITS on request. As a minimum, the audit should:
a. consider whether the index's published methodology has been respected during the period in question (including, where applicable, for the treatment of defunct components and classification of components);
b. validate that, for a sample of index calculation points, the index value was calculated consistently with the disclosed methodology.

***Q7**: Do index providers currently carry out the type of annual audit described, or would the eligibility of many current HFIs be negatively impacted by such a requirement? If so, please give an estimate of the cost of introducing such an audit procedure. Is the scope of disclosure of the audit (full opinion or summary, to the UCITS/UCITS investor/the public) appropriate?*

***Q8**: Please provide your comments on this proposed level 3 guideline.*

To our knowledge, such an audit does not have to be conducted for indices that represent other asset classes, such as stocks or real estate. For us, it is not clear on what grounds hedge fund index providers should be faced with higher costs than other index providers (and if such an audit becomes necessary for hedge fund index providers, why would other index providers be spared from it?).

What is more, it seems to be the case that given the requirements on transparency of the index methodology and free access to index data, an audit is superfluous given the possibilities that exist for users of hedge fund indices to verify the qualities of a given index. On the other hand, if audits provide a useful mark of distinction for an index provider, then market

participants could figure out a solution to fulfill this need, as is the case with quality certificates and ratings in many other areas, without a need for additional regulation.

BOX 5.
In respect of a hedge fund index, the criterion of "representing an adequate benchmark" will not be met unless the UCITS:
1. verifies that the index provider makes available to the UCITS details of whether each index component is investable or non-investable;
2. verifies that the index provider makes available to the UCITS details of the index components (including a list of components and their prices and weight in the index) for each index calculation point.

Q9*: Please provide your comments on these proposed level 3 guidelines.*

The CESR has pointed out in its issues paper that numerous problems exist with non-investable hedge fund indices. Investable indices avoid certain database problems and can be constructed to be representative given that an appropriate construction methodology is used. Therefore, they should be seen as a useful investment vehicle for UCITS. It seems to us that it is necessary to ensure investability of each index component. Information on the investability of each component would provide useful information that allows the UCITS to verify the overall investability of the index.

An index does not necessarily become replicable once price data and the construction methodology are available. Even for stock market indices, full transparency is not always granted. For example, the full composition of MSCI equity indices is not available free of charge to investors, which renders replication impossible, given that the components and the component weights are not known. However, it should be noted that the index does not necessarily have to be replicable by any market participant. Taking again the example of MSCI indices, they may be replicated by market participants who do have access to the full composition (by paying the index provider for this information) but are not replicable by other market participants. As the example of MSCI equity indices shows, full transparency of indices is not a question that is specific to hedge funds.

This problem exists generally in the case of indices that are constructed from proprietary databases. By construction of the business model of such index and database providers, it is forbidden for market participants (even those who pay for access to the database) who have not entered into additional license agreements with the database provider, to create or to replicate such indices. This is for example the case for investable real estate indices for which the CESR has left the possibility to be recognised as financial indices. Also, some of the listed property index providers do not freely disclose components and component weights to the public.

BOX 6.
In respect of a hedge fund index, the criterion "publication in an appropriate manner" will not be met unless the UCITS confirms that the index provider carries out due diligence on the net asset value calculation procedures used by each index component. The audit referred to in Box 4 above should confirm the adequacy of this due diligence and that it is being appropriately carried out.

***Q10**: Please provide your comments on this proposed level 3 guideline.*

Reliable net asset values are absolutely crucial for precise calculation of the index values. Therefore, we would agree in principle that due diligence has to be carried out. However, it is not necessarily the case that this due diligence has to be done by the index provider. In fact, the resources available to the index provider may not be sufficient to conduct due diligence of hedge funds' net asset values. The regulation should allow the provider to use net asset values that have been calculated subject to a due diligence procedure. The due diligence however may have been carried out by a database provider or a managed account platform provider or another third party charged with due diligence by the index provider.

***Q11**: Please provide comments as to the suitable minimum frequency of index publication. Do any hedge fund strategies require a different frequency of index publication? If so, which are they, why do they need a different frequency, and what should that frequency be?*

***Q12**: Does the frequency of publication of index values affect the UCITS ability to value its assets?*

To the best of our knowledge, none of the existing hedge fund indices, either investable or non-investable, publishes less frequently than monthly. Any frequency that is lower than monthly would be unacceptable for meaningful analysis of the data.

We also think that increasing the data frequency to weekly is an absolute necessity. Given that hedge funds' risk characteristics cannot be captured by the mean and variance but higher moments have to be taken into account, weekly data is needed in order to increase the accuracy of the estimates. In addition, weekly data frequency and weekly liquidity are necessary for dynamically managing the betas of hedge fund strategies for the purpose of asset allocation. As beta management is the principal use of hedge fund indices, these indices should provide weekly data frequency and liquidity.

***Q13**: Should CESR carry out further work on this issue?*

We believe that CESR's current approach of ensuring compliance with certain quality criteria for eligible indices seems to be more convincing than to either reject hedge fund indices on the basis of their shortcomings or to make all hedge fund indices eligible without considering the specific quality of each index. Wide use of high quality hedge fund indices for investment and risk analysis would mark an important step towards proper information for investors on the level of risk in hedge fund products.

***Q14**: Do the level 3 guidelines proposed in this paper adequately address the position of HFIs based on managed account platforms, or are additional guidelines necessary? If so, what are they and why?*

***Q15**: Do you have any other comments about, or suggestions for, level 3 guidelines?*

Managed account platforms essentially provide two advantages.

First, managed account platforms provide a way to mitigate operational risk. Advanced managed account platforms that provide the full range of middle and back office services, alongside independent valuation and risk monitoring with contractual arrangements favouring

stringent control of the hedge fund manager's operations can therefore be considered the most secure environment. No investor can expect to be fully insured against deliberate fraud or operational risks. It is however very important to stress that a managed account platform accompanied by terms and conditions that allow the risk management team to instantly cease the relationship with the manager, and the use of a systematic and independent valuation and risk monitoring function can allow several sources of risks that have caused hedge fund debacles to be restricted. It would be erroneous to believe that all cases could be avoided within a managed account environment as the complexity of some strategies may involve very difficult or unexpected situations occurring (for example market conditions leading to pricing and risk models not being applicable) but the regular stress tests and privileged terms and conditions will certainly allow the investors to recover with significantly less damage than direct investors.

Second, managed account platforms allow for greater transparency. No investor can be expected to gain full insight into the holdings of a hedge fund, but managed account platforms typically provide a host of information at the aggregate level, such as portfolio risk exposures. These are actually derived from the current holdings of the fund rather than from *ex-post* statistical analysis, which is the only tool for investors in the absence of insights into the fund holdings. The managed account platform provider plays the role of information aggregation from the portfolio holdings of the funds. Given the managed account setup, the holdings are fully transparent to the provider. Risk reports can then be compiled for investors, showing the current exposure of the fund. As a consequence, managed account platforms can be regarded as a tool to enhance transparency of the strategy followed by the manager. Therefore, funds available on such platforms provide a natural alternative to more intransparent choices of hedge funds for index construction.

The limit of such platforms is, of course, their limited number of available funds. However, given that it is possible to achieve high representativeness even with a low number of funds (see response to Q1), this limitation may be overcome.

Given the advantages of transparency and operational risk mitigation, we think that hedge fund indices based on managed account platforms should not require any additional guidelines.

References

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