

Executive Summary

We're not favorable to classify Hedge Fund indices as financial indices that could be used by UCITS for investments purposes because:

- HF indices exhibit **many biases**. When dealing with the presence of measurement biases in hedge fund data, you have to make the distinction between those present at the database level and those appearing at the index level. While HFIs obviously (but partially) inherit some of the biases of HF databases they are built from, the amplitude of this bias contagion is hard to quantify. The main biases are:
 - o Self-reporting bias (estimated at 0.2%)
 - o Survivorship bias (2-4% on HF databases, difficult to measure on HF indices)
 - o Database selection bias (estimated at 1.8%)
 - o Backfill bias (estimated at 1.2%, mainly on database)
 - o Sample bias
 - o Classification bias
 - o **Liquidity bias** (estimated at 0.5 to 2.7%): This bias is very important to consider because of liquidity of underlyings and redemption constraints.
- **Only investable indices** investing in funds (and not in managed accounts) can qualify as **adequate benchmarks in terms of liquidity and replicability**, as investors can theoretically invest in the constituent fund with the same liquidity as the HFI, and thus will be able to replicate the HF index. On the other hand, those investable HF indices that are replicable **are not anymore representative of the HF universe**.
- If investors were given easier access to HF index products than funds of hedge funds, HF indices could be an alternative to investing in funds of hedge funds to get exposure to the alternative asset class. In that **sense, there is a competition aspect to consider because the** eligibility to UCITS would be a competitive advantage for HF Indices **relative to funds of hedge funds** usually banned from selection in UCITS as a result of restrictive investors protective rules.

If HF indices are selected to be financial indices, we are favorable to:

- A **complete and transparent disclosure** of the index revision methodology:
 - o Treatment and communication on defunct funds. CESR should set criteria on the communication on defunct funds redemptions.
 - o Banishment of backfilling
 - o HF indices minimum publication frequency should be daily
 - o A specific agreement needed for AM to invest in such indices
- **Ucits should be fully responsible** of conducting the assessment on a HFI provider.
- It should be highly recommended that HFI providers hire independent third party to review and assess their revision methodology (similar to GIPS compliant for AM)
- A **specific agreement** ("Programme d'activité" in France) is needed for AM to invest in HF indices

In conclusion, replicability and representativity are 2 opposed objectives for HF indices. Achieving investability seems to come at the cost of representativity.

Consolidated list of questions:

Q1: What are your views on the potential biases described in this section and on how they can affect HFIs? Please explain your comments.

It is indeed vital, when dealing with the presence of measurement biases in hedge fund data, to make the distinction between those present at the database level and those appearing at the index level. While HFIs obviously (but partially) inherit some of the biases of HF databases they are built from, the amplitude of this bias contagion is hard to quantify.

Database / index biases should be put into perspective:

- **Self-reporting bias:** Reporting to HF databases is done on a voluntary basis. Very successful funds, as very bad ones, have less need for advertising and therefore have an incentive to stop reporting or even not to report at all. **Unfortunately, it is not easy to assess the net effect of any such self-selection bias.** Contagion to the index level is due to the fact that funds that choose to stop reporting (for good or bad reasons) to the database are usually removed (at the following rebalancing date) from the associated index. According to Ross Barry's study "Hedge funds: A Walk Through the Graveyard" (performed on the TASS database, Macquarie Univ. March 2003), funds that have stopped reporting but are still in operation represent 33% of all "defunct funds" (liquidated, closed, merged/matured or ceased reporting). **The associated self-reporting bias stands around 0.2% p.a.**
- **Survivorship bias:** Several academic studies (cf, among others, Fung and Hsieh paper "Benchmarks of Hedge Fund Performance: Information Content and Measurement Biases", February 2001) **have estimated the impact of survivorship bias within the 2%-4% bucket.** While this effect can be expected when analysing HF returns directly from a database sample over a given period, its effective impact on hedge fund indices is not so obvious. When analyzing HFIs, it is important to pay attention to the construction methodology and the calculation of historical returns prior to inception. In order to address survivorship bias, the HFI provider should avoid to remove funds for any reason not stated in its predefined rules, including funds that blow up. **Member funds that liquidate should be kept into the index until completion of the liquidation**, even if they would otherwise be omitted by applying the standard index construction rules.
- **Database selection bias:** HF databases differ from one vendor to another depending on the criteria that they impose for inclusion in (or exclusion of) their databases. For instance, Bing Liang (cf his paper "Hedge Funds: The Living and the Dead", March 2003) has compared HFR and Tremont database, and concluded that the former is much more "optimistic" as it posts a lower erosion rate (number of defunct funds / number of observed funds at the beginning of every year). Bing Liang **estimates the database bias impact on the corresponding indices at around 1.8% p.a.** A way to mitigate database selection bias is to exclude any qualitative/quantitative selective factors from fund selection rules. Similarly, a given index eliminates a large degree of subjectivity by being based on an objective, rules-based methodology for member inclusion. Index constituents should only change at pre-determined rebalancing dates and follow a framework that is transparent enough to allow investors to understand the rationale of the changes.
- **Backfill bias:** Funds that have performed well over several years are more likely to want to start reporting returns. They join a database, bringing their entire return history with them, which can lead to an upward bias in overall database returns. Academic studies (cf, for instance, Fung & Hsieh (2000) "Performance Characteristics of Hedge Funds and Commodity Funds: Natural vs. Spurious Bias" or Edwards & Caglayan (2001) "Hedge Fund Performance and Manager Skill") **estimate this bias at 1.2-1.4% p.a.** Ross Barry have stated (cf "Hedge funds: A Walk Through the Graveyard") strong reservations on these (over) estimates. In order to

minimize the contagion of such a bias to HFIs, **new member funds should be added to the index on a going-forward basis only** and index historical values should not be adjusted.

- **Sample bias:** An index is, by definition, **a numerical proxy for a well-specified investment universe**. While this notion of spatial representativity is easy to apprehend in the traditional universe, it has to cope, here, with the specificities that characterize the alternative industry (track record, funds closed to new investments, use of managed account structure, lock-up periods, lack of liquidity, allowed frequency for investment/redemption, NAV frequency, minimum amount for initial/subsequent investments...). It is worth noting, for instance, that imposing managed accounts as a selection criterion does not only reduce representativity (as administrative implications and position disclosure is not accepted by all funds) but also introduces a counterparty risk concentration. Investors, in that case, are at risk if the managed accounts platform goes into troubles (cf the case of PlusFunds during Refco bankruptcy).
- **Classification bias:** First of all, there is no consensus as to the definition of HF strategies. Maximizing the purity of strategy indices probably needs to go beyond the use of the managers' self-proclaimed styles, and to apply a validation process (through periodic due diligence) in order to counter "style drift" risk. From our point of view, more quantitative classification techniques (cluster analysis, factor analysis) can hardly be part of market standards.

Q2: Are there any other material sources of bias affecting HFIs that CESR should consider?

CESR may consider the following issues:

- **Liquidity bias:** Liquidity within hedge funds may show up under mainly two forms:
 - i. Liquidity of the underlying instruments: This is the case for example for mortgage backed securities, emerging markets funds, private equity, distressed debt funds... All these funds/strategies largely invest in illiquid assets and, as a consequence, provide lower liquidity to their investors.
 - ii. Redemption constraints: Hedge funds rarely allow subscription/redemption on a daily basis (like traditional funds). Redemption is typically monthly or quarterly. Some funds do impose lock-up periods (sometimes as long as 1 to 3 years) and/or charge a penalty on early withdrawal.

Academic studies (cf, among others, Favre & Galeano's paper "Portfolio Allocation with Hedge Funds, Case study of Swiss Institutional Investor"), Weisman & Krishnan, Abdulali & Weinstein) **estimate the liquidity bias to 0.5% - 2.7% p.a.** From our point of view, 0.5% - 1% is a more trustable estimate for a diversified HFI. Biases can be introduced at the HFI level depending on the retained (liquidity) selection criteria.

- **Short history and index suspension mechanism:** The alternative industry is still young and still evolving. Its growth has been spectacular in recent years (since 98). Most commercially available databases were created in the early 90s. **Thus, available time series are probably not long enough to allow pertinent risk analysis** (contagion risk from traditional assets and between styles...), **neither to help establishing appropriate suspension procedures.**

Q3: Should an HFI have to meet certain additional quantitative criteria other than level 2 requirements, or should compliance with the level 2 requirement of sufficient diversification be left to the UCITS to assess? Please explain precisely the grounds underlying your comments.

Academic research (cf Amin and Kat (2002) "Portfolios of hedge Funds") has investigated how the performance of relatively small portfolios of HFs deviates from that of the entire population (large HFI). Amin and Kat's study has evidenced that HF diversification within an index could be reached with 15 to 20 underlying funds. **Thus, we recommend setting as additional quantitative criteria to level 2 a requirement of a minimal of 15 constituent funds**, giving access a representative average return while benefiting from a substantial reduction in volatility.

There is, however, “fairly tenuous evidence to suggest that as portfolios grow larger they become more correlated to each other, which might reflect a drift to mediocrity” (Simon Ruddick (2002) “Diversification Overkill?”). Indeed, Amin and Kat have shown that, as the number of member funds increases and volatility decreases, skewness drops and kurtosis and correlation with equities go up. In other words, the diversification benefit within an equity-HF portfolio (which is one of the main incentives for HF investing) declines. Thus, **attractiveness of HFs is sacrificed in favor of a better representativity.**

It is vital, at this stage, to determine if representativity is more vital than investability/attractiveness.

In addition to the above requirements (level 2, minimal number of member funds), we can (if representativity is favored) think about providing UCITS with a standard quantification tool. The extent of diversification within a given HFI could be captured by a quantitative approach similar to ‘Diversity Score’, first introduced by Moody’s to analyze collateralized debt obligations. Basically, diversity score converts a portfolio of correlated exposures to a smaller number of independent exposures.

Q4: What requirements on weighting should HFIs have to fulfill to qualify as financial indices? Please explain precisely the grounds underlying your comments.

Weighting schemes in HFIs could be either asset-weighted, equally weighted or some combination of the two (asset-weighted at the fund level and equally weighted at the strategy level, for instance). Weightings could even be model-based (Edhec indices use a Principal Component Analysis approach), but this is obviously not an expected standard.

Asset-based weighting seems more appropriate than equal-weighting to represent the performance of the HF industry. Equal-weighting would over represent smaller funds, which also may post better performances than larger funds due to less capacity constraints. Besides, equal-weighting leads to underweighting the best performers and overweighting the worst performers, and frequent rebalancing. The superiority of the asset-weighting scheme is confirmed in Edhec’s paper (2003) “A detailed Analysis of the Construction Methods and Management principles of Hedge Fund Indices”. They show that CSFB/Tremont HFIs (one of the rare asset-weighted indices) are very efficient from a representativity standpoint.

However, the logic of representativity through capitalization is made difficult by a **lack of data on managed assets**. Hedge Funds are more reluctant to communicate on their total AUM than on their performance figures.

Q5: Is the definition of the representative group of underlyings made by the index provider sufficient to satisfy the criterion of “adequate benchmark”? Please provide comments.

Because most Hedge Funds are private funds, they have no obligation to communicate their NAV or AUM other than to their own investors. Thus, contrary to most traditional indices, **it is impossible to list all existing Hedge Funds** to encompass a HF industry total universe.

Consequently, **HFIs providers select groups of underlyings funds** from different HF universes. Still many claim to represent “the Hedge Fund Industry, or the “asset class”. Some indices such as CSFB/Tremont aim at a maximum representation of the “Index Universe” with a clear definition of Investment universe. However **the definition of what is being replicated is often not explicit enough** on the provider’s website.

Thus, **it should be imposed to all HFI providers to clearly state the size and characteristics of their database**, and define the universe they are aiming to replicate. Only then can an investor judge if an index is a representative benchmark of his investment universe. Then, **assessment of the HFI database quality and the HFI representativity is part of the UCITS due diligence process** to select a HFI

provider. One of Edhec Studies has shown that some HFI do reach satisfactory levels of representativity of the HF industry.

Concerning underlyings' **liquidity requirements** for an index to qualify as an adequate benchmark, "sufficient liquidity" is understood as a liquidity that allows index replication. Investors should be able to invest in constituent funds following the HFI composition and to replicate all funds exclusions, inclusions and/or weighting updates with no lag due to liquidity constraints.

If not qualified as "investable", HF indices should include closed funds and funds with lockup periods and HF indices often do not (and shouldn't) take into account the constituent fund's specific liquidity (frequency, gate...) when taking rebalancing decisions. Those funds clearly don't have sufficient liquidity to be included in a replicable benchmark. Thus, HFIs that include such funds **cannot qualify as adequate benchmarks in respect to liquidity and replicability**.

Investable indices, on the other hand, have to guarantee that investors will, to a certain extent, be able to replicate the index and follow the HFI rebalancing decisions if noticed on due time. This investability constraint automatically eliminates funds that are closed to investment and/or with lock-up periods. This raises an important issue as those funds represent a large portion of the hedge fund universe!

Investment within a HFI might be done either directly (with some minimal constraints on available capacity, investment/redemption frequency, no lock-up period...), or through managed accounts.

Investable indices based on managed account select fund managers willing to open a managed account, and to offer sufficient liquidity on the managed account. Still, the manager's flagship fund might be closed to new investments. Through the managed account, the index provider gains higher liquidity compared to external investors. Thus liquidity of the underlying fund is granted to the HF index provider who owns the managed account platform but yet there is **no liquidity guarantee offered to external investors**. Besides, managed account platforms usually select well performing managers, as they sell structured notes which performance is based on that of those managers. Thus, **passive representativity is not respected**.

Only investable indices investing directly in HFs can therefore qualify as **adequate benchmarks in terms of liquidity and replicability**, as investors will be able to invest in the constituent fund with the same liquidity as the HFI, and thus will be able to replicate the HF index. Nevertheless, their representativity dimension does not cover funds which have reached maximum capacity or have lock-up periods for regulatory reasons (to avoid SEC registration), funds that represent the bulk of the HF industry.

In conclusion, replicability and representativity are 2 opposed objectives for HF indices. Although the number of hedge funds is substantial, some rule-based indices (CFSB/Tremont indices, for instance) can reach satisfactory levels of representativity. Their underlying liquidity prevents them from being replicable. Investable HFIs, on the other hand, have to sacrifice representativity (at least, partially) for a better investability.

Achieving investability seems to come at the cost of representativity.

Q6: Is there a role for any quantitative assessment of the 'breadth' of coverage of the HFI? If so, how would this work?

We don't think that a quantitative assessment of the 'breath' of coverage of the HFI **has to be mandatory** to be selected as financial indices. Nevertheless, measuring the representativity of a HFI is interesting and the HFI providers should promote this practice.

Quantifying the breadth of coverage of a given HFI could consist in assessing the total weight of its member funds within the investment universe that it claims to cover. A realistic way to do this is to base the calculation on a given HF database, as large as possible.

A better quantitative measure (unfortunately, difficult to implement in practice) of the breadth of coverage would consist in calculating the correlation of the HFI with its assumed investment universe as seen through a compilation of all available HF databases (for further information on this methodology please refer to Edhec's paper "A Detailed Analysis of the Construction Methods and Management Principles of Hedge Funds Indices").

Q7: Should backfilling be banned for HFIs to qualify as financial indices? If not, why not? Please explain precisely the grounds underlying your comments.

Backfilling should be banned for HFIs to qualify as financial indices.

While HFIs are expected to offer investors the stability they require in order to make rational investment decisions, backfilling results in a modified history (modified after the fact), making the index an inconsistent / instable benchmark.

In addition, a backfilled HFI can hardly be used as an underlying for any derivative/structured product.

Q8: Should CESR set criteria for the treatment of defunct funds by HFIs for them to qualify as financial indices? If so, what should they be? Please explain precisely the grounds underlying your comments.

CESR should **promote unambiguous transparency guidelines on the treatment of defunct member funds**: member funds that **liquidate**, that **fail to report performance** or that **close to new investments**. A comprehensive methodology should be used when calculating their performance and/or getting them out of the index. More generally, such guidelines should also cover other special rebalancing situations (forced redemptions, suspended redemptions, exclusion for regulatory matters...).

CESR should set **criteria on the communication on defunct funds**: HF providers should clearly announce (on their website, for instance) when a HF is defunct and at **what date the fund will exit the index**, in order to allow investors to exit simultaneously and to replicate the index.

Member funds that liquidate should be kept into the index until completion of the liquidation, even if they would otherwise be omitted by applying the standard index construction rules.

Q9: Is disclosure of the index revision methodology sufficient or should controls be placed on the frequency, method or amount of due diligence the index provider must carry out regarding ongoing constituent classification? If so, what should they be? Please explain precisely the grounds underlying your comments.

Disclosure of index revision methodology should be **mandatory**. Indices that act as benchmarks have to be transparent, unambiguous, verifiable and accountable.

Furthermore, **transparency should be promoted** (and, may be, guaranteed by an independent committee) in terms of construction methodology (funds inclusion/exclusion, fund screenings, member selection criteria...), composition, weightings and data used to calculate the index. All the information should be available on the provider's website ahead of the revision implementation so that investors willing to replicate the index have sufficient notice time to act. As for members classification, HFI providers should carry out frequent (annually, at least) due diligences to update these classifications.

The composition of the index must not be modified too frequently to avoid exaggerated volatility of its fundamentals (return, risks...), and insure a **certain level of stability** to investors.

We **do not believe controls should be placed**, but rather that those HFI databases that aren't transparent enough will be less used by investors and that the market will self-regulate.

Q10: Can the UCITS assess the revision methodology of the HFI adequately or should an independent third party be required to review the HFI's methodology? If the latter, how would this work? Please explain precisely the grounds underlying your comments.

UCITS should be **fully responsible of conducting their assessment on a HFI provider** before investing, which includes assessing the revision methodology of the HFI. UCITS should have access to sufficient information to do so (cf transparency requirements Q5, Q9, Q19), and UCITS authorized to invest in derivatives on HFI should also be UCITS qualified to conduct such assessments (cf certification Q20). If the UCITS decide to hire a third party to assess the revision methodology, it should be their own responsibility.

However, in order to push HFI providers to adopt industry “best practices”, it could be **highly recommended that Hedge fund Index providers hire independent third parties to review and assess their revision methodology**. “Audited” HFI providers could use their audited status as a marketing tool (similar to GIPS compliance for asset managers), which at the same time shouldn't relieve UCITS from their assessment responsibility.

Q13: Are there any competition aspects CESR should consider in the context of hedge fund indices compared to funds of hedge funds? Please explain precisely the grounds underlying your comments.

Hedge Fund indices and funds of hedge funds **do not compete directly**. Funds of Hedge funds allocate dynamically their portfolio (active management) whereas Hedge Fund indices are static baskets (passive management). Funds of funds charge a management fees for their active allocation, funds selection and due diligence. Hedge Fund indices charge a fee to subscribers to their database, or sell structured products on their HF Indices. Besides, selection criteria of Hedge Fund indices and funds of funds differ: Hedge Fund indices seek representativity and funds willing to report (or to do managed accounts) in their due diligence selection whereas funds of hedge funds analyze performance potentiality of funds and select the best of breed.

However, if investors were given easier access to HF index products than funds of hedge funds, HF indices could be an alternative to investing in funds of hedge funds to get exposure to the alternative asset class. In that sense, there is a **competition aspect** to consider because the **eligibility to UCITS would be a competitive advantage for HF Indices** relative to funds of hedge funds.

Q15: Should CESR set requirements for verification of NAV calculation and independent custody arrangements/robust governance structures for the underlying constituents of HFIs to qualify as financial indices; or as an alternative, should the UCITS be required to assess the due diligence procedures of the index provider in respect of the underlyings in this regard? Please explain precisely the grounds underlying your comments.

The main issue in NAV calculation is the fact that constituent hedge funds report themselves their net returns, and no double-check can be performed by HFI providers, even more when they are not investors. However an **audit of the due diligence procedures of the HFI providers** in respect of the underlyings **would be more efficient** than setting requirements for verification of NAV calculation. Indeed, it would allow for a comprehensive due diligence procedure on the underlying hedge funds without limiting the scope of the due diligence.

Thus, **UCITS should be responsible for assessing the HFI provider's due diligence procedures**, and furthermore CESR could consider proposing a standard due diligence questionnaire for UCITS to assess HFI providers' procedures in respect to underlying constituents.

Q16: Should a minimum monthly publication frequency be a requirement for HFIs to qualify as financial indices? If not, why not, and what frequency would be suitable?

To qualify as financial indices, **HFIs' minimum publication frequency should be daily**, as for most other financial indices. However we reckon that such a frequency is hardly compatible with representativity (most Hedge Funds do not give daily estimates but rather weekly estimates).

Q18: Should it be a requirement for an HFI to qualify as a financial index that its full rules are publicly available (rather than just material rules)? If not, why not?

Yes, we do believe that the index full rules should be publicly available.

Q19: To qualify as financial indices, should HFIs be required to disclose at all times details of their constituents (eg list of underlyings, their classification, and the weight applying to them, if appropriate)? Is there other information about the HFI that should be disclosed? Would this be done via the index provider's website? Please explain precisely the grounds underlying your comments.

HFIs **should be required to disclose at all time details** of their constituents: name of the funds, inception date, date of index inclusion, AUM, historical returns, liquidity, status (open or closed to new investments) and remaining capacity, management fees, if audited or not, date of last due diligence by HFI provider, classification, weight in the index, country of registration, and contact details.

This information should be disclosed on the index provider's website.

Q20: Should a UCITS which intends to invest in derivatives based on HFIs have to disclose this fact in its prospectus or other documents? What degree of information should a UCITS which intends to invest in derivatives based on HFIs have to disclose in its prospectus? Please explain precisely the grounds underlying your comments.

Yes, UCITS should disclose in their prospectus the fact that they intend to invest in derivatives based on HFIs. We also recommend that UCITS investing in such products be required to receive a specific agreement (similar to the French AMF "Programme d'activité") guaranteeing that the UCITS managers are equipped to analyze such products (experience and knowledge of HF and derivatives, qualitative and quantitative analysis etc).

Q22: From the regulatory and retail investors' point of views, how do you assess the situation of competition between funds investing in derivatives based on HFIs and funds of hedge funds? Please explain precisely the grounds underlying your comments.

In addition to comments made on Q13

A risk is that the performances of derivatives on HFIs disappoint investors for lack of understanding of the structured product or of the HFI construction methodology. This would be highly detrimental to funds of hedge funds and to the asset class. For that reason, we recommend that a specific agreement be granted to UCITS willing to invest in derivatives on HFIs to make sure they are able to analyze the risks of HF and the specificities of HF indices.