

WHAT A CAIA MEMBER SHOULD KNOW

Setting the Benchmark: Spotlight on Private Equity

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What is Benchmarking?

Benchmarking is the process of comparing a firm’s business processes and performance metrics to those of the firm’s industry or another industry. The benchmarking process may focus on specific segments of the industry such as the top performing firms or the “average” firm. Dimensions typically measured are quality, time, cost, risk, and return.

The term benchmarking was first used by cobblers to measure people’s feet for shoes. They would place someone’s foot on a “bench” and mark it out to make the pattern for the shoes. In the investment industry, benchmarking is the process of finding a quantifiable standard against which to measure a portfolio’s performance. The focus of this essay is on benchmarking for investment products and in particular for private equity investments. First, we discuss the desirable properties that a proper benchmark should possess. Second, we present a framework for classification of asset classes depending on the liquidity of the product itself, liquidity of its underlying assets, and the degree to which the product is actively managed. Third, we discuss two broad approaches to benchmark construction and then discuss the role of benchmarks in the evolution of asset classes. Finally, we examine various private equity benchmarks and discuss their properties.

Desirable Properties of Benchmarks

The purpose of creating a benchmark is to establish a measure, which can be used to evaluate the performance of an actively managed portfolio. A proper benchmark should have the following characteristics:

1. *Transparent and Unambiguous* – The underlying investments of the benchmark should be clearly defined.
2. *Frame-able and Customize-able* – Investors and managers should be able to use available information to develop a quantifiable measure of performance and to create sub-benchmarks that reflect different investment objectives of comparison.
3. *Appropriateness and Coverage* – The benchmark should represent the investment style of the manager and its components must adequately span the representative universe.
4. *Invest-able* – The benchmark should represent a viable investment opportunity as an alternative to the actively managed portfolio that is being evaluated.

Below, we discuss each of these characteristics in greater detail.

Transparent and Unambiguous

There are three aspects of being **transparent and unambiguous** that center around the **components, prices, and methodology** used to construct the benchmark. The **components transparency** aspect implies that there is full disclosure on the actual choice of components used in the benchmark, and that there is no ambiguity in the

choices of components of the benchmark. For example, S&P 500 is generally composed of the 500 largest firms listed in the U.S., and more importantly, the list of these firms and their relative weights are fully disclosed to the public. The **prices transparency** aspect refers to a need for full and unambiguous disclosure on the actual prices of the components of the benchmarks. Thus, in the aforementioned S&P 500 Index, we know that the price of say “GE” is X and that this price was used to generate the value of Y for the benchmark. Finally, the third aspect, the **methodology**, refers to the ability to understand the benchmark calculation methodology. For instance, the process for calculating the weight of each component of the S&P 500 Index is clearly established and is such that market participants can verify these values independently.

Frame-ability and Customize-ability

The second desirable property of benchmark construction centers on its **frame-ability** and **customize-ability**. **Frame-ability** or **measurement** is the ability to clearly understand what the interpretation of the comparison means; e.g., the S&P 500 Index allows one to measure the performance of a portfolio against a cap-weighted portfolio of largest firms whose stocks are listed in the U.S. Further, the S&P 500 index allows one to use a quantifiable method to measure the relative performance of the portfolio (e.g., one can calculate Sharpe ratios to compare risk-adjusted performance). The **Customize-ability** requirement goes one step further and refers to the ability to create sub-benchmarks that reflect different investor objectives. For instance, the S&P 500 Communications Index, reflects those companies in the S&P 500 that invest in the communications area. Private Equity, in particular, raises requirements not just around customize-ability by strategy (industry, product, geography) but customize-ability around investor objectives on performance because unlike marketable equities, private equity commitments are NOT coincident with capital calls or disbursements and hence there is no 1-1 correspondence between the different metrics such as IRR and Multiple of Capital. A long term focused family office that does not optimize its cash balance has very different benchmark methodology requirements as opposed to a financial advisor who optimizes cash on hand.

Appropriateness and Coverage

The third desirable property is **appropriateness** and **coverage**, which has two dimensions. First, **appropriateness** requires that the benchmark should represent the investment style according to which portfolio is being managed. For example, MSCI Emerging Markets Index is an appropriate benchmark for a diversified portfolio of large cap emerging markets stocks. The second dimension of this property is **coverage**. This means the benchmark should cover the entire investment universe that the manager is allowed to access. Going back to MSCI Emerging Markets Index, we may conclude that the benchmark is not complete because it does not cover all large cap stocks that trade in emerging markets. The benchmark must be able to answer questions like what percentage of the entire universe does the benchmark cover? The **coverage** shows how relevant the benchmark is and a very poor coverage number begs the question of whether the benchmark is relevant. The **coverage** also answers important questions around selection bias – Is there an adverse selection in the choice of components?

Investability

Investability is the final desirable property of an investment benchmark. The term **investability** refers to the degree to which an investor (in this case the user of the benchmark) can physically invest in the benchmark and acquire the returns represented by the benchmark. Investors should be able to access a highly investable benchmark at almost no cost (e.g., fees, due diligence cost, infrastructure, etc.). For example, if a benchmark includes hedge funds or

mutual funds that are closed to new investments, the benchmark is not investable. Clearly, the investable property can be achieved only in certain types of assets, which will be discussed in detail later.

A Framework for Classification of Asset Classes

The development and application of benchmarks are greatly dependent on the characteristics of the investment under consideration. While there are many methods for delineating investment characteristics, one clear and concise method is to consider investments in three dimensions – *active vs. passive*, *liquid investment product vs. illiquid investment product*, and *liquid underlying assets vs. illiquid underlying assets* as shown in Exhibit 1. The last dimension distinguishes between the liquidity of underlying assets of an investment product (e.g., publicly traded securities used to create a mutual fund’s portfolio) and the liquidity of the investment product itself (e.g., the mutual fund).

It is worth noting that the degree of liquidity of an investment product is normally related to the liquidity of the underlying assets of the investment product as well as the liquidity inherent in the investment structure itself. For example, an equity long/short hedge fund may trade highly liquid large cap exchange traded equities, but if it imposes significant redemption fees or lockup periods, the hedge fund could be illiquid from the perspective of the investor.

Exhibit 1: Investment Characteristic Matrix of Financial Intermediaries

	Liquid Product Liquid Underlying	Liquid Product Illiquid Underlying	Illiquid Product Liquid Underlying	Illiquid Product Illiquid Underlying
Passive	(A) Index Tracking ETFs and Mutual Funds	(B) Bank Deposits; Asset Backed Securities; Some Real Estate Investment Products; Some Closed End Funds;	(C) Some Annuity Programs; Universal Life Insurance	(D) Some Load Mutual Funds; Some PE Funds; Some Real Assets Funds (e.g., timber, land, infrastructure)
Active	(E) Active Mutual Funds; Some Liquid Hedge Funds and CTAs	(F) Actively Managed Real Estate Funds; Some Closed End Funds; Some Hedge Funds	(G) Most Hedge Funds and CTAs	(H) Most PE Funds and Some Hedge Funds

In general, the simplest investments to benchmark fall in the upper left box (A). In fact, these investments are often used as benchmarks for other, more difficult to benchmark, investments. These investments are both liquid and passive in nature. Since both the product and the underlying assets are liquid, obtaining accurate current prices is generally a simple matter. In addition, since they are passive in nature, benchmarking is usually as simple as finding an appropriate existing index or constructing an index with similar exposures such as a broad equity index (e.g., Russell 2000) or a sector index (e.g., S&P 500 Consumer Discretionary Index).

The investments in the lower right box (H) are the most difficult products to benchmark as no reliable market prices are available for their underlying assets and the products themselves are not liquid and therefore reported returns are



DIFFERENCES

Transparent & Unambiguous vs. Appropriate & Coverage:

Complex benchmarks that attempt to capture active management of the product by using sophisticated quantitative techniques are bound to become ambiguous and less transparent (e.g., hedge fund replication products).

Appropriateness & Coverage vs. Investability:

Using peer groups to create appropriate benchmarks generally make the benchmark less investible.

subject to potential errors. Further, due to the illiquidity of their underlying assets, these investment products are typically quite heterogeneous and therefore custom-made benchmarks must be used to evaluate their performance.

Exhibit 2 presents a rough guide as to whether the four desirable properties discussed previously are typically satisfied by benchmarks that could be constructed for various types of assets.

Exhibit 2: Investment Characteristic Matrix of Benchmarks

	<i>Liquid Product Liquid Underlying</i>				<i>Liquid Product Illiquid Underlying</i>				<i>Illiquid Product Liquid Underlying</i>				<i>Illiquid Product Illiquid Underlying</i>			
	T and U	F and C	A and C	Inv	T and U	F and C	A and C	Inv	T and U	F and C	A and C	Inv	T and U	F and C	A and C	Inv
Passive	+	+	+	+	+	+	0	+	0	+	0	0	0	+	0	-
Active	0	+	0	+	0	0	0	+	-	0	-	-	0	+	0	-

("+" = property is strongly satisfied, "0" = property is barely satisfied, "-" = property is not satisfied)

It is important to note that the above taxonomy of asset classes and properties of their corresponding benchmarks does not apply to every available benchmark. In fact, benchmark providers have a great deal of latitude in creating their products by considering various tradeoffs. As stated in the side box, a benchmark provider may wish to emphasize one dimension (e.g., invest-ability) at the expense of another dimension (e.g., transparency).

Approaches to Benchmark Construction

There are two broad approaches to the construction of benchmarks: (1) *asset-based benchmarks* and (2) *peer groups*. In asset-based benchmarks, the underlying assets that a manager can potentially invest in are used to construct an index. For example, S&P 500 Index is an example of an asset-based benchmark. In the case of S&P 500 Index, the underlying assets and their corresponding weights are specified in advance. Alternatively, one can construct an asset-based benchmark using Sharpe style approach, which uses the return of the portfolio to construct a benchmark with the same style profile. Asset-



INSIGHTS

Insights on benchmark differences: Other than differences in the underlying sets, the differences in the benchmarks are also attributable to several subtle distinctions. The Cambridge Index does not include Venture in its Private Equity benchmark and reports two separate benchmarks for the U.S.

The Thomson VentureXpert only covers the underlying assets and therefore does not account for the aggregation and selection inherent in a fund as well as the extra-normal participation in the returns that a typical PE professional ensures through term sheets.

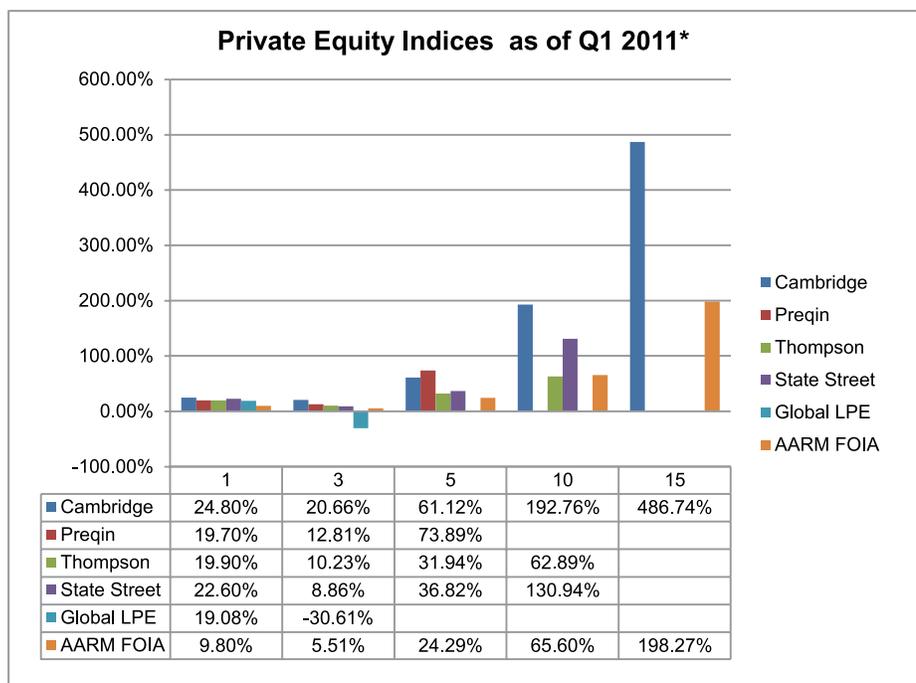
Finally, the lack of transparency in methodology for Cambridge and Preqin Indices makes it impossible to understand what they are best compared against; which metric of performance or which type of portfolio and for what type of investor objective.

based benchmarks would normally satisfy the desirable properties discussed above when the underlying assets of the investment product are liquid. In some cases, asset-based benchmarks are constructed using publicly traded securities that are supposed to have the same risk exposures as the assets used to construct the portfolio that is being evaluated.

However, the assets used to construct the benchmark may not be the same assets used in the portfolio. For example, there is an Exchange Traded Fund (PowerShares Listed Private Equity (PSP)) based on an index of publicly listed private equity firms Global LPE. This could be viewed as an asset-based benchmark for private equity investment products. However, a comparison of the returns on all 5 PE benchmarks that we examined shows that there could be significant differences between them (see Exhibit 3).

The second approach to the construction of benchmarks is to use peer groups. With the exception of Global LPE, the four remaining private equity indices that we detail later are all examples of peer group benchmarking. Peer groups are typically employed when the portfolio is actively managed and/or the returns on the underlying assets of the portfolio are not available (e.g., the underlying assets of the portfolio are illiquid). The illiquidity of the underlying assets prevents one from using style analysis or similar approaches to create a portfolio that tracks the risk-return properties of these investment products. More importantly, an important source of return to these products is the illiquidity premium that the underlying assets carry. Clearly, this important source of return cannot be captured using a portfolio of liquid securities.

Exhibit 3: Asset Based and Peer Based Private Equity Benchmarks



Source: Listed in Reference Section of Paper, AARM Analysis 2011

5yr, 10yr as of Dec 31, 2010



INFORMATION

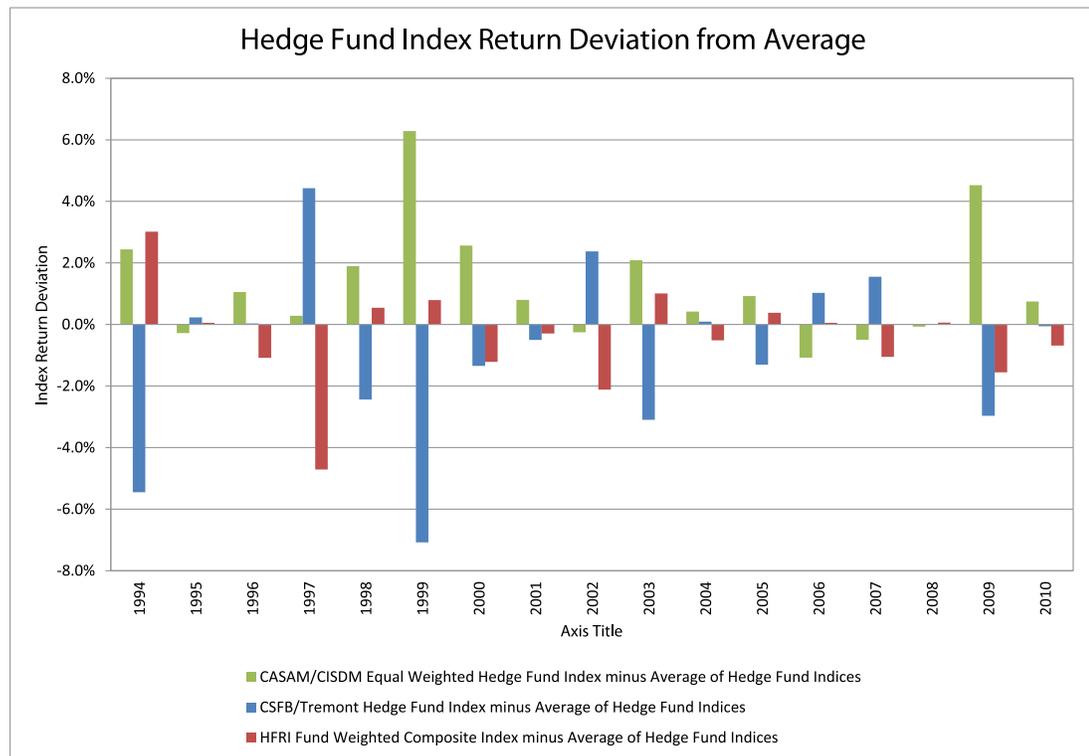
Asset Based Benchmarks:

Note that market prices are not always used to construct asset-based benchmarks. For instance, some real estate indices use appraisal values to create benchmarks. These appraisal values may or may not reflect the current market prices of the underlying asset class.

In some cases, it might be possible to create benchmarks for passive illiquid investment products with illiquid underlying assets. For example, various real estate, timber, and infrastructure indices have been developed to benchmark the performance of these products. But when the portfolio is actively managed, peer group benchmarking appears to be the only option. As was mentioned previously, one desirable property of a benchmark is to be investable. This property is generally not available with illiquid investment products and it becomes especially difficult to achieve when the underlying asset is illiquid as well.

Exhibit 4 compares the performance of three different hedge fund indices which are based on a peer group approach.

Exhibit 4: Hedge Fund Index Return Deviations from Average of the Indices



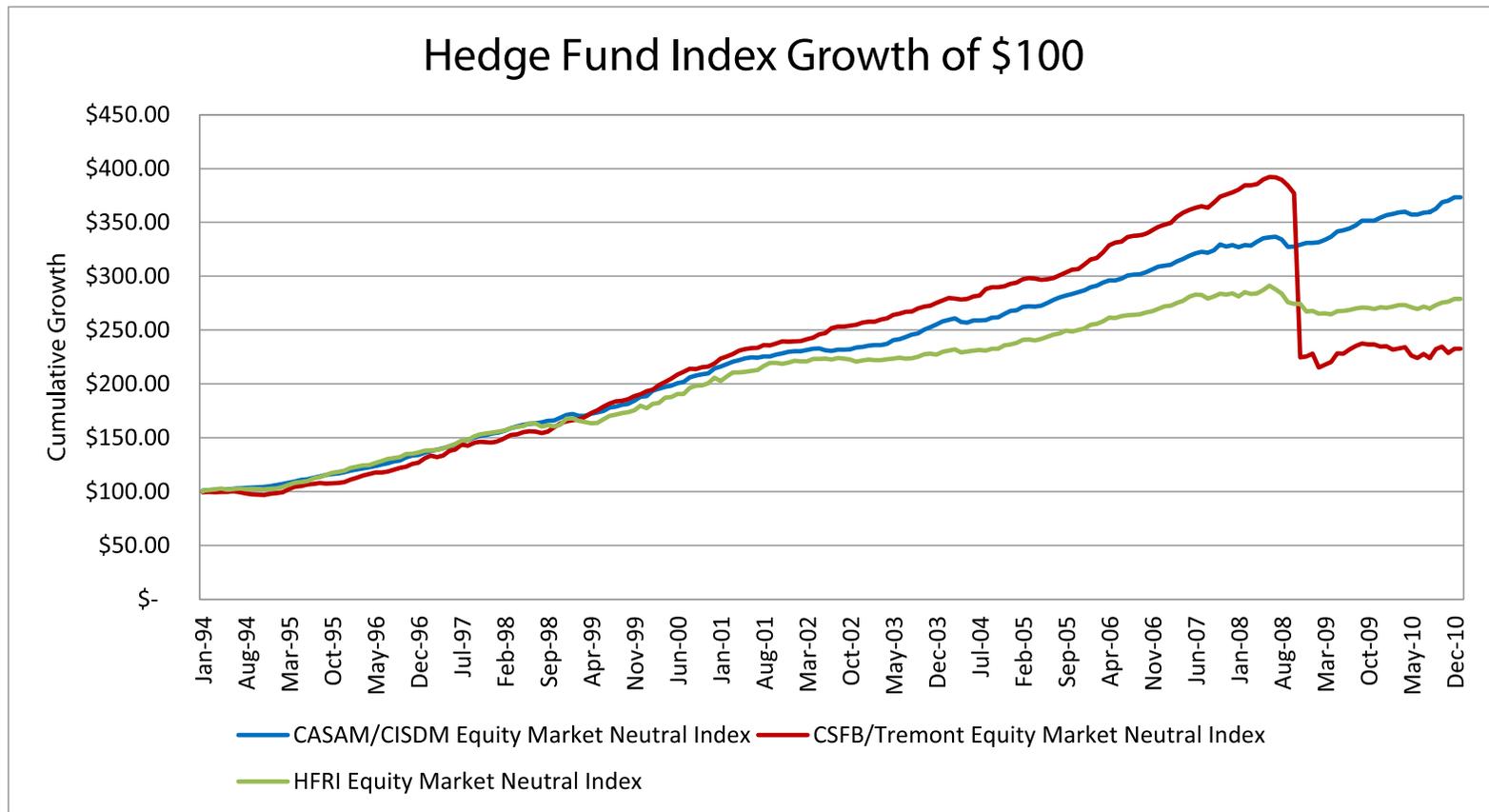
Source: Listed in Reference Section of Paper, AARM Analysis 2011

Generally, the peer group approach compares the performance of a portfolio manager to other similar managers. This has a number of implications. First, the peer group is not likely to be completely investible (e.g., some of the managers may not be open or may have a large minimum investment that would prevent the investor from investing in the entire peer group). Second, it may not be possible to find managers that match our manager’s characteristics (e.g., they may differ in terms of size, age, currency, location, fees, and, mostly importantly, the investment strategy). Finally, and most importantly, the peer group is typically constructed using publicly available databases, which are subject to a number of biases. Because of the above issues, different peer groups may report significantly different returns.

Impact of Benchmarking on the Evolution of Asset Classes

The existence of reliable benchmarks can have a profound impact on the growth of aggregate investment in an asset class. Benchmarks provide a basis for recording and understanding the performance of an asset class and investments in the asset class, as well as providing a basis for analyzing the relative performance of individual investments. Consultants and investment advisors rely on benchmarks for decision making and reporting, and therefore the growth of aggregate investment in a particular investment class is significantly affected by the availability of effective, reliable, and transparent benchmarks.

Exhibit 5: Equity Market Neutral Hedge Fund Indices Jan 1, 1994 to Jan 31, 2011



Source: Listed in Reference Section of Paper, AARM Analysis 2011

Benchmarking for Private Equity Investments

We will discuss 5 different purported benchmarks in the private equity industry and show whether they are adequate in terms of meeting the criteria of proper construction of a benchmark. These are the Cambridge Index, the Preqin Index, the State Street Index, the AARM FOIA Index, and the Global LPE Index. Most of these indices do not meet the standards of a proper benchmark outlined above. This is expected in a nascent industry such as private equity (PE), and in order to achieve the status of benchmark, most of the indices require modification. As part of this discussion, we ignore the Thomson VentureXpert Index, which covers only underlying portfolio assets and is completely irrelevant to the benchmarking of PE funds. Just as we don't benchmark a company's performance based on its buildings and other underlying assets that its general managers combine to get enterprise value, it also makes no sense to benchmark a PE fund's performance on underlying portfolio investments that its GP general



manager is responsible for actively managing.

Private equity has unique characteristics that put additional requirements on proper benchmarks. In particular, PE raises requirements not just around customize-ability by strategy (industry, product, geography), but customize-ability around investor performance objectives. PE commitments are NOT co-incident with capital calls or disbursements, and funds have a finite lifetime. Hence there is no 1-1 correspondence between the different metrics such as IRR vs. Multiple of Capital and the fund-set is continually changing as old funds reach end of life.

Thus, the right benchmark and method in private equity is determined by investor goals and investor context. A long term focused family office, which does not optimize its cash-balance, is quite content with the use of Multiple of Capital as a performance metric. On the other hand a financial institution that optimizes cash-on-hand will require real IRR for performance benchmarking. A newly created fund investor prefers to benchmark against funds of the same age but a mature portfolio is best compared against a well-diversified age set spanning the entire J-curve. An investor may choose a benchmark against similar vintages during diligence but prefer all vintages for reporting.

Cambridge Index

The Cambridge Index is constructed by Cambridge Associates by leveraging their confidential and proprietary non-marketable alternative assets database. The benchmark claims that it compiles the performance results for more than three-fourths of institutional-quality venture capital assets and nearly two-thirds of leveraged buyouts, subordinated debt, and special situations partnerships to publish Cambridge Associates U.S. Venture Capital Index and the Cambridge Associates Private Equity Index. These indices report preliminary returns in Barron's Market Laboratory section and quarterly returns approximately 12-15 weeks following the close of each quarter.

While Cambridge's benchmark was one of the first attempts at PE benchmarking in the industry, it does not satisfy most of the criteria for correct benchmark construction. Neither the **components** nor the **price** in the Cambridge benchmarks are disclosed by Cambridge Associates. Thus, it fails construction for **component** and price **transparency** and **un-ambiguity**. However, Cambridge does disclose some of the construction methodology, but does not clarify all ambiguity on implicit set used for IRR, Multiple, Age calculations, etc. Cambridge fails **frame-ability** and **customize-ability** because of its lack of transparency and its services business model that does not allow any type of dynamic customization.

POTENTIAL BIASES

Selection Bias: Peer group is constructed using a sample of actively managed portfolios that is different from a universe of managed portfolios. For example, those managers that are closed to new investors may not report their performance to any public database.

Survivorship Bias: Peer group is constructed using actively managed portfolios that currently report to a database. Because these managers have survived for an extended period, they are likely to have a superior performance in comparison to the entire universe of active and defunct portfolio managers.

Instant History Bias: Peer group benchmark may contain performance figures that relate to the incubation period. These returns are generally inflated because it is at the discretion of the manager to report these figures to the public.

The biggest factor in favor of Cambridge is that arguably Cambridge lays claim to being the industry leader in PE consulting, and therefore, must be privy to a large amount of data. But the benchmark is neither transparent nor frame-able – no one knows what is in it. The coverage is unproven because only 1290 U.S. Venture and 858 Buyout funds are used in the benchmark and there is neither transparency on the components, nor quantitative substantiation of the claims of the coverage of that set. There is selection bias in those funds that choose to pay Cambridge consulting fees.

Illustrating the Extra Value in a Good Benchmark

For a concrete example of how differences could illuminate underlying issues, consider a hypothetical investor considering an investment in an equity market neutral hedge fund. While there are a number of hedge fund index providers, one of the most popular equity market neutral indices was the Credit Suisse/Tremont Equity Market Neutral Index (CSFB EMN). Hedge fund indices can be equal weighted, asset weighted or medians. The CSFB EMN is an asset weighted index. This in itself may not be of great concern, until one considers the constituents of the index prior to the collapse of Bernard Madoff's ponzi scheme in 2009. As described in Schneeweis and Szado [2010], a large portion of the assets under management of the CSFB EMN index was composed of Madoff feeder funds. Therefore the performance of the index was largely influenced by Madoff's reported returns, which arguably had little relationship with returns to the equity market neutral strategy. In fact, Schneeweis and Szado point out that, for the period of 2005-9/2009, the average correlation of the five Madoff feeder funds in the study with the CSFB EMN index was .32, while the average correlations with the HFRI and CISDM EMN hedge fund indices were -.05 and .06 respectively. Clearly the use of the CSFB EMN index could lead to questionable conclusions when considering a true equity market neutral hedge fund manager.

Preqin Index

The Preqin Performance Benchmarks module offers comprehensive benchmarking tools for the private equity industry. The benchmarks are calculated using performance returns for over 4,800 funds and 15,000 data points from their Performance Analyst database. Preqin claims that in terms of aggregate value, this represents around 70% of all capital ever raised, but there is no clear substantiation for that claim.

Unlike Cambridge, the benchmark does breakdown by product (e.g., venture, buyout, mezzanine, distressed, special situations, real estate, natural resources, fund-of-funds, secondary), but not by other factors like geography or industry focus. The biggest advantage of the Preqin Benchmark is its transparency in component and in methodology. However, the benchmark is not frame-able because it is unclear why a fund is or is not in the benchmark. An investor has no understanding of what a comparison to the Preqin benchmark implies. The benchmark (like all benchmarks in PE) is not investible and while Preqin makes a claim on coverage, it is not substantiated by any data.

State Street Index

State Street provides its own PE index called the State Street Private Equity Index. The index is based on the latest quarterly statistics from State Street Investment Analytics' Private Edge Group and includes more than 1,500 private equity partnerships with aggregate commitments of approximately \$1.5 trillion. State Street's Private Edge Group provides detailed analyses of private equity investments for a diverse client base including public and private pensions,

endowments and foundations, representing nearly 5,000 commitments totaling approximately \$200 billion. State Street's benchmark provides some measure of coverage by disclosing the total AUM of its clients and the number of clients it supports. While this is not a complete specification, it is far superior to the prior two benchmarks on coverage.

However, State Street's benchmark is neither **transparent** nor **frame-able in components**, price, or methodology. The State Street benchmark is not investible either, as is true with all of private equity. Thus, it fails most of the requirements of proper construction.

We choose not to elaborate on the recently released Northern Trust—"Private" index in this paper because the benchmark shows no fundamental difference in properties to the State Street Index. Therefore, other than noting that the particular benchmark being based on an accounting vendor's confidential customer data as opposed to a financial institution's confidential customer data, there is nothing that requires a separate discussion or examination that State Street's benchmark does not already address.

The Global LPE Index

The Global LPE Index is designed to track the performance of private equity firms which are publicly traded on any nationally recognized exchange worldwide. These companies invest in, lend capital to, or provide services to privately held businesses. The Index is comprised of 40 to 60 public companies representing a means of diversified exposure to private equity firms. The securities of the Index are selected and rebalanced quarterly per modified market capitalization weights. Market capitalization may be adjusted to represent a means of diversified exposure to private equity firms, as well as the consolidated exposure of the underlying portfolio investments. Considerations for diversification include the consolidated stage of investment (e.g., early, mid, late), type of capital (e.g., equity, debt, mezzanine, etc.), sector (e.g., energy, industrials, technology, etc.), and geography.

The Global LPE Index is the only PE index that is investible through investment products such as the PSP Powershares ETF. Additionally, it is completely transparent in its construction. Unfortunately, it also has serious shortcomings, as it is neither appropriate nor does it have sufficient coverage. There are very few (less than 100) PE firms/funds that are publicly traded and they in no way represent the majority of the thousands of PE firms/funds that compromise the industry.

AARM FOIA Index

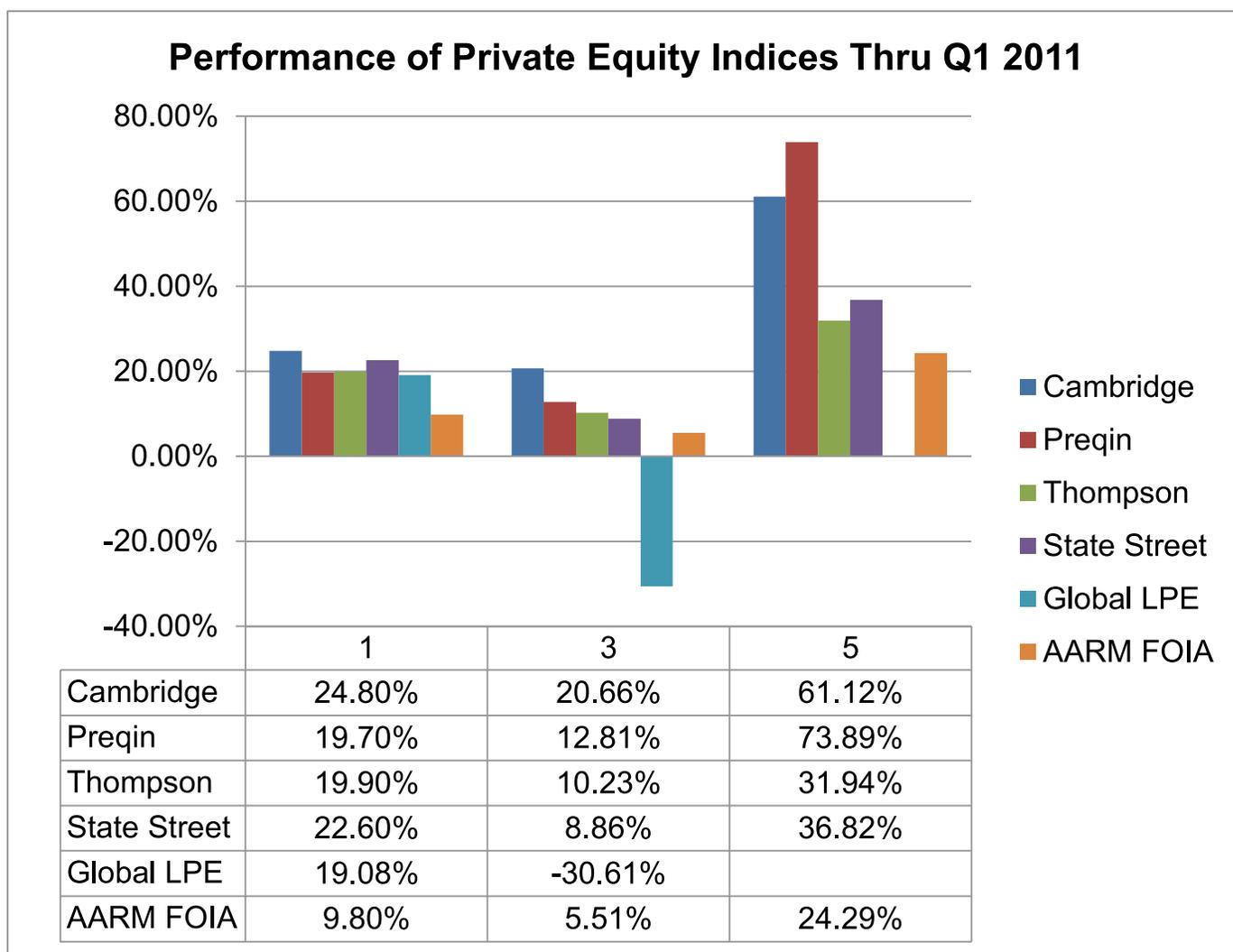
The AARM FOIA Global PE Benchmark is completely **transparent** and **unambiguous** on **components**, **price**, and **methodology**. The index comprises fund performance data of LPs with the largest portfolios of alternative asset investments. Since fund data is collected from public data sources – websites of the public pension funds and university endowments, AARM limits components to those invested in by LPs that disclose their portfolio performance. Data from LPs currently included in the AARM Index include several hundred of PE firms from 20 Major International LPs such as Calpers, Calstrs, Florida, New York, and Wisconsin, all of which are fully disclosed.

The AARM Index is also completely transparent and unambiguous in the methodology for construction and lays out rules for aggregation. For example, if multiple LPs invest in the same fund, the average performance statistics for that fund are constructed using simple averaging. If both Washington State Investment Board and Oregon State

Treasury invested in KKR 1982 Fund, then KKR 1982 Fund Capital Committed Amount = average (Washington State Investment Board KKR 1982 Fund Capital Committed Amount, Oregon State Treasury KKR 1982 Fund Capital Committed Amount). The AARM Benchmark is weighted by capital commitment and is available by product, industry, and geography and fund size.

The **frame-ability** and **customize-ability** that AARM provides as a result of its on-demand productized approach set it apart from all the other benchmarks. AARM allows the user to dynamically customize on all possible dimensions to select the most appropriate benchmark for their investment objective.

Exhibit 6: Performance of Private Equity Benchmarks



Source: Listed in Reference Section of Paper, 2011

Like most other PE benchmarks, the AARM Benchmark is not investible. However, it is completely **appropriate** and **representative** and does have a very high **coverage** of space with nearly 6000 funds in its dataset. The Index includes a similar number of funds and more data-points than Preqin but it defines quantitative coverage as a percent of all available funds (as defined by individual regional PE groups such as NVCA, BVCA, etc.). Out of all available PE benchmarks, the AARM FOIA probably best meets the previously outlined ideal benchmark practices by construction but it is also the newest, dating back to 2008, and least prevalent in the industry.

Exhibit 7: Performance of Private Equity Benchmarks

	Cambridge	Preqin	State Street	Global LPE	AARM FOIA
Transparency and Un-ambiguity	NO	YES	NO	YES	YES
Frame-ability and Measurability	NO	PARTIAL	NO	PARTIAL	YES
Appropriateness and Coverage	PARTIAL	PARTIAL	YES	NO	YES
Invest-ability	NO	NO	NO	YES	NO

Conclusions

This article provides a framework for creating ideal benchmarks with emphasis on benchmarks for private equity funds. In reality, all benchmarks involve some deviations away from this ideal. It is important for the end user to determine which of the characteristics are of primary importance and choose a benchmark accordingly. In addition, it is of vital importance that benchmarks are not viewed in isolation. This is particularly true of benchmarks with limited transparency. Typically, multiple benchmarks are available to track a particular asset class or investment style. A comparison of the available benchmarks can provide some insight into the impact of benchmark choice for the investment in consideration. The comparison may also indicate the existence of critical limitations (or advantages) of a particular benchmark as a valid comparison for the investment in question. If the indices under consideration exhibit different return patterns or factor exposures, further investigation may be warranted. The differences may not be due to faults in the indices, but rather due to a particular focus or exposure. Understanding these differences can provide further insight into the appropriateness of each index for the purpose at hand.

The authors would like to thank Professor Nitin Nohria, Harvard Business School, who provided us the initial vision, ideas and encouragement to design proper benchmarks for the alternative asset industry.

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