Global Investment Performance Standards (GIPS®) for Fiduciary Management Providers to UK Pension Schemes

Explanation of the Provisions in Section 32

June 2020

CFA Institute®
Global Investment Performance Standards

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INTRODUCTION

The Explanation of the Provisions in Section 32 provides interpretation of each provision contained in Section 32: Input Data and Calculation Methodology. Fiduciary Management Providers that choose to comply with the Global Investment Performance Standards (GIPS®) for Fiduciary Management Providers to UK Pension Schemes (GIPS standards for FMPs) must comply with all applicable requirements of the GIPS standards for FMPs, including any interpretive guidance published by CFA Institute and the GIPS standards for FMPs governing bodies.

Consistency of input data used to calculate performance is critical to effective compliance with the GIPS standards for FMPs and establishes the foundation for full, fair, and comparable investment performance presentations. Achieving comparability among Fiduciary Management Providers' performance presentations requires uniformity in methods used to calculate returns. The GIPS standards for FMPs mandate the use of certain calculation methodologies to facilitate comparability. The Input Data and Calculation Methodology section addresses these topics.

Each provision appears in a grey text box. Some words in the provisions are in small capital letters, which indicates defined terms that can be found in the GIPS Standards Glossary. Following each provision is a discussion that provides interpretive guidance to help readers understand the provision.

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32. INPUT DATA AND CALCULATION METHODOLOGY

32.A. Input Data and Calculation Methodology—Requirements

Fiduciary Management Provider Assets and Composite Assets

Provision 32.A.1

TOTAL FIDUCIARY MANAGEMENT PROVIDER ASSETS:

a. MUST be the aggregate FAIR VALUE of all SCHEMES managed by the FIDUCIARY MANAGEMENT PROVIDER.

b. MUST include assets assigned to a SUB-ADVISOR provided the FIDUCIARY MANAGEMENT PROVIDER has discretion over the selection of the SUB-ADVISOR.

Discussion

The definition of the Fiduciary Management Provider delineates the universe of all UK pension schemes that must be included in total Fiduciary Management Provider assets. All discretionary and non-discretionary assets for which the Fiduciary Management Provider has investment management responsibility must be included in total Fiduciary Management Provider assets. This includes assets assigned to a sub-advisor, provided the Fiduciary Management Provider has discretion over the selection of the sub-advisor.

For all periods, Fiduciary Management Providers must value all assets in accordance with the definition of fair value. Fair value is defined in the GIPS standards for FMPs as the amount at which an investment could be sold in an arm's-length transaction between willing parties in an orderly transaction. The valuation must be determined using the objective, observable, unadjusted quoted market price for an identical investment in an active market on the measurement date, if available. In the absence of an objective, observable, unadjusted quoted market price for an identical investment in an active market on the measurement date, the valuation must represent the Fiduciary Management Provider's best estimate of the fair value. Fair value must include any accrued income.

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Total Fiduciary Management Provider assets must reflect the fair value of all assets within the Fiduciary Management Provider definition.

Some Fiduciary Management Providers use a sub-advisor to manage part or all of a particular strategy. For example, if a Fiduciary Management Provider specializes in managing equities, it might hire a sub-advisor to manage its fixed-income assets. If a Fiduciary Management Provider has discretion over selecting (i.e., can hire and/or fire) the sub-advisor, the Fiduciary Management Provider must include the assets managed by the sub-advisor in total Fiduciary Management Provider assets. If the Fiduciary Management Provider does not have discretion over sub-advisor selection, it must not include the sub-advised assets in total Fiduciary Management Provider assets or composite assets.

A Fiduciary Management Provider retains the responsibility for its claim of compliance for all of its assets, including its discretionary sub-advised assets and their reported performance. Therefore, all discretionary sub-advised assets must be treated by the Fiduciary Management Provider in the same manner as assets managed internally, and must be subject to the same policies and procedures as internally managed assets. If the Fiduciary Management Provider intends to place reliance on information from sub-advisors, it must ensure that the records and information provided by the sub-advisor meet the requirements of the GIPS standards for FMPs. For reliance on third-party records and information, please refer to Provision 31.A.20.

Total Fiduciary Management Provider assets must include:

- assets for which the Fiduciary Management Provider has either conditional or unconditional authority to make investment decisions,
- assets managed outside the Fiduciary Management Provider (e.g., by sub-advisors) for which the Fiduciary Management Provider has asset allocation (assignment) authority (i.e., the Fiduciary Management Provider has discretion over the selection of the sub-advisor), and
- cash and cash equivalents (substitutes).

Note that schemes that are managed but not yet included in a composite because they have not yet met the new scheme composite inclusion policy must nonetheless be included in total Fiduciary Management Provider assets.

Total Fiduciary Management Provider assets must exclude theoretical schemes (e.g., hypothetical, model, or backtested).

Total Fiduciary Management Provider assets reported for any given time period must be the same in all of the Fiduciary Management Provider's GIPS Composite Reports.

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Provision 32.A.2

Total fiduciary management provider assets and composite assets must:

a. Include only actual assets managed by the fiduciary management provider.

b. Be calculated net of discretionary leverage and not grossed up as if the leverage did not exist.

Discussion

Total Fiduciary Management Provider assets and composite assets must include only actual assets managed by the Fiduciary Management Provider. Assets represented by simulated, backtested, or model performance must not be included in total Fiduciary Management Provider assets or composite assets because such assets do not represent actual assets managed by the Fiduciary Management Provider.

When a composite strategy employs discretionary leverage, the composite assets and total Fiduciary Management Provider assets must be presented net of the discretionary leverage and not grossed up as if the leverage did not exist. Discretionary leverage refers to loans taken at the discretion of the Fiduciary Management Provider or a sub-advisor. For example, if the Fiduciary Management Provider hires a sub-advisor to manage a portion of a scheme, and the sub-advisor uses leverage, the Fiduciary Management Provider must include the net assets managed by the sub-advisor, and not the gross assets, in composite and total Fiduciary Management Provider assets.

Provision 32.A.3

The fiduciary management provider must not double count assets when calculating total fiduciary management provider assets.

Discussion

Fiduciary Management Providers are prohibited from double counting assets when calculating total Fiduciary Management Provider assets. If double counting is not eliminated, assets reported will be inflated and result in a misleading GIPS Composite Report. For Fiduciary Management

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Providers that include schemes in more than one composite, care must be taken to ensure assets are not counted more than once.

As an example, suppose that FMP XYZ has two composites. Composite 1 is the Unconstrained Liabilities plus 1.5% < x ≤ 2.5% Composite that contains the following three schemes:

Scheme 1: contracted for a liabilities plus 1.5% target with net assets of £20 million,

Scheme 2: contracted for a liabilities plus 1.75% target with net assets of £30 million, and

Scheme 3: contracted for a liabilities plus 2.25% target with net assets of £10 million.

Composite 2 is the sub-composite Unconstrained Liabilities plus 1.5% < x ≤2.0% Composite, which includes the following two schemes:

Scheme 1: contracted for a liabilities plus 1.5% target with net assets of £20 million, and

Scheme 2: contracted for a liabilities plus 1.75% target with net assets of £30 million.

- What is the correct amount of composite assets in the Unconstrained Liabilities plus 1.5% < x ≤2.5% Composite?

  The Unconstrained Liabilities plus 1.5% < x ≤2.5% Composite has composite assets of £60 million.

- What is the correct amount of composite assets in the Unconstrained Liabilities plus 1.5% < x ≤2.0% Composite?

  The Unconstrained Liabilities plus 1.5% < x ≤2.0% Composite has composite assets of £50 million.

- What is the correct amount of total Fiduciary Management Provider assets?

  Total Fiduciary Management Provider assets equal £60 million. Although schemes 1 and 2 are each included in two composites, for the purpose of the total Fiduciary Management Provider assets calculation, the value of the scheme assets may be counted only once.

Scheme	Included in	Composite 1 Assets (£ millions)	Composite 2 Assets (£ millions)	Total Fiduciary Management Provider Assets (£ millions)
1	Composite 1 & 2	20	20	20
2	Composite 1 & 2	30	30	30
3	Composite 1	10		10
Total		60	50	60

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Provision 32.A.4

COMPOSITE performance MUST be calculated using only actual assets managed by the FIDUCIARY MANAGEMENT PROVIDER.

Discussion

Composite performance must be calculated using only actual assets managed by the Fiduciary Management Provider. This performance must include any sub-advised assets for which the Fiduciary Management Provider has discretion when selecting the sub-advisor.

Simulated, backtested, or model performance must not be included in any composites because such performance does not represent actual assets managed by the Fiduciary Management Provider.

A ported composite track record (a track record from a past or acquired Fiduciary Management Provider that meets the portability requirements and can be used by the new or acquiring Fiduciary Management Provider) is considered to be an extension of the new or acquiring Fiduciary Management Provider. The assets of the ported track record must be included in composite assets. Although a ported track record is not based on actual assets that had been managed at the new or acquiring Fiduciary Management Provider, it must be based on actual assets at the past or acquired Fiduciary Management Provider.

General/Accounting

Provision 32.A.5

TOTAL RETURNS MUST be used.

Discussion

Total return, which is measured over a specified period, has two components: (1) the appreciation or depreciation (capital change) of the assets in the scheme over the specified period and (2) the income earned on the assets in the scheme over the specified period. When calculating the performance of a scheme, Fiduciary Management Providers are required to use a total return.

Provision 32.A.6

TRADE DATE ACCOUNTING MUST be used.

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Discussion

For the purpose of complying with the GIPS standards for FMPs, trade date accounting is defined as recognizing the asset or liability on the date of the purchase or sale and not on the settlement date. Recognizing the asset or liability within three business days of the date the transaction is entered into (the trade date [T], T + 1, T + 2, or T + 3) satisfies the trade date accounting requirement for purposes of the GIPS standards for FMPs. Settlement date accounting recognizes the asset or liability on the date when the exchange of cash and investments is completed.

For purchases, when using settlement date accounting, any movement in value between the trade date or booking date and the settlement date will not affect performance until the settlement date. For purchases, when using trade date accounting, the change in value will be reflected for each valuation between trade date and settlement date. Performance comparisons between schemes and/or composites that use settlement date accounting and those that use trade date accounting may not be valid. The same problem occurs when comparing settlement date schemes and composites with their benchmarks.

The principle behind requiring trade date accounting is to ensure there is not a significant lag between trade execution and reflecting the trade in the performance of a scheme. For the purpose of compliance with the GIPS standards for FMPs, schemes are considered to satisfy the trade date accounting requirement provided that transactions are recorded and recognized consistently and within normal market practice—typically, a period between trade date and up to three business days after trade date (T + 3).

For some pooled fund investments, Fiduciary Management Providers may need to differentiate between the date of placing a subscription/redemption order and the date of the effective asset ownership transfer. The date of the execution or transfer of ownership (in this case, when the definitive quantity and settlement price of the asset being purchased/sold is determined and becomes known) should be considered the trade date.

External cash flows are typically booked on the date when they are actually received or distributed. If a Fiduciary Management Provider receives notification of incoming funds and trades on a pre-announced external cash inflow before it is received into the scheme, the scheme will become leveraged during the period between the trade date and the date when the external cash inflow is physically received. To “cover” this additional exposure and eliminate the leverage effect, Fiduciary Management Providers may choose to apply the trade date and settlement date principles to pre-arranged external cash flows by booking the external cash flow with a trade date that reflects the date the Fiduciary Management Provider may trade in advance of the external cash inflow and a settlement date that reflects the date when the cash is received. If the Fiduciary Management Provider chooses to match the trade date of pre-announced external cash flows to the trade date of trades related to those external cash flows, it should establish this as its policy and treat all pre-announced external cash flows consistently.

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Provision 32.A.7

ACCRUAL ACCOUNTING MUST be used for fixed-income securities and all other investments that earn interest income, except that interest income on cash and cash equivalents may be recognized on a cash basis. Any accrued income MUST be included in the beginning and ending SCHEME values when performance is calculated.

Discussion

Accrual accounting allows the recording of financial transactions as they come into existence rather than when they are paid or settled. When determining the valuation for a security that pays interest income, Fiduciary Management Providers must include the income that would have been received at the end of the performance period had the security actually paid interest income earned during the performance period.

Accrued interest income must be included in the beginning and ending scheme values when performance is calculated. Interest should be accrued for a security in the scheme using whatever method is customary and appropriate for that security.

Some instruments already include accrued income as part of the security's market price. If income for these instruments is being accrued as part of the income recognition process, steps should be taken to ensure that the income is not double counted.

Income on cash and cash equivalents may be recognized on either an accrual or cash basis. Accrued income for cash and cash equivalents can be more difficult to calculate. Unlike bonds with a known coupon rate, some short-term securities (e.g., overnight deposits) may not have a published interest rate. Fiduciary Management Providers could consider using the last actual known interest rate to accrue income for the most recent period. When the actual rate becomes known, an adjustment can then be made to allocate the actual income earned to the proper period. In this way, there is no systematic underestimation or overestimation of income, and income is also properly assigned to the period when earned. Cash-basis accounting (recording the income for short-term cash and cash equivalents as it is actually received) will tend to lag the suggested accrual method by recognizing income a month after it was earned. Either method is acceptable, however, and the method chosen must be used consistently.

An issue that may arise is how to calculate the performance of a bond, including the accrual of interest, when a bond goes into default. In this situation, the Fiduciary Management Provider must recognize the loss when it occurred and must not recalculate the historical performance. The accrual of interest must be included in the calculation method up until the point of the bond's default. At that point, the calculation method would reflect the loss of accrued interest by adjusting the amount of accrued interest to zero. When and if the bond comes out of default and there is a reasonable expectation that the bond will commence paying interest, including back interest, the

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Fiduciary Management Provider must begin accruing for such interest payments. The Fiduciary Management Provider must not allocate such payments over periods when they were originally due but not paid.

Provision 32.A.8

Returns from cash and cash equivalents MUST be included in all return calculations, even if the FIDUCIARY MANAGEMENT PROVIDER does not control the specific cash investment(s).

Discussion

Returns earned on cash and cash equivalents held in schemes must be combined with the returns of other assets in the scheme to calculate the scheme's return. The Fiduciary Management Provider's asset allocation decisions, including allocation to cash, are a component of investment strategy implementation and thus part of the scheme's return.

Provision 32.A.9

Returns for periods of less than one year MUST NOT be annualized.

Discussion

Composite performance reflects only the performance of actual assets managed by the Fiduciary Management Provider. When returns for less than one year are annualized, the partial-year return is "extended" in order to create an annual return. The extrapolation of the partial-year return produces a simulated return and does not reflect the performance of actual assets. The non-compliant return does not qualify for inclusion in the GIPS Composite Report. Therefore, performance for periods of less than one year must not be annualized.

Provision 32.A.10

All returns MUST be calculated after the deduction of TRANSACTION COSTS incurred during the period.

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Discussion

Transaction costs are defined as the costs of buying or selling investments. These costs typically take the form of brokerage commissions, exchange fees and/or taxes, and/or bid–offer spreads from either internal or external brokers. Custodial fees charged per transaction should be considered custody fees and not transaction costs.

All returns must reflect the deduction of transaction costs incurred in the purchase or sale of investments. Transaction costs must be deducted when calculating performance because these are costs that must be paid in order to implement the investment strategy.

Provision 32.A.11

The FIDUCIARY MANAGEMENT PROVIDER MUST calculate performance in accordance with its COMPOSITE-specific calculation policies.

Discussion

A Fiduciary Management Provider must create composite-specific policies for calculating the performance of its schemes and composites. It must apply these policies consistently when calculating performance. A Fiduciary Management Provider must ensure that its policies for calculating performance address not only assets managed internally but also those managed externally, or for which performance is calculated externally. A Fiduciary Management Provider claiming compliance with the GIPS standards for FMPs that uses external managers and service providers is responsible for having policies and procedures in place to ensure that the relevant outsourced services produce information on which the Fiduciary Management Provider relies is consistent with the requirements of the GIPS standards for FMPs, and that all GIPS standards for FMPs requirements have been met.

Although it is not possible to list all of the items that must be included in a Fiduciary Management Provider's policies and procedures for calculating the performance of its schemes and composites, the following are examples of some of the items that a Fiduciary Management Provider must address in its policies and procedures relating to performance calculation:

- How the Fiduciary Management Provider ensures that the information from third-party service providers meets the requirements of the GIPS standards for FMPs and can be used, as necessary, to produce returns that comply with the GIPS standards for FMPs;
- The calculation methodology for composite assets and total Fiduciary Management Provider assets;
- The fees and expenses deducted when calculating scheme net returns;

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- The treatment of reclaimable withholding taxes when recording interest income and dividends;
- The treatment of dividend income—accrued or recorded on a cash basis;
- The treatment of performance-based fee clawbacks, if any; and
- The calculation methodology for:
    - scheme returns, including the treatment of external cash flows,
    - benchmark returns,
    - scheme relative returns,
    - composite relative returns,
    - internal dispersion,
    - annualized standard deviation,
    - annualized information ratio, and
    - annualized maximum drawdown.

Policies may be established on a composite-specific basis. Once a Fiduciary Management Provider establishes its policies, it must apply them consistently.

A Fiduciary Management Provider's policies and procedures for calculating performance must be designed to ensure that the Fiduciary Management Provider adheres to all applicable laws and regulations regarding the calculation and presentation of performance. Fiduciary Management Providers must establish policies and procedures to ensure that performance and performance-related information does not include false or misleading information.

Policies and procedures should be reviewed regularly to determine if they should be changed or improved, but it is not expected that they will change frequently. A Fiduciary Management Provider must not change a policy retroactively solely to increase performance or to present the Fiduciary Management Provider in a better light. Retroactive changes to policies and procedures should be avoided.

The Fiduciary Management Provider should conduct periodic testing or other monitoring procedures to ensure that all outsourced policies and procedures are being applied consistently and appropriately.

Provision 32.A.12

For SCHEMES invested in underlying POOLED FUNDS, all returns MUST reflect the deduction of all fees and expenses charged at the underlying POOLED FUND level.

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Discussion

When calculating returns for schemes invested in underlying pooled funds, all returns must reflect the deduction of all fees and expenses charged at the underlying pooled fund level, because the clients must pay these fees and expenses and they can be viewed as costs of investing in these underlying pooled funds.

Valuation

Provision 32.A.13

SCHEMES MUST be valued in accordance with the definition of FAIR VALUE.

Discussion

The quality of a return depends on the quality of the valuations included in the calculation of that return. Performance reporting is of little value unless the underlying valuations are based on sound valuation principles.

Fair value is defined as the amount at which an investment could be sold in an arm's-length transaction between willing parties in an orderly transaction. The valuation must be determined using the objective, observable, unadjusted quoted market price for an identical investment in an active market on the measurement date, if available. In the absence of an objective, observable, unadjusted quoted market price for an identical investment in an active market on the measurement date, the valuation must represent the Fiduciary Management Provider's best estimate of the fair value. Fair value must include any accrued income.

As noted in the definition of fair value, when determining fair value, Fiduciary Management Providers must use the objective, observable, unadjusted quoted market prices for identical investments in active markets on the measurement date, if available. Markets are not always liquid, however, and investment prices are not always objective and/or observable. For illiquid or hard-to-value investments, or for investments for which no observable market value or market price is available, additional steps are necessary. A Fiduciary Management Provider's valuation policies and procedures must address situations in which the market prices may be available for similar but not identical investments, inputs to valuations are subjective rather than objective, and/or markets are inactive instead of active.

Fiduciary Management Providers are required to disclose that policies for valuing investments are available upon request (see Provision 34.C.12). Fiduciary Management Providers must also disclose significant events that would help a prospective client interpret the GIPS Composite Report (see Provision 34.C.14), including significant events that have affected fair value (e.g., market dislocation events).

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A very small number of circumstances exist in which cost or book value may be deemed to be fair value. Examples include stable value assets, such as Guaranteed Investment Contracts (GICS) or real estate in the first year of the purchase of the property. In such cases, if a Fiduciary Management Provider can support a determination that cost or book value and fair value are the same, it is acceptable for book value to be used in the calculation of asset values and returns.

It is important that a Fiduciary Management Provider establish fair valuation policies that take into account the specific characteristics of asset classes or investment products. For example, when a Fiduciary Management Provider invests in a private equity fund, the Fiduciary Management Provider may choose to place reliance on the valuations of the private equity fund that are provided by the general partner, adjusted for any capital calls and/or distributions.

There is a recommended valuation hierarchy in Provision 32.B.6. Fiduciary Management Providers are not required to follow the valuation hierarchy, but it is recommended that they do so.

Although a Fiduciary Management Provider may use external third parties to value investments, the Fiduciary Management Provider still retains responsibility for compliance with the GIPS standards for FMPs, which includes the requirement to fair value investments.

Provision 32.A.14

The FIDUCIARY MANAGEMENT PROVIDER MUST value SCHEMES in accordance with the COMPOSITE-specific valuation policy.

Discussion

When daily calculations are not used, a Fiduciary Management Provider must not value a scheme "opportunistically" and must follow its composite-specific valuation policies consistently. For example, assume that a Fiduciary Management Provider's valuation policy is to value schemes for large cash flows, defined in the composite-specific valuation policy as a single external cash flow equal to or greater than 5% of the scheme's beginning-of-month value. For any single external cash flow that is less than 5% of the scheme's beginning-of-month value, the Fiduciary Management Provider must not value the scheme. For any single external cash flow that is equal to or greater than 5% of the scheme's beginning-of-month value, the Fiduciary Management Provider must value the scheme. The Fiduciary Management Provider must apply the composite-specific valuation policy consistently and not "cherry-pick" when to value schemes.

Although a Fiduciary Management Provider must establish a composite-specific valuation policy, that policy may differentiate valuation frequency for different types of schemes in the composite. For example, the composite may include schemes that use different custodians that employ

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slightly different valuation hierarchies. The Fiduciary Management Provider needs to ensure that the custodian valuation hierarchies are reasonable and use the respective valuations consistently.

It is possible that all of a Fiduciary Management Provider's composites use the same valuation policy; however, the appropriate policy must be determined for each composite. The Fiduciary Management Provider must not simply establish this policy on a Fiduciary Management Provider–wide basis without considering whether the policy is appropriate for each composite.

A Fiduciary Management Provider must ensure that its policies for calculating performance address not only assets managed internally but also those managed externally or for which performance is calculated externally. A Fiduciary Management Provider claiming compliance with the GIPS standards for FMPs that uses external managers and service providers is responsible for having policies and procedures in place to ensure that the relevant outsourced services produce information on which the Fiduciary Management Provider relies is consistent with the requirements of the GIPS standards for FMPs, and that all GIPS standards for FMPs requirements have been met.

Policies and procedures should be reviewed regularly to determine if they should be changed or improved, but it is not expected that they will change frequently. A Fiduciary Management Provider must not change a policy retroactively solely to increase performance or to present the Fiduciary Management Provider in a better light. Retroactive changes to policies and procedures should be avoided.

The Fiduciary Management Provider should also conduct periodic testing or other monitoring procedures to ensure that all outsourced policies and procedures are being applied consistently and appropriately.

Provision 32.A.15

If the FIDUCIARY MANAGEMENT PROVIDER uses the last available historical price or preliminary, estimated value as FAIR VALUE, the FIDUCIARY MANAGEMENT PROVIDER MUST:

a. Consider it to be the best approximation of the current FAIR VALUE.

b. Assess the difference between the approximation and final value and the effect on COMPOSITE assets, TOTAL FIDUCIARY MANAGEMENT PROVIDER ASSETS, and performance, and also make any adjustments when the final value is received.

Discussion

It is not uncommon for alternative investments to be valued using preliminary, estimated values. If a Fiduciary Management Provider uses the last available historical price or preliminary,

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estimated values as fair value, perhaps in order to produce a GIPS Composite Report on a timely basis, the Fiduciary Management Provider must consider the estimate of value to be the best approximation of the current fair value, and this must be defined in the Fiduciary Management Provider's fair valuation policy. When using preliminary, estimated values, the Fiduciary Management Provider should obtain an understanding of the process used to establish estimated values in order to determine whether reliance can be placed on the process.

Fiduciary Management Providers must define the use of the last available historical price or preliminary, estimated values, and the treatment of subsequent final values, in their composite-specific fair valuation policies. The valuation policies must be followed consistently and made available upon request. If the Fiduciary Management Provider uses the last available historical price or preliminary, estimated values, when final values are received, the Fiduciary Management Provider must assess the difference between the estimate of value and the final value, as well as the effect on composite assets, total Fiduciary Management Provider assets, and performance. If the final values and resulting performance differ materially, Fiduciary Management Providers must determine whether any adjustments to the composite must be made on a prospective basis or retroactively.

If composite valuations are revised retroactively, Fiduciary Management Providers must consider the requirements related to error correction and the Fiduciary Management Provider's error correction policies. Differences between final and estimated values are not considered to be errors but are treated similarly.

It is important to remember the underlying principles of the GIPS standards for FMPs: fair representation and full disclosure. If differences between the estimated and final values are consistently material, the Fiduciary Management Provider should reassess whether it is proper to continue to use the estimates of fair value.

Provision 32.A.16

COMPOSITES MUST have consistent beginning and ending annual valuation dates. The beginning and ending valuation dates MUST be at calendar year end or on the last business day of the year.

Discussion

It is required that composites have consistent beginning and ending annual valuation dates. Such consistency will result in improved comparability of data. The beginning and ending valuation dates of the composite must be at calendar year end or on the last business day of the year. Schemes in a composite must therefore have beginning and ending valuation dates that are at

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calendar year end or on the last business day of the year. If the composite beginning or ending annual valuation dates fall on a weekend or a holiday, the Fiduciary Management Provider should use the valuation on the last business day of the year. If the composite ending annual valuation date differs from that of the benchmark, this difference should be disclosed. For example, if the annual period end and the last valuation falls on 30 December because of the New Year's holiday but the end of the annual period for the benchmark falls on 31 December, any material difference in performance should be disclosed. The Fiduciary Management Provider should use the benchmark value from 30 December if it is available.

Schemes—Time-Weighted Returns

Provision 32.A.17

The FIDUCIARY MANAGEMENT PROVIDER MUST value SCHEMES:

a. At least monthly.
b. As of the calendar month end or the last business day of the month.
c. On the date of all LARGE CASH FLOWS. The FIDUCIARY MANAGEMENT PROVIDER MUST define LARGE CASH FLOW for each COMPOSITE to determine when SCHEMES in that COMPOSITE MUST be valued.

Discussion

When calculating time-weighted returns for schemes included in composites, all schemes must be valued at least monthly. Valuing schemes included in the composite at different end dates does not allow for comparability of information. Fiduciary Management Providers must be consistent in defining the monthly valuation period to allow for comparability of data for all GIPS Composite Reports. It is also required that the calculation period must end on the same day as the reporting period. In other words, Fiduciary Management Providers must value schemes included in a composite on the last day of the reporting period or the nearest business day.

In addition to the requirement for Fiduciary Management Providers to value schemes included in a composite at least monthly, Fiduciary Management Providers are required to value all schemes included in a composite on the date of all large cash flows, if schemes are not valued daily.
A large cash flow, defined by the Fiduciary Management Provider for each composite, is the level at which the Fiduciary Management Provider determines that an external cash flow may distort performance if the scheme is not valued and a sub-period return is not calculated. The Fiduciary Management Provider must determine in advance (i.e., on an ex ante basis) what is considered to be a large cash flow on a composite-specific basis. Fiduciary Management Providers must define the amount in terms of the value of cash/asset flow or in terms of a percentage of the scheme

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assets. Fiduciary Management Providers must also determine if a large cash flow is a single external cash flow or an aggregate of a number of external cash flows within a stated period. The determination of the large cash flow level may be influenced by a variety of factors, such as the strategy's nature, its historical and expected volatility, and its targeted cash level.

A Fiduciary Management Provider must not establish a high large cash flow level solely for the purpose of reducing the number of instances when schemes must be valued because of large cash flows. The Fiduciary Management Provider also must not base the policy on the degree to which the large cash flow affects the return. The large cash flow level chosen by the Fiduciary Management Provider on a composite-specific basis must represent the Fiduciary Management Provider's estimate of the level of external cash flow that would potentially distort the accuracy of a scheme's performance calculation if the scheme is not valued at the time of the external cash flow and a sub-period return is not calculated.

It is possible that all of a Fiduciary Management Provider's composites have the same level of large cash flows; however, the appropriate level must be determined for each composite. The Fiduciary Management Provider must not simply establish this level on a Fiduciary Management Provider–wide basis without considering whether the level is appropriate for each scheme or composite.

Revaluing schemes as of the close of the business day prior to a large external cash flow is acceptable if external cash flows are assumed to take place at the beginning of the day.

Provision 32.A.18

The FIDUCIARY MANAGEMENT PROVIDER MUST calculate TIME-WEIGHTED RETURNS and MUST:

a. Calculate returns at least monthly.
b. Calculate monthly returns through the calendar month end or the last business day of the month.
c. Calculate sub-period returns at the time of all LARGE CASH FLOWS, if daily returns are not calculated.
d. For EXTERNAL CASH FLOWS that are not LARGE CASH FLOWS, calculate SCHEME returns that adjust for daily-weighted EXTERNAL CASH FLOWS, if daily returns are not calculated.
e. Treat EXTERNAL CASH FLOWS according to the FIDUCIARY MANAGEMENT PROVIDER'S COMPOSITE-specific policy.
f. Geometrically LINK periodic and sub-period returns.
g. Consistently apply the calculation methodology used for an individual SCHEME.

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Discussion

Time-weighted returns (TWRs) measure the Fiduciary Management Provider's performance and attempt to negate or neutralize the effect of external cash flows to or from the client. The GIPS standards for FMPs do not require a specific method to be used to calculate TWRs but do require the return methodology to meet certain criteria.

Although it is required that TWRs be calculated at least monthly, Fiduciary Management Providers may calculate daily returns. If daily returns are not calculated, a Fiduciary Management Provider must calculate sub-period returns for schemes at the time of all large cash flows in order to calculate a more accurate TWR. A large cash flow is the level at which the Fiduciary Management Provider determines that an external cash flow may distort performance if the scheme is not valued at the time of the external cash flow and a sub-period return is not calculated. A large cash flow is defined by the Fiduciary Management Provider for each composite to determine when the schemes in that composite are to be valued for performance calculations. Fiduciary Management Providers must define the amount, for each composite, in terms of the value of the cash/asset flow or in terms of a percentage of the scheme assets. Fiduciary Management Providers must also determine if a large cash flow is a single external cash flow or an aggregate of a number of external cash flows within a stated period.

Fiduciary Management Providers must calculate scheme TWRs at least monthly. When a Fiduciary Management Provider is calculating and presenting performance in a GIPS Composite Report, calculating returns for schemes at different end dates does not allow for the comparability of information. Therefore, to facilitate comparability, Fiduciary Management Providers must calculate monthly returns as of the calendar month end or the last business day of the month.

The actual valuation of the scheme's investments and calculation of return each time there is a large cash flow will result in a more accurate TWR calculation than using the Modified Dietz method, but it is less accurate than a "true" TWR calculation methodology, which requires valuation and return calculation with every external cash flow.

The returns calculated for each sub-period are geometrically linked according to the following formula:

$$r_t^{TWR} = \left[\left(1+r_1\right)\times\left(1+r_2\right)\times\ldots\times\left(1+r_I\right)\right]-1,$$

where r_t^{TWR} is the time-weighted return for period t and period t consists of I sub-periods.

The chief advantage of valuing a portfolio at the time of large cash flows and calculating sub-period returns is that it calculates a better estimate than the midpoint or day-weighting methods. The major disadvantage is that it requires precise valuation of the scheme each time a large cash flow occurs. In practice, this means that Fiduciary Management Providers must have the ability to value schemes on a daily basis. If all investments are not accurately priced for each

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sub-period valuation, errors generated in the return calculation may be greater than the errors caused by using the midpoint or day-weighting approximation methods. In such cases, it is important to be able to correct for errors, such as missed security splits, mispricings, and improperly booked transactions, because day-to-day compounding will not correct for them automatically if external cash flows occur.

The calculation of scheme returns that adjust for daily-weighted external cash flows is required, if daily returns are not calculated. The denominator in the calculation of a TWR that adjusts for daily-weighted external cash flows reflects the weighting of external cash flows for the days they have been in the scheme and available for investment during the period. A Fiduciary Management Provider must create a composite-specific policy for the treatment of external cash flows and apply the policy consistently. Examples of acceptable methods for calculating returns that adjust for daily-weighted external cash flows are the Modified Dietz method and internal rate of return (IRR). These methods are estimates of TWRs.

Modified Dietz Method

The Modified Dietz method improves upon the Original Dietz method, which assumes that all external cash flows occur during the midpoint of the period. In an attempt to determine a more accurate return, the Modified Dietz method weights each external cash flow in the denominator by the amount of time it is held in the scheme. The formula for estimating the TWR using the Modified Dietz method is

$$r_t^{MD} = \frac{V_t^E - V_t^B - \sum_{i=1}^{I} CF_{i,t}}{V_t^B + \sum_{i=1}^{I}\left(CF_{i,t} \times w_{i,t}\right)},$$

where

r_t^{MD} = the Modified Dietz return for the scheme for period t

V_t^E = the ending value of the scheme for period t

V_t^B = the beginning value of the scheme for period t

i = the number of external cash flows (1, 2, 3, . . . I) in period t

$CF_{i,t}$ = the value of external cash flow i in period t

$w_{i,t}$ = the weight of external cash flow i in period t (assuming the external cash flow occurred at the end of the day), as calculated according to the following formula:

$$w_{i,t} = \frac{D_t - D_{i,t}}{D_t},$$

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where

$w_{i,t}$ = the weight of external cash flow i in period t, assuming the external cash flow occurred at the end of the day

D_t = the total number of calendar days in period t

$D_{i,t}$ = the number of calendar days from the beginning of period t to external cash flow i

The numerator of $w_{i,t}$ is based on the assumption that the external cash flows occur at the end of the day. If external cash flows were assumed to occur at the beginning of the day, the numerator would be $[(D_t—D_{i,t}) + 1]$. A Fiduciary Management Provider may choose to use a beginning-of-day or end-of-day external cash flow assumption or some combination of the two. The key is to establish a policy and treat external cash flows consistently.

The chief advantage of the Modified Dietz method is that it does not require scheme valuation on the date of each external cash flow. Its chief disadvantage is that it provides a less accurate return than when the scheme is valued at the time of each external cash flow. The estimate suffers most when a combination of the following conditions exists: (1) one or more large external cash flows occur; and (2) external cash flows occur during periods of high market volatility—that is, the scheme's returns are significantly non-linear.

The following is an example of a return calculation using the Modified Dietz method. The example is for a scheme with a beginning value of £100,000 on 31 May, an ending value of £135,000 on 30 June, and external cash flows of –£2,000 on 6 June and £20,000 on 11 June. Assume the external cash flows were reflected at the end of the day.

31 May	Beginning Value (*BV*)	£100,000
6 June	Cash Flow (*CF*)	–£2,000
11 June	Cash Flow (*CF*)	£20,000
30 June	Ending Value (*EV*)	£135,000

$$R_{Modified\ Dietz} = \frac{EV - BV - CF}{BV + (W \times CF)}$$

W is the weight of the external cash flow for the month. Because June has 30 days and the external cash flows were assumed to occur at the end of the day, the weights of the external cash flows are calculated as (30 – 6)/30 = 0.80 and (30 – 11)/30 = 0.6333, respectively.

$$R_{Modified\ Dietz} = \frac{135{,}000 - 100{,}000 - (-2{,}000 + 20{,}000)}{100{,}000 + (0.80 \times -2{,}000) + (0.6333 \times 20{,}000)}$$

$$R_{Modified\ Dietz} = \frac{17{,}000}{111{,}067} = 15.31\%$$

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If the Fiduciary Management Provider's policy was to treat external cash flows as occurring at the beginning of the day, the Fiduciary Management Provider would have added 1 to the numerator in the weight calculation, and the weights to be multiplied by the external cash flow would be calculated as (30 – 6 + 1)/30 = 0.8333 and (30 – 11 + 1)/30 = 0.6667, respectively.

The following is an example of a return calculation using the Modified Dietz method and revaluing during the month for a large cash flow (assumed to be 10% in this example). To calculate performance for the month, we must calculate performance for the sub-periods before and after the large external cash flow and then geometrically link the sub-period returns. In this example, we use the same data as in the prior example but instead value the scheme at the time of the large cash flow on 11 June.

31 May	Beginning Value (BV)	£100,000
6 June	Cash Flow (CF)	–£2,000
11 June	Cash Flow (CF)	£20,000
11 June	Ending Value (EV)	£125,000
30 June	Ending Value (EV)	£135,000

Sub-period 1 calculation, from 31 May through 11 June:

Because sub-period 1 has 11 days and the external cash flows are assumed to occur at the end of the day, the weight of the external cash flow on the sixth day is (11 – 6)/11 = 0.4545. The weight of the cash flow on the 11th would be zero because it is assumed to happen at the end of the day on 11 June, which is when the portfolio was revalued.

$$R_{\textit{Modified Dietz (sub-period 1)}} = \frac{125{,}000 - 100{,}000 + (-2{,}000 + 20{,}000)}{100{,}000 + (0.4545 \times -2{,}000) + (0 \times 20{,}000)}$$

$$R_{\textit{Modified Dietz (sub-period 1)}} = \frac{7{,}000}{99{,}091} = 7.06\%$$

Sub-period 2 calculation, from 11 June through 30 June:

$$R_{\textit{Modified Dietz (sub-period 2)}} = \frac{135{,}000 - 125{,}000}{125{,}000}$$

$$R_{\textit{Modified Dietz (sub-period 2)}} = \frac{10{,}000}{125{,}000} = 8.00\%$$

To calculate the monthly return, geometrically link sub-period returns 1 and 2: (1 + 0.0706) × (1 + 0.08) – 1 = 0.1563, or 15.63%.

Other formulas in addition to the Modified Dietz method for calculating approximate time-weighted rates of return are also permitted.

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Internal Rate of Return (IRR) Method

The IRR, which is a money-weighted return, is the implied discount rate or effective compounded rate of return that equates the present value of cash outflows with the present value of cash inflows. The IRR Method is an acceptable method to use to calculate a TWR when no large cash flows occur during the sub-period. To create a TWR, the IRRs before and after the large cash flow are calculated and then linked together geometrically.

The IRR is that value of R that satisfies the following equation:

$$V_E = \sum_{i=0}^{n} CF_i (1+R)^{W_i},$$

where V_E and W_i are the same as for the Modified Dietz method.

The external cash flows, CF_i, are also the same as with the Modified Dietz method with one important exception: The value at the beginning of the period is also treated as an external cash flow—that is, $V_B = CF_0$.

The IRR is obtained by selecting values for R and solving the equation until the result equals V_E. For example, if three external cash flows (including the value at the beginning of the period) have occurred, the formula will have three terms:

$$V_E = CF_0(1+R)^{W_0} + CF_1(1+R)^{W_1} + CF_2(1+R)^{W_2}.$$

The first term deals with the first external cash flow, CF_0, which is the value of the scheme at the beginning of the period; W_i is the proportion of the period when the external cash flow CF_i was held in the scheme. Because CF_0 is in for the whole period, $W_0 = 1$. The larger the value of CF_i in the term, the more it will contribute to the total; but the smaller the exponent (i.e., the value of W_i), the less the term will contribute to the sum. The usual effect is that the first term, with a large CF_0 and W_0 equal to 1, will contribute far more than the other terms.

The advantages and disadvantages of the IRR method are the same as those of the Modified Dietz method. The IRR method has the additional disadvantage of requiring an iterative process solution. It is also possible to have multiple answers if both positive and negative external cash flows occur.

When calculating the TWR for schemes, periodic and sub-period returns must be linked geometrically.

A Fiduciary Management Provider must create a composite-specific policy for the treatment of external cash flows for each of its composites and apply that policy consistently. For example, the same definition of a large cash flow must be used when evaluating a cash flow for all schemes within the composite. Policies and procedures for the calculation methodology used for an individual scheme must also be created and applied consistently.

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Net Returns

Provision 32.A.19

SCHEME NET RETURNS MUST reflect the deduction of actual TRANSACTIONS COSTS and all other actual fees and expenses, including INVESTMENT MANAGEMENT FEES paid to both the FIDUCIARY MANAGEMENT PROVIDER and any SUB-ADVISORS.

Discussion

Transaction costs are the costs of buying or selling investments. Investment management fees are the fees payable to the Fiduciary Management Provider for the ongoing management of a scheme. They are typically asset based (based on a percentage of assets), performance based (based on the performance of the scheme on an absolute basis or relative to a benchmark), or a combination of the two but may take other forms as well. Investment management fees include fees that are charged to clients for investment-related activities. Schemes often incur other fees and costs beyond transaction costs and investment management fees, such as custody fees. Therefore, scheme net returns must reflect the deduction of all costs associated with the scheme's assets, including transaction costs, custody fees, administrative fees, and all other fees and expenses. Scheme net returns must also reflect the deduction of investment management fees and performance-based fees paid to the Fiduciary Management Provider, underlying investment managers, and any sub-advisors.

Provision 32.A.20

When calculating SCHEME NET RETURNS, the FIDUCIARY MANAGEMENT PROVIDER MUST reflect any PERFORMANCE-BASED FEE CLAWBACK in the period in which it is repaid.

Discussion

A clawback is the repayment of previously earned performance-based fees resulting from subsequent underperformance. When calculating scheme net returns, any performance-based fee clawback must be reflected in the period in which the Fiduciary Management Provider determines previously earned performance fees must be repaid. A Fiduciary Management Provider must not restate returns to eliminate performance-based fees that were previously reflected in returns.

Typically, performance fees reward positive outperformance, whereas no fee is charged when negative excess returns occur. Some performance fee models specify a penalty (negative fee) that must

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be paid by the manager in case of negative excess returns, or they may require clawbacks wherein the Fiduciary Management Provider must pay back the performance fee received in the past in the case of underperformance.

The Fiduciary Management Provider may not restate historical net performance because of performance fee clawbacks. The clawback is not an error correction of the performance fees accrued and crystallized in the previous periods but represents an actual penalty for the Fiduciary Management Provider for underperforming in the current period. Restating historical performance would be misleading. The Fiduciary Management Provider must disclose that returns are net of performance-based fees. The Fiduciary Management Provider must also disclose that the Fiduciary Management Provider's policies for calculating performance are available upon request. These policies must include the methodology for reflecting performance-based fees and clawbacks in performance.

Composite Relative Returns

Provision 32.A.21

COMPOSITE RELATIVE RETURNS MUST be calculated at least monthly.

Discussion

The more frequently composite returns are calculated, the more accurate the results will be. Composite returns must be calculated at least monthly. The schemes included in the composite must be consistent for the monthly performance measurement period.

Provision 32.A.22

COMPOSITE RELATIVE RETURNS MUST be calculated by equal-weighting the individual SCHEME RELATIVE RETURNS.

Discussion

A composite is defined as an aggregation of one or more schemes managed according to a similar investment mandate, objective, or strategy. The objective in calculating the composite's relative return is to use a method that will give equal importance to every scheme relative return in the composite.

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When calculating composite relative returns for a specific period, only schemes that are included in the composite for the entire performance period are included in the calculation. For example, when calculating monthly composite relative returns, only those schemes' relative returns that are managed on a discretionary basis for the full month are included in the composite relative return calculation. Schemes that begin during the month, close during the month, or are otherwise determined to not qualify for inclusion in the composite for the full month must not be included in the composite relative return calculation. Fiduciary Management Providers must create and document policies and procedures for calculating composite relative returns and follow the policies and procedures consistently.

The formula to calculate an equal-weighted composite relative return is as follows:

$$R_t = \frac{\sum r_{k,t}}{k}$$

where

R_t = the equal-weighted relative return for the composite for period t

k = the number of schemes (1, 2, 3, . . . , k) in the composite for period t

$r_{k,t}$ = the scheme relative return of scheme k for period t

Scheme Relative Returns

Provision 32.A.23

SCHEME RELATIVE RETURNS MUST be calculated as the difference between the SCHEME NET RETURN and the BENCHMARK return.

Discussion

The GIPS standards for FMPs defines scheme relative return as the difference between the scheme net return and the benchmark return. If the Fiduciary Management Provider calculates composite performance monthly, then the scheme relative return must be calculated monthly.

If the composite strategy is an unconstrained mandate, the scheme relative return must be calculated relative to the liability benchmark. (See Provision 34.A.1.b.) If the composite strategy is a hedge-constrained mandate, the scheme relative return must be calculated relative to both the liability benchmark and the hedge ratio–adjusted benchmark. (See Provision 34.A.1.c.) Scheme relative returns are calculated as the difference between the scheme net return and the respective benchmark return.

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Provision 32.A.24

When calculating SCHEME RELATIVE RETURNS, any objective (e.g., BENCHMARK + x%) MUST be ignored.

Discussion

Fiduciary Management Providers must ignore any target outperformance above the benchmark return when calculating scheme relative returns that will be included in composite relative return calculations. For example, assume a client's liability benchmark includes a margin over the liability such as gilts + 0.5%. The margin of 0.5% must be excluded from the calculation of the liability benchmark for the purposes of calculating performance.

Provision 32.A.25

SCHEME RELATIVE RETURNS for unconstrained mandates MUST be calculated using the liability BENCHMARK.

Discussion

When calculating scheme relative returns for schemes included in a composite with an unconstrained mandate, the Fiduciary Management Provider must calculate the scheme relative return as the scheme net return less the liability benchmark return. The liability benchmark should equal the assets (or funded liabilities) of the client.

Provision 32.A.26

SCHEME RELATIVE RETURNS for hedge constrained mandates MUST be calculated using the liability BENCHMARK and the HEDGE RATIO–ADJUSTED BENCHMARK.

Discussion

When calculating scheme relative returns for schemes included in a composite with a hedge-constrained mandate, the Fiduciary Management Provider must calculate two scheme relative returns for each scheme. The first is the scheme relative return that is relative to the liability benchmark. The second is the scheme relative return that is relative to the hedge ratio–adjusted benchmark.

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The hedge ratio–adjusted liability benchmark is calculated by including cash for the proportion of liabilities for which interest rate hedging is not allowed and the full liabilities for the proportion of liabilities for which hedging is allowed. This calculation reflects the client's responsibility for the decision to limit hedging on a proportion of the liabilities.

Provision 32.A.27

For periods beginning on or after 1 January 2020, SCHEME RELATIVE RETURNS MUST be calculated using the GEOMETRIC DIFFERENCE METHODOLOGY.

Discussion

As of 1 January 2020, Fiduciary Management Providers must calculate monthly scheme relative returns using the geometric difference methodology. To calculate the scheme relative return using the geometric difference methodology the Fiduciary Management Provider must first calculate the monthly scheme net return and benchmark return, ignoring any additional margin over the benchmark for each scheme. The monthly scheme relative return using the geometric difference is then calculated using the following formula (1 + Scheme Net Return)/(1 + Benchmark Return) – 1. For periods prior to 1 January 2020, Fiduciary Management Providers may calculate scheme relative returns using the arithmetic methodology. The arithmetic methodology is calculated as follows: Scheme Net Return – Benchmark Return, ignoring any additional margin over the benchmark for each scheme. Monthly scheme relative returns are equal weighted to arrive at the monthly composite relative return. The monthly composite relative returns are then geometrically linked to calculate the annual composite relative return.

Benchmarks

Provision 32.A.28

When calculating SCHEME RELATIVE RETURNS using the liability BENCHMARK, the FIDUCIARY MANAGEMENT PROVIDER MUST use the liability BENCHMARK for each respective client. The BENCHMARK may be:

- **a.** the full liability cash flows;
- **b.** a liability proxy BENCHMARK constructed from gilts or swaps to represent the cash flow liabilities; or
- **c.** a gilt of similar duration to the liabilities. This option may be used only when neither the full liability cash flows nor a liability proxy BENCHMARK constructed from gilts or swaps exists.

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Discussion

When calculating the scheme relative returns, the Fiduciary Management Provider should use the liability benchmark used to report performance to the client. The liability benchmark may be the full liabilities (i.e., the cash payouts to be made by the pension scheme for the life of the pension scheme discounted back to the present); a liability proxy benchmark, sometimes also referred to as an asset proxy benchmark (e.g., a portfolio of gilts or swaps that match the liabilities of the pension scheme); or a gilt of similar duration to the liabilities.

Provision 32.A.29

When calculating HEDGE RATIO–ADJUSTED BENCHMARKS, the FIDUCIARY MANAGEMENT PROVIDER MUST include cash for the proportion of liabilities where the interest rate hedging is not allowed and include the full liabilities for the proportion of liabilities where hedging is allowed.

Discussion

The hedge ratio–adjusted liability benchmark is calculated by including cash for the proportion of liabilities for which interest rate hedging is not allowed and the full liabilities for the proportion of liabilities for which hedging is allowed. This calculation reflects the client's responsibility for the decision to limit hedging on a proportion of the liabilities.

Risk Measures

Provision 32.A.30

When calculating COMPOSITE EX POST STANDARD DEVIATION, the FIDUCIARY MANAGEMENT PROVIDER MUST use monthly COMPOSITE RELATIVE RETURNS.

Discussion

To calculate the composite ex post standard deviation for any period, the Fiduciary Management Provider must use the monthly composite relative returns for the defined period.

Ex post standard deviation is calculated as follows:

$$Ex\ post\ standard\ deviation = \sqrt{\frac{\sum\left[R_i - MEAN(R)\right]^2}{n}},$$

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where R_i is the return on the *i*th monthly composite relative return, n is the number of monthly returns used for the external standard deviation calculation (the use of n is best practice, but either n or $n - 1$ in the denominator of the standard deviation calculation is acceptable), and $MEAN(R)$ is the mean monthly composite relative return over the period for which the external standard deviation is being calculated, where

$$MEAN(R) = \frac{R_1 + R_2 + \ldots + R_i}{n},$$

where R_1 is the first monthly composite relative return, R_i is the *i*th monthly composite relative return, and n is the number of monthly composite relative returns used in the calculation (e.g., for the annualized three-year ex post standard deviation, n is 36).

To annualize the ex post standard deviation calculated using monthly composite relative returns, the result of the foregoing standard deviation formula must be multiplied by the square root of 12.

The composite relative returns used in the standard deviation calculation depend on the composite's mandate. If the composite has an unconstrained mandate, the composite relative returns that are relative to the liability benchmark must be used. (See Provision 34.A.1.b.) If the composite has a hedge-constrained mandate, the Fiduciary Management Provider must present two ex post standard deviations in the GIPS Composite Report. The first uses the composite relative returns that are relative to the liability benchmark, and the second uses the composite relative returns that are relative to the hedge ratio–adjusted benchmark. (See Provision 34.A.1.c.)

For periods prior to 1 January 2020, scheme relative returns used in composite ex post standard deviation calculations may be calculated using the arithmetic difference methodology or the geometric difference methodology. For periods beginning on or after 1 January 2020, scheme relative returns used in composite relative return calculations must be calculated using the geometric difference methodology (see Provision 32.A.27). When switching from the arithmetic difference methodology to the geometric difference methodology for scheme relative return calculations, Fiduciary Management Providers must consider if this change is a material change in calculation methodology that must be disclosed (see Provision 34.C.29).

Provision 32.A.31

When calculating MAXIMUM DRAWDOWN, the FIDUCIARY MANAGEMENT PROVIDER MUST use monthly COMPOSITE RELATIVE RETURNS.

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Discussion

The maximum drawdown is the maximum observed loss from a peak to a trough using the composite relative returns for a specific period. When a Fiduciary Management Provider is calculating and presenting the maximum drawdown for one-year, three-year, five-year, seven-year, and since-inception periods, the maximum drawdown is calculated as of the period end being presented and is not calculated on a rolling period. For example, a composite that has an inception date of 1 July 2016 that is presenting information for the period from 1 July 2016 through 31 December 2020 would calculate the one-year maximum drawdown for the period from 1 January 2020 through 31 December 2020 and not the maximum drawdown for any one-year rolling period from 1 July 2016 through 31 December 2020. Likewise, the three-year maximum drawdown would be the maximum drawdown for the period from 1 January 2018 through 31 December 2020. The maximum drawdown is an indicator of the largest loss over a specified period. To calculate the maximum drawdown, the Fiduciary Management Provider must identify peaks and troughs and calculate the largest percentage loss for each peak to trough, where the Maximum Drawdown (MDD) is:

$$\text{MDD} = \frac{\text{Trough Value} - \text{Peak Value}}{\text{Peak Value}}$$

Consider the following two examples. In Scenario 1, there are two peaks and troughs, but the max drawdown is the peak to trough with the greatest percentage loss (Peak 1 to Trough 1 with a percentage loss of 5.50%). In Scenario 2, there is only one period with a peak to trough.

Scenario 1

Period	Relative Return	Indexed Value	Peak to Trough	Drawdown	
0		100.000	Peak 1		
1	−5.496%	94.504	Trough 1	5.50%	←Max Drawdown
2	4.277%	98.545			
3	−0.480%	98.073			
4	−0.749%	97.338			
5	3.477%	100.722			
6	2.478%	103.218	Peak 2		
7	−1.988%	101.165			
8	−0.899%	100.256			
9	−2.348%	97.902	Trough 2	5.15%	
10	2.008%	99.868			
11	2.158%	102.023			
12	0.110%	102.135			

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Scenario 2

Period	Relative Return	Indexed Value	Peak to Trough	Drawdown	
0		100.000			
1	3.428%	103.428			
2	0.230%	103.666			
3	−1.469%	102.143			
4	3.538%	105.756	Peak 1		
5	−2.219%	103.410			
6	−0.570%	102.821			
7	1.739%	104.609			
8	−0.180%	104.421			
9	0.260%	104.692			
10	0.340%	105.048			
11	−1.919%	103.032			
12	−4.887%	97.997	Trough 1	7.34%	←Max Drawdown

The composite relative returns used in the maximum drawdown calculation depend on the composite's mandate. If the composite has an unconstrained mandate, the composite relative returns that are relative to the liability benchmark must be used. (See Provision 34.A.1.b.) If the composite has a hedge-constrained mandate, the Fiduciary Management Provider must present two maximum drawdown values in the GIPS Composite Report. The first uses the composite relative returns that are relative to the liability benchmark, and the second uses the composite relative returns that are relative to the hedge ratio–adjusted benchmark. (See Provision 34.A.1.c.)

For periods prior to 1 January 2020, scheme relative returns used in the maximum drawdown calculations may be calculated using the arithmetic difference methodology or the geometric difference methodology. For periods beginning on or after 1 January 2020, scheme relative returns used in composite relative return calculations must be calculated using the geometric difference methodology (see Provision 32.A.27). When switching from the arithmetic difference methodology to the geometric difference methodology for scheme relative return calculations, Fiduciary Management Providers must consider if this change is a material change in calculation methodology that must be disclosed (see Provision 34.C.29).

Provision 32.A.32

When calculating the INFORMATION RATIO, the FIDUCIARY MANAGEMENT PROVIDER MUST use monthly COMPOSITE RELATIVE RETURNS.

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Discussion

The annualized information ratio measures the composite relative returns compared with the volatility of those returns. For periods prior to 1 January 2020, scheme relative returns used in composite relative return calculations may be calculated using the arithmetic difference methodology or the geometric difference methodology. For periods beginning on or after 1 January 2020, scheme relative returns used in composite relative return calculations must be calculated using the geometric difference methodology (see Provision 32.A.27). When switching from the arithmetic difference methodology to the geometric difference methodology for scheme relative return calculations, Fiduciary Management Providers must consider if this change is a material change in calculation methodology that must be disclosed (see Provision 34.C.29).

The annualized information ratio is calculated as follows:

$$\textit{Annualized information ratio} = \frac{\left(\frac{\sum(R_i)}{N}\right) \times P}{\sigma(R_i) \times \sqrt{P}}$$

where

R_i = monthly composite relative return

N = number of monthly observations

P = number of periodic observations in a year (i.e., 12)

σ = standard deviation

The composite relative returns used in the information ratio calculation depend on the composite's mandate. If the composite has an unconstrained mandate, the composite relative returns that are relative to the liability benchmark must be used. (See Provision 34.A.1.b.) If the composite has a hedge-constrained mandate, the Fiduciary Management Provider must present two information ratio values in the GIPS Composite Report. The first uses the composite relative returns that are relative to the liability benchmark, and the second uses the composite relative returns that are relative to the hedge ratio–adjusted benchmark. (See Provision 34.A.1.c.)

32.B. Input Data and Calculation Methodology—Recommendations

Provision 32.B.1

The FIDUCIARY MANAGEMENT PROVIDER SHOULD value SCHEMES on the date of all EXTERNAL CASH FLOWS.

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Discussion

The GIPS standards for FMPs require schemes to be valued at least monthly and on the date of all large cash flows. Best practice, however, is to value schemes on the date of all external cash flows. Fiduciary Management Providers are encouraged to create a policy to value schemes on the date of all external cash flows as part of the composite-specific valuation policy, where possible.

> ### Provision 32.B.2
>
> Valuations SHOULD be obtained from a qualified independent third party.

Discussion

The quality of valuations used as inputs to calculate performance has a significant effect on the accuracy of scheme and composite returns; therefore, it is important that the valuations used are accurate. It is recommended that Fiduciary Management Providers obtain valuations from an independent source because a third party can provide the most objective investment valuations. In most instances, obtaining valuations from an independent third party is considered to be a best practice. A Fiduciary Management Provider claiming compliance with the GIPS standards for FMPs is responsible for its claim of compliance and must ensure that the valuations obtained from a third party can be used to satisfy the requirements of the GIPS standards for FMPs.

> ### Provision 32.B.3
>
> ACCRUAL ACCOUNTING SHOULD be used for dividends (as of the ex-dividend date).

Discussion

Accrual accounting determines the correct economic value of the scheme assets and allows the recording of financial transactions as they come into existence rather than when they are paid or settled. It is recommended that dividends be recognized when earned on ex-date (accrual basis) versus when paid (cash basis).

> ### Provision 32.B.4
>
> The FIDUCIARY MANAGEMENT PROVIDER SHOULD accrue INVESTMENT MANAGEMENT FEES.

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Discussion

Investment management fees are the fees payable to the Fiduciary Management Provider for the ongoing management of a scheme. They are typically asset based (based on a percentage of assets), performance based (based on the scheme's performance either on an absolute basis or relative to a benchmark), or a combination of the two, but may take other forms as well. To reflect the most accurate net return, investment management fees should be accrued when possible. Accrual accounting allows the recording of financial transactions as they come into existence rather than when they are paid or settled. Scheme net returns can be skewed if investment management fees are reflected in the calculation as they are paid, particularly when scheme values change significantly.

Provision 32.B.5

Returns SHOULD be calculated net of non-reclaimable withholding taxes on dividends, interest, and capital gains. Reclaimable withholding taxes SHOULD be accrued.

Discussion

Global investing requires recognition of the tax consequences of investing in different countries. The GIPS standards for FMPs recommend that performance be reported net of non-reclaimable withholding taxes on dividends, interest, and capital gains. Some countries allow certain types of foreign investors to reclaim a portion of the foreign withholding taxes that are paid when transactions or payments occur. These reclaimable foreign withholding taxes may be credited back to the investor at a later date. It is recommended that reclaimable foreign withholding taxes be accrued, meaning that the refund for reclaimable withholding taxes should be recorded when the reclaimable withholding taxes become a receivable owed to the Fiduciary Management Provider rather than when the refund is actually received.

Provision 32.B.6

The FIDUCIARY MANAGEMENT PROVIDER SHOULD incorporate the following hierarchy into its policies and procedures for determining FAIR VALUE for SCHEME investments on a COMPOSITE-specific basis.

a. Investments MUST be valued using objective, observable, unadjusted quoted market prices for identical investments in active markets on the measurement date, if available. If such prices are not available, then investments SHOULD be valued using;

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b. Objective, observable quoted market prices for similar investments in active markets. If such prices are not available or appropriate, then investments SHOULD be valued using;

c. Quoted prices for identical or similar investments in markets that are not active (markets in which there are few transactions for the investment, the prices are not current, or price quotations vary substantially over time and/or between market makers). If such prices are not available or appropriate, then investments SHOULD be valued based on;

d. Market-based inputs, other than quoted prices, that are observable for the investment. If such inputs are not available or appropriate, then investments SHOULD be valued based on;

e. Subjective, unobservable inputs for the investment where markets are not active at the measurement date. Unobservable inputs SHOULD be used to measure FAIR VALUE only when observable inputs and prices are not available or appropriate. Unobservable inputs reflect the FIDUCIARY MANAGEMENT PROVIDER's own assumptions about the assumptions that market participants would use in pricing the investment and SHOULD be developed based on the best information available under the circumstances.

Discussion

The GIPS standards for FMPs include a recommended valuation hierarchy as presented in Provision 32.B.6. It is recommended that Fiduciary Management Providers incorporate this hierarchy into their policies for determining fair value for scheme investments on a composite-specific basis.

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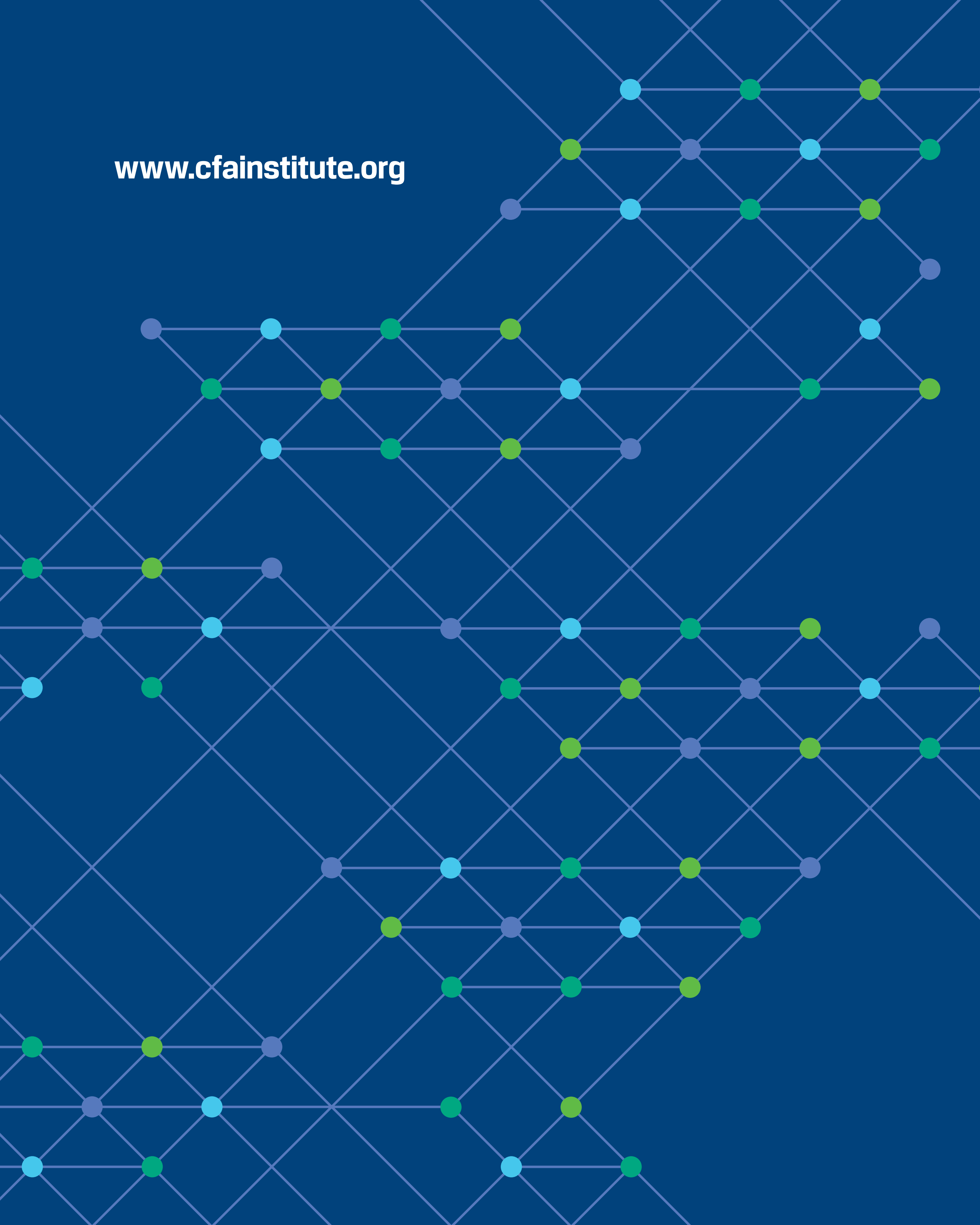
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