G·I·P·S

Global Investment Performance Standards

Guidance Statement on Calculation Methodology

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GIPS® Guidance Statement on Calculation Methodology

Introduction

Achieving comparability among firms' compliant presentations requires as much uniformity as possible in the methodology used to calculate portfolio and composite returns. The uniformity of the return calculation methodology is dependent on accurate and consistent input data, a critical component to compliance with the GIPS® standards. Although the GIPS standards allow flexibility in return calculation, the return must be calculated using a methodology that incorporates the time-weighted rate of return concept for all portfolios except for private equity. For information on calculating performance for private equity, see the private equity provisions and guidance.

The GIPS standards require a time-weighted rate of return because it removes the effects of external cash flows, which are generally client-driven. Therefore, a time-weighted rate of return best reflects the firm's ability to manage the portfolios according to a specified mandate, objective, or strategy, and is the basis for the comparability of composite returns among firms on a global basis.

In this Guidance Statement, the term "return" is used, rather than the more common term "performance," to emphasize the distinction between return and risk and to encourage the view of performance as a combination of risk and return. Risk measures are valuable tools for assessing the abilities of asset managers; however, this Guidance Statement focuses only on the return calculation.

Money- or dollar-weighted returns may add further value in understanding the impact to the client of the timing of external cash flows, but are less useful for return comparisons and are therefore not covered by this Guidance Statement.

Guiding Principles

Valuation Principles
The following are guiding principles that firms must use when determining portfolio values as the basis for return calculations:
- For periods beginning on or after 1 January 2011, portfolios must be valued in accordance with the definition of fair value and the GIPS Valuation Principles in Chapter II of the GIPS standards.
- For periods prior to 1 January 2011, portfolio valuations must be based on market values (not cost basis or book values).
- Firms must value portfolios in accordance with the composite-specific valuation policy.
  - For periods prior to 1 January 2001, portfolios must be valued at least quarterly.
  - For periods beginning on or after 1 January 2001, portfolios must be valued at least monthly.
  - For periods beginning on or after 1 January 2010, firms must value portfolios on the date of all large cash flows. Firms must define large cash

     flow for each composite to determine when portfolios in that composite must be valued.

    o Portfolios must not be valued more frequently than required by the composite-specific valuation policy.

- For periods beginning on or after 1 January 2010, firms must value portfolios as of the calendar month end or the last business day of the month.
- Firms must use trade date accounting for periods beginning on or after 1 January 2005. [Note: for purposes of the GIPS standards, trade date accounting recognizes the asset or liability on the date of the purchase or sale, not on the settlement date. Recognizing the asset or liability within three days of the date the transaction is entered into (trade date, $T + 1$, $T + 2$, or $T + 3$) satisfies the trade date accounting requirement for purposes of the GIPS standards.]
- Accrual accounting must be used for fixed-income securities and all other investments that earn interest income. The value of fixed-income securities must include accrued income.
- Accrual accounting should be used for dividends (as of the ex-dividend date).

Calculation Principles for Portfolios
The following are guiding principles that firms must use when calculating *portfolio* returns:

- All returns must be calculated after the deduction of the actual trading expenses incurred during the period. Firms must not use estimated trading expenses.
- Total returns must be used. Total return is defined as the rate of the return that includes the realized and unrealized gains and losses plus income for the measurement period.
- The calculation method chosen must represent returns fairly, must not be misleading, and must be applied consistently.
- Firms must calculate time-weighted rates of return that adjust for external cash flows. External cash flow is defined as capital (cash or investments) that enters or exits a portfolio and is generally client driven. Income earned on a portfolio's investments is not considered an external cash flow unless it is paid out of the portfolio.
- For periods beginning on or after 1 January 2005, firms must calculate portfolio returns that adjust for daily-weighted external cash flows. An example of this methodology is the Modified Dietz method.
- For periods beginning on or after 1 January 2010, at the latest, firms must calculate performance for interim sub-periods between all large cash flows and geometrically link performance to calculate periodic returns. (Note: For periods beginning on or after 1 January 2010, firms must define prospectively, on a composite-specific basis, what constitutes a large cash flow.) For information on calculating a "true" time-weighted return, see the "Time-Weighted Rate of Return" section below.
- External cash flows must be treated in a manner consistent with the firm's documented composite-specific policy.
- For periods beginning on or after 1 January 2001, firms must calculate portfolio returns at least monthly. For periods prior to 2001, portfolio returns must be calculated at least quarterly.

- Periodic and sub-period returns must be geometrically linked.

Calculation Principles for Composites
The following are guiding principles that firms must use when calculating *composite* returns:

- Composite returns must be calculated by asset-weighting the individual portfolio returns using beginning-of-period values or a method that reflects both beginning-of-period values and external cash flows.
- The aggregate return method, which combines all the composite assets and cash flows to calculate composite performance as if the composite were one portfolio, is acceptable as an asset-weighted approach.
- For periods beginning on or after 1 January 2006 and prior to 1 January 2010, firms must calculate composite returns by asset-weighting the individual portfolio returns at least quarterly. For periods beginning on or after 1 January 2010, composite returns must be calculated by asset-weighting the individual portfolio returns at least monthly.
- Periodic and sub-period returns must be geometrically linked.

Cash Flow Principles
The following are guiding principles that firms must consider when defining their composite-specific cash flow policies:

- An *external cash flow* is a flow of capital (cash or investments) that enters or exits a portfolio, which is generally client driven. When calculating approximated rates of return, where the calculation methodology requires an adjustment for the daily-weighting of cash flows, the formula reflects a weight for each external cash flow. The cash flow weight is determined by the amount of time the cash flow is held in the portfolio.
- When calculating a more accurate time-weighted return, a *large cash flow* must be defined by each firm for each composite to determine when the portfolios in that composite are to be valued for performance calculations. It is the level at which the firm determines that an external cash flow may distort performance if the portfolio is not valued. Firms must define the amount in terms of the value of the cash/asset flow or in terms of a percentage of the portfolio assets or the composite assets. The large cash flow determines when a portfolio is to be valued for performance calculations.
- A large cash flow is differentiated from a *significant cash flow*, which occurs in situations where the firm determines that a client-directed external cash flow may temporarily prevent the firm from implementing the composite strategy and the portfolio is temporarily removed from the composite or the external cash flow is placed in a temporary new account. Please see the Guidance Statement on the Treatment of Significant Cash Flows, which details the procedures and criteria that firms must adhere to and offers additional options for dealing with the impact of significant cash flows on portfolios.

Time-Weighted Rate of Return

Valuing the portfolio and calculating interim returns each time there is an external cash flow results in the most accurate method to calculate the time-weighted rates of return.

The formula for calculating the time-weighted portfolio return when there are no external cash flows is:

$$r_i = \frac{V_i^E - V_i^B}{V_i^B},$$

where

r_i = the return for period i in which there are no external cash flows

V_i^E = the ending value of the portfolio for period i

V_i^B = the beginning value of the portfolio for period i

When a portfolio experiences external cash flows during a period, the most accurate return is calculated by valuing the portfolio at the time of the external cash flow, calculating the time-weighted return for each sub-period (defined as the period between external cash flows), and then geometrically linking the sub-period returns using the following formula:

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

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

Approximation of Time-Weighted Rate of Return

As mentioned in the introduction, the GIPS standards require firms to calculate a time-weighted rate of return, except for private equity. The GIPS standards allow flexibility in choosing the calculation methodology, which means that firms may use alternative formulas, provided the calculation method chosen represents returns fairly, is not misleading, and is applied consistently.

Calculating a time-weighted rate of return is not an easy task and may be cost intensive. For these reasons, firms may use an approximation method to calculate the total return of the individual portfolios for the periods and sub-periods. The most common approximation methods combine specific rate of return methodologies (such as the original Dietz method, the Modified Dietz method, the original IRR (internal rate of return) method, and the Modified BAI (Bank Administration Institute) method) for sub-periods, and then geometrically links the sub-period returns.

Just as the GIPS standards transition to more frequent valuations, the GIPS standards also transition to more precise calculation methodologies. Therefore, the GIPS standards require firms to calculate approximated time-weighted rates of return that adjust for daily-weighted external cash flows (e.g., Modified Dietz method) for periods beginning on or after 1 January 2005. For periods beginning on or after 1 January 2010, firms are required to calculate a more accurate time-weighted rate of return and are required to value portfolios at the time of each large cash flow, as well as at calendar month-end or on the last business day of the month.

According to the *Modified Dietz* method the portfolio return can be calculated using the formula:

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

where

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

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

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

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

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

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

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

where

$w_{i,t}$ = the weight of cash flow i in period t, assuming the 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 cash flow i

While this Guidance Statement only contains details about the Modified Dietz method, other formulas for calculating approximate time-weighted rates of return are also permitted.

Composite Return Calculation

The GIPS standards require that composite returns must be calculated by asset weighting the individual portfolio returns using beginning-of-period values or a method that reflects both beginning-of-period values and external cash flows.

The intention is to show a composite return that reflects the overall return of the set of the portfolios included in the composite.

To calculate composite returns, firms may use alternative formulas so long as the calculation method chosen represents returns fairly, is not misleading, and is applied consistently.

According to the *Beginning Assets Weighting* method the composite return, R_t, can be calculated using the formula:

$$R_t = \frac{\sum_{k=1}^{K} \left(V_{k,t}^{B} \times r_{k,t} \right)}{\sum_{k=1}^{K} V_{k,t}^{B}},$$

where

R_t = the beginning assets weighted return for the composite for period t

k = number of portfolios (1, 2, 3,…, K) in the composite at the beginning of period t

$V_{k,t}^{B}$ = the beginning value of portfolio k for period t

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

The *Beginning Assets Weighting* method can also be expressed as:

$$R_t = \sum_{k=1}^{K} \left(\frac{V_{k,t}^{B}}{\sum_{k=1}^{K} V_{k,t}^{B}} \times r_{k,t} \right) = \sum_{k=1}^{K} w_{k,t}^{B} r_{k,t}$$

where $w_{k,t}^{B}$ is the weight of the value of portfolio k as a fraction of total composite asset value based on beginning asset values for period t, and can be calculated according to the following formula:

$$w_{k,t}^{B} = \frac{V_{k,t}^{B}}{\sum_{k=1}^{K} V_{k,t}^{B}}$$

The *Beginning Assets Plus Weighted Cash Flow* method represents a refinement to the beginning assets weighting method. Consider the case in which one of two portfolios in a composite doubles in value as the result of a contribution on the third day of a performance period. Under the beginning assets weighting method, this portfolio will be weighted in the composite based solely on its beginning value (i.e., not including the contribution). The beginning assets plus weighted cash flow method resolves this problem by including the effect of external cash flows in the weighting calculation.

Assuming that external cash flows occur at the end of the day, the weighting factor for each cash flow is calculated as:

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

where

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

D_t = the total number of calendar days in period t

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

The *Beginning Assets Plus Weighted Cash Flow* composite return can be calculated as follows:

$$R_t = \frac{\sum_{k=1}^{K}\left\{\left[V_{k,t}^{B} + \sum_{i=1}^{I_k}\left(CF_{i,k,t} \times w_{i,k,t}\right)\right] \times r_{k,t}\right\}}{\sum_{k=1}^{K}\left[V_{k,t}^{B} + \sum_{i=1}^{I_k}\left(CF_{i,k,t} \times w_{i,k,t}\right)\right]},$$

where

R_t = the beginning assets plus weighted cash flow composite return for period t

$V_{k,t}^{B}$ = the beginning value of portfolio k for period t

I_k = the number of cash flows (i = 1, 2, 3,…, I_k) in portfolio k

$CF_{i,k,t}$ = the ith cash flow in portfolio k for period t

$w_{i,k,t}$ = the weight of cash flow i in portfolio k for period t

$r_{k,t}$ = the return for portfolio k for period t

The *Beginning Assets Plus Weighted Cash Flow* composite return method can also be expressed by the following formula:

$$R_t = \sum_{k=1}^{K}\left(\frac{V_{k,t}}{\sum_{k=1}^{K}V_{k,t}} \times r_{k,t}\right),$$

where

R_t = the beginning asset plus weighted cash flow composite return for period t

$r_{k,t}$ = the return for portfolio k for period t

$V_{k,t}$ = the beginning value plus weighted cash flows of portfolio k for period t as calculated according to the following formula:

$$V_{k,t} = V_{k,t}^{B} + \sum_{i=1}^{I_k}\left(CF_{i,k,t} \times w_{i,k,t}\right),$$

where

$V_{k,t}$ = the value of portfolio k's beginning assets plus weighted cash flows for period t

$V_{k,t}^{B}$ = the beginning value of portfolio k for period t

I_k = the number of cash flows (i = 1, 2, 3,…, I_k) in portfolio k

$CF_{i,k,t}$ = the ith cash flow in portfolio k for period t

$w_{i,k,t}$ = the weight of cash flow i in portfolio k for period t

The *Aggregate Return* method combines all the composite assets and external cash flows before any calculations occur to calculate returns as if the composite were one portfolio. The method is also acceptable as an asset-weighted approach.

Geometric Linking of the Periodic Composite Returns

To calculate the composite return over more than one period or sub-period, the composite return over the total period is calculated by geometrically link the individual composite periodic returns using the following formula:

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

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

Additional Considerations

Changes to the Methodology
Where appropriate, in the interest of fair representation and full disclosure, firms should disclose material changes to their calculation and valuation policies and/or methodologies.

Third-Party Performance Measurement
Firms may use portfolio returns calculated by a third-party performance measurer as long as the methodology adheres to the requirements of the GIPS standards.

Different Valuation and/or Calculation Method
Firms are permitted to include portfolios with different valuation and/or calculation methodologies within the same composite as long as the methodologies adhere to the requirements of the GIPS standards. Firms must be consistent in the methodology used for a portfolio (e.g., firms cannot change the methodology for a portfolio from month to month).

Month End Valuations
Firms must be consistent in defining the (monthly) valuation period. The valuation period must end on the same day as the reporting period. In other words, firms must value the portfolio/composite on the last day of the reporting period or the nearest business day. Including portfolios with different ending valuation dates in the same composite is not permitted for periods beginning on or after 1 January 2006. For periods beginning on or after 1 January 2010, firms must value portfolios as of the calendar month end or the last business day of the month.

Trading Expenses
Returns must be calculated after the deduction of the actual trading expenses. Trading expenses are the actual costs of buying or selling investments. These costs typically take

the form of brokerage commissions, exchange fees, taxes, bid-offer spreads from either internal or external brokers, and any other regulatory fee, duty, etc. associated with an individual transaction. Custodial fees charged per transaction should be considered custody fees and not trading expenses.

Trade Date Accounting
Firms must use trade date accounting for periods beginning on or after 1 January 2005. Trade-date accounting recognizes an asset or liability on the date of the purchase or sale, not on the settlement date. Recognizing the asset or liability within three days of the date the transaction is entered into satisfies the trade-date accounting requirement.

Taxes
Firms must disclose relevant details of the treatment of withholding taxes on dividends, interest income, and capital gains, if material. Returns should be calculated net of non-reclaimable withholding taxes on dividends, interest, and capital gains. Reclaimable withholding taxes should be accrued.

Grossing Up or Netting Down of Investment Management Fees
Firms are allowed to include portfolios with different grossing-up methodologies within the same composite. Firms must be consistent in the methodology used for a portfolio (e.g., firms cannot change the methodology for a portfolio from month to month). Please see the Guidance Statement on Fees.

Large Cash Flows
The firm must have an established composite-specific policy on defining and valuing for large cash flows and apply this policy consistently. Actual valuation at the time of any large cash flow is required for periods beginning on or after 1 January 2010.

Disclosures
Firms must disclose that policies for valuing portfolios, calculating performance, and preparing compliant presentations are available upon request.

Effective Date
The effective date for this Guidance Statement is 1 January 2011. When bringing past performance into compliance, firms may comply with this version of the Guidance Statement or with prior versions in effect at the time. Prior versions of this Guidance Statement are available on the GIPS standards website (www.gipsstandards.org).