



Global Investment Performance Standards

GIPS® Guidance Statement on Calculation Methodology

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Guidance Statement on Calculation Methodology (Revised)

Introduction

Achieving comparability among investment management firms' performance 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 effective 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 assets (except Private Equity assets). For information on calculating performance for these assets, see the separate Private Equity Provisions and Guidance.

The Standards require a time-weighted rate of return because it removes the effects of cash flows, which are generally client-driven. Therefore, a time-weighted rate of return best reflects the firm's ability to manage the assets according to a specified strategy or objective, 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 comparison 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 the return calculation:

- Portfolio valuations must be based on market values (not cost basis or book values).
- For periods prior to 1 January 2001, portfolios must be valued at least quarterly. For periods between 1 January 2001 and 1 January 2010, portfolios must be valued at least monthly. For periods beginning 1 January 2010, firms must value portfolios on the date of all large external cash flows.
- For periods beginning 1 January 2010, firms must value portfolios as of calendar month-end or the last business day of the month.
- Firms must use trade-date accounting for periods beginning 1 January 2005. (Note: for purposes of the Standards, trade-date accounting recognizes the transaction on the date of the purchase or sale. Recognizing the asset or liability within at least 3 days of the date the transaction is entered into satisfies this requirement.)

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- Accrual accounting must be used for fixed income securities and all other assets that accrue interest income. Market values of fixed-income securities must include accrued income.
- Accrual accounting should be used for dividends (as of the ex-dividend date).

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

- Firms must calculate all returns after the deduction of the actual trading expenses incurred during the period. Estimated trading expenses are not permitted.
- Firms must calculate time-weighted total returns, including income as well as realized and unrealized gains and losses.
- The calculation method chosen must represent returns fairly, must not be misleading, and must be applied consistently.
- Firms must use time-weighted rates of return that adjust for external cash flows. External cash flows are defined as cash, securities, or assets that enter or exit a portfolio (capital additions or withdrawals) and are generally client-driven. Income earned on a portfolio's assets is not considered an external cash flow.
- The chosen calculation methodology must adjust for daily-weighted external cash flows for periods beginning 1 January 2005, at the latest. An example of this methodology is the Modified Dietz method.
- For periods beginning 1 January 2010, at the latest, firms must calculate performance for interim periods between all large external cash flows and geometrically link performance to calculate period returns. (Note: as such, at 1 January 2010, or before if appropriate, each firm must define, prospectively, on a composite-specific basis, what constitutes a large external cash flow.) For information on calculating a “true” time-weighted return (see below).
- External cash flows must be treated in a consistent manner with the firm's documented, composite-specific policy.
- Firms must calculate portfolio returns at least on a monthly basis. For periods prior to 2001, firms may calculate portfolio returns on a quarterly basis.
- Periodic returns must be geometrically linked.

Calculation Principles – 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 prior to 1 January 2010, firms must calculate composite returns by asset weighting the individual portfolio returns at least quarterly. For periods beginning 1 January 2010, composite returns must be calculated by asset weighting the individual portfolio returns at least monthly.
- Periodic returns must be geometrically linked.

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

- An **external cash flow** is a flow of cash, securities, or assets that enter or exit a portfolio, which are 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 external cash flow** must be defined by each firm for each composite to determine when the portfolios in that composite are to be revalued for performance calculations. It is the level at which a client-initiated external flow of cash and or securities into or out of a portfolio may distort performance if the portfolio is not revalued. Firms must define the amount in terms of the value of the cash/asset flow, or in terms of a percentage of portfolio or composite assets.
- The large external cash flow (described above) determines when a portfolio is to be revalued for performance calculations. This is differentiated from a **significant cash flow**, which occurs in situations where cash flows disrupt the implementation of the investment strategy. 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 ought to result in the most accurate method to calculate the time-weighted rates of return, referred to as the “true” Time-Weighted Rate of Return Method.

A formula for calculating a true time-weighted portfolio return whenever cash flows occur is:

$$R_i = \frac{(EMV_i - BMV_i)}{BMV_i},$$

where EMV_i is the market value of the portfolio at the end of sub-period i , excluding any cash flows in the period, but including accrued income for the period. BMV_i is the market value at the end of the previous sub-period (i.e., the beginning of the current sub-period), plus any cash flows at the end of the previous sub-period, where an inflow is positive and an outflow is negative, and including accrued income up to the end of the previous period. The cash inflow is included in the BMV (previous period EMV + positive cash inflow) of the sub-period when the cash inflow is available for investment at the start of the sub-period; a cash outflow is reflected in the BMV (previous period EMV + negative cash outflow) of the sub-period when the cash outflow is no longer available for investment at the start of the sub-period.

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The sub-period returns are then geometrically linked to calculate the period's return according to the following formula:

$$R_{TR} = ((1 + R_1) \times (1 + R_2) \dots (1 + R_n)) - 1,$$

where R_{TR} is the period's total return and $R_1, R_2 \dots R_n$ are the sub-period returns for sub-period 1 through n respectively.

Approximation of Time-Weighted Rate of Return

As mentioned in the Introduction, the GIPS standards require firms to calculate returns using a methodology that incorporates the time-weighted rate of return concept (except for Private Equity assets). The 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 true 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 Internal Rate of Return (IRR) method, and the Modified IRR method) for sub-periods and incorporate the time-weighted rate of return concept by geometrically linking the sub-period returns.

Just as the GIPS standards transition to more frequent valuations, the 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 cash flows by 1 January 2005 (e.g., Modified Dietz method) and will require the calculation of a more accurate time-weighted rate of return with valuations occurring at each large external cash flow as well as calendar month-end or the last business day of the month for periods beginning 1 January 2010.

This Guidance Statement does not contain details on the different formulas for calculating approximate time-weighted rates of return.

Composite Return Calculation

Provision 2.A.3 requires 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.

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According to the *Beginning Market Value-Weighted Method* the composite return, R_{BMV} , can be calculated using the formula:

$$R_{BMV} = \frac{\sum_{i=1}^n (BMV_i \times R_i)}{BMV_{TOTAL}},$$

where BMV_i is the beginning market value (at the start of the period) for a portfolio, R_i is the rate of return for Portfolio i , and BMV_{TOTAL} is the total market value at the beginning of the period for all the portfolios in the composite.

The *Beginning Market Value Plus Cash Flow-Weighted Method* represents a refinement to the asset-weighted approach. Consider the case in which one of two portfolios in a composite doubles in market value as the result of a contribution on the third day of a performance period. Under the asset-weighted approach, this portfolio will be weighted in the composite based solely on its beginning market value (i.e., not including the contribution). The beginning market value and cash flow-weighted method resolves this problem by including the effect of cash flows in the weighting calculation as well as in the market values. Assuming that cash flows occur at the end of the day, the weighting factor for each cash flow is calculated as:

$$W_{i,j} = \frac{(CD - D_{i,j})}{CD},$$

where CD is the total number of calendar days in the period and $D_{i,j}$ is the number of calendar days since the beginning of the period in which cash flow j occurred in portfolio i .

The beginning market value plus cash flow-weighted composite return, R_{BMV+CF} , can be calculated as follows:

$$R_{BMV+CF} = \frac{\sum_{i=1}^n \left\{ \left(BMV_i + \left(\sum_{j=1}^m CF_{i,j} \times W_{i,j} \right) \right) \times R_i \right\}}{\sum_{i=1}^n \left(BMV_i + \left(\sum_{j=1}^m CF_{i,j} \times W_{i,j} \right) \right)},$$

where $CF_{i,j}$ is the cash flow j within the period for portfolio i (contributions to the portfolio are positive flows, and withdrawals or distributions are negative flows) and R_i is the return for portfolio i .

The *Aggregate Return Method* combines all the composite assets and 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 (sub-)period, the composite return over the total period is calculated by geometrically linking the individual composite sub-period returns using the following formula:

$$R_{CT} = ((1 + R_{C1}) \times (1 + R_{C2}) \dots (1 + R_{Cn})) - 1,$$

where R_{CT} is the composite return over the total period and R_{C1} , R_{C2} , and R_{Cn} are the individual composite returns for the sub-periods 1, 2, and n, respectively.

Additional Considerations

Changes To The Methodology - Where appropriate, in the interest of fair representation and full disclosure, firms should disclose when a change in a calculation methodology or valuation source results in a material impact on the composite return.

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). Aggregating portfolios with different ending valuation dates in the same composite is not permitted after 1 January 2006.

Trading Expenses - Returns must be calculated after the deduction of all trading expenses. Trading expenses are the costs of buying or selling a security, and include brokerage commissions and any other regulatory fee, duty, etc. associated with an individual transaction.

Trade Date Accounting - Firms must use trade-date accounting for periods beginning 1 January 2005. Trade-date accounting recognizes an asset or liability on the date the transaction is entered into. Recognizing the asset or liability within at least 3 days of the date the transaction is entered into satisfies the trade-date accounting requirement. As a result, the account will recognize any change between the price of the transaction and the current market value.

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

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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 on Fees for the GIPS standards.

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

Disclosures - Firms must disclose that additional information regarding policies for calculating and reporting returns is available upon request. Generally, the firm's policies and procedures on calculating and reporting returns could serve as the basis for this information.

Effective Date

This Guidance Statement was originally effective 1 June 2004 and was revised to reflect the changes to the GIPS standards effective as of 1 January 2006.

Firms are encouraged, but not required, to apply this guidance prior to the original Effective Date of 1 June 2004; however, the original guidance must be applied to all presentations that include performance for periods on and after that date.

The revisions made to this guidance (effective 1 January 2006) must be applied to all presentations that include performance for periods after 31 December 2005.

Key GIPS Provisions Specifically Applicable to Calculation Methodology

1.A.2 Portfolio valuations must be based on market values (not cost basis or book values).

1.A.3 For periods prior to 1 January 2001, portfolios must be valued at least quarterly. For periods between 1 January 2001 and 1 January 2010, portfolios must be valued at least monthly. For periods beginning 1 January 2010, firms must value portfolios on the date of all large external cash flows.

1.A.4 For periods beginning 1 January 2010, firms must value portfolios as of the calendar month-end or the last business day of the month.

1.A.5 For periods beginning 1 January 2005, firms must use trade date accounting.

1.A.6 Accrual accounting must be used for fixed-income securities and all other assets that accrue interest income. Market values of fixed-income securities must include accrued income.

1.A.7 For periods beginning 1 January 2006, composites must have consistent beginning and ending annual valuation dates. Unless the composite is reported on a noncalendar fiscal year, the beginning and ending valuation dates must be at calendar year-end (or on the last business day of the year).

2.A Calculation Methodology — Requirements

2.A.1 Total return, including realized and unrealized gains and losses plus income, must be used.

2.A.2 Time-weighted rates of return that adjust for external cash flows must be used. Periodic returns must be geometrically linked. External cash flows must be treated in a consistent manner with the firm's documented, composite-specific policy. At a minimum:

- a. For periods beginning 1 January 2005, firms must use approximated rates of return that adjust for daily-weighted external cash flows.
- b. For periods beginning 1 January 2010, firms must value portfolios on the date of all large external cash flows.

2.A.3 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.

2.A.4 Returns from cash and cash equivalents held in portfolios must be included in total return calculations.

2.A.5 All returns must be calculated after the deduction of the actual trading expenses incurred during the period. Estimated trading expenses are not permitted.

2.A.6 For periods beginning 1 January 2006, firms must calculate composite returns by asset weighting the individual portfolio returns at least quarterly. For periods beginning 1 January 2010, composite returns must be calculated by asset weighting the individual portfolio returns at least monthly.

2.A.7 If the actual direct trading expenses cannot be identified and segregated from a bundled fee:

- a. when calculating gross-of-fees returns, returns must be reduced by the entire bundled fee or the portion of the bundled fee that includes the direct trading expenses. The use of estimated trading expenses is not permitted.
- b. when calculating net-of-fees returns, returns must be reduced by the entire bundled fee or the portion of the bundled fee that includes the direct trading expenses and the investment management fee. The use of estimated trading expenses is not permitted.

2.B Calculation Methodology — Recommendations

2.B.1 Returns should be calculated net of nonreclaimable withholding taxes on dividends, interest, and capital gains. Reclaimable withholding taxes should be accrued.

2.B.2 Firms should calculate composite returns by asset weighting the member portfolios at least monthly.

2.B.3 Firms should value portfolios on the date of all large external cash flows.

Applications:

1. *Does the firm violate the GIPS standards by reporting money-weighted rates of return to an existing client for their portfolio (which contains no private equity assets)?*

No, the Standards would not be violated if the firm reported money-weighted rates of return to an existing client for their portfolio. The Standards are primarily based on the concept of presenting the firm's composite performance to a prospective client rather than presenting individual portfolio returns to an existing client. The IRR (or money-weighted return) represents the performance of the specific client's fund holdings (i.e., influenced by the client's timing and amount of cash flows) and measures the performance of the fund rather than the performance of the fund manager. Money-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 comparison purposes.

IRRs are only required in the GIPS standards when calculating performance for private equity assets where the investment firm controls the cash flows.

2. *The GIPS standards currently state that firms are required to use trade-date accounting as of 1 January 2005. How should trade date be defined?*

For the purposes of the GIPS standards, trade-date accounting is defined as “recognizing the asset or liability within at least 3 days of the date the transaction is entered into.” Settlement-date accounting is defined as “recognizing the asset or liability on the date in which the exchange of cash, securities, and paperwork involved in a transaction is completed.”

When using settlement-date accounting, any movement in value between the trade date or booking date and the settlement date will not have an impact on performance return until settlement date; whereas for trade-date accounting, the change in market value will be reflected for each valuation between trade date and settlement date. If the trade and settlement dates straddle a performance measurement period-end date, then performance return comparisons between portfolios that use settlement-date accounting and those that use trade-date accounting may not be valid. The same problem occurs when comparing settlement-date portfolios and 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 portfolio. For the purposes of compliance with the GIPS standards, portfolios 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 days after trade date (T+3). After 1 January 2005, all firms must recognize transactions on trade date as defined herein.

3. *Given the following information, calculate the rate of return for this portfolio for January, February, March, and the first quarter of 2000, using a true time-weighted rate of return:*

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Date	Market Value (€)	Cash Flow (€)	Market Value Post Cash Flow (€)
12/31/99	500,000		
1/31/00	509,000		
2/19/00	513,000	+50,000	563,000
2/28/00	575,000		
3/12/00	585,000	-20,000	565,000
3/31/00	570,000		

Solution:

January

$$R = \frac{(509,000 - 500,000)}{500,000} = 1.80\%$$

February

$$1/31/00 - 2/19/00 \quad R = \frac{(513,000 - 509,000)}{509,000} = 0.79\%$$

$$2/19/00 - 2/28/00 \quad R = \frac{(575,000 - 563,000)}{563,000} = 2.13\%$$

$$1/31/00-2/28/00 \quad R_{FEb} = ((1 + 0.008) \times (1 + 0.021)) - 1 = 2.92\%$$

March

$$2/28/00 - 3/12/00 \quad R = \frac{(585,000 - 575,000)}{575,000} = 1.74\%$$

$$3/12/00 - 3/31/00 \quad R = \frac{(570,000 - 565,000)}{565,000} = 0.88\%$$

$$2/28/00-3/31/00 \quad R_{Mar} = ((1 + 0.017) \times (1 + 0.009)) - 1 = 2.62\%$$

Quarter 1

$$R_{Q1} = ((1 + 0.018) \times (1 + 0.029) \times (1 + 0.026)) - 1 = 7.48\%$$