



October 17, 2002

Professional Standards and Advocacy  
Association for Investment Management and Research  
P.O. Box 3668  
Charlottesville, VA 22903

Re: GIPS Guidance Statement on Calculation Methodology

Dear Sir or Madam:

Thank you for giving me the opportunity to comment on the proposed Guidance Statement.

I definitely agree with the principles established in the Guidance Statement. However, I do not think that all areas of rate of return and asset-weighted composite calculation are covered sufficiently. There are several areas of rate of return calculations that, I believe, need additional guidance. The most important of these is, by far, the need for guidance on the proper treatment of corrections, adjustments, and late transactions that affect 'closed' periods. There is also a need for some additional guidance on asset-weighted composite calculation. My comments on these areas are enclosed.

It is reasonable to expect that firms will be able to value portfolios at the time of any external cash flow beginning 1 January 2010 (excluding real estate, venture capital, and private equity).

Finally, I agree with the proposed Effective Date.

Sincerely,

James J. Merrick CCP, FLMI  
Vice President  
Special Development Projects

Enclosure



## Comments on GIPS Guidance Statement on Calculation Methodology

### ***Modified Dietz Method.***

The formula for  $W_i$  should be amplified as follows for computational clarity because *the number of calendar days since the beginning of the period* is ambiguous and could be misinterpreted even though Example 1 does clarify the meaning.

$$W_i = \frac{CD - D_i}{CD} = \frac{(d_c - d_p) - (d_i - d_p)}{d_c - d_p} = \frac{d_c - d_i}{d_c - d_p}$$

where  $CD$  is the total number of calendar days in the period.  $D_i$  is the number of calendar days since the beginning of the period in which cash flow  $CF_i$  occurred.  $d_c$  is the end date of the current valuation period.  $d_p$  is the end date of the prior valuation period.  $d_i$  is the date of cash flow  $CF_i$ .

### ***Daily Valuation Method.***

The formula was given as:

$$R_n = \frac{(EMV - BMV)}{BMV}$$

where  $EMV$  is the market value of the portfolio at the end of the sub-period, before any cash flows in the period, but including accrued income for the period.  $BMV$  is the market value at the end of the previous sub-period (i.e., the beginning of the current sub-period), including any cash flows at the end of the previous period.

As a practical matter, the following gives the same result but is easier to understand, easier to implement and removes the ambiguity of whether the published ending market value contains the cash flow in the last sub-period or not.

$$R_n = \frac{EMV - BMV - CF}{BMV}$$

where  $EMV$  is the market value of the portfolio at the end of the sub-period including any cash flows and accrued income for the period.  $BMV$  is the  $EMV$  from the previous sub-period (i.e., the beginning of the current sub-period).  $CF$  is the net cash flow in the period.

The Modified Dietz Method gives the same result as this formula when portfolios are valued on the date of any external cash flow because the term for the sum of the weighted cash flows in the following formula is zero.

$$R_{MDietz} = \frac{EMV - BMV - CF}{BMV + \sum_{i=1}^n (CF_i \times W_i)}$$

Firms that implement the Modified Dietz Method to adjust for *daily-weighted* cash flows have the advantage of knowing that when they value portfolios on the date of any external cash flow they will be using the Daily Valuation Method without any change in their software.



### ***Closed Period Corrections.***

In a perfect world, all corrections, adjustments, and late transactions would have been applied before the period is ‘closed,’ the final measurement of performance is completed, and composites are published. Nevertheless, there are instances – bad prices, trades allocated incorrectly, forward settlements, and securities with days delay, for example – when you discover a correction or adjustment is needed long after the pricing, trade or receivable date and after results have been published.

Often, the ‘closed’ period corrections and adjustments discovered after the close have no material net effect on the published results. In this case, it is probably sufficient to apply the corrections, adjustments and late transactions as if they occurred on day 0 of the current period, effectively adjusting the beginning market values of the affected portfolios.

If the net effect of the ‘closed’ period corrections is material though, it seems that the published results should be corrected and republished even though the period is ‘closed.’ Otherwise, a material misstatement of results may be carried forward in geometrically linked returns. The alternative would be to use the day 0 treatment in all cases, which would occasionally cause the current period results to be materially misstated and still not offset the incorrect closed period.

Guidance is needed on what ‘closed’ period adjustments are material and what is the proper treatment of these cases.

### ***Precision and Rounding of Intermediate Results.***

Guidance is needed on the minimum precision of intermediate calculation results such as weighting factors and linked returns. A minimum precision of eight decimal places (e.g. 12.345678%) should be required for sub-period returns that are geometrically linked. For comparison, Excel uses 15 decimal place precision for its calculations even though it displays fewer due to formatting. While presentation of periodic returns rounded or truncated to 4 or 5 decimal places (e.g. 12.35% or 12.345%) is fine, geometric linking of results at this level of precision can lead to distortions.

Consider an extreme example – a portfolio with one fixed 6.125% coupon asset, always priced at 100. If it is valued daily in a 22 trading day month, the daily return is 0.022521% or 0.023% rounded. The latter, geometrically linked and rounded, gives a monthly return of 0.507% versus 0.496625% if there was only one monthly valuation. A one basis point difference when presented rounded as 0.51% or 0.50% doesn’t seem significant. However, the 0.507% return annualized is 6.257% which is a significant distortion, especially in a fixed income portfolio.

Although the proposed guidance statement says, “The major disadvantage [of the Daily Valuation Method] is that it requires precise valuation of the portfolio on the date of each cash flow,...”, this example should give pause to those who believe that daily valuation always produces a more accurate return. If the sub-period returns aren’t linked with sufficient precision, daily valuations will produce greater distortions than monthly valuations.



**Asset Weighted Composites.**

Using the values for Portfolios 1 and 2 in the document, I could not derive the monthly returns presented – 11.32% and 8.26%, respectively – by any of the methods discussed in the document. Also, the Aggregate Method example only used the Modified Dietz Method, which might lead to the conclusion that it is the only way to implement the Aggregate Method for Composite Returns. I think the following table is a more accurate and complete summarization of the application of the TWRR that adjusts for daily-weighted cash flows and of the methods of constructing asset-weighted composites. It also shows, in one place, the variability inherent in these methods.

Date	Portfolio 1			Portfolio 2			Aggregate		
	Cash Flow	Market Value	$R_n$	Cash Flow	Market Value	$R_n$	Cash Flow	Market Value	$R_n$
12/31/99		100,000			500,000			600,000	
1/10/00	20,000	123,000	3.000%		512,000	2.400%	20,000	635,000	2.500%
1/22/00		130,000	5.691%	-70,000	460,000	3.516%	-70,000	590,000	3.937%
1/31/00		133,000	2.308%		470,000	2.174%		603,000	2.203%
$R_{Daily}$			11.374%			8.304%			8.883%
$R_{MDietz}$			11.449%			8.339%			8.934%
$R_{MIRR}$			11.473%			8.329%			8.928%
$R_{BMV}$								$R_{Daily}$	8.816%
$R_{BMV+CF}$								$R_{Daily}$	8.892%
$R_{BMV}$								$R_{MDietz}$	8.857%
$R_{BMV+CF}$								$R_{MDietz}$	8.934%
$R_{BMV}$								$R_{MIRR}$	8.853%
$R_{BMV+CF}$								$R_{MIRR}$	8.931%