

## Much Ado About Nothing: Why the choice of “day count method” doesn’t materially affect the return annualization outcome

By Shalini C. Kurukulasuriya, CFA Assette

## One of our clients posed an interesting question during the last reporting cycle of 2021.

They were custom configuring the day count method to 365.25, so the calculation engine within Assette could replicate the numbers from their portfolio performance & accounting systems. During this process, our client was curious to know what other day count methods were accommodated within Assette and if there was a preferred “standard” among industry peers. We explained that while the Assette default has always been *Actual/Actual*, there was no industry “standard”. In fact, this surprising lack of standardisation was precisely the reason the Assette calculation engine was built with the flexibility to accommodate multiple day count methods.

Over the past 20+ years, the GIPS standards have shaped the precise way investment performance results are calculated and presented to facilitate greater comparability across global asset managers. Among traditional asset managers, time weighted returns are now readily accepted as the standard way of calculating investment performance. Yet, on the matter of day count method to be used for annualizing investment results, an important aspect of the return calculation process, there is no required or recommended course of action.

An exploration of the key issues surrounding the lack of standardisation in day count methods, could be beneficial to performance analysts at asset management firms, particularly in preparation for the first reporting cycle of 2022.

## Annualization is pretty straightforward, right? Yes...

Annualization is a compounding calculation, and the math is pretty straightforward when full years and months are considered. Simply take the  $n$ th root of the cumulative return plus one or raise the cumulative return plus one to the  $1/n$ th power, where “ $n$ ” equals the number of years, then subtract one. For months,  $n$  is defined as the number of months in the period divided by 12.

## ...but things get a bit complicated with point-to-point cumulative returns and leap years

Things become tricky when annualizing periods that involve *from* and *to* dates that aren’t year or month-ends. In these cases, we need to *know the number of days* for the period. For example, let’s say it’s 1,000 days. As with months (where we divide by 12), we need to take this figure and divide by something. The challenging part is to know what that number should be. Some firms always use 360, 365 while others use 365.25 considering leap years and when February 29 is crossed in the entire time series.

## How many day count methods? Let me count the ways

The important question to reflect on is not the how many variations of day count methods exist but whether it really makes a *material* difference to the return annualization outcome. The short answer is, no. Admittedly, the outcome will differ by a few basis points depending on whether 360, 365, or 365.25 is used and become larger, the lower number. However, over long time periods these differences tend to be inconsequential.

## The quest for the ‘right’ day count method; a trade-off between accuracy and materiality

David Spaulding, a luminary in the field of investment performance measurement, has written extensively on this topic. He is of the view that converging on the ‘right’ day count method is preferable, in keeping with the

desire to improve comparability of investment results among asset managers. However, for practitioners, the means - a highly complex calculation methodology, rarely justify the end- improving accuracy by a few basis points. This is even more so over long periods of time, when the impact of different day count methods on the annualization outcomes are *immaterial*.

Day count conventions widely adopted in fixed income markets provides an interesting counterpoint. When various fixed instruments are sold, the seller is entitled to a portion of the coupon payment. In these instances, the choice of day count method determines precisely how much of the coupon payment the seller receives. Consequently, the International Swap Dealers Association has gathered and documented common methods to be used for specific instruments. For example, 30/360 is used for calculations of accrued interest calculations for corporate, agency, municipal bonds and mortgage-backed securities. Meanwhile, Actual/365 is used when pricing U.S. government Treasury bonds.

### Should there be a preferred choice of day count method? We think so.

Our exploration of the key issues has revealed that the annualization outcome varies by only a few basis points over short periods and tends to be *immaterial in the long run* regardless of which day count method is applied. This is most likely why industry participants have not felt any urgency to converge on a day count convention. Our software will continue to reflect this reality by maintaining the flexibility to custom configure the day count method. Nevertheless, Assette believes that *Actual/Actual* could be the preferred day count method and here’s why:

- First, we believe that materiality of the outcome should drive the quest for greater accuracy.
- Second, it addresses the issue of taking leap years into account which has been sticking point among different methods.
- Third, it is easy to understand, and implement and facilitates a greater degree of comparability of investment results from different asset managers that claim compliance with GIPS.

In some ways, this is yet another instance in finance where we can prevail upon the principle of Occam’s Razor-all other things remaining constant, the simplest explanation is best - to illuminate the path forward.