Performance Measurement and Attribution Introduction

[Nematrian website page: PerfMeasAndAttrIntro, © Nematrian 2015]

A key aspect of an investment manager's stewardship of other people's assets is to demonstrate how well these investments have performed and what are the main drivers behind the observed performance.

Performance measurement and attribution require high quality accounting and/or instrument characteristic data but otherwise involve relatively straightforward mathematics (at least compared to some of the mathematics appearing elsewhere on the Nematrian website). A summary of the mathematics involved is set out here.

In due course, we are hoping to include in the Nematrian website toolkit more functions orientated towards performance measurement activities. Ones that are already included in the Nematrian web toolkit are set out here.

Performance Measurement: Introduction
[PerfMeasIntro]

The Nematrian website differentiates between *fund-level* performance measurement calculations, explained in these pages, and stock, sector and factor level performance attribution calculations described elsewhere in the Nematrian website.

An important part of the stewardship of assets is to demonstrate that the performance achieved on them is adequate, i.e. suitably good relative to a benchmark. In these pages we explain how portfolio-level returns (for both funds and benchmarks) may be derived and what tools the Nematrian website offers to facilitate the relevant calculations.

Fund-level performance measurement can be subdivided between:

(a) Cases where individual period fund and benchmark performances are already known. This might include cases where we want to characterise how a particular fund has performed in relation to some specified peer group or to determine some deemed aggregate performance of a composite of different funds; and

(b) Cases where we need to calculate the individual period returns from underlying accounting data. We will generally then require high quality accounting and/or instrument characteristic data because even a single missed income or expenditure item or a single inaccurate instrument valuation can introduce errors that are large relative to the difference between the overall fund return and the overall benchmark return. Indeed, we could argue that performance measurement provides a way of checking the reliability of the underlying fund accounting processes (and of defining the level of granularity needed for these accounting processes to work effectively). Only if the relative return derived from the accounting data is plausible is this data likely to be correct.

A summary of the mathematics involved in calculating fund (and benchmark and relative) returns is set out here.

Performance Attribution: Introduction

[PerfAttrIntro]

The Nematrian website differentiates between *fund-level* performance measurement calculations, explained in pages linked to PerfMeasIntro, and stock, sector and factor level performance attribution calculations described in these pages.

Employers of investment managers will generally be interested in understanding what has been the source of their (past) under- or out-performance. The process of carrying out such an analysis is typically called *performance attribution*.

Performance attribution typically requires high quality accounting and/or instrument characteristic data. However, it may not necessarily need as high quality data as may be needed for pure performance measurement purposes.

From a theoretical perspective this differentiation arises principally because sources of under or outperformance interact with each other. It is therefore not always practical to expect performance allocation to provide a unique theoretically correct answer. For example, suppose a manager performs well in an asset class that also did well and in which he/she was overweighted. Should we deem the additional outperformance at the fund level coming from the good performance on the overweighted asset class be deemed to be good 'stock selection' within that asset class, or good 'asset allocation' between classes? Once users focus on such uncertainties they may also feel that the need for high precision is less compelling, particularly if it comes at a high cost.

A particular issue here is that some types of transactional data we might otherwise ideally want, i.e. prices at which instruments are bought and sold, can in theory be dispensed with for performance attribution purposes if we include in an 'other' category the contribution to performance coming from the fund manager buying and selling instruments at other than their period end valuations.

However, the problem with this line of reasoning is that we can always identify situations where such blurring does not actually apply in practice. In the situation highlighted in the previous paragraph this would include the case where the fund manager did not deviate materially from benchmark exposures but typically bought assets at a poor price. The element of the attribution that we would then ideally want to focus on would have been bucketed into the residual item that had been created by lack of better data.