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March 2009



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A platform for introducing and debating the more controversial and complex issues that face our industry

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Eugene Botha



Eugene Botha:

How different data sets can impact performance insights
Comparing portfolio data using holdings-based data versus returns-based data

Eugene Botha provides an instructive assessment on the kinds of analyses that can and can't be done with returns-based data and compares that to the insights provided by holding-based analysis of portfolios.



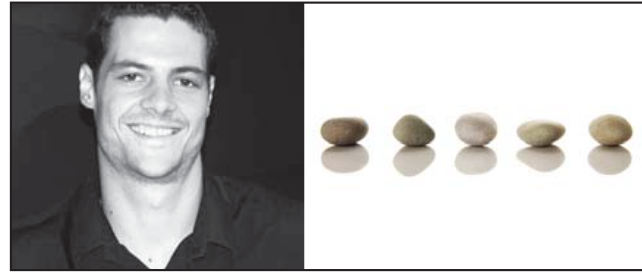
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How different data sets can impact performance insights

Comparing portfolio data using holdings-based data versus returns-based data

Quantitative assessments of asset managers involve a cold scientific analysis of the facts. These facts can be scrutinised and dissected in many different ways, but in the end it is what you do with the results that adds or subtracts value.

There are basically two broadly different quantitative analyses you can perform to assess managers: historical returns based analysis and holdings based analysis. Historical returns based analysis uses manager returns data exclusively. As such, ascribing what drove performance can only be achieved by comparing or regressing those returns against some benchmark or factor index. By contrast, because holdings based data actually provides data on the underlying holdings of the manager, as well as their buying and selling decisions, an analyst can delve into exactly what the fund manager was actually holding that could potentially explain performance.

In this article we will tackle the issue of what returns level data and analysis can and cannot tell you, as well as what holdings based data and analysis are able to reveal.

Returns-based analysis

Let us start off with returns-based analysis. The majority of returns-based analysis is based on what has happened in the past, that is, the analysis of the historical facts. It reveals how the manager has performed in different market conditions, but it does not necessarily reveal why the manager's fund has performed in the way it did.

Probably the most common usage of historical returns is the cumulative returns over a period of time, which reveals how much an investment would have grown or shrunk during this period. This can be seen in an absolute space, or compared to a benchmark. Another way of viewing the same data is examining the absolute or relative returns over different rolling periods, e.g. 12 months rolling, 3 years rolling, 5 years rolling, etc.

Advantage would typically not use these historical cumulative and rolling returns in isolation, but rather use it in a way to see how a blend of managers would have performed relative to each other and how the combination as a blend would have performed against a certain benchmark. What is referred to here is a typical backtested scenario analysis of returns. An example of such an analysis is shown in Chart 1 and Chart 2.

Chart 1

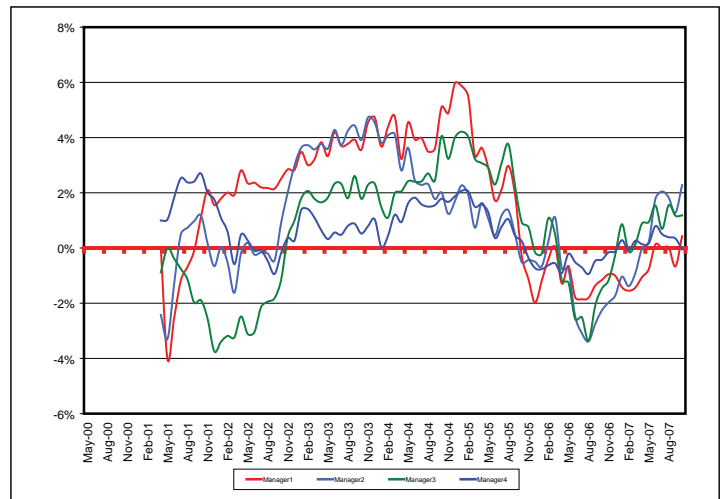


Chart 2

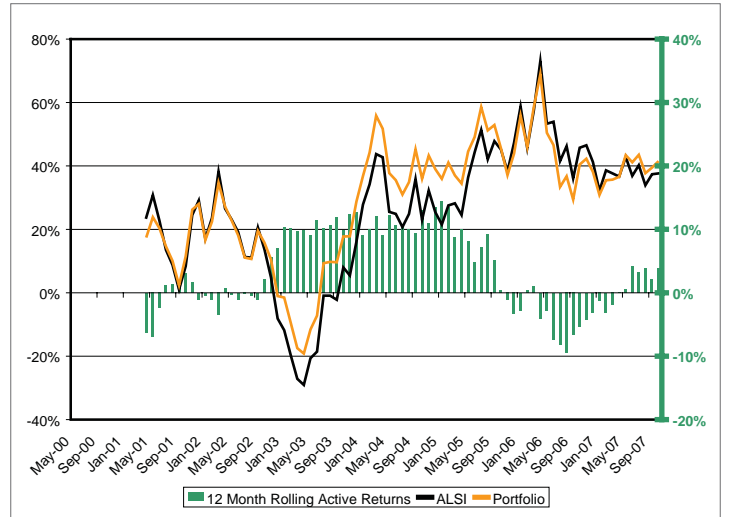
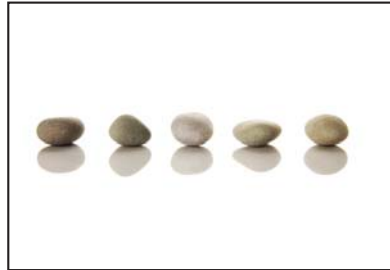


Chart 1 shows the 12 month weighted active performance of each of the different managers in the blend relative to the benchmark. In this chart you can see how the different managers out or underperformed the benchmark over 12 month rolling periods. It thus shows how correlated or diversified the active returns of the managers are relative to each other.

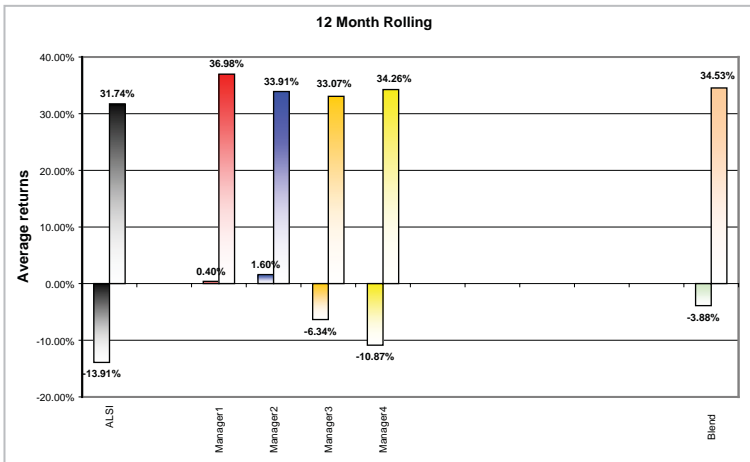
Chart 2 shows the cumulative return of the weighted combination of the managers' returns on the right hand scale, compared to the benchmark. The green bars show the margin of over or underperformance to the benchmark over rolling 12 month periods.





Other analysis that we can look at is in terms of certain market conditions. The graph in Chart 3 shows how each of the managers performed on average during bull and bear markets over rolling 12 month periods compared to the market. For example, the ALSI has returned -13.91% on average during 12 month bear periods and 31.74% during 12 month bull periods. Manager 2 has on average returned 1.60% during the same bear periods and returned 36.98% during the same bull periods. Why the manager outperforms the ALSI during both bull and bear periods cannot be gleaned from historical returns only.

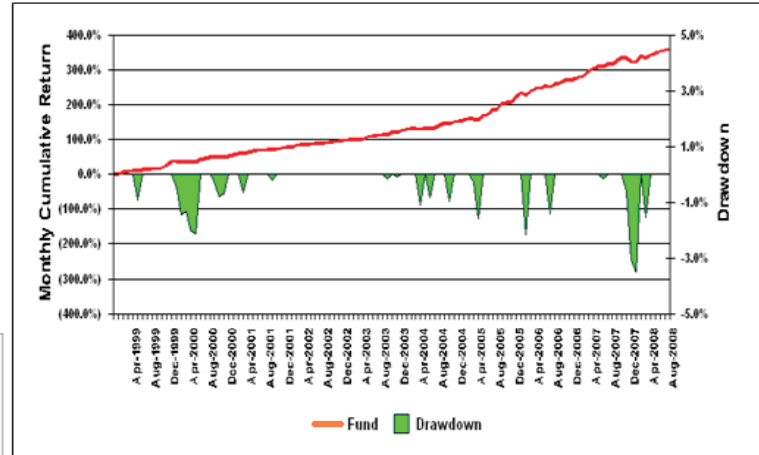
Chart 3



Absolute return funds or hedge funds can be quite difficult to analyse on a holdings level if you do not have a proper model that can handle all the different derivatives. Typically these funds are analysed in terms of historical risk adjusted returns, ratios, drawdowns, recovery rates, volatility in returns, etc.

An example of this is where we look at the cumulative returns as well as the negative periods within the data. This is known as the drawdowns. The magnitude and length of the drawdown can be measured as well as the length of recovery from each drawdown. This can be used as a measure of the riskiness of an absolute return type fund.

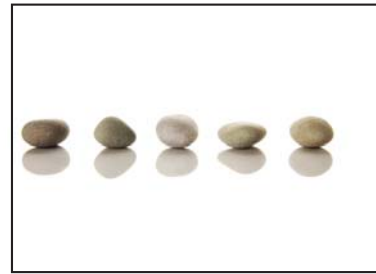
Chart 4



Drawdown	Length	Recovery	Peak	Valley
-3.52%	3	1	Oct-07	Jan-08
-2.17%	1	1	Jan-06	Feb-06
-2.13%	5	1	Dec-99	May-00
-1.59%	2	1	Feb-05	Apr-05
-1.54%	1	1	Feb-08	Mar-08
-1.42%	1	1	Jun-06	Jul-06
-1.12%	1	1	Mar-04	Apr-04
-0.95%	1	1	Sep-04	Oct-04
-0.94%	1	1	Apr-99	May-99
-0.83%	1	1	May-04	Jun-04
-0.80%	2	2	Aug-00	Oct-00
-0.64%	1	1	Feb-01	Mar-01
-0.22%	1	1	Jun-01	Jul-01
-0.20%	1	1	Aug-01	Sep-01
-0.18%	1	1	Aug-03	Sep-03
-0.17%	1	1	May-07	Jun-07

The above examples cover the basics of historical returns based analysis and demonstrates how returns may be used to understand and assess a fund manager.





Holdings-based analysis

Holdings-based analysis carries a lot more detail and explanatory power how funds behave under different market conditions.

Before investing in a manager, one should understand where the risks in the portfolio of holdings lies, when and how these inherent risks are awarded, and most importantly how these risks can come back to haunt one in times of trouble.

Advantage utilises several tools and models to dissect a portfolio of holdings to understand exactly where a manager takes risk to drive their performance. One of the tools utilised is ¹**Aegis Portfolio Manager (APM)** which is specifically designed to identify risks and biases in a portfolio, whether they are related to individual managers or a blend of managers.

Typical holdings analysis conducted on a manager and blend level involves an assessment of risk exposures to sectors, industries, styles and market risk. Performance attributions can also be done in ¹**Aegis Performance Analyst (APA)** over a period of time where historical performances of a manager or blend are attributed to different sources of performance generating strategies and styles. For example, you can determine whether the small cap bias in a portfolio has contributed to return or whether the exposure to momentum, value or growth shares has contributed or detracted from performance. Examples of these attributions are shown in chart 5 and 6.

Chart 5

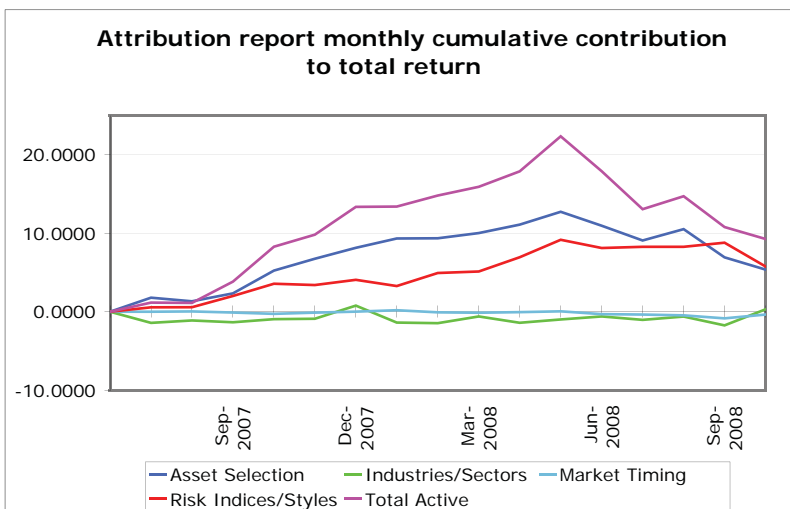
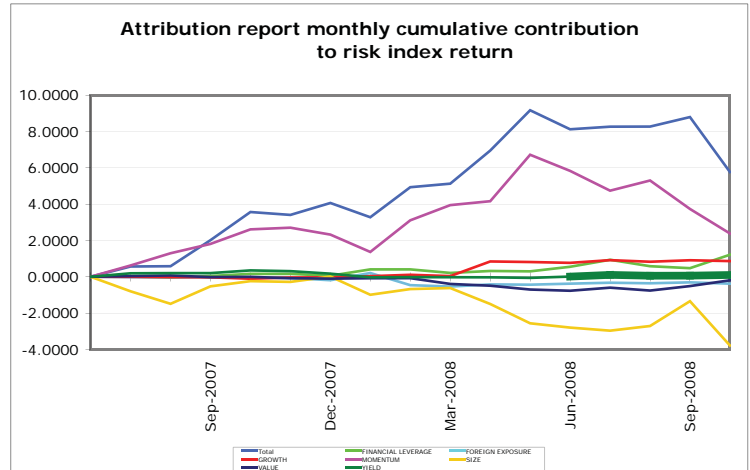


Chart 6



On holdings data you can also see what the individual shares marginal contribution is to the total risk in a portfolio. Other analyses based on holdings level would be the sector exposures over time relative to a benchmark or index, as shown in chart 7, as well as the active style exposures as shown in chart 8 below.

Chart 7

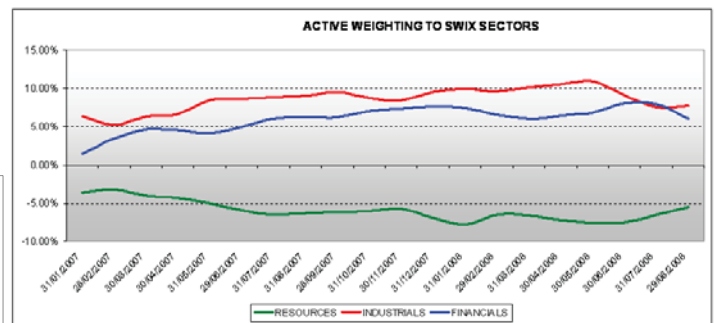
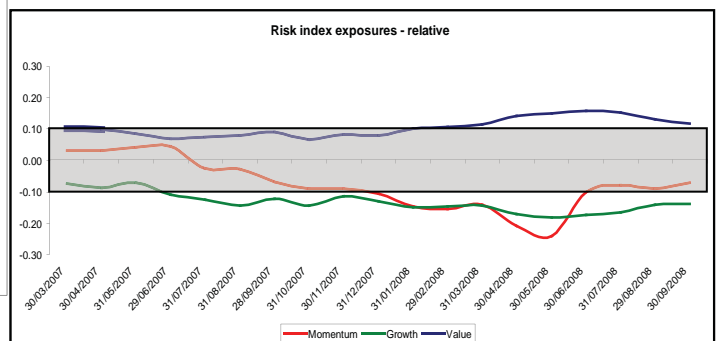
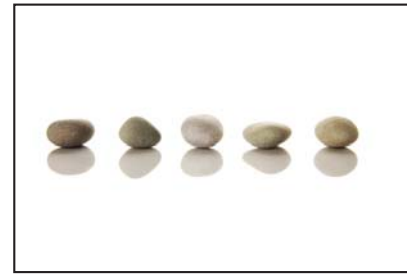


Chart 8



¹APM and APA are licensed solutions of MSCI Barra

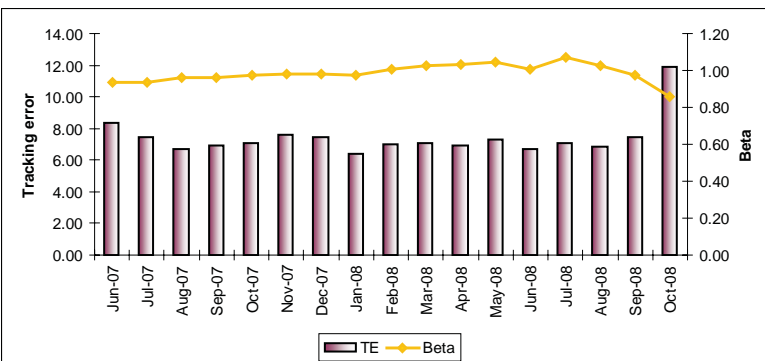


²**Advanced Portfolio Technologies (APT)** is another risk model that analyses holdings data. Within APT one can assess risk exposures of a manager's strategy to macroeconomic factors and stock specific risk. One can for example analyse the beta exposure to rand dollar movements or sensitivities to movements in the oil price.

Assessments of daily trading ability and behaviour of managers within a portfolio can also be done in ³**Behavioural Performance Strategies (BPS)**. This assesses the contribution a manager makes from timing its purchases and sales correctly and allows us to quantify the contribution to performance from the manager's portfolio construction process.

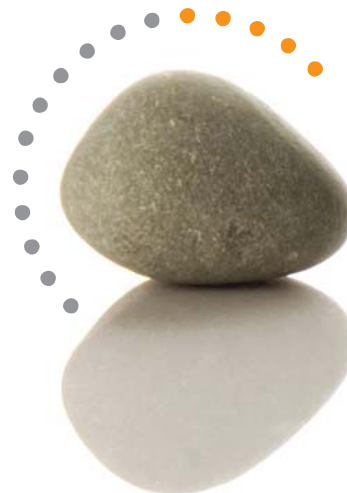
Certain comparative analyses can be conducted on returns and holdings. Examples include beta analysis and tracking errors. The tracking errors on returns would be ex-post tracking errors, while tracking errors from a risk model like APM and APT would be ex-ante tracking errors.

Chart 9



In conclusion, it is very clear that different aspects of quantitative analysis reveal different properties of a portfolio. In essence one needs analyses on historical returns as well as holdings to make realistic conclusions and to understand where the performance came from historically as well as where it will come from in future.

Eugene Botha
 Quantitative Analyst
 Advantage Asset Managers



²Sungard APT is a market and credit risk model developer and distributor

³BPS is an outsourced service, provided by Analytics