Overview

We provide a performance and attribution system delivered through the cloud, hosted on Microsoft's Azure platform. We use a holdings and transaction based approach to provide daily returns. These form the core of our equity, multi-asset and fixed income attribution models. Here we describe the different parts of the system and show its output:

Web Reporting

Interactive at the desk web reporting gives portfolio managers and the client team the information they need to be able to tell their story to the client. It enables a fast feedback of what is working in portfolios by providing fund comparisons and detailed reporting. However, it is presented in an accessible way that only provides the data as needed to avoid overwhelming the user. We have found that more detail available, more widely quickly leads to improvements in data quality across the organisation as more people focus on it. It also empowers portfolio management teams to ask questions of each

Intuitive models and a

focus on the quality of the

results make the system

easy to use and a trusted

information source.

other and to discuss strategy more widely, raising investment performance across the board.

Performance

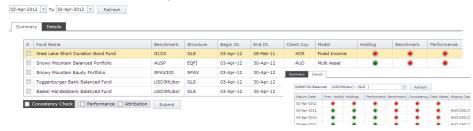
Using holdings and transactions allows us to check the consistency of the data. After

quality checks our performance calculation is capable of handling any type of asset including derivatives such as CDS or options. We provide two output screens specifically to review portfolio performance: the first shows performance through time in limited detail. The other shows contributions to return over a period down to security level. This second screen provides a lot of aggregated detail to allow the user to dig in to understand exactly what happened to the portfolio by security.

Generally we use a traditional sector approach to group assets, however, we also offer <u>strategy tagging</u> at a transaction level to allow portfolios managers to group the stocks exactly as they manage them.

Performance Analysts' Interface

The analysts' interface allows the user to add and manage portfolios and benchmarks; linking the two through time. Sector schemas can also be defined from the underlying portfolio and benchmark descriptive data using an intuitive drag-and-drop approach. Data quality checks are provided to compare holdings and transactions so that the performance team can quickly home in on data problems, correcting them immediately or providing the corrective information to operations.



Performance

Absolute performance contributions are shown using predefined grouping structures. Interactivity allows the user to see down to security level where we provide detail on holdings and transactions over the user defined period.

| | o Total Return | | | | | | | | 1 May | / 2012 | - 31 Ma | y 2012 | V | Sho | | | |
|------|---------------------------|--|---------------|--------------------------------|----------------------------|---|---------|-------------------|----------------------------|-----------------------------------|-----------------------------|--------------------------------------|----------------------|----------------|--|--|--|
| ific | ation: [Model] • Currency | on: [Model] - Currency - Country - Subordination - Rating - Duration | | | | | | | | | | Column View: [Client] • Local • Cust | | | | | |
| Cai | tegory | | Ссу | Total P&L (client) | Base MV (local) | Base MV (client) | Weight | Weight (expos) | Total Return (local) | Total Return (fx) | Total Return (client) | CTR (local) | CTR (fx) | CTR (client | | | |
| Tot | Attribution | | | -5,671,882 | 6,345,185,695 | 271,116,375 | 100.00 | 100.00 | -2.53 | 0.43 | -2.10 | -2.53 | 0.43 | -2.1 | | | |
| 0 | US Treasury | | $\overline{}$ | 1,346 | 5,896,035 | 5,896,035 | 2.22 | 2.22 | 0.02 | 0.00 | 0.02 | 0.00 | 0.00 | 0.0 | | | |
| - | Government Bond | | | -20,495 | 2,066,491 | 2,735,107 | 0.27 | 0.27 | 3.14 | -5.91 | -2.77 | 0.01 | -0.02 | -0.0 | | | |
| | >FR0011196856 | | EUR | -20,495 | 2,066,491 | 2,735,107 | 0.27 | 0.27 | 0.95 | -1.83 | -0.88 | 0.01 | -0.02 | -0.0 | | | |
| | Begin MV: Begin AI: | | | End MV: End AI: End R/P: | | Txn AI: Txn MV Non-Cash: Txn AI Non-Cash: | | 3,020 0 0 | | AI P&L: Trade P&L: Fee P&L: | | | 2,173 -6,354 0 | | | | |
| | | | | | | | | | - | | | | | | | | |
| | Begin Price: | 100.27 | | End Price: | 0.0 | | n Fees: | | 0 | | Base MV: | | 2,066 | | | | |
| | Client Values (USD) |) | | | | | | | | | | | | | | | |
| | Begin Par: | Begin Par: 0 | | End Par: | (| Txn MV: | | 0 | | | Begin MV: | | | 0 | | | |
| | Begin MV: | 2,735,107 | | End MV: | (| 0 Txn Al: | | | 0 End MV: | | 0 | | | | | | |
| | • | Begin AI: 0 | | End AI: | (| 0 Txn MV Non-Cash: | | | 0 | | | | | | | | |
| | Begin R/P: | _ | | End R/P: | (| | | 0 | | Total P&L: | | -20,495 | | | | | |
| | Begin Price: | Begin Price: 0 | | End Price: | 0 Txn Fees: | | n Fees: | 0 Base MV: | | | 2,735,107 | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | Agency | | | 48,980 | 145,234,136 | 1,818,951 | 0.69 | 0.69 | 0.83 | 1.82 | 2.64 | 0.01 | 0.01 | 0.0 | | | |
| | Agency Corporate Bond | | | 48,980 -2,143,330 | 145,234,136 202,063,778 | 1,818,951 | 66.80 | 66.80 | 0.83 | -1.84 | -1.20 | 0.01 | -1.23 | -0.8 | | | |



Equity / Multi-Asset

Our equity / multi-asset model uses a traditional Brinson approach to provide attribution to sectors designed by the user. Sectors themselves are simple to build using a drag and drop process and can be as simple or complex as you require.

Currency is allocated for equities and fixed income using the Karnosky-Singer approach, grouping cash management with FX and splitting FX into an invested portion and a forward FX overlay.

Fixed Income

Our fixed income model is based on returns rather than yield changes. At the performance calculation stage we split the return into price and interest accrual elements. This change significantly simplifies the data gathering process and derivative handling. However, the model still provides a by market split of duration along the curve and a sector breakdown (using the same sector creation process outlined above). This approach no longer requires a beginning and end of period yield for each security. We do, however, still require a duration and spread duration,

although these can be provided periodically rather than daily since as long as the security and curve data are consistent.

Our fixed income model cuts down on the data requirements, speeding up implementation.

Derivatives

Derivatives are handled without fuss. For fixed income the only extra data that we require is a duration and spread duration, these are also required for derivatives. We handle credit derivatives with other credit assets so that you see the results side-by-side. Other derivatives are similarly treated with their invested equivalents to give clear exposures and performance contributions.

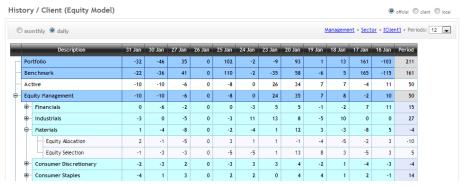
Contact Us

We'd be very happy to hear from you if you have any questions about our system or simply want to discuss something with us:

Website: www.cloudattribution.com
E-mail: info@cloudattribution.com

History Screen

Daily or monthly data can be viewed over time. We provide the individual periods and also aggregates for longer periods over 1 year. This quickly highlights trends over time, indicating strengths or problems in the process.



Detail Screen

The interactivity on this screen aims to allow the user to quickly identify what has happened in the portfolio. We provide contributions to active return and weights or duration contributions so that the whole story can be told. Initially displayed with the sectors used for the attribution, the data can also be regrouped to show duration buckets, sectors, countries or currencies. The lowest level security data once again provides full information on the period, showing all data used to calculate the attribution.

