The Wallstreet Suite performance measurement and attribution tool enables the analysis of absolute and relative returns. The flexibility of the functionality makes it possible to clearly assess the strengths and weaknesses of an investment strategy and to report on results.

BUSINESS CHALLENGES

Institutional asset management organizations need to have a clear understanding of the success factors and failures of their investments to validate their strategies. This information is then regularly reported to the investment committee. The performance information must be available on-demand and must be consistent with the investment strategy. Furthermore, with increased regulations, the reporting must comply with strict performance standards.

Asset managers may need to quickly capitalize on ever-changing investment opportunities. They must have access to complete up-to-date information relating to their portfolios and benchmarks. Increased investment diversification requirements have resulted in asset managers needing systems that can support multiple investment strategies including Fixed Income, Equities, FX and Money Markets in one integrated solution. Today’s applications must support multiple processes, for example the investment process in Fixed Income differs from the Equity process. The Fixed Income portfolio manager will take a decision based on the duration of the portfolio while an Equity portfolio manager will take a decision based on the allocation. In addition, they must be able to break down the performance analysis and analyze the contribution of:

- Different sectors, geographies, currencies and ratings etc., to the return and excess returns
- Curve movements, parallel, rotation to the return and excess return
- Time, spread and trading to the return and excess return.
THE WALLSTREET SUITE SOLUTION

STRUCTURE PORTFOLIOS, INSTRUMENTS AND BENCHMARKS

Wallstreet Suite allows the asset manager to define multiple hierarchical portfolio structures that reflect his or her investment or funding strategies. These can be used to monitor how the investments or funds differ between strategies.

Instruments can be defined for cross-asset portfolios, including Money Market, Fixed Income, Equity and Foreign Exchange. In addition to grouping by portfolio or instrument, there are many other configurable ways of grouping for performance reporting, such as grouping by market, country, industry sector, credit class, and maturity gap. Customer specific instrument groupings can also be used.

The flexibility in hierarchical portfolio structures and classifications also applies to the benchmarks which can be defined in Wallstreet Suite. Benchmarks can be defined from transactions generated from one or a combination of the following components:

- Security Baskets. Each basket is associated to security criteria. The basket can be set to include or exclude securities.
- Indexes.
- Derived Indexes.
- Return Index Series. The custom index derived from multiple percentage weighted source indexes.

The derived indexes and benchmark portfolios can be re-weighed to comply with the originally set percentage weights of the source indexes. This can be done on fully flexible periods, e.g. daily, monthly or on demand.

Wallstreet Suite offers a standard interface for index compositions for upload from Bloomberg, plus a library of custom-built interfaces to other indexes sources and index compositions data.

PORTFOLIO AND BENCHMARK VALUATION

The Performance Monitor in Wallstreet Suite provides tracking of the daily market value of portfolios and benchmarks over time. Portfolios and benchmarks can be:

- Valued by considering the sum of intraday cash flows as occurring at the start of the day or at the end of the day and then splitting them accordingly.
- Valued by positions in the settlement period by using both trade date and settlement date-based valuation.
- Valued on an actual basis – the performance of the portfolio in stock picking and leveraging whilst using leveraged instruments.
RETURN CALCULATION

Performance measurement within Wallstreet Suite is based on the daily valuation of portfolios and the daily Dietz returns which are linked in a unique geometric scheme and support short-selling. In addition to the time-weighted rate of return, the money-weighted rate of return can be viewed in a fully configurable user interface, giving flexibility to select the period monitored and to analyze the position and its returns at different levels. In addition, fees, taxes, dividends and specific chosen cash flows can be flexibly included or excluded from the return. All performance calculations have been designed to provide additional flexibility and higher theoretical sophistication thereby satisfying the most demanding user. All calculations comply with industry standards, for example AIMR-PPS of the CFA Institute.

When evaluating the return of investment portfolios, it is important to consider the level of risk taken to achieve the return. Wallstreet Suite provides the following statistical and risk adjusted return measures from which sampling count and frequency measures can be selected:

- Return Standard Deviation
- Return Volatility
- Beta
- Tracking Error
- Tracking Error (annualized)
- Alpha
- Alpha (annualized)

PERFORMANCE ATTRIBUTION

In order to analyze and explain how the return was derived, Wallstreet Suite’s performance attribution functionality quantifies the contribution of the various investment decisions to the final overall portfolio (excess) return. For single currency portfolios, the Brinson model provides the split of the excess return into the standard key figures Allocation, Selection and Interaction.

Multicurrency performance attribution for domestic and international investments is supported by breaking down the impact of active asset management into that arising from currency decisions or that arising from local market decisions. The impact arising from these decisions can be grouped on many levels including, for example, geographic market, sector and credit class or maturity gap.

Using the Karnosky and Singer framework for management of foreign currency investments, Wallstreet Suite defines the market effect in terms of return premiums, i.e. local return in excess of local deposit return, leading to true separation of the market and currency effects.

The market effect is further divided into the standard allocation, selection and interaction effects. The currency effect is divided similarly into currency allocation, hedged selection and currency interaction.

Using Fixed Income Attribution, the total return is divided by:

- Currency Component
- Trading Component
- Time Component
- Roll Down
- Risk Free Curve Movements
- Spread Component
- Residual Component

Within global portfolios, the investment process can be divided into multiple levels. For example, a portfolio might have one level where an allocation decision between global sectors or countries is made and another where the actual security choice within the global sector or country is made. The attribution scheme and the implementation in Wallstreet Suite supports multi-level investment processes as well as currency overlay management. The attribution effects are calculated from daily data and adaptively linked over time using the Cariño method.
### BUSINESS CHALLENGE

| INFORMATION CONSISTENT WITH INVESTMENT STRATEGY AND AVAILABLE ON DEMAND |
| Wallstreet Suite generates performance reporting of cross-asset portfolios in one single tool. Its reporting tools give immediate access and allow for flexible grouping and analysis of integrated and consistent data from the investment decision to the performance analysis. |

| COMPLIANCE TO PERFORMANCE PRESENTATION STANDARDS |
| The performance calculations in Wallstreet Suite are designed to comply with industry standards such as AIMR-PPS. Performance is measured by money and time-weighted rate of return, and is based on the daily valuation of portfolios. In addition, it allows for trade date-based valuations. |

| COMPLETE DEFINITION AND ADMINISTRATION OF PORTFOLIO AND BENCHMARK |
| Wallstreet Suite provides streamlined benchmark and index management. Its complete flexibility in the definition of hierarchical portfolio structures and security classifications applies to both portfolios and benchmarks. The user can define many different kinds of indexes as well as benchmark portfolios composed of individual securities. Benchmark compositions and flexible definitions of custom indexes and benchmarks can be easily imported. |

| FLEXIBLE BREAKDOWN OF PERFORMANCE ANALYSIS |
| Wallstreet Suite supports flexible and customizable grouping levels to analyze the different components' contribution to the return and excess return. The Wallstreet Suite performance measurement and attribution solution also handles attribution analysis and reporting for single and multi-currency portfolios based on the Brinson, Karnosky-Singer and Carini frameworks, and allows for attribution reporting drilled down from top level to security level. |