

## Wallstreet Suite

The comprehensive reserve, debt, cash and asset management solution for central banks and government agencies

[www.wallstreetsystems.com](http://www.wallstreetsystems.com)



# FACT SHEET: Wallstreet Suite PERFORMANCE MEASUREMENT AND ATTRIBUTION



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 reflects 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-weighted 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.

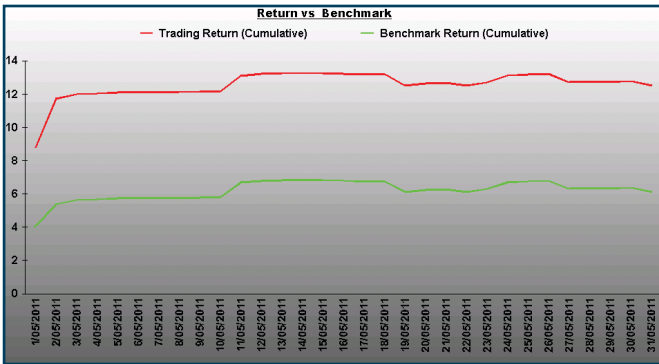
Wallstreet Suite offers a standard interface for index compositions for upload from Bloomberg, plus a library of custom-built interfaces to other indexes sources and index compositions data.

## 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 intra-day 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.





A return graph from Performance Monitor, displaying the performance of an investment portfolio against a selected benchmark.

## 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)
- Return Semi-deviation
- Information Ratio
- Sharpe Ratio
- Modigliani-Modigliani
- Treynor Ratio
- Jensen's Alpha

## 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.

Multi-currency 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.

	CB-MULTI-TRADING						CB-MULTI-BENCH	
	Return (Cumulative)	Attribution Weight	Return (Cumulative)	Attribution Weight	Excess Return Contribution (Cumulative)	Excess Return Asset Contribution (Cumulative)	Excess Return Hedge Contribution (Cumulative)	
16/05/2011	<b>0.700073</b>	<b>100.000000</b>	<b>0.614919</b>	<b>100.000000</b>	<b>0.085255</b>	<b>0.089384</b>	<b>-0.004049</b>	
EUR Instrument	0.311683	120.268631	0.321318	125.450574	0.003821	-0.028182	0.001021	
USD Instrument	1.048533	-20.268631	0.831899	-25.450574	0.081534	0.117485	-0.029580	
Total	<b>1.115237</b>	<b>100.000000</b>	<b>0.845100</b>	<b>100.000000</b>	<b>0.085255</b>	<b>0.181953</b>	<b>-0.007168</b>	
24/05/2011	<b>0.440277</b>	<b>119.804766</b>	<b>0.458152</b>	<b>125.084626</b>	<b>0.009591</b>	<b>-0.045434</b>	<b>0.002212</b>	
EUR Instrument	2.959589	-19.804766	1.841596	-25.084626	0.084104	0.147387	-0.010970	
USD Instrument	1.115237	100.000000	0.820385	100.000000	0.181832	0.156765	-0.007134	
Total	<b>0.590227</b>	<b>77.018154</b>	<b>0.606882</b>	<b>89.831332</b>	<b>-0.028372</b>	<b>-0.065553</b>	<b>0.001551</b>	
EUR Instrument	2.383554	22.901846	-0.897273	10.068866	0.214804	-0.261418	-0.008865	
USD Instrument	1.148656	100.000000	0.853100	100.000000	0.181556	0.186388	-0.004914	
Total	<b>0.624142</b>	<b>81.581434</b>	<b>0.642136</b>	<b>75.235162</b>	<b>-0.028711</b>	<b>-0.068431</b>	<b>0.001166</b>	
EUR Instrument	2.396331	38.418556	-0.890515	24.764838	0.214268	-0.265789	-0.009967	
USD Instrument	1.043216	100.000000	0.358086	100.000000	0.487510	0.223844	0.263866	
EUR Instrument	0.540489	81.596406	0.530303	75.232903	0.061177	-0.028666	0.008720	
USD Instrument	4.384937	38.413592	1.244644	24.780097	0.428333	0.260331	0.195146	
Total	<b>2.461587</b>	<b>100.000000</b>	<b>1.725538</b>	<b>100.000000</b>	<b>0.708049</b>	<b>0.225083</b>	<b>0.482286</b>	
EUR Instrument	0.540269	81.110551	0.528385	74.857215	0.116310	-0.032053	0.123624	
USD Instrument	6.014582	38.889469	2.827112	25.142885	0.591730	0.261416	0.359162	
Total	<b>2.477936</b>	<b>100.000000</b>	<b>1.764450</b>	<b>100.000000</b>	<b>0.713487</b>	<b>0.225177</b>	<b>0.488310</b>	
EUR Instrument	0.541172	80.741646	0.530887	74.564551	0.117084	-0.032002	0.125179	
USD Instrument	6.055972	39.258354	2.897161	25.435449	0.595793	0.261379	0.363131	
Total	<b>2.345839</b>	<b>100.000000</b>	<b>1.679758</b>	<b>100.000000</b>	<b>0.665391</b>	<b>0.224937</b>	<b>0.411084</b>	
EUR Instrument	0.542276	80.732621	0.531791	74.557373	0.105885	-0.030164	0.113141	
USD Instrument	5.795654	39.267379	2.520373	25.444827	0.660276	0.261161	0.327662	
Total	<b>2.331843</b>	<b>100.000000</b>	<b>1.681517</b>	<b>100.000000</b>	<b>0.658326</b>	<b>0.216786</b>	<b>0.433540</b>	
EUR Instrument	0.568101	80.811759	0.557755	74.620293	0.102176	-0.039753	0.111247	
USD Instrument	5.628901	39.188241	2.495888	25.379707	0.548149	0.258519	0.322292	

Performance Monitor displaying multi-currency performance attribution using the Karnosky-Singer model. The excess return contribution can be subdivided to show both asset and currency (hedge) impact separately. In addition, you could further split both figures in Brinson style figures, for example Allocation, Selection and Interaction.

	CB-BOND-TRADING (EUR)			CB-BOND-BENCH(BOND)		
	Return (Cumulative)	Attribution Weight	Return (Cumulative)	Excess Return Contribution (Cumulative)	Attribution Weight	Allocation
May	<b>0.108800</b>	<b>100.000000</b>	<b>0.216200</b>	<b>-0.654211</b>	<b>100.000000</b>	<b>-0.653939</b>
Total	0.044051	36.858589	0.048301	-0.062028	15.187399	-0.133640
1-3Y	0.106655	34.578610	0.100750	-0.099988	15.683754	-0.000015
3-5Y	0.000000	0.000000	0.000000	0.000000	0.000000	-0.000000
5-7Y	0.000000	0.000000	0.270075	-0.010187	16.589396	-0.048786
7-10Y	0.000000	0.000000	0.286675	-0.048491	15.511136	-0.062070
10Y+	0.312889	34.584251	0.313871	0.015712	18.282011	0.016651

Performance Monitor displaying single currency performance attribution using the Brinson model, for IR instruments grouped by maturity bucket.

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 Cario method.



## BUSINESS CHALLENGE

## WALLSTREET SUITE SOLUTION

### 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.

### COMPLIANCY 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 Cariño frameworks, and allows for attribution reporting drilled down from top level to security level.

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