

AVANTGARD RISK

Today's treasurer is concerned with far more than traditional cash management. A key component of the growth of an organization, treasuries must constantly search for tighter controls, efficiency enhancements and improved reporting.

With ever-increasing demands being placed on treasury departments, AvantGard Risk is an integrated treasury management solution, providing comprehensive dealer desktop, risk management and performance measurement capabilities across the full range of physical and derivative treasury instruments. Deals can be priced and captured through the AvantGard Risk front-office or imported from external sources. Pricing, analysis and reporting are fully integrated into the AvantGard Risk desktop, providing functionality and interactivity essential to a global treasury management solution.



BUSINESS CHALLENGES

Financial risk management – including liquidity, market and credit risk – is an ongoing challenge in every treasury operation. Specific challenges include the following:

- Timely risk reporting
- Data transparency
- Achieving consolidated risk view across organization
- Complete automation of all reporting
- Integration with external transaction processing systems

WHY AVANTGARD RISK

AvantGard Risk is a real-time reporting tool providing comprehensive analysis and analytics to the front, middle and back office. AvantGard Risk offers:

- Individual cash flows are maintained for all transactions allowing detailed liquidity analysis.
- Cash flows can also be imported from external sources for consolidation of the liquidity position.
- Seamless integration of bank account balances, along with the ability to group cash flows into customized time profiles, provides a comprehensive liquidity management framework.
- Performance measurement capability includes benchmarking, profit/loss attribution, and return on investment/cost of funds.



Market risk management capability covers interest rate, currency and commodity price risk across the full range of financial instruments. Functionality includes a flexible approach to market valuations, measures of sensitivity to market rates, a choice of Value at Risk or VaR methodologies and comprehensive Scenario Analysis capability.

Detailed forecast and hedge analysis, portfolio modeling, real-time compliance reporting with alerts and the dealer desktop complete a powerful package for the treasury professional.

KEY FEATURES

Dealer Desktop

Pricing and deal capture is provided across all treasury products. Trading Credit Limits can be monitored and validated prior to deal capture. Capability includes:

Deal	Position Date	Rates Date	As At Date
	27/07/2005	27/07/2005	27/07/2005

Instrument	Type	Style
Barrier Down In	Standard	Barrier: Down & In (Rubenstein and Reiner)

Buy/Sell	Call/Put	Currency	Amount	Strike	Currency	Amount
<input type="radio"/> Buy <input type="radio"/> Sell	<input type="radio"/> Call <input type="radio"/> Put	USD	5,000,000.00	1.22000000	EUR	4,093,260.66

Deal Date	Monitor Frequency
27/07/2005	Continuously

Expiry Date	Barrier
27/07/2005	1.17000000

Spot Rate
1.19230000

Forward Points
-0.00450771

Forward Rate
1.18779228

Volatility
11.30699634

Domestic Rate
2.04744716%

Foreign Rate
1.36796172%

Calculate	Currency
Price	EUR

Market	For Unit	Position	Percent
Price	0.000014000	194,074.01	4.73540596%
Delta	0.641094434	320.66	0.00792136%
Gamma	5.471260285	0.27	0.00000637%
Vega	0.230212904	110.11	0.00269659%
Theta	-0.027055557	-362.96	0.00344054%
Rho	0.251417436	125.71	0.00306729%
Phi	-0.270689952	-175.44	0.00330490%

- Calculating Market Prices and Sensitivities
- Pricing Matrices
- Solving for Rates and Zero-cost Option Structures

Market Risk

Market standard sensitivity measures are provided allowing detailed analysis of position sensitivities to market rate movements.

- Sensitivities can be reported at any level, from an individual cash flow through to consolidation at the enterprise level.
- Sensitivity measures calculated by the valuation engine include delta, duration, modified duration, gamma, convexity, theta, vega and rho.

Position Management

- For position management and other reporting the user has full control over the data elements and presentation.

along with the ability to group cash flows into customized time profiles, provides a comprehensive liquidity management framework.

Market Value Summary								
Currency	Market Value	Spot Rate	Base Mkt Value	BP Delta	BP Gamma	Theta	Vega	Modified Duration
AUD	7,529,031.83	0.739700	9,568,224.70	6,587.08	-2.84	-2,586.34	0.00	2.568858
CAD	-12,878.84	1.329800	-18,466.86	0.27	0.00	0.28	0.00	0.213096
EUR	-294,671,378.42	1.182300	-358,338,674.95	2,186.28	-2.17	5,179.28	-888.78	1.728880
GBP	281,258,377.41	1.741400	144,288,898.72	-9,689.68	3.04	3,232.44	0.00	1.292494
JPY	-38,888,377.35	115.080800	-462,747.83	82,281.28	-14.89	-23,284.24	0.00	0.820480
USD	-527,868,848.76	1.000000	-527,868,848.76	7,049.64	-19.15	-4,571.07	523.48	2.827008
Grand Total			-729,358,820.41	89,485.96	-36.21	-22,171.01	-471.32	

- The level of detail/aggregation and drill-down can be customized for individual queries. Extensive analysis is available for the management of sensitivities to interest rates, FX rates and volatilities.
- Multiple points in time calculations are available on a single report for attribution and trend analysis.

Liquidity Analysis

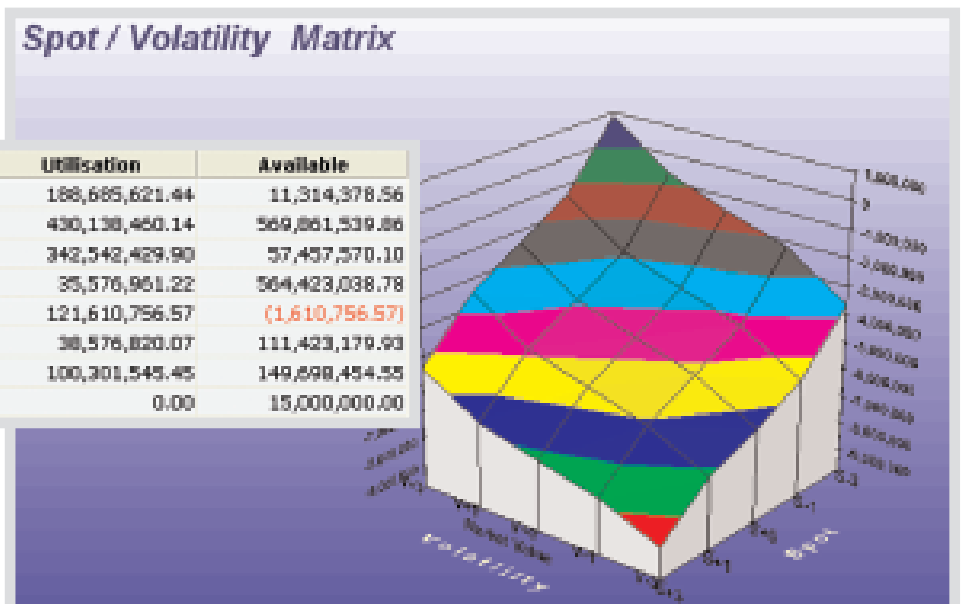
Individual cash flows are maintained for all transactions allowing detailed liquidity analysis. Cash flows can also be imported from external sources for consolidation of the liquidity position. Seamless integration of bank account balances,

Credit and Compliance

Real-time Limit monitoring capability covers both credit and trading limits with user-defined utilization calculations. Limits can be constructed on any combination of Counterparty, Country, Industry, Counterparty Rating, Country Rating, Currency, Entity, Transaction Type, Instrument, Dealer, and Term. Utilization calculation can be user-defined, using any measure generated by the valuation engine. Limits are monitored in real-time and breaches automatically reported via the Alerts module. This module allows automatic notifications to be sent via electronic means such as e-mail.

Spot / Volatility Matrix

CParty	Limit Amount	Utilisation	Available
ABN Amro Group	200,000,000	188,685,621.44	11,314,378.56
ALL	1,000,000,000	430,138,460.14	569,861,539.86
Citibank Group	400,000,000	342,542,429.90	57,457,570.10
Deutsche Bank Group	600,000,000	35,576,961.22	564,423,038.78
Governments	120,000,000	121,610,756.57	(1,610,756.57)
HSBC Group	150,000,000	38,578,820.07	111,421,179.93
Internal Group	250,000,000	100,301,543.45	149,698,456.55
News Corporation	15,000,000	0.00	15,000,000.00



Scenario Analysis

Scenario Analysis provides *what-if* analysis on market rates. It allows interest rates, currency rates, commodity prices and volatilities to be shifted either individually or in combination and the resultant market values and sensitivity measures are available for comparison and profit/loss analysis. This functionality is useful for measuring the effect of rate shifts expected under normal market conditions and also for performing stress testing, i.e., measuring the effect of rate shifts in extreme market conditions.

Performance Measurement

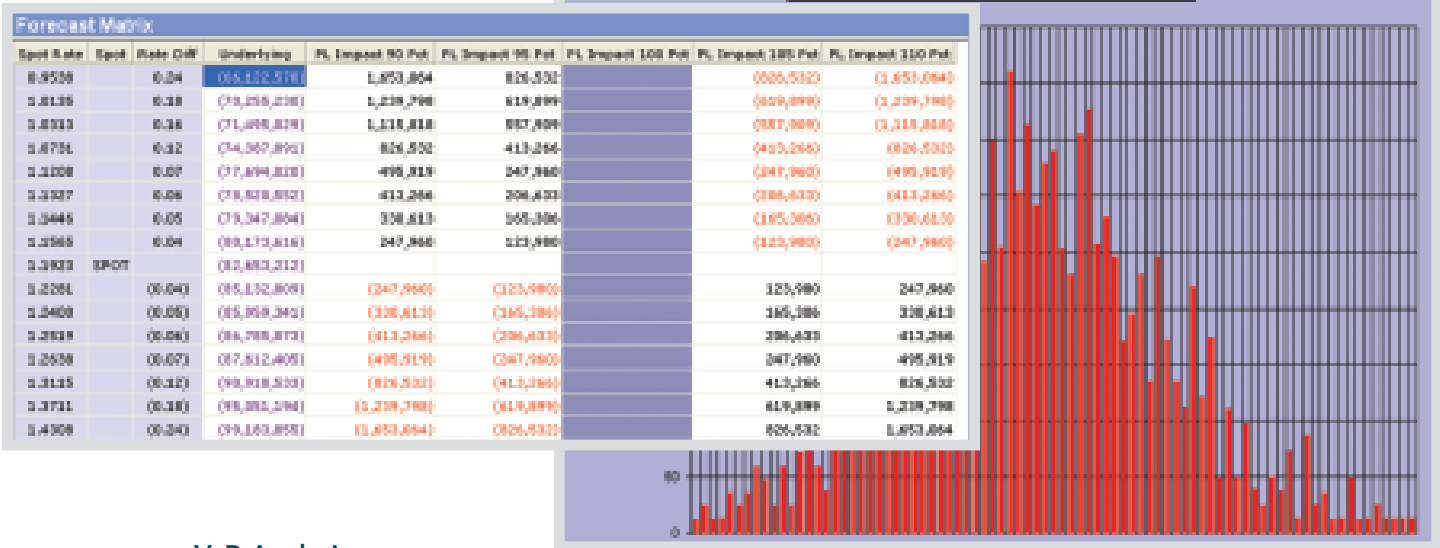
Benchmarking - Analysis can be performed on benchmark rates and transactions and comparison made with actual positions and market rates.

Profit/Loss Attribution - In addition to total profit/loss over any user-defined time period, profit/loss can be broken down for detailed analysis.

Return on Investment/Cost of Funds - Both Return on Investment and Cost of Funds can be measured on a market value or book value basis.

Forecast/Hedge Analysis - Extensive analysis is available for measuring forecast accuracy, hedge effectiveness and strategies.

Monte Carlo VaR Histogram



VaR Analysis

VaR estimates the maximum loss that may be incurred on a portfolio over a given time horizon, with a given level of confidence. The advantage over traditional measure of risk is that VaR takes into account the diversification within a portfolio, i.e., exposure across all

products, asset classes and currencies. Traditional measures of risk typically only provide sensitivity measures on a product-by-product basis. Methodologies for calculating VaR include: Parametric VaR, Monte Carlo Simulation and Historical Simulation.