

one simple word  
complex manifestations



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# Risk

one simple word - complex manifestations

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How do you marry technology, solutions and practice to meet the myriad expressions, shapes and forms of risk?

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At Alchemy we do it  
**one customer,**  
**one problem,**  
one question at a time.

## Alchemy Risk Manager

### Comprehensive

There are very few solutions that effectively integrate Basel II, Market Risk, Asset Liability Management, Stress Testing, and Regulatory reporting on one Enterprise Risk platform.

### Agile

There is hardly any with a 90 day implementation schedule and an affordable desk top configuration saving hardware and third party licensing costs.

### Flexible

Add the ability to handle regional eccentricities and local demands - the universe shrinks even further.

## We do all three

Take a look at some of the questions we have answered and you will understand why our customers come back with referrals and repeat orders.

# Alchemy Risk Manager Feature List

## Market Risk

Treasury and forward rates calculator, Benchmarking and Back testing tool kit, Risk adjusted return analysis, VaR capital charge, Internal capital charge, Limits management.

## Basel II Calculator

Capital charge for Market, Credit and Operation Risk using standardized and internal model approaches.

## Asset Liability Management

Earning at Risk, Net Interest Income at Risk, Price and Rate Gaps, Duration Gap and Capital at Risk reports.

## Value at Risk

Variance Co-Variance, Historical and Monte Carlo simulation with Incremental VaR, Full valuation and variance reduction options.

## Stress Testing

Worst case scenarios and shocks for Market, Credit, Interest Rate and Liquidity risk. Scenario analysis and paper trades.

## Derivative Pricing

Interest rate swaps, caps, floors, forward rate agreements, vanilla and exotic currency options and structured products.

## Interest Rates Generators

Chained CIR generators for simulating term structures for usage with traditional and interest rate derivatives.

## Interfaces

XML, text and CSV based import and export functionality.

# Market Risk Snapshots

**How do I compare my internal capital framework against regulatory capital requirements?**

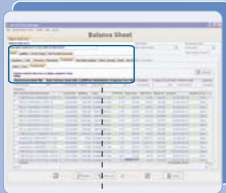
How do I revise my limits framework for both?

**What** is my market risk exposure today?

**How** will that change tomorrow?

**Which** number should I worry about?

A summary view of the entire balance sheet with transaction level drill down and convenient jumps to report and capital adequacy analysis



Assets Liabilities Owner's Equity Non-Funded Exposures

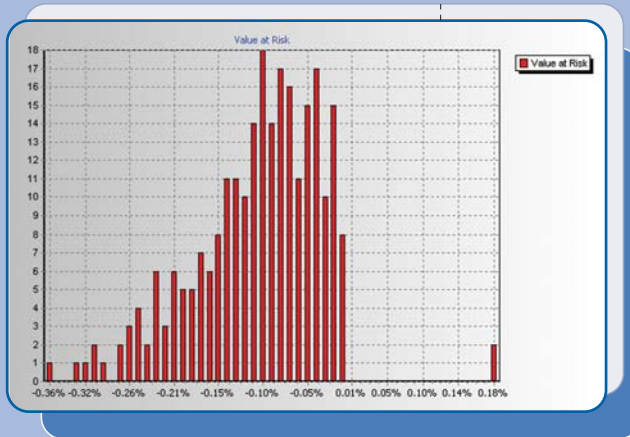
Regulatory Cash Advances Placements Investments Inter Bank Lendings Others- Earning Others - Non Earn

Equity Forex Fixed Income

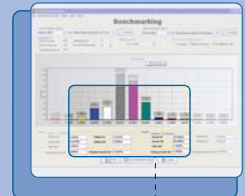
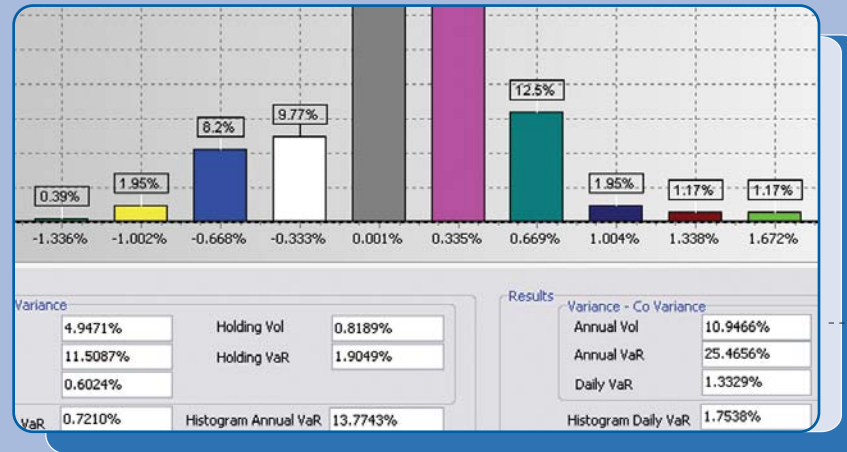
Positions marked in blue have no dealers assigned to them

**Issue**

Fixed Income Bond Title	Base Currency	Issue Date	CutOff(%)	MaturityDate	Frequency	Face Value
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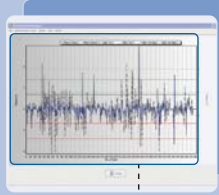
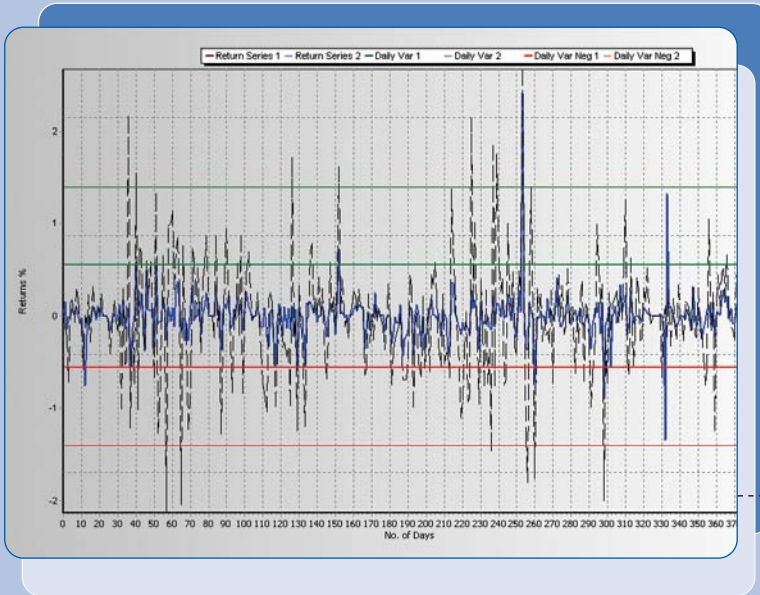
Quick side by side comparison of annual, daily and holding period Value at Risk using Variance covariance and Historical simulation methods



# Benchmarking Snapshots

How do I relate value at risk to historical trends,  
outliers and market based benchmarks?

On a risk adjusted basis, **how can I rank positions,**  
opportunities and threats?



### Benchmarking

Balance Sheet: 007, Demo Bank Limited As of 31 Dec, Portfolio

Select Balance Sheet: 09/01/2007, Benchmark Index Performance

Yrs: 365, Holding Period: 10, Settlement Date: 31/12/2006

Analyze: 300, No. of histogram bars: 9

Fixed Income Trading Types:  Trading,  Held To Maturity,  Available For Sale

Value at Risk: Return Series

927%	1.39%	1.95%	20.31%	74.61%	1.95%	0%	0.38%	0%	0.38%	2.410%
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Value at Risk: Return Series

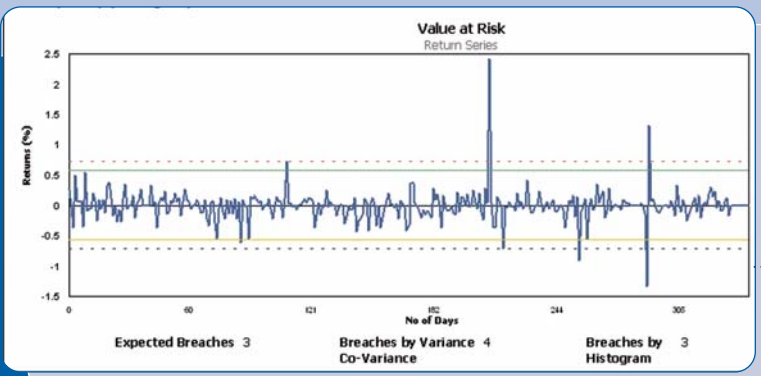
1.17%	3.13%	13.67%	41.02%	34.38%	3.52%	1.58%	1.17%	0.39%
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Results: Variance - Co Variance

Annual Vol	4.9471%	Holding Vol	0.8189%
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Results: Variance - Co Variance

Annual Vol	10.9466%	Holding Vol	1.8119%
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Benchmark your performance against indices, competition and market portfolios, on screen or via reports at a level of detail that you need



# Asset Liability Management & Stress Test Snapshots

What will be the impact of a 1% rise in interest rate on my Net Interest Income?

**How different is this from my Earnings at Risk number?**

Where do my **largest  
liquidity gaps**

lie? What is the impact of an interest rate shock on the cost of these gaps?

What is the cost of closing these gaps?

**What is the maximum liquidity shock my balance sheet can withstand?**

What is the combined impact of worst case market, credit and interest rate shocks on my capital adequacy numbers?

### ALM Price Sensitive Gap

Balance Sheet as of: January 09, 2007  
 Balance Sheet Name: Demo Bank Limited As of 31 Dec 2006  
 Revaluation Date: 31/12/2006

	0-3 months	3-6 months	6-12 months
<b>1. On-Balance Sheet Items</b>			
<b>Assets</b>			
Advances	466,778,565.36	5,363,448.00	160,709.1
Cash	590,383,949.55	0.00	
Investments	477,024,748.00	187,730,000.00	183,520.0
Others-Earning	66,659,654.00	5,000,000.00	97,688.2
<b>Total Rate - Sensitive Assets</b>	<b>1,600,846,916.91</b>	<b>198,093,448.00</b>	<b>441,917,47</b>
<b>Liabilities</b>			

### ALM Liquidity Limits Report

Balance Sheet as of: January 09, 2007  
 Balance Sheet Name: Demo Bank Limited As of 31 Dec 2006  
 Revaluation Date: 10/01/2007

	Loans	Deposits
<b>Loans/Deposits</b>		
Loans / Deposits (LCY)	2,524,882,771.26	5,290,409,759.26
Loans / Deposits (FCY)	0.00	0.00
Loans / Deposits (Total)	2,524,882,771.26	5,290,409,759.26
<b>Interbank Borrowings / Liabilities</b>	<b>Interbank Borrowings</b>	<b>Total Liabilities</b>
Inter Bank Borrowings / Total Liabilities	363,669,669.00	6,269,619,828.68
<b>CRR and SLR Requirements</b>	<b>Demand Time Liability</b>	<b>Limit(%)</b>
CRR (LCY)	5,290,409,759.26	5.00

### Earning At Risk

Balance Sheet as of: January 09, 2007  
 Balance Sheet Name: Demo Bank Limited As of 31 Dec 2006  
 Revaluation Date: 31/12/2006

	0-3 months	3-6 months	6-12 months
<b>Assets</b>			
<b>Total Rate Sensitive Assets</b>	1,548.83	198.32	346.22
Rate Shock	0.84%	0.22%	0.23%
Effect due to change in Interest Rates	1.530044	0.177056	0.736628
<b>Liabilities</b>			
<b>Total Rate Sensitive Liabilities</b>	842.82	497.49	9.20
Rate Shock	0.33%	0.24%	0.62%
Effect due to change in Interest Rates	0.32	0.33	0.03

Asset liability management reports that present the impact of expected rate shocks on balance sheet as well as earnings on a single page.

### Stress Test Report (C-5 Annex.)

Balance Sheet at: January 09, 2007  
 Balance Sheet Name: Demo Bank Limited As of 31 Dec 2006  
 Revaluation Date: 10/01/2007

<b>Equity Price Risk - Fall in the Stock Market Prices</b>	
<b>Magnitude of Shock (%)</b>	<b>1.00</b>
<b>Total Exposure in Stock Market</b>	<b>577,300,062.98</b>
<b>Fall in the Value of Stock</b>	<b>5,773,000.63</b>
<b>Tax Adjusted Loss</b>	<b>5,195,700.57</b>
<b>Revised Capital</b>	<b>656,704,082.32</b>
<b>Revised RWA</b>	<b>8,648,430,307.57</b>
<b>Revised CAR(%)</b>	<b>7.59</b>
<b>Liquidity Shock - Fall in Liquid Liabilities</b>	

# Basel II Snapshots

What is the business case for Basel II?

Will I save capital or need additional capital under the advance regime?

What is the marginal capital impact on today's balance sheet?

What will my new balance sheet look like, after I have merged with a target acquisition?

What would be **the impact** on my capital requirements today?

Three quarters from now?

How do I manage Pillar II reporting requirements?

How can I recalibrate probability of default generated from an internal model?

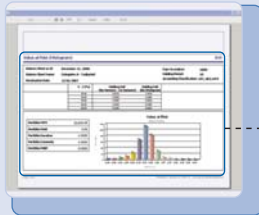
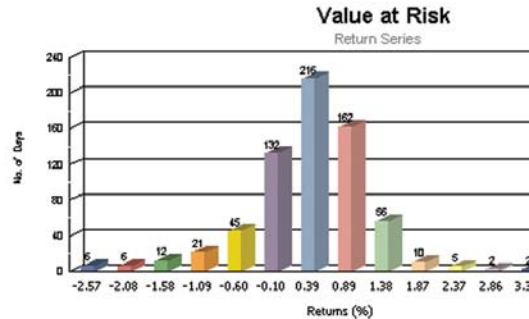
## Value at Risk (Histogram)

Balance Sheet as of: December 21, 2006  
 Balance Sheet Name: Categories A - J adjusted  
 Revaluation Date: 12/01/2007

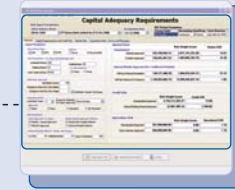
Days to analyse: 1000  
 Holding Period: 10  
 Accounting Classification: HFT, AFS  
 FI VaR based on: Rates

	C. I (%)	Holding VaR (By Variance - Co Variance)	Holding VaR (By Histogram)
	99.00	5.8796	7.9984
	95.00	4.1572	4.1696
	90.00	3.2390	2.5852
	66.00	1.0425	0.2050
	60.00	0.6403	0.0871

Portfolio MIM	22,951.66
Portfolio Yield	5.10
Portfolio Duration	2.9500
Portfolio Convexity	5.9000
Portfolio PVBP	6.6000



Segmentation, graphical presentation, multi-method analysis and 100 configurable reports to put your risk exposures at your finger tips



## Capital Adequacy Requirements

**Risk Input Parameters**

Select Balance Sheet: 09/01/2007 >> Demo Bank Limited As of 31 Dec 2006  
 Revaluation Date: 31/12/2006  
 IRS Pricing Parameters: Pricing Model: Bond Model, Discounting: Continuous, BootS: All Ten

Summary | Capital Requirements and Credit Risk | Market Risk | Operational Risk | Errors and Messages

**Input Parameters**

Accounting Class:  HFT  AFS  HTM  Options:  Buyer  Buyer/Seller

Compute Internal Models Charge

VaR Parameters - For Internal Model Approach

Lookback Period: 365 Trading Days: 60  
 Holding Period: 10 F1 VaR based on:  Rates  Prices  
 Conf. Interval (%): 99.00

Delta Plus Approach

Simulation Count: 100  
 Change in Price (%): (For Delta) 1  
 Change in Vol (%): (For Vega) 1  Antithetic Variate Technique

Operational Risk

Look Back Years: 1 Exposure Indicator: Gross Income  
 Approach:  None  Basic  Standard  Alt Standard

IRB Parameters

RWA Approach for Equity:  Market - based Approach  PD/LGD Approach  
 Market Based Approach Method:  Simple Risk Weight Method  Internal Models Method

Internal Models Method - Equity VaR Params

C.I (%) 99 Holding Period 10 Days To Analyze 365

**Market Risk**

**Risk Weight Assets**

Standardized

Maturity Approach	314,718,822.04	3,933,985,275.47
Duration Approach	295,371,948.00	3,692,149,350.03

Internal Models Approach (For Traditional Portfolio)

Charge by Historical Simulation	79,890,859.97	998,635,749.66
Charge By Variance Co-Variance	63,044,476.96	788,055,961.96

**Credit Risk**

**Risk Weight Assets** **Credit**

Standardized Approach	4,735,172,355.37	
Internal Ratings Based Approach	5,393,843,897.55	

**Operations Risk**

**Risk Weight Assets**

Standardized Approach	667,500,000.00	8,343,750,000.00
Basic Indicator Approach	750,000,000.00	9,375,000,000.00





Designed by Enabling Technologies

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