

CASE STUDY



Introduction

This case study aims to demonstrate a real-life example of RiskValue™ put into practice by a large banking organization. We shall see how RiskValue addressed the needs of a complex risk management operation, ranging from day-to-day risk measurement and reporting to strategic economic capital evaluation. The Bank being considered in this case study is the National Bank of Greece (NBG).

About NBG

NBG is the largest financial institution in Greece, with more than 15,000 employees and total assets in the order of €48 Billion (per 2001 Annual Report). NBG controls a number of subsidiary banks in various countries and has its shares traded in the Athens Stock Exchange and New York Stock Exchange. The entire Risk Management Group of the Bank is run by a staff of 45 people, with 10 of them concentrating on market risk. The following excerpt from the 2001 Annual Report illustrates the underlying risk environment in which NBG operates over the past few years:

		National Bank		NBG Group	
		2001	2000	2001	2000
Profit and loss account (€ millions)					
Net interest income		897.2	725.0	1 010.0	962.9
Total operating income		1 538.2	1 756.1	1 963.0	2 156.8
Profit before provisions		676.6	929.5	757.5	1 080.6
Profit before tax		647.5	874.6	698.7	980.6
Balance sheet (€ millions)					
Total assets		47 846.5	43 399.7	52 840.1	48 547.3
Total equity		2 265.7	2 581.6	2 578.4	3 184.9
Loans and advances to customers		16 388.2	14 966.8	19 251.8	17 765.2
Amounts owed to customers		40 534.0	36 780.0	44 812.6	40 889.1
Per share (€)					
Earnings		-	-	2.02	3.33
Dividend		1.00	1.09	-	-
Dividend yield (share price at 31/12)		4.9%	2.7%	-	-
Ratios					
Return on average equity (after tax)		19.4%	27.5%	18.7%	27.3%
Return on average assets (before tax)		1.4%	2.2%	1.4%	2.2%
Cost/income efficiency		56.6%	47.5%	45.4%	49.9%
Net interest margin		2.2%	2.0%	2.4%	2.2%
Loans after provisions/total assets		32.6%	32.7%	34.5%	34.6%
Capital adequacy					
Tier 1		9.9%	11.2%	9.0%	11.5%
Total capital		11.3%	12.6%	10.2%	12.3%
Staff numbers					
		15 194	15 788	21 332	21 714
Credit ratings					
			Long-term	Short-term	
Moody's			A3	P-2	
Standard & Poor's			BBB+	A-2	
Fitch/ICA			A-	P-2	
Capital Intelligence			A-	A-2	

“The NBG attaches great importance to effective and up-to-date risk management to ensure stability and continuity in its business. The Bank’s activity in the Balkans and Southeast Europe implies an increased level of risk, given that these countries are not members of the OECD and should, under the current regulatory framework, be approached differently. Furthermore, NBG’s expansion in retail banking, with continuing growth in its range of products, means that its loan portfolio is also growing both quantitatively and qualitatively, thus generating a need for increasingly sophisticated risk management. The listing of NBG’s stock on the New York Stock Exchange has created more exacting demands, in line with US GAAP, as regards the presentation of the Bank’s results....”

The above environment imposed an urgent need for a suitable risk management system, which would be capable of complying with the following requirements:

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- Modern risk measurement techniques, including VaR methods
- Extensive coverage of treasury instruments and global financial markets
- Fast deployment with minimum implementation costs
- Ease of use and low training costs
- Ease of integration with existing deal capturing / positioning systems
- Open architecture to allow integration with internal mathematical models
- Ease of customization and local support

The use of RiskValue by NBG

NBG turned to Systemic Risk Management (SRM) to work out a customized solution, based on its experience with risk management systems. SRM's strength lies in the quality of its people who previously worked for major international banks, such as the Bank of America, Citibank and ABN-Amro Bank, in functions ranging from in-house software development to treasury sales and risk management. As a result, SRM people have extensive hands-on experience in the banking industry and are particularly familiar with global best practices in risk management.

SRM's core product is **RiskValue**, a powerful, cost-effective solution for treasury and risk management operations. Following extensive customization work and thorough testing, NBG decided to rely on **RiskValue** as the main risk management engine at NBG's treasury centers around the world. This was validated with a Global Agreement signed between NBG and SRM in 2000. Following this agreement, **RiskValue** was installed in Athens, London, Sofia and Johannesburg. The Risk Management Group located in Athens is responsible for aggregating all regional data into one database used for central monitoring.

RiskValue proved an open, scalable, and extendible platform, in accordance with NBG's initial requirements. The Bank was able to integrate **RiskValue** with various third-party systems, such as market data vendors, deal capturing systems, and back-office applications. **RiskValue** is now able to import deals from a number of different trading systems, either on a real-time basis or through end-of-day procedures. In some cases, **RiskValue** is used as a data warehouse for other systems, where **RiskValue** exports data (mainly on positions) for further analysis and reporting.

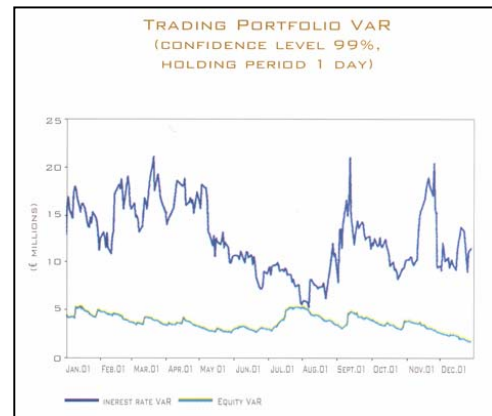
The Bank is trading in several instruments and markets. **RiskValue** maintains positions and trade information in any of the following types of instruments / deals:

- Stocks
- Futures
- Options
- Corporate Bonds
- Government Bonds
- Asset Swaps
- Interest Rate Swaps
- FX (Spot / Forward)

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The Bank evaluates the market risk of its trading portfolio using VaR measures produced by **RiskValue** on a day-to-day basis. **RiskValue**'s open architecture allowed the Bank to incorporate its own mathematical models that produce volatility and correlation estimates used in VaR calculations. The diagram to the right illustrates the daily fluctuation in NBC's portfolio VaR during 2001, as measured by **RiskValue** (source: 2001 Annual Report, page 62). The Bank's senior management receives daily VaR reports produced by **RiskValue**, detailing the aggregate exposure of the Bank in the various markets.



The Bank has set up three main trading portfolios: Equity, Foreign Exchange and Interest Rate. **RiskValue** provides advanced drill-down capabilities allowing risk monitoring at any portfolio or sub-portfolio level. The Bank has set up limits at various portfolio levels to contain risk exposure within acceptable VaR levels. These limits are set up in accordance with the risk policy of the Bank and are closely monitored by senior management. In addition to VaR limits, the Bank uses **RiskValue** to monitor counterparty exposure through appropriate PSR (pre-settlement risk) limits.

Following a recent decision by the Central Bank of Greece (dd. 27/05/2002) concerning the use of internal models for estimating regulatory capital, the Bank is planning to apply for approval of its internal methodology based on measures provided by **RiskValue**. Some initial capital calculations based on **RiskValue** indicate a substantial potential reduction in capital charges against the standard CAD methodology, in the order of several million euros.

Further Information

To obtain additional information about **RiskValue** or to explore how **RiskValue** can be used to serve the needs your organization, please do not hesitate to contact us:

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