Breaking new ground

Praised for some of the world's most treasured Roman archeological sites, Turkey has been known for discovering some of its own worst financial risks too. But regulatory developments over the past few years are helping build a foundation for risk management.

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The supervisory powers previously shared by the Treasury and the Central Bank of the Republic of Turkey were transferred recently to the Banking Regulation and Supervision Agency (BRSA) of Turkey[1]. Established as an independent body at the end of August 2000 (www.byegm.gov.tr/references/banking.htm), BRSA's key objectives have been to protect depositor rights and to promote an efficient, globally competitive and sound banking sector in Turkey. It also is responsible for conducting effective oversight of the banking system with more efficient and enhanced guidance on bank supervision. And in parallel with the rapid changes in the area of regulation and supervision of financial institutions, the BRSA has adopted a series of best practices that are mainly issued by the Basel Committee on Banking Supervision.

Internal control systems and risk management

We are emphasizing the importance of efficient internal control mechanisms and the identification of institutional weaknesses and vulnerabilities – they are of great importance to bank managers, senior management and shareholders. The idea is to follow the Basel Committee and other leading regulatory bodies that have been instrumental in setting guidelines to promote such internal control mechanisms. In line with these guidelines, and following a close consultation process with Turkish banks, the BRSA has published a comprehensive regulation entitled *Regulation on Banks' Internal Control and Risk Management Systems*.

According to this regulation, which consists of 48 articles in total, the banks are required to establish, maintain and improve the internal control and risk management systems within their organizational structure. This must be done with quality, sufficiency and efficiency during changing conditions, and in conformity with the nature and scope of their activities.

The regulation provides incentives for bank management to take into account interactions between internal control and risk management according to the priorities of risk management. The banks were granted approximately a one-year transition period until January 2002 to meet the requirements set by the BRSA. During the transition period, an online help facility established between banks and the Risk Management and Surveillance Techniques Research Department of the BRSA, will help banks interpret the articles stipulated in the regulation. Furthermore, a series of meetings with the Working Group on Risk Management established within the Turkish Banks' Association (**www.tbb.org.tr**) is being conducted on a regular basis. The internal control and risk management framework proposed in the regulation is shown in the side chart.

Incorporation of market risks into calculation of capital charges

Following the above mentioned regulation, the BRSA has also published another regulation, which requires banks to incorporate market risks into the calculation of regulatory capital charges (www.bddk.org.tr). The regulation lays down the principles and procedures related to the calculation of capital adequacy standard ratio of banks both on a consolidated and an unconsolidated basis. This is to ensure that they maintain an adequate amount of capital[2] against losses, as a result from existing and potential risks. Needless to say, the driving forces behind the episode of many extreme and devastating financial disasters were mainly the failures in internal control mechanisms and of mismanagement of the risks inherent in trading activities.

According to the regulation, banks will separate their books into banking book and trading book. The calculation of market risk will cover interest rate risk and equity risk of trading book, while the foreign exchange risk will cover both the trading and banking book. Banks are permitted to use either the standard approach (building blocks) or the model approach. Whether a bank can use the model approach will be determined based on the compliance with qualitative and quantitative criteria defined in the regulation.

Backtesting

Banks permitted and qualified to use the model approach will also conduct a regular backtesting program to assess the accuracy and quality of their risk measurement models. For banks that do not pass backtesting, then the so-called multiplication factor will be applied, and these banks will be required to increase their capital.

Stress testing

Banks using models are also required to conduct a regular stress testing program. The stress testing is of great importance for emerging markets. Still fresh in mind, Turkish financial markets have experienced two very severe crises in a row (November/2000 and February/2001). During the crises a six-fold increase in the volatility of foreign exchange rates and a four-fold increase in the O/N interest rate volatility were observed. These events clearly indicate how important it is to take extreme events into consideration in the calculation of risks.

Value-at-risk and extreme value theory

The value-at-risk (VaR) that gives the amount of loss on a given confidence interval within a predetermined time horizon is frequently used in the model approach, and is inherently not capable of capturing the extremes. This is why the use of stress testing is proposed to complement VaR. Stress testing techniques can be classified into groups such as, scenario and sensitivity analyses that are both based on either historical or hypothetical scenarios. However, the extreme value theory (EVT) based on a solid statistical theory enables us to attach a probability statement to the extreme events rather than hypothetical assumptions. Considering the severity of losses and tail events, EVT seems better fit to describe emerging markets' financial data in the sense of risk measurement. The above-mentioned financial crises can be considered as a case study for EVT and risk management practices.

Given the sophistication of calculating market risk-based capital charges, it is obvious that both risk managers and supervisors need to allocate a significant amount of technical capacity and qualified human resource. They also need to consider budgeting for the implementation and supervision of an efficient, activity based, consolidated risk focused approach.

Still swallowing Basel II

The BRSA is currently reviewing and interpreting the Basle II principles published in January this year. Although the proposed Accord includes many hard-to-implement processes and procedures, it opens up a new era in the regulation of credit risk while offering a moderate range of options to choose. However, the most important aspects of adopting and implementing Basel II requires an advanced technical and quantitative capacity and functioning rating agencies in the country.

Within the context of credit risk, the BRSA has already re-amended the regulation on loan classification and loan loss provisioning in June 2001. This establishes a mechanism among loan impairment, impairment of creditworthiness of the borrower and five loan categories[3]. The loan categories require the calculation of future losses derived from borrowers' default potentials and utilization of an internal credit scoring/rating system to support this procedure. Definitions of loan categories, sufficiently include detailed classification criteria, which will also be utilized by the internal credit risk management and its provisioning system.

View on operational risk

Apart from the credit risk regulations stipulated in Basel II, another important aspect, which requires maximum attention, is the proposed capital charges against operational risks. The BRSA is now at the stage of articulating plans for the regulation on operational risk and advising the banks to collect operational risk loss data.

BRSA's efforts to date

Within the context of the interactive nature of risk regulation, significant steps have been taken within the BRSA to organize a data collection system and enhance the information technology (IT) services. Within this framework, two committees have been set up to establish a comprehensive call-reports scheme[4] to monitor banks more closely, as well as to enable the BRSA to collect comprehensive market and bank specific data. An important result of these efforts has been the introduction of a daily reporting requirement of banks' selected balance sheet items. Learning from the recent crises, the BRSA aims to develop a more risk-sensitive early warning systems through the adoption of frequent reporting. Within one to two years the BRSA intends to establish a state-of-the-art database management and warehousing system, as well as an efficient surveillance system.

The BRSA is also very committed to pilot the process of interpreting and adopting best international banking standards — and practices to enhance the overall efficiency and quality of the Turkish banking system. To ensure this, the BRSA is increasing its internal capacity to respond to the needs of a dynamic and fast-changing domestic and international financial environment.

The BRSA now has an articulated plan to enhance its own risk management infrastructure and monitor the risk management practices of banks operating in Turkey. To serve this purpose, the BRSA is working in close cooperation with internationally recognized consulting firms, as well as regulatory bodies in some developed countries. The aim is to equip and train the staff in risk supervision with the skills and knowledge required for sophisticated risk measurement and operational management practices.

Overview of what is under construction

The enactment of these regulations has been an important step taken in the area of prudential supervision of banks, as the BRSA gives highest priority to the establishment of a risk culture and infrastructure within the banking organizations. We can clearly say that the banks, which took the signal of the BRSA very seriously, have initiated this process.

We expect that these changes will improve the banks' capacity for a better assessment of risks, as a result of having an efficient internal organization. More realistic asset valuation and pricing methods of financial instruments will enforce the discipline necessary over banks' trading and lending policies. The involvement of senior management and oversight of the Board of Directors in the risk management process is another aspect, which clearly indicates the definition of roles and responsibilities throughout the organization with the establishment of internal audit and control systems. Progress in this area is also being made and complementary sub-regulations supporting the implementation of the above-mentioned regulations are expected to be released by the end of this year.

In conclusion, both financial institutions and supervisory authorities should cooperate to handle the risk management issue together in a pro-active manner. While the efforts of the BRSA focuses on the supervision of procedures, the financial institutions should improve their internal capacity to adopt and understand the changing nature of financial markets and transactions and, of course, the risks. As Turkey's risk management culture evolves, the most important task is to be aware of the risks and to treat them properly in the context of both the regulatory and economic capital allocation framework. Hidden risks inherent to trading activities can generally not be seen until they become visible. The task of risk managers should be to identify them by processing through the risk measurement and management filter. ■

1 Regarding banking supervision, the Undersecretariat of Treasury was previously responsible for preparing and issuing prudential banking regulations and conducting bank examinations according to Banks' Act while the Central Bank's function was off-site monitoring of banks according to Central Bank Act.

2 Own funds.

3 Loan categories include: Standard, watch, substandard, doubtful and loss.

4 Prudential returns.

Internal Control and Risk Management Organizational Chart