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TITLE: Commercial Bank Risk Management and Measuring Portfolio Risk via Monte Carlo VaR Simulation Method

ABSTRACT

Financial risk is the prospect of financial loss due to unforeseen changes in underlying risk factors. In this study we are concerned with the measurement of one particular form of financial risk-namely, market risk, or the risk of loss arising from unexpected changes in market prices or rates in the context of Basel Capital Accord. Regulatory requirements for financial institutions have been a major focus of interest in the 1980s and 1990s, not least because of some rather spectacular financial scandals which have occurred. The reasons for regulatory control arise from different types of market failure. The presumption here being that in a general competitive environment governments ought to leave the market mechanism to reward and penalize the normal risk taking activities of participants in the market.

Predominantly, commercial banks as the most important participants in the financial industry hold large positions in marketable assets and are therefore prone to big losses. Prudential considerations imply that “capital” should be held as a buffer against potential losses, otherwise the banks may become insolvent. The New Basel Capital Accord finalized in 2005, which will be applied from 2009 in Turkey, lie in the midst of the risk, return and capital equilibrium. A significant component of proposed capital adequacy arrangements is the opportunity for banks to use their internal VaR models. This empirical research study attempts to measure market risk of a bank’s FX portfolio for a period 2001-2003 by using Monte Carlo Simulation which is applied for 2000 times. Subsequently, the computational results are compared to the other methods’ figures computed and checked the accuracy of forecasts of portfolio VaR by back-testing. Findings are consistent with much of the existing literature on market risk measurement.

KEYWORDS: Commercial Banking, Market Risk, Basel Capital Accord, Value at Risk, Monte Carlo Simulation Method