EUROPEAN MACROECONOMIC STRESS TESTING

Konstantinos A. Moutsianas[1], Kyriaki Kosmidou[2(*)]

[1]PhD candidate,
Aristotle University of Thessaloniki,
Dept. of Economics
Division of Business Administration
email: kmoutsia@econ.auth.gr

[2(*)] Assistant Professor,
Aristotle University of Thessaloniki,
Dept. of Economics
Division of Business Administration
54124 Thessaloniki, Greece
Tel. +30 2310 996519, email: kosmid@econ.auth.gr

(*) Author for correspondence

EUROPEAN MACROECONOMIC STRESS TESTING

Abstract

The forces of deregulation, financial innovation, internationalization and the increasing competition have changed rapidly the banking system during the last years. In the new financial environment, the banking sector plays a dominant role in the smooth function of financial systems. Recently, the banking system has been at the heart of the global financial crisis and, therefore, the prudential assessment of the banking institutions is important in order to prevent systemic crises.

The monitoring of the banking institutions is related closely with the financial stability. The central banks, the supervisory authorities and the management of the financial institutions show particular interest in ensuring the necessary conditions for the normal operation of the financial systems. In this framework, the assessment of the resilience of the banking systems to hypothetical adverse macroeconomic environment is attempted. A risk management tool for the evaluation of the consequences of the macroeconomic volatility has become the macro stress testing, a methodology that has been widely used by International Monetary Fund and the European Banking Authority.

Our research includes macroeconomic stress tests for the 15 EU banking systems. The objective is, firstly, the specification of the macroeconomic variables that affect the credit quality of the banking institutions and, secondly, the application of adverse values in order to estimate the change in the credit quality ratio. For this purpose, regression analysis is performed among loan loss provisions (LLPs) and macroeconomic variables such as GDP, gross national income, unemployment rate, foreign direct investment index, current account balance and inflation. In general, the results indicate that the macroeconomic environment affects the LLPs in different ways and intensity for each bank and each country.

Keywords: Stress testing, credit risk, financial stability, banking system

JEL classification*:* G01, G17, G21, C15

References

Akhter, S., K. Daly, (2009), "Bank health in varying macroeconomic conditions: A panel study", International Review of Financial Analysis, Vol.18, Issue 5, 285-293.

Asghar, A., K. Daly, (2010), "Macroeconomic determinants of credit risk: Recent evidence from a cross country study, International Review of Financial Analysis", Vol.19, Issue 3, 165-171.

Babihuga, R., (2007), "Macroeconomic and Financial Soundness Indicators: An Empirical Investigation. International Monetary Fund", Working Paper, no 07/115.

Basel Committee on Banking Supervision, (2009) "Principles for Sound Stress Testing Practices and Supervision", Bank for International Settlements, consultative document.

Blaschke, W., M.T. Jones, G. Majnoni and M. Peria, (2001), "Stress Testing of Financial Systems: An Overview of Issues, Methodologies and FSAP Experiences", International Monetary Fund, Working Paper, no /01/88.

Boss, M., (2002), "A macroeconomic credit risk model for stress testing the Austrian credit portfolio", Oesterreichische National Bank, Financial Stability Report 4.

Dovern, J., C. Meier, J. Vilsmeier, (2010), „ How resilient is the German banking system to macroeconomic shocks?", Journal of Banking and Finance, 34, 1839-1948.

European Banking Authority, (2011), EU-wide stress test - Aggregate report.

European Banking Authority, (2010), Aggregate outcome of the 2010 EU wide stress test exercise coordinated by CEBS in cooperation with the ECB.

Jimenez, G., J. Saurina, (2005), "Credit cycles, credit risk and prudential regulation", Bank of Spain, working paper no. 0531.

Jones, M., P. Hilbers and G. Slack, (2004), "Stress Testing Financial Systems: What to Do When the Governor Calls", International Monetary Fund, Working Paper, no 04/127.

Delgado, J., J. Saurina, (2004), "Credit risk and loan loss provisions. An analysis with macroeconomic variables", Manuscript, Banco de Espana.

Evjen. S, A. Lund, K. Morka, Kjell, B. Nordal, I.Svendsen, (2005), "Monetary and financial stability in Norway: what can we learn from macroeconomic stress tests?", Bank for International Settlements.

Filosa, R., (2007), “Stress Testing of the Stability of the Italian Banking System: a VAR Approach”, Heterogeneity and Monetary Policy, No. 0703.

Gtogowski, A., (2008), “Macroeconomic determinants of Polish banks’ loan losses – results of a panel data study”, National Bank of Poland, working paper no.53.

Jakubík, P., C. Schmieder, (2008), “Stress Testing Credit Risk: Comparison of the Czech Republic and Germany”, Bank for International Settlement.

Kalirai, H., M. Scheicher, (2002), “Macroeconomic stress testing: preliminary evidence for Austria”, OeNB, Financial Stability Report 3 .

Kearns, A., (2004), “Loan losses and the macroeconomy: a framework for stress testing credit institutions’ financial well-being”, The central bank and financial Services Authority of Ireland, Financial Stability Report.

Pain, D., (2003), “The provisioning experience of the major UK banks: a small panel investigation”, Bank of England, Working Paper no. 177.

Pesola, J., (2001), “The role of macroeconomic shocks to banking crises”, Bank of Finland, Discussion Papers 06/2001.

Pesola, J., (2005), “Banking fragility and distress: An econometric study of macroeconomic determinants”, Bank of Finland, Discussion Papers 13/2005.

Quagliariello, M., (2004), “Banks’ performance over the business cycle: a panel analysis on Italian intermediaries”, The University of York, discussion papers in Economics, no 2004/17.

Sorge, M., K. Virolainen. (2006), “A Comparative Analysis of Macro Stress-Testing Methodologies with Application to Finland”, Journal of Financial Stability, Vol.2, Issue 2, 113-151.

Tsionas, E., G. Lolos, D. Christopoulos, (2002), “The performance of the Greek banking system in view of the EMU: results from a non-parametric approach”, Economic Modelling, Vol.20, Issue 3, 571-592.

Virolainen, K., (2004), “Macro Stress Testing with a Macroeconomic Credit Risk Model for Finland”, Bank of Finland, Discussion Paper No. 18/2004.