

Abstract

This thesis develops an early warning system framework for assessing systemic risks and for predicting systemic events, i.e. periods of extreme financial instability with potential real costs, over the short horizon of six quarters and the long horizon of twelve quarters on the panel of 14 countries both advanced and developing. Firstly, Financial Stress Index is built aggregating indicators from equity, foreign exchange, security and money markets in order to identify starting dates of systemic financial crises for each country in the panel. Secondly, the selection of early warning indicators for assessment and prediction of systemic risks is undertaken in a two-step approach; relevant prediction horizons for each indicator are found by means of a univariate logit model followed by the application of Bayesian model averaging method to identify the most useful indicators. Next, logit models containing useful indicators only are estimated on the panel while their in-sample and out-of-sample performance is assessed by a variety of measures. Finally, having applied the constructed EWS for both horizons to the Czech Republic it was found that even though models for both horizons perform very well in-sample, i.e. both predict 100% of crises, only the long model attains the maximum utility of 0,5 as well as maximizes area under Receiver Operating Characteristics curve which measures the quality of the forecast.

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Author's e-mail	diana.zigraiova@yahoo.com
Supervisor's e-mail	PetrJakubik@seznam.cz

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