

An Early Warning System for Financial Stress in South Africa – A Potential Macroprudential Analytical Tool?

1. Introduction

From a macroprudential policy point of view, the need for uncomplicated indicators of financial system health has become essential. In this regard, measures such as financial stress indices are proving to be quite useful in identifying contemporaneous levels of stress. However, an ultimate goal of macroprudential policy is to anticipate and mitigate the occurrence of systemic stress before it occurs. This paper applies a signal extraction approach to develop an early warning system (EWS) for identifying potential periods of financial stress in South Africa. By using an approach similar to that of Kaminsky, Lizondo and Reinhart (1998), several economic indicators are evaluated to ascertain if they exhibit changing behaviour prior to periods of severe financial stress. Such stress periods are identified by using a financial stress index (FSI) constructed for South Africa. The behaviour of economic indicators are also analysed by constructing three different composite indicators. The first is a simple summed composite indicator, which does not distinguish between the strength of signals. The second indicator also considers the strength of signals being identified, while the third composite indicator applies a weighting scheme to also account for forecasting accuracy of individual indicators by weighting them according to their noise-to-signal ratios. Finally, the predictive ability of these composite indicators are evaluated based on several criteria. The outline of the paper is as follows. Section 2 provides justification for better macroprudential analytical tools, while section 3 shortly describes the EWS literature and methodology. Section 4 clarifies how the FSI to be used for EWS analysis for South Africa is constructed and describes how the EWS approach is applied to South Africa. Section 5 summarises the empirical results, while section 6 concludes.