

# Early Warning Systems for Banking Crises: Does Regulatory and Institutional Quality Matter?

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## Abstract

This thesis aims to develop and estimate an early warning system (EWS) model for banking crises, paying attention to the role of governance quality, banking regulation, and market power, and using a sample of 130 countries over 25 years. The work presented below consists of a literature review, data and methodology, and baseline model estimation results. The baseline EWS model used is a hazard model that takes into account the time to the crisis event, which is modelled as a function of banking, financial and macroeconomic indicators. Model fit statistics across six estimators (*probit*, *logit*, and *cloglog* applied to pooled data; and *xtprobit*, *xtlogit*, and *xtcloglog* that take account of the panel structure in the data) indicate that the *probit* and *xtprobit* estimators are preferable compared to other estimators. Estimation results indicate that bank deposits to gross domestic product (GDP) and GDP growth tend to reduce the probability of a banking crisis whereas the ratio of domestic credits to GDP, the ratio of broad money to total reserves and the deposit rate tends to increase the probability of a banking crisis. Other banking, financial and macroeconomic indicators such as liquid liabilities to GDP, real interest rates, banking sector's claims on central government, inflation and the trade and current account balance do not have any significant effect on the probability of a banking crisis. Further work will be undertaken to estimate an augmented EWS model with governance quality, composite risk indicators and market power in the banking industry.

**Keywords:** banking regulation, EWS, Financial, hazard model