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Forecasting Financial Crises in Turkey with Leading Indicators (1992: Q1-2023: Q1)

Assoc. Prof. Dr. Hasan İslatince[1], Research Assistant Ali Benli[2]

Anadolu University, Turkey

Abstract

Economic crises are defined as severe price fluctuations that exceed acceptable levels in goods, services, production, and foreign exchange, all of which are regarded as fundamental building blocks of an economy. Depending on how they manifest, economic crises can be examined from two perspectives. The first is real sector crises. They manifest as inflation and stagnation crises in the goods and services markets, as well as unemployment crises in the labor markets. The second is financial crises which are defined as a sudden, sharp, and obvious deterioration of all or most financial indicators such as short-term interest rates, asset prices, payment deterioration, and bankruptcy of companies and financial institutions. One of the key issues addressed by the models that emerged as a result of the efforts to develop a theory for financial crises is the detection of financial crisis symptoms before they occur. In this context, many empirical studies have been conducted to create early warning systems that will forewarn crises and take them under control, and various models have been developed to explain the financial crisis phenomenon. These models formed the leading indicators through the analysis of the pre-crisis macroeconomic indicators. These studies investigate how various macroeconomic aggregates change before crises occur and whether crises can be predicted accordingly. Although crises can be similar or dissimilar in terms of occurrence and ethics, they pose a threat to the socioeconomic stability of all world economies. At the same time, estimating the occurrence probability of a crisis using leading indicators is a critical point for countries to turn crises into opportunities.In this study we use the appropriate AR(r)-GARCH(p,q) models to model the volatility of crises indicators (Md Akhtaruzzaman, Sabri Boubaker , John W. Goodell (2023), Did the collapse of Silicon Valley Bank catalyze financial contagion?, Finance Research Letters, 56 (2023) 104082, https://doi.org/10.1016/j.frl.2023.104082). After estimating the GARCH model for each indicator, we obtain the plots of volatilities of each indicator by using using the conditional standard deviation of the indicators from a GARCH (1,1).

Keywords: Crisis, Financial crises, crisis models, financial crisis indicators, GARCH model.

JEL Classification Codes: F30, C10, G15