Predicting Recessions Using Yield Spread in Developing Economies: Regime Switch vs. Probit Analysis

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Abstract

In this study we investigate the explanatory power of yield spread in predicting economic activities in developing economies. For our purpose we use the data from two economies (South Korea and Thailand) that are also known for their openness in terms of exports and imports. We employ both two-regime Markov-Switching model (MS) and three-regime MS model to estimate the probability of recessions during Asian crisis. We found that three-regime MS model is better predictor of recessions than two-regime MS model. The MS results are also compared with that of the standard probit model for comparison. The MS model does not significantly improve the forecasting ability of the yield spread in forecasting business cycles.

Keywords: Markov regime switching, Yield spread, Economic recession, Business cycle

JEL Classification: C25, E32, E37

* We sincerely thank Robert Bohm, Seong-Hoon Cho and Matthew Murray for their very constructive comments. The usual disclaimer applies.
1. Introduction

It is fascinating that researchers often successfully predict economic activities by using limited available information. As a result, many empirical economists, policy makers, and various investors are always in search for better business cycle indicators. One common predictor of economic activity is the slope of the yield curve. Central bankers and policy makers pay serious attention to the slope of the yield curve, as it may contain useful information to aid in designing economic policy. In this study, we test whether we can predict economic activity (recessions) using the yield spread in two Asian countries – South Korea and Thailand. These countries are known for their participation in global trade and commerce. In addition, they are highly linked with the rest of the world financially. Both are members of a group of countries known as the ‘Asian Tigers’ and experienced economic crises in the late 1990s. To analyze the predictive power of the yield spread, we employ a Markov regime switching autoregressive time series model for empirical analysis. We also compare and contrast our results to that of a standard probit analysis.

The yield spread measures the difference between long and short-term interest rates. It is assumed that the yield spread contains agent’s expectations regarding the change in future government policies. Usually, the yield curve is upward sloping because long-term bonds have higher yields than short-term bonds. A higher yield spread tends to precede faster output growth. An inverted yield curve, on the other hand, raises concerns because it may indicate the approach of an economic downturn.¹ There are two possible theoretical explanations as to why the yield spread predicts economic recession. The first is the expectation hypothesis of the term structure of interest rates. It states that long-term interest rates are the average of current and expected

¹ Before each of the last seven recessions in the United States, yield curves were inverted.