Leading Behavior of Interest Rate Term Spreads and Credit Risk Spreads in Korea

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Abstract

Interest rate term spreads and credit spreads are well known to have a predictive power for future fluctuations of output in many developed countries. This study examines the leading behaviors of interest rate term spreads and credit risk spreads in Korea in two ways. First, we apply various empirical methods to delineate the leading behavior of interest rate term spreads and credit risk spreads for business fluctuations between May 1995 and January 2012. Second, using structural VAR models, we decompose the sources of fluctuations of output and interest rate spreads into permanent real shocks and temporary financial shocks, and examine the impulse response of each variable to these shocks, focusing on the leading behavior of the spreads over the business cycle. We establish successfully that in Korea the leading behavior for the term spread and the credit risk spread comprises a tendency for the term spread to increase and for the credit risk spread to shrink about four to six months before an expansion. We also find that much of output fluctuation is attributed to real shocks while fluctuations in the interest rate spreads come from temporary financial shocks.

Keywords: Term Spread, Credit Risk Spreads, Leading Behavior, Structural Var, Forecast-Error Variance Decomposition

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I. Introduction

Information plays a very important role in financial markets because informational advantage such as inside information may easily create an excess return. Thus, financial market participants try to use all available information and are likely to want to gain as much knowledge of future movements as possible. Some financial variables have been known to move in advance of the real economy showing any direction. The index of leading indicator is composed of these variables, among which interest rate term spreads and credit risk spreads have shown a predictive power for fluctuations in future output. In light of this observation, much attention has been put on many related financial variables and a substantial amount of research has been carried out since Stock and Watson (1989).

The term spread (or yield spread) is defined as a difference between a long-term risk-free government bond yield rate and a short-term risk-free rate. This extends when a boom is expected and shrinks when a recession is expected. That is, a steep yield curve slope has been used as a signal for economic recovery, whereas a flat or sometimes downward sloping yield curve indicates an impending economic recession. Lee (2007) shows that a situation in which short-term interest rates are higher than long-term rates for more than a month has been observed in the U.S. ten times over the period between 1960 and 2001 and in most of these cases a recession followed within a year. He concludes that the term spread has a predictive power for future fluctuations of output. A private U.S. economic research institute, the Conference Board, has included the term spread as a component of the index of the leading indicators since 1996. In Korea, Statistics Korea also added the term spread between three year government yield rates and call rates to the leading indicator variables. Extensive research on the predictability of term spreads over the business cycle has been documented (See: Ang, et al., 2006), Evans and Marshall (2007), Rosenberg and Maurer (2008), and Estrella and Hardouvelis (1991), for the U.S., and Lee (2012), Song and Choi (2008), Yie (2008), Park and Kim (2008), Lee (2007), and Ji and Park (2002), for Korea).

Credit risk spreads have also often been considered as a leading variable over the business cycle, although the empirical evidence supporting their leading behavior is not as strong as that for the term spread. Bernanke (1990) and Friedman and Kuttner (1993) showed that the spread between three month commercial paper rates and three month T-bill rates are closely related to the future business cycle. Recently Gertler and Lown (1999) and Mody