Frequency domain causality analysis of stock market and economic activities in Vietnam

Nguyen Ngoc Thach, Le Hoang Anh, and Ha Thi Nhu Phuong

Abstract. In this study, we explore the causal relationship between stock prices and economic growth in Vietnam following to a new approach, frequency domain causality test, to account to seasonal effect of data. We use monthly data for period from January 2005 to November 2017 (2005M1 – 2017M11) in which the stock market is vibrant and starts developing.

Firstly, we use conditional VAR causality test with the endogenous variables are economic growth (IPI) and stock price (SP) and the exogenous variables are real effective exchange rate (REER), inflation (CPI), reserves (R), and trade balance (TB). The result shows that there are not any significant evidences about there exists the causal relationship between economic growth (IPI) and stock price (SP) in both directions.

Secondly, we employ the conditional and unconditional bidirectional frequency domain causality tests proposed by Breitung and Candelon (2006). In the frequency domain analysis, the time length will be reduced; it can help to avoid the seasonal effects of data. The findings show that there exists the causal relationship between economic growth and the stock market at different frequency domains. The frequency domains in the causality are quite similar in the both of conditional and unconditional tests. At the low frequency domains, cycles from 5 to 9 months, there exists a causal relationship running from economic growth (IPI) to stock prices (SP). The reverse causality from stock prices (SP) to economic growth (IPI) is found in higher frequency domains, cycles from 2 months to less than 4 months. These empirical results are consistent with Partrick (1969), Padhan (2007), Ahmed (2008), Johansen (1991), and Srivastava (2010). In the initial stage, there appears supply leading phenomenon that is the development of the stock market will lead to economic growth. This is also happening in Vietnamese market when the stock market becomes an effective capital mobilization channel, increasing stock market size in number of listed companies and scale of capital mobilization; it not only supports

companies in their investments, but also helps the government to balance the national budget by mobilizing capital in the Government bond market. Therefore, the stock market plays an important role in promoting economic growth. After the economic grows well and sustainably, then the reverse causal direction will appear running from economic growth to stock market. The growing economy will lead to increase in demand of financial services, so promote financial market development and the demand-following phenomenon will prevail and dominate than the first stage.