

The Effect of Financial Market Integration on Monetary Policy and Long-term Interest Rate in Korea and Its Policy Implications¹

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Financial market integration mitigates production shocks that occur in a country by pooling the risk through portfolio diversification and this contributes to consumption smoothing for life-time utility maximization. Financial market integration also contributes to economic growth by supplying capital to developing countries via the integrated financial market.² However, the integrated financial market also serves as a transition channel where the financial shock which originated from the center country spreads to its neighboring economies. In the event of a financial crisis, there is a potential risk of capital flight from neighboring countries to the financial center, meaning that many countries in the integrated financial market have an economic structure that is vulnerable to external shocks.

The 2008 global financial crisis (GFC) was a representative example of a financial shock

spreading worldwide through the integrated financial market. The GFC shock, which began with the bankruptcy of Lehman Brothers, expanded rapidly among developed countries with high capital account openness.³ In emerging market economies, the slowdown of international capital inflows took place and a flight to quality occurred, leading to an increase in the price of U.S. Treasury bills. Some emerging market economies experienced a foreign exchange crisis due to a large depreciation in local currencies. As the uncertainties in the international financial market increased significantly during the GFC, financial variables such as asset prices, leverage, credit growth, and capital flows in many countries were heavily affected by global financial market sentiments rather than their own monetary policies. This is evidence supporting that many countries in the global financial market have constrained monetary policies (Rey 2013).

Therefore, it is necessary to understand how monetary policy is constrained in the context

¹ This report is written based on KIEP research paper 17-11.

² There are some papers that argue that it is hard to find the contribution of financial market integration to economic growth and the effect of financial market integration is different between short and long periods of time (Kose et al. 2009; Obstfeld 2009; Bussière and Fratzscher 2007).

³ In response to this, the United States reduced the federal fund rate and implemented an unconventional monetary policy.

of the international financial market, from which we can derive relevant policy implications. To this end we analyze how monetary policies are restricted by introducing the concept of monetary policy independence. Narrowly defined, monetary policy independence means the autonomy of short-term policy rate decisions, but it broadly means the ability to pursue a range of domestic policy goals.⁴ An economy that is heavily influenced by the global financial market necessarily places a higher priority on achieving stability of external factors such as exchange rate and capital flows, rather than on domestic policy targets such as inflation and economic growth, when the policy rate is determined. However, the monetary authorities of an economy with high monetary policy independence can decide their own policy rates and carry out their domestic policy goals separately from the international financial markets by more or less depending on the degree of monetary policy independence.

Securing monetary policy independence is important in terms of having adequate policy measures in accordance with the business cycle that each country is currently in. During the global financial crisis, the simultaneous economic downturn around the world heightened the cyclicity of the economy and led to the implementation of expansionary monetary policy in most countries. However, in the process of overcoming the crisis, the different pace of economic recovery in each country led to a desynchronization in business cycles and a divergence in their monetary policies (policy rates). The U.S. monetary policy normalization, which began in December 2015, emerged as a new uncertainty in the global financial market. It constrains the monetary policy of economies that still need to recover, because

⁴ See Obstfeld (2015).

the increase in the interest rate of the center country is an external factor that makes many countries, especially small open economies, inevitably raise their interest rates in preparation for capital outflow risks at the end. This implies that policy rates can be formed against the economic fluctuations of some small open economies that maintain low interest rates or require additional interest rate cuts.

The formation of a policy rate contrary to the business cycle is one of the most likely scenarios that the Bank of Korea can face. If the monetary authority decides the policy rate considering only the domestic economic situation, it will not be easy for it to raise interest rates due to the burden of growing household debt (1,450 trillion won as of the 4th quarter of 2017, the Bank of Korea). Nevertheless, since the Federal Reserve has already started raising interest rates and is expected to raise interest rates steadily, the Bank of Korea has inevitably raised interest rates in the mid- to long-term in preparation for the risk of a capital outflow. This implies that the situation may lead to a deterioration of the internal sector, especially in terms of household debt (i.e. a rapid adjustment of household debt to a certain target), in order to stabilize the external sector.

The theoretical basis for this paper is the trilemma associated with the Mundell-Fleming model. Trilemma is also called the “impossible trinity,” meaning that it is impossible to simultaneously achieve the three policy objectives of exchange rate stability, capital account openness, and monetary policy independence. In any economy, these three goals cannot be achieved at the same time, so a stable exchange rate regime should be abandoned to ensure monetary policy independence in an open capital market. In other words, a floating regime should be adopted to secure monetary policy independence instead of a fixed regime.

Countries adopting a fixed regime under an open capital market do so at the risk of losing their monetary policy independence. If these countries want to achieve monetary policy independence, they must lower the capital account openness of their economy through capital control or macroeconomic policies.

In this study, we examine whether trilemma exists in reality. This is a very important question if we are to establish policy implications. If trilemma holds, it is clear how to secure monetary policy independence. Most developed countries with high financial market openness can secure monetary policy independence by adopting a floating regime. In other words, if the flexible exchange rate fluctuations in the open capital market manage the capital flows, monetary authorities can determine the policy rate. These policy rate decisions can make it possible to achieve domestic economic targets in terms of inflation or economic growth. In countries with a fixed regime, monetary policy independence can be secured by adjusting the capital account openness through capital control or macroprudential policies. If trilemma does not hold, however, securing monetary policy independence will not be as easy as what trilemma implies.

In recent years, there has been debate on whether trilemma holds or not. This is because the results of empirical analysis show that the effect of monetary policy has not been fully demonstrated despite the adoption of floating exchange rates in some countries.⁵ To tackle this issue, we focus on the long-term interest rate, which plays an important role in the monetary transmission mechanism where monetary policy affects the long-term interest rates, which in turn affects economic performance indicators such as investment and pro-

⁵ See Chapter 2 for details about related literature.

duction. Even if the monetary authorities of an economy with high monetary policy independence decide on short-term policy rates relatively freely, the effectiveness of securing monetary policy independence will be diminished if the channel from monetary policy to the real economy does not function properly. In other words, if the long-term interest rate in the open financial market responds more sensitively to the global financial market than the policy rate set by the monetary authorities, the effect of monetary policy will weaken. In order to take into account these long-term interest rate channels, this study evaluates not only monetary policy independence, which reflects short-term interest rate desynchronization, but also long-term interest rate desynchronization and examines how this relates to monetary policy independence.

In this paper, the trilemma indexes are constructed using data from 45 countries, spanning the period of 2002 to 2013. The trilemma indexes consist of monetary policy independence index, capital account openness index, and exchange rate stability index. For the traditional monetary policy independence index, we construct the short-term interest rate independence index (SRI), which reflects a tendency to desynchronize in the short-term interest rates between 45 countries and their base countries.⁶ The higher the SRIs, the more independent the monetary policies. The long-term interest rate independence index (LRI), which reflects an ability to pursue domestic policy goals based on the broad definition of monetary policy independence, will be established along with the traditional trilemma

⁶ The base country is the country most closely associated with its monetary policy. See Shambaugh (2004) based on the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER) and the CIA Factbook.

indexes. The long-term interest rate independence index is compared with the three trilemma indexes by country and period, and we will analyze how well the new index, LRI, can explain the economic fluctuations among countries. In addition, we use the block-exogenous VAR (vector auto-regression) model to examine how the short- and long-term interest rates of 10 emerging economies respond to U.S. policy rate shocks.

From the results of this study, we can confirm that trilemma holds well. Interestingly, however, we find that not trilemma but dilemma holds when the short-term interest rate independence index is replaced with the long-term interest rate independence index.⁷ This is even more pronounced in the sample period after the global financial crisis, in which the correlation between SRI and LRI has decreased. This is mainly because the monetary transmission mechanism has not worked well since the global financial crisis. When considering that the long-term interest rate independence index is a very important explanatory variable in explaining the international business cycle (see Chapter 4 in the paper), the long-term interest rate independence index should be carefully monitored especially after the global financial crisis.

Using a block-exogenous VAR (vector auto-regression) model to examine the impact of the U.S. policy rate shocks on the short- and long-term interest rates in 10 emerging market economies, we find a clear difference between before and after the global financial crisis. In the period prior to the global financial crisis, the U.S. short-term interest rate shock affects

only short-term interest rates in emerging market economies and does not have a statistically significant effect on long-term interest rates. But after the global financial crisis, the U.S. short-term interest rate shocks have a significant impact only on the long-term interest rates, leading to an increase in the long-term interest rate synchronization in emerging market economies. This is consistent with the result of the analysis using the trilemma indexes and LRI. As a result of the additional analysis dividing countries into high and low capital account openness, we find that the impact of the U.S. policy rate shock on the long-term interest rates was relatively small in countries with low capital account openness.

Regarding the trilemma indexes evaluated for Korea, the capital account openness index increased significantly after the global financial crisis, but the exchange rate stability index remained very low. While the short-term interest rate independence index remained high, the long-term interest rate independence index decreased after the global financial crisis. Though the SRI in Korea is still a little bit higher than that of non-EU advanced economies group where Korea is included, but the degree of index decline is sizable. The impact of the U.S. short-term interest rate shock on the short- and long-term interest rates in Korea was similar to the impulse response functions from the analysis of 10 emerging market economies. With respect to the increased long-term interest synchronization in Korea after the global financial crisis, monetary authorities need to pay attention to our empirical analysis, in which we investigate the impulse response functions depending on different levels of the capital account openness index. The results show that long-term interest rate synchronization is more pronounced in countries with high capital account openness. These empirical re-

⁷ If the monetary policy independence is evaluated by replacing the short-term interest rate independence index with the long-term interest rate independence index, we could find evidence supporting dilemma on the issue trilemma vs. dilemma.

sults suggest a new perspective on the role of capital control or macroprudential policy, in that these sets of policy measures play an important role in terms of not only capital flow management, but also monetary policy independence.

The contribution of this study is that we use a relatively broad country panel covering 45 countries, among which 16 are emerging market economies, which are relatively overlooked in previous studies. This is meaningful in that it provides useful policy implications for emerging market economies. We have constructed a long-term interest rate independence index that reflects the tendency to desynchronize in the long-term interest rates, which play an important role in the monetary transmission mechanism, and this adds new dimension of monetary policy independence to the existing literature on the trilemma indexes. Further details on the research can be accessed at the following URL (http://www.kiep.go.kr/sub/view.do?bbsId=search_report&nttId=200138&searchIssue=&searchWrt=&pageIndex=2). **KIEP**

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