

The US Monetary Policy Normalization: The Impact on Korean Financial Market and Capital Flows¹

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I. Introduction

During the global financial crisis, the US monetary authority (Fed) reduced its benchmark interest rate to 0% and provided massive liquidity through three quantitative easing measures. As a result, the US Fed balance sheet expanded by five times, from \$0.9 trillion in September 2008 to \$4.5 trillion. Much of the increased global liquidity flowed into emerging economies. The influx of capital contributed to the growth of emerging economies, leading to new credit increases such as bank loans. Emerging markets, which represented 63% of global GDP, served as the engine of the global economy at a time when growth in the US and Europe was subdued.

II. Recent Issues on Global Capital Flows

While capital inflows play a supporting role

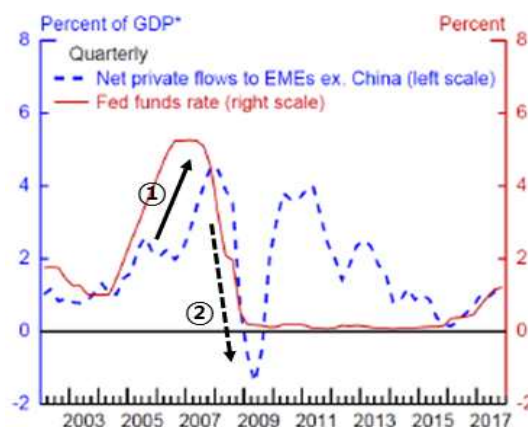
in contributing to economic growth, they also serve as potential factors prompting systemic risk in emerging countries and Korea. Emerging economies actively responded to systemic risks from foreign capital inflows. With the introduction of macro-prudential policy measures, emerging economies have been striving to maintain an external balance by responding to the surge in domestic credit and restraining excessive capital inflows. In order for emerging countries to adopt measures to curb inflows of capital, persuasiveness and legitimacy can be secured only if external influences are triggered by external factors.

Most previous studies have shown that push factors have had a greater impact on capital outflows in emerging economies than pull factors. Raghuram Rajan, former central bank governor of India, has pointed out that the monetary policy impact of the US Fed and developed country central banks is a major external factor (push factor). Meanwhile, in May 2018, the US Federal Reserve Chairman Jerome Powell addressed the controversy over capital movements to emerging economies after the global financial crisis. Powell said the inflows of capital into emerging economies

¹ This report is written based on Tae Soo Kang, Kyunghun Kim, Hyunduk Suh, and Eunjung Kang (2018).

are unlikely to have been caused by the Fed's interest rate policy (see Figure 1 and 2).

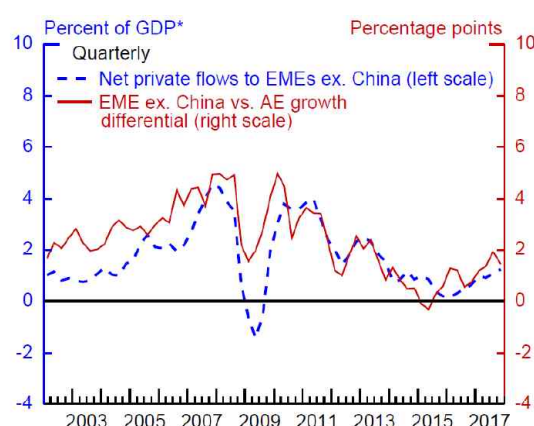
Figure 1. Net Private Flows & Funds Rate



Note: * 4-quarter rolling average.

Source: Powell(2018), Figure 4, p. 4.

Figure 2. Net Private Flows and EME vs AE Growth Differential



Note: * 4-quarter rolling average.

Source: Powell(2018), Figure 4, p. 4.

According to the study, the US Fed's quantitative easing has had the effect of lowering the Fed base rate by a further 4%. This means that normalization of the quantitative easing policy will lead to a policy rate hike of 4 percentage points. This is the reason why the normalization of US monetary policy will have a negative impact on the global economy. At the same time, the squeezing on capital outflows in emerging economies is increasing.

Powell's speech contains "implied" warnings that the US monetary policy is not a triggering force of a capital outflow in emerging economies. This is why Powell's speech is adding to the difficulty of policy responses in emerging countries. This, in turn, suggests that it is necessary to check the determinants of global capital flows. In addition, the impact of US monetary policy on Korea's financial markets and capital outflows needs to be analyzed in depth.

III. Analysis for Capital Flow Determinants²

Capital market integration has been an inevitable long-term trend for many emerging market economies (hereafter EMEs) over the past few decades (Aizenman et al., 2010). There have been continuous capital flows to EMEs, which started even before the Global Financial Crisis (GFC), and this trend has been more pronounced during the US zero-interest rate period (Ahmed and Zlate, 2014). Though some monetary authorities in EMEs tried to moderate the procyclicality of credit flows by implementing policy instruments such as capital controls or macro-prudential policy measures after the GFC (Kim and Mehrotra, 2018), the common factors in the global financial market still play a crucial role in determining capital inflows to EMEs.

The relationship between the global financial condition and its impact on capital inflows to EMEs has been a long-debated issue. This is-

2 See the 3rd chapter of "The US Monetary Policy Normalization: The Impact on Korean Financial Market and Capital Flows (KIEP Research Paper Series)," or "Push vs. Pull Factors of Capital Flows Revisited: A Cross-country Analysis (KIEP Working Paper Series, 19-01)" for further details.

sue concerns whether push or pull factors are the major determinant of capital flows. Push factors represent common factors that exist in the global financial market or center countries, which influence capital inflows to peripheral countries. These factors include interest rates and GDP growth rates of advanced economies (AEs, hereafter), global risk factors such as VIX (S&P 500 Volatility Index), and the commodity price index. Pull factors denote domestic factors that attract funds from the global financial market to domestic financial markets. These factors include domestic interest rates, domestic GDP growth rates, and other country-specific characteristics such as exchange rate regime, degree of the capital account openness, institutional quality, and stages of economic development.

In previous literature, many scholars have found strong evidence for push factors being the major determinant of capital movement. The interest rates of mature economies and VIX are significant determinants of capital inflows to EMEs. However, there is only limited evidence indicating that higher domestic interest rates and higher domestic GDP growth rates pull capital from the center countries to individual EMEs (Koepke, 2015).

Related to this long-debated issue in academia, the chairman of the Federal Reserve, Jerome H. Powell, recently stated, "... I will argue that, while global factors play an important role in influencing domestic financial conditions, the role of US monetary policy is often exaggerated." With this statement, he also pointed out that the slowdown in capital inflows to EMEs which has been happening ever since 2011 has been mainly due to the narrowing of GDP gaps between AEs and EMEs, i.e., the recent decrease in capital inflows to EMEs can be attributed to the decline in EMEs' GDP growth rates given the fact that the US GDP growth

rate has picked up.

In this chapter, we revisit this issue of push and pull factors of capital inflows. To this end, we consider the heterogeneity that exists in EMEs by dividing them into four subgroups. We investigate whether push or pull factors are the main driver of capital inflows across country groups. Categorizing subgroups is important for two reasons. First, EMEs are so heterogeneous that we make subgroups which share similar economic fundamentals by regions. Second, making subgroups across EMEs is an effective way to indirectly consider the regional contagion effect. With this cross-country analysis, we can measure the differing effects of push and pull factors across country groups, and this can eventually lead to the development and implementation of appropriate policy instruments.

Our empirical findings show that push and pull factors play a different role in determining capital inflows to AEs and EMEs. The major drivers of capital inflows to AEs are both push and pull factors, but push factors turn out to be the main determinant of capital inflows to EMEs. When EMEs are divided into four subgroups, we find sizable heterogeneity across subgroups. In Asian countries, both push and pull factors are significant, which is similar to AEs, but only the US interest rate plays a major role in Eastern Europe. Some pull factors are important in Latin American countries and other EMEs, but these are not robust.

According to our empirical results, it might lead to unexpected results if EMEs simply follow uniform policy recommendations suggested by international organizations because there is sizable heterogeneity in determinants of capital flows to EMEs. Therefore, individual countries need to find effective policy instru-

ments which are appropriate to the financial market environment in their own country.

IV. Time-varying Impacts of US Monetary Policy on Korean Financial Markets and Capital Flows

When analyzing how US monetary policy normalization would affect Korean financial markets and capital flows, one should consider the possibility that the effect can vary over time. This is because the effect is influenced by time-specific conditions surrounding the global and Korean economy. For example, the key variable representing US monetary policy can differ for different time periods (e.g. federal funds rate in normal periods, term premium and credit spread in quantitative easing periods), as can the conditions in global financial markets and the Korean macroeconomy.

In this chapter, we use the large time-varying parameter vector autoregressive (TVP-VAR) model developed by Koop and Korobilis (2013) to capture this dynamic nature of the effect. By combining a TVP-VAR method and Bayesian model selection, the model allows the economic structure and the magnitudes of shocks hitting the economy to vary over time, thus becoming suitable to characterize both gradual and rapid changes in economic conditions. Employing this model, we investigate the relation between US monetary policy variables (federal funds rate, term premium, credit spread) and Korean variables (long-term interest rate, credit spread, exchange rate, capital flows). In addition, we segment capital flows as foreign investors' stock/bond investment and lending, and residents' overseas stock/bond investment and lending.

The estimation results suggest that federal

funds rate hikes had a significant adverse effect on the Korean financial market and capital flow variables in the mid-2000s, but that these effects have become smaller since 2015. One possible explanation is that a better communication policy on the part of the Federal Reserve, aimed at keeping market expectations aligned with the actual policy rate path, was able to reduce the adverse impact of the tightening. On the other hand, the effect from term premium and credit spread shock, especially the latter, increased after the global financial crisis, as the Federal Reserve turned to unconventional monetary policy measures such as quantitative easing to reduce term premium and credit spread.

According to our simulation, in which currently known normalization measures are assumed, US monetary policy normalization is likely to weaken Korean financial markets, represented by upward pressure in credit spread, long-term interest rate, and exchange rate. This would also reduce both foreign investment and residents' overseas investment. However, the magnitude will be more severe when accompanied by global financial market instability, represented by such events as the rapid increase in US credit spread.

Our simulation also suggests that, even with the assumption of large shocks and instable global financial markets, overall capital market outflow from Korea might not be big. This is because the retraction of Korean residents' overseas investment, as investors wish to maintain liquidity, can offset outflows by foreign investors. This pattern is more apparent in the recent economic structure, compared to the economic structure of the early 2000s, which is in line with the significantly increased volume of residents' overseas investment after the mid-2000s. This finding suggests the growing importance of residents' overseas

investment in determining the external balance of Korea.

V. Policy Implications

Based on the above analyses, this report presents five policy implications. First, it is necessary to respond appropriately to an “externality” such as capital outflow caused by normalization of monetary policy in developed countries. Through the G20 platform, the government could include international institutions like the IMF, OECD, BIS in an objective analysis of the adverse effects of capital flows between “source countries” and “recipient countries.”

Second, when operating domestic monetary policy, it is necessary for the Bank of Korea to consider a pattern of capital flows that have changed from the past. In the meantime, there was a concern that the expanded gap between the domestic and US interest rates would lead to capital outflows. However, the capital outflow risk from the interest rate gap is expected to diminish due to the two following reasons: ① the capital flow pattern of residents’ overseas investment exceeding foreigners’ domestic investment has settled down since 2014; and ② residents’ overseas investment could return in a crisis period.

Third, the establishment of a virtuous cycle structure between increases in current account surplus and residents’ overseas investments is key to the balance in the external sector. If current account surpluses do not stay in Korea and prompt an increase in overseas investment by Korean investors, the income generated in the form of dividend income etc. will be linked to the next round of current account surplus and will ease the pressure on the Korean won to appreciate.

Fourth, there is a need to increase the foreign currency deposits of residents, which act as a secondary source of foreign exchange reserves to ensure foreign currency liquidity.

Fifth, it is time for the Bank of Korea to double its efforts to communicate with the financial markets when making decisions on its policy rate. A good case in point is how the Fed guides market sentiment by strengthening its communication efforts through a “forward guidance” vehicle, which communicates the intended path ahead of an expected rate hike.

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