Journal of Innovation Economics ISSN: 2960-1835
DOI: 10.5281/zenodo.16810335 Volume 1, Issue 2, 2025

The Spillover Effects of the Expansion of Central Bank Balance Sheets in Developed Economies on Emerging Economies

Yuhan Zhou

Nanjing University of Finance and Economics, School of Finance,

3 Wenyuan Road, Qixia, Nanjing, Jiangsu, China

ntzxzyh@163.com

Abstract: ***The expansion of central bank balance sheets in developed economies has become a key area of research in global academic and financial communities. This paper examines how the expansion of central bank balance sheets in developed economies affects emerging economies. First, it reviews global research on how monetary policies in developed economies affect emerging economies. Second, taking the Federal Reserve and the European Central Bank as examples, it analyzes the trends in the balance sheet changes of developed economies and the underlying reasons. Third, by analyzing the theoretical mechanisms underlying spillover effects, as well as the changes in the balance sheets and foreign exchange reserves of emerging economies, the paper highlights the dual impact of expanding central bank balance sheets in developed economies on emerging economies, as manifested through capital movements, foreign exchange market transmission, and asset price adjustments. Finally, the paper suggests that emerging economies should adopt flexible monetary policies, optimize balance sheet management, and strengthen international cooperation to effectively cope with external spillover effects and enhance their role in global financial governance.***

Keywords: Spillover Effects, Balance Sheets, Developed Economies, Emerging Economies.

1. Introduction

1.1 Literature Review--Research on Spillover Effects from Developed Economies

1.1.1 Western Scholars' Research

In recent years, the spillover effects of developed economies, especially the policies of the Federal Reserve and the European Central Bank on other countries, have become a focus of academic attention. Chen et al. (2016) observed that the impact of the US quantitative easing policy on emerging economies was significantly greater than its effect on other developed economies [1]. Tillmann Peter (2016), using a Qual VAR model, quantified the contribution of Federal Reserve policy to external financial conditions in emerging economies, finding that the rise of the Federal Reserve's quantitative easing policy significantly increased capital inflows, bond prices, stock prices, and exchange rates in emerging markets [2], demonstrating the strong spillover effects of monetary policies from developed economies to emerging markets.

Regarding the international manifestation of monetary policy spillovers from developed economies, Antonakakis Nikolaos, Gabauer David, and Gupta (2019) pointed out that Europe and the US are the main spillovers of monetary policy, while the UK and Japan are passive receivers [3], emphasizing the core position of developed economies in the global monetary policy spillover network.

1.1.2 Chinese Scholars' Research

Ma and Yu (2015) applied PVAR techniques and concluded that the impact of the US quantitative easing policy on emerging economies was significant and lasting, raising real economic output, appreciating currencies, and promoting economic development in the short term [4]. Tan and Wang (2022) studied the spillover effects of monetary policies in the Eurozone and 17 emerging economies under negative interest rates, showing that emerging economies were significantly affected by the spillover effects of European monetary policy [5].

1.2 Research Background

In recent years, central banks have played a more significant role in shaping economic outcomes, especially after the 2008 global financial crisis. In response, central banks in developed economies implemented unconventional policies like quantitative easing, leading to a sharp expansion of their balance sheets. While these measures stabilized domestic economies, their spillover effects on emerging markets remain underexplored. This paper examines how balance sheet expansion in developed economies affects emerging economies, focusing on capital flows, exchange rates, and financial volatility.

2. The Balance Sheets of Developed Economies

2.1 The Federal Reserve's Balance Sheet

2.1.1 Trends in Size

From 2003 to 2025, the Federal Reserve's balance sheet showed significant fluctuations and growth. Since 2003, the size of the Federal Reserve's balance sheet has gradually increased, with fluctuations, but an overall upward trend, especially after the global financial crisis of 2008, when the scale rapidly expanded and remained high. From 2018 to early 2020, the growth rate slowed down, even showing some relative decline. In early 2020, the balance sheet size surged to a new peak. However, from 2022 to 2025, despite remaining high, it began to gradually decrease.

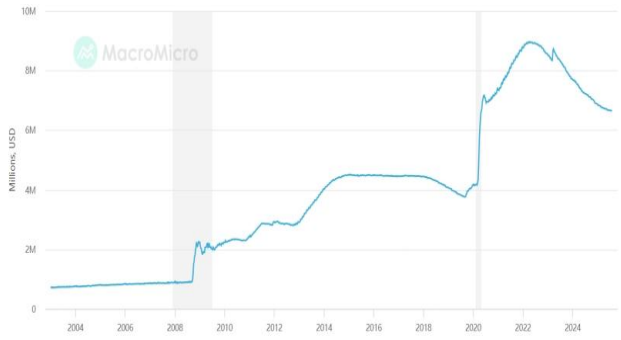

Figure 1: The Size of the Federal Reserve's Balance Sheet
(Source: MacroMicro)

2.1.2 Reasons for Size Changes

After the global financial crisis in 2008, in response to financial market turmoil and credit tightening, the Federal Reserve adopted large-scale asset purchases and other quantitative easing policies to stimulate the economy and stabilize the financial market, leading to a rapid expansion of the balance sheet, which remained high. From 2018 to early 2020, as the global economy gradually recovered and policies adjusted, the growth rate of the Federal Reserve's balance sheet slowed down. The outbreak of the COVID-19 pandemic in 2020 triggered market turmoil again, leading the Federal Reserve to purchase large amounts of financial assets to increase market liquidity, causing the balance sheet size to rise sharply. From 2022 to 2025, as monetary policy normalized, the Federal Reserve took measures to reduce asset purchases and withdraw liquidity from the market, causing the overall size of the balance sheet to decrease, though it remained at a high level.

2.2 European Central Bank's Balance Sheet

2.2.1 Trends in Size

From 1999 to 2008, the European Central Bank's balance sheet expanded slowly and steadily. From 2008 to early 2011, the scale rapidly increased. From mid-2011 to 2012, after reaching its peak, the size slightly decreased and began to adjust. From 2012 to 2014, the scale gradually declined but remained at a high level. From June 2014 to early 2020, the size continued to grow steadily. From 2020 to 2022, the scale expanded rapidly, reaching a historic high, and has gradually decreased in the last three years.

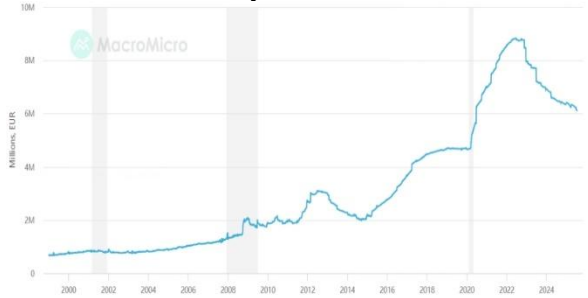

Figure 2: The Size of the European Central Bank's Balance Sheet
(Source: MacroMicro)

2.2.2 Reasons for Size Changes

Before 2008, the economic environment was relatively stable, and monetary policy was conventional, resulting in relatively stable balance sheet size with no significant fluctuations. In 2008, in response to the financial crisis and the European debt crisis, the European Central Bank implemented large-scale asset purchases and other unconventional monetary policy measures, leading to a significant expansion of the ECB's balance sheet. From 2019 to 2020, the appreciation of foreign exchange reserves and the increase in the circulating euro money supply caused the scale to continue expanding. In 2020, in response to the COVID-19 pandemic, the European Central Bank introduced a series of monetary policy measures, including asset purchase programs, unconventional long-term refinancing operations, and pandemic emergency purchase programs, which drove the rapid expansion of the ECB's balance sheet.

2.3 Main Reasons for the Expansion of Balance Sheets in Developed Economies

2.3.1 Unconventional Monetary Policy

Central banks in major developed economies often adopt unconventional monetary policies during extraordinary periods. For instance, in response to significant economic shocks such as the 2008 global financial crisis and the COVID-19 pandemic in 2020, central banks in developed economies implemented unconventional measures, such as quantitative easing and large-scale asset purchase programs, to stabilize markets. These actions directly increased the size of central bank assets and injected substantial liquidity into the financial system. Moreover, as the prices of these assets rose, the balance sheets of central banks further expanded, resulting in a persistently elevated level over the long term.

2.3.2 Prolonged Low Interest Rates

Against the backdrop of slowing global economic growth and low inflation levels, developed economies have long maintained low or even negative interest rate policies to reduce borrowing costs, stimulate investment activities and credit demand, and thereby promote the release of economic liquidity, leading to the expansion of balance sheet sizes. Meanwhile, the sustained low-interest-rate environment has driven up the prices of various assets, further increasing the total volume of financial assets and contributing to the continued growth of balance sheets.

2.3.3 Combined Factors and International Impact

The prevalence of consumerism, inadequacies in social security systems, and volatility in international markets have together exerted greater fiscal pressure on governments, collectively driving the expansion of balance sheets in developed economies. These factors interact with one another, intensifying debt burdens and resulting in a continued upward trend in balance sheet sizes.

3. Spillover Effects of the Balance Sheet Expansion of Central Banks in Developed Economies on Emerging Economies

3.1 Theoretical Mechanism

Central banks in developed economies have used policies like quantitative easing to expand their balance sheets and inject liquidity, leading to lower domestic interest rates and reduced asset yields. Driven by interest rate differentials, this

low-interest-rate environment has facilitated global capital flows through channels such as capital movements, foreign exchange market transmission, and asset price adjustments. This process creates a capital flow transmission mechanism. Through international financial markets, this mechanism rapidly impacts emerging economies.

First, global interest rate differentials have driven capital flows, leading to a rapid increase in the supply of funds in emerging economies. As developed economies lowered interest rates and suppressed returns on domestic assets, global capital was attracted to the higher-yielding assets in emerging economies. Capital entered emerging markets in large volumes through channels such as bonds, equities, and direct investment, injecting liquidity into their economies.

Second, the sustained inflow of capital increased the supply of foreign exchange in emerging economies, placing upward pressure on their local currencies. To mitigate the negative impact of currency appreciation on exports and economic growth, central banks in emerging economies intervened in the foreign exchange market by purchasing foreign currencies to stabilize exchange rate fluctuations. This led to dynamic adjustments in the scale of foreign exchange reserves, further strengthening the linkage between capital flows and exchange rates.

Finally, capital inflows pushed up asset prices in emerging markets. The substantial influx of capital led to excess liquidity, which raised investors' expectations for asset returns and further fueled bullish market sentiment, triggering continuous increases in security prices. Meanwhile, part of the capital also flowed into non-financial asset sectors such as real estate, contributing to a comprehensive rise in overall asset prices.

3.2 Changes in the Balance Sheets and Foreign Exchange Reserves of Emerging Economies

The expansion of balance sheets by central banks in developed economies affects the overall economic performance of emerging economies through capital flows, foreign exchange market transmission, and asset price adjustments, specifically impacting changes in their balance sheets and levels of foreign exchange reserves. Capital inflows increase liquidity and promote credit expansion, thereby driving the growth of balance sheets. In addition, foreign exchange market interventions lead to dynamic changes in the foreign exchange reserves of emerging economies. The following takes the People's Bank of China and the Reserve Bank of India as examples to analyze the manifestation of these effects in detail.

3.2.1 Changes in the Balance Sheet of Emerging Economies--The Case of the People's Bank of China

The expansion of balance sheets in developed economies typically influences the balance sheets of emerging economies by increasing capital inflows, expanding base money supply, and enhancing capital market activity, thereby promoting the expansion of their balance sheet sizes.

Taking the People's Bank of China as an example, the balance sheet expansion of developed economies has driven capital inflows into China, which have partially been converted into foreign exchange reserves. This has led the People's Bank of China to expand the supply of base money through monetary issuance mechanisms, resulting in a sustained expansion trend in its balance sheet. Particularly during the 2008 financial crisis, the significant expansion of balance sheets in developed economies led to a notable release of global U.S. dollar liquidity, increased capital inflows into China and other economies, and a corresponding significant expansion of the balance sheet of the People's Bank of China.

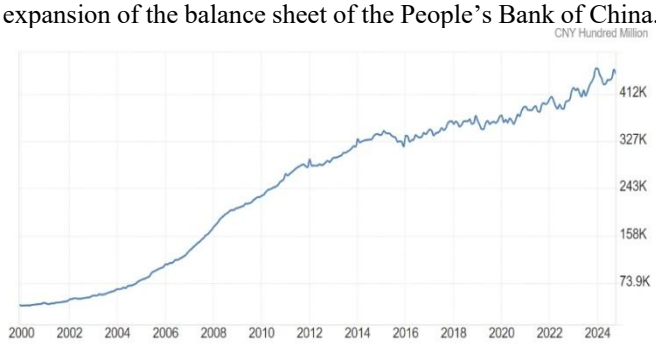

Figure 3: Balance Sheet Size of the People's Bank of China

(Source: Trading Economics)

3.2.2 Changes in Foreign Exchange Reserves of Emerging Economies--The Case of the Reserve Bank of India

The expansion of balance sheets by developed economies has released a large amount of liquidity, driving international capital flows into emerging economies and consequently increasing their foreign exchange reserves, resulting in the expansion of foreign exchange reserve levels in these economies.

Taking the foreign exchange reserves held by the Reserve Bank of India as an example, since 1999, its foreign exchange reserves have shown a steady upward trend, with particularly significant increases following the global financial crisis. This reflects the impact of large-scale balance sheet expansion by developed economies. Furthermore, in 2022, India's foreign exchange reserves also experienced a marked upward trend. These two periods of substantial reserve accumulation are both closely related to the liquidity released through the expansion of balance sheets in developed economies.

Figure 4: Foreign Exchange Reserves of the Reserve Bank of India

(Source: Trading Economics)

3.3 Dual Impact

3.3.1 Positive Impact

(a) Activation of Financial Markets

The expansion of balance sheets, by lowering interest rates in developed economies and increasing market liquidity, has driven capital flows into emerging economies. This not only significantly revitalized the capital markets in these emerging

economies but also strengthened their connections with global capital markets, fostering deeper cross-border investment and financial interactions. In the process, the trading volumes and investment demand in the financial markets of emerging economies, such as their stock and bond markets, have increased, promoting market growth and prosperity. As shown in the chart below, compared to the volatility of capital inflows into developed economies (AE), capital inflows into emerging market economies (EME) tend to respond more sensitively and dramatically to global economic events, often showing significant growth following the implementation of quantitative easing policies.

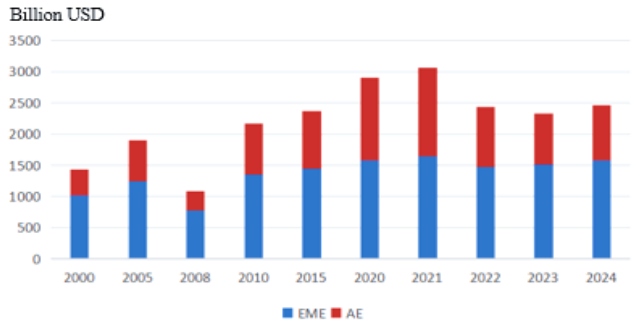

Figure 5: Dynamic Evolution Trends of Capital Flows in Emerging Economies

(Note: AE represents total capital inflows into developed economies, and EME represents total capital inflows into emerging economies. Source: IMF-BOP.)

(b) Foreign Capital Inflows

The quantitative easing policies of developed economies have attracted foreign capital into emerging economies, particularly in the form of foreign direct investment (FDI). As an important driver of growth for emerging economies, FDI has strengthened economic ties between emerging and developed economies, significantly promoting the development of emerging economies.

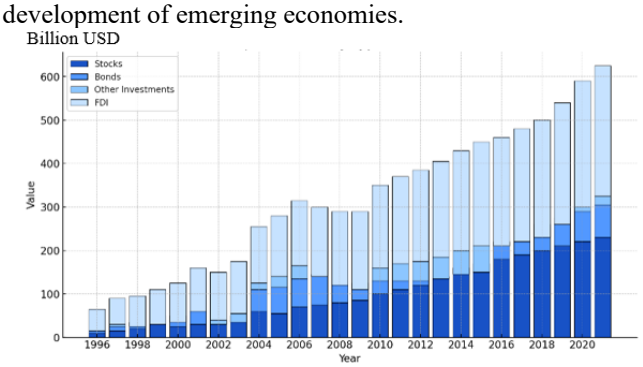

Figure 6: Types of Capital Inflows into Emerging Economies

(Source: IMF-BOP)

(c) Export Growth

The accommodative monetary policies of developed economies have stimulated domestic economic growth, thereby driving global, and particularly emerging economy, export demand. Robust exports have played a significant supporting role in the economic growth of emerging economies, alleviating downward economic pressure to a certain extent and providing important support and assurance for sustained economic development.

3.3.2 Negative Impact

(a) "Hot Money" Flows and Financial Stability Risks

With the inflow of capital, a portion manifests as "hot money," i.e., short-term speculative capital, which is highly liquid and oriented toward short-term profits. In the short term, excessive capital inflows may lead to overvalued asset prices and the formation of bubbles. Once external conditions change or capital flows reverse, these bubbles may burst, thereby intensifying volatility in the financial markets of emerging economies, threatening high-risk sectors such as real estate and equity markets, and potentially impacting the overall stability of the economic system [6].

Following the financial crisis, inflows of bond investment capital have become more frequent. Due to the high sensitivity and volatility of bond capital flows, they are more susceptible to changes in global markets, which increases financial instability in emerging economies. As shown in the figure below, the average number of capital flow sudden stops in emerging economies has slightly increased since the crisis, indicating that bond capital flows have exacerbated the financial vulnerability of emerging markets.

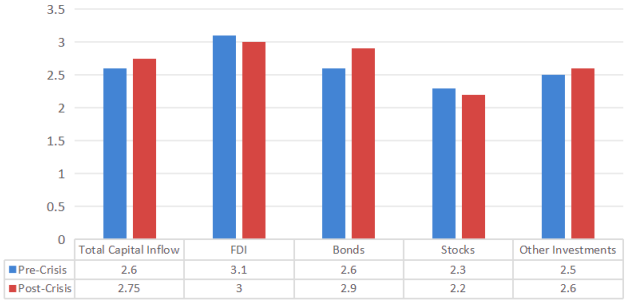

Figure 7: Number of Sudden Stops in Capital Inflows to Emerging Economies Before and After the Financial Crisis

(Source: Forbes)

(b) Imported Inflationary Pressure

Quantitative easing policies in developed economies often lead to liquidity spillovers, driving up international commodity prices. For resource-dependent emerging economies already facing high inflationary pressure, imported inflation intensifies, not only increasing production costs in these countries but also pushing up the Consumer Price Index (CPI), thereby posing significant challenges to economic stability.

(c) Debt Risk

Quantitative easing policies in developed economies lead to currency depreciation, which may erode the value of foreign exchange reserves and debts held by emerging economies acting as creditor nations. Especially in the context of U.S. dollar depreciation, emerging economies holding large volumes of dollar-denominated assets face severe potential foreign exchange losses and heightened debt risk, which increases their debt burden and places additional pressure on the stability of their foreign exchange reserves.

4. Policy Responses of Emerging Economies

4.1 Strengthening Cross-border Cooperation and Coordination

Emerging economies should actively enhance strategic cooperation with developed economies and other emerging market countries in areas such as monetary policy coordination, financial market stability, and foreign exchange management. By establishing and improving multilateral cooperation mechanisms, emerging economies can gain more support and resources during periods of global economic turbulence, thereby reducing the negative impact of external uncertainties. In addition, given the similarities in development stages and economic structures among emerging economies, internal cooperation and exchanges are critical. Regional cooperation facilitates the sharing of response strategies, enhances overall economic resilience, and strengthens the capacity to cope with global financial shocks [7].

4.2 Optimizing Central Bank Balance Sheet Management

Emerging economies should strengthen the management of central bank balance sheets, optimize their asset structures, and avoid excessive reliance on external capital flows to ensure the stability of the financial system. This approach will support macroprudential policies in managing cross-border capital flow risks. At the same time, central banks should adopt appropriate financial instruments—such as government bonds, foreign exchange reserve management tools, and other monetary policy tools—to address the spillover effects of external monetary policies. By improving the soundness of balance sheets, emerging economies can not only reduce dependence on external capital but also enhance the resilience of financial markets against risks.

4.3 Flexible Use of Monetary Policy and Capital Controls

When facing the spillover effects of monetary policies from developed economies, emerging economies need to flexibly adjust their monetary policies through interest rate modifications and money supply management, thereby achieving the dual objectives of economic growth and inflation control. Timely changes in interest rates can not only stimulate economic growth but also prevent excessive capital inflows or outflows, reducing dependence on the influx of “hot money.”

At the same time, capital control measures can serve as a buffer to help mitigate the impact of foreign capital flows on the domestic economy. For instance, emerging economies can limit short-term capital movements to reduce reliance on external capital and ensure financial market stability. Additionally, emerging economies should strengthen exchange rate management to cope with exchange rate fluctuations caused by capital flows, thereby maintaining the stability of domestic currency exchange rates, safeguarding export competitiveness, and supporting balanced domestic economic development.

5. Conclusion and Future Prospects

5.1 Conclusion

This paper systematically examines the spillover effects stemming from the expansion of central bank balance sheets in developed economies on emerging economies. The research reveals that unconventional monetary policies, such as quantitative easing, implemented by major central banks like the Federal Reserve and the European Central Bank in response to crises, led to significant balance sheet expansion. This profoundly impacts emerging economies through three primary channels: capital flows, exchange rate fluctuations, and asset price adjustments. Positively, capital inflows revitalized financial markets, attracted foreign direct investment, and provided a short-term boost to exports. Conversely, significant challenges emerged, including heightened financial fragility from "hot money," increased imported inflation, and rising external debt risks. Emerging economies need flexible policies, optimized balance sheet management, and enhanced international cooperation to mitigate external shocks and strengthen their role in global financial governance.

5.2 Future Trends in the Balance Sheets of Central Banks in Developed Economies

As major developed economies such as the Federal Reserve and the European Central Bank gradually exit quantitative easing policies, they may begin to reduce asset purchases and bond reinvestments, thereby tightening financial market liquidity and progressively shrinking the size of their balance sheets.

5.3 Potential Impacts and Challenges for Emerging Markets

5.3.1 Intensified Capital Outflows

As developed economies gradually raise interest rates and reduce their balance sheets, global capital tends to flow back into developed markets, resulting in capital outflow pressures for emerging economies. Such capital outflows narrow the financing channels for enterprises in emerging economies, and companies that rely on foreign capital face difficulties in both equity and external debt financing. This suppresses investor willingness to invest and affects both the stability of the financial systems and the healthy and stable development of the real economy in emerging markets.

5.3.2 Limited Monetary Policy Space

Against the backdrop of interest rate hikes in developed economies, the monetary policy space of emerging economies will become increasingly constrained. High debt burdens and high capital flow sensitivity make it difficult for emerging economies to stimulate economic growth through measures such as interest rate cuts. Moreover, if monetary policy becomes excessively tight, it may lead to a slowdown in economic growth.

5.3.3 Increased Exchange Rate Volatility

The current interest rate hike cycle by the Federal Reserve has triggered heightened volatility in global foreign exchange markets. According to the classical interest rate parity theory, rising interest rates in the United States drive cross-border capital to withdraw from emerging economies and return to the U.S., resulting in a stronger U.S. dollar and a relative depreciation of emerging market currencies. The figure below shows the exchange rate trends of major emerging market currencies from 2022 to 2024. It can be observed that, except

for a few countries, most emerging market currencies have depreciated against the U.S. dollar. The currencies with the largest depreciation are the Argentine peso (depreciated by 87.4%), the Nigerian naira (depreciated by 72.4%), and the Turkish lira (depreciated by 57.3%).

Currency depreciation increases the prices of imported goods, raising production costs for domestic enterprises. These higher costs, in turn, push up consumer prices and trigger inflation. Additionally, it may increase the burden of foreign-currency-denominated debt, affecting national credit and economic stability.

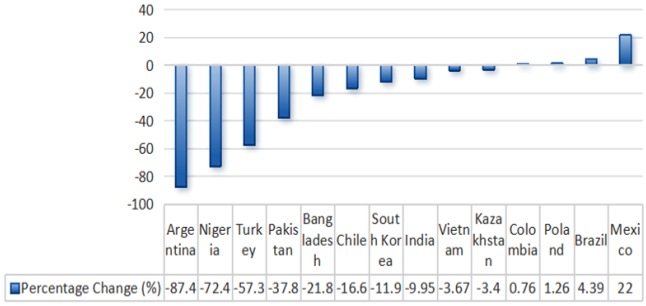

Figure 8: Exchange Rate Changes of Major Emerging Market Currencies

(Note: The time span is from 2022 to 2024; Source: CEIC)

5.4 Emerging Economies and Global Financial Governance

As developed economies tighten their monetary policies, emerging economies face challenges such as capital outflows and limited monetary policy space, which may lead to currency depreciation and financial market volatility. More importantly, emerging economies need to play a greater role in global financial governance.

Emerging economies should take an active role in the reform of global financial governance. By strengthening regional cooperation and international collaboration, they can seek a higher share and greater representation in the International Monetary Fund (IMF), ensuring their voice in international financial decision-making and promoting fairness and inclusivity in the global financial governance system. In addition, emerging economies can reduce their reliance on external capital and enhance their resilience to shocks by establishing regional financial safety nets and local currency settlement mechanisms [8].

Finally, enhancing the effectiveness and inclusiveness of global financial governance will help emerging economies better cope with the spillover effects of quantitative easing and tightening policies by the central banks of developed economies, promoting the development of the global economic system towards a more stable and equitable direction.

References

[1] Q. Chen, A. Filardo, D. He, "Financial Crisis, US Unconventional Monetary Policy and International Spillovers," Journal of International Money and Finance, 67, pp. 62-81, 2016.

[2] P. Tillmann, "Unconventional Monetary Policy and the Spillovers to Emerging Markets," Journal of International Money and Finance, 66, pp. 136-156, 2016.

[3] N. Antonakakis, D. Gabauer, R. Gupta, "International Monetary Policy Spillovers: Evidence from a Time-Varying Parameter Vector Autoregression," International Review of Financial Analysis, 65, pp. 101382, 2019.

[4]MA Li, YU Huijuan, "The Spillover Effects of US Quantitative Easing Monetary Policy on BRICS Countries," Studies of International Finance, (3), pp. 13-22, 2015. (In Chinese)

[5] TAN Xiaofen, WANG Xinkang, "Monetary Policy Spillovers in a Negative Interest Rate Environment: Evidence from the Euro Area and 17 Emerging Economies," China Soft Science, (12), pp. 35-49, 2022. (In Chinese)

[6] SONG Guoyou, "Global Quantitative Easing, Emerging Economies and International Financial Governance," World Affairs, (2), pp. 73-79, 2013. (In Chinese)

[7] Research Group of Accounting and Finance Department, Nanchang Central Sub-branch, The People's Bank of China, WU Haosheng, "A Brief Discussion on the Spillover Effects of Balance Sheet Policies of Central Banks in Advanced Economies: An Analysis Based on Central Bank Balance Sheets," Finance and Economy, (10), pp. 63-71, 2015. (In Chinese)

[8] TAN Xiaofen, WANG Xinkang, "The Divergence of Emerging Market Currencies during the Fed's Interest Rate Hiking Cycle," China Forex, (9), pp. 42-46, 2024. (In Chinese)