



The Impact of the US Interest Rate Hike on Emerging Market Economies and the Belt and Road Initiative

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Abstract

Since the end of 2015, the US Federal Reserve has raised its benchmark interest rate nine times. This has led to capital outflows and asset depreciation in many emerging market economies. The present paper examines the factors that determine the financial volatility of emerging markets in the face of external shocks. By calculating the capital flows of 30 emerging markets from 1990 to 2018 and conducting panel regression, this paper finds that countries with good infrastructure facilities, a sound banking system and high economic growth have significantly lower cross-border financial risks. An implication from the empirical analysis is that emerging countries would benefit greatly by actively taking part in the Belt and Road Initiative. The framework of the Belt and Road Initiative allows emerging countries better access to China's massive consumer market to promote trade and long-term growth. Their quality of infrastructure can be improved through cooperation with China in infrastructure investment. They can also jointly establish a cooperative financial framework to enhance regional financial stability. These strategies will reduce systematic financial risks and counteract the negative impacts of US interest rate hikes.

Key words: Belt and Road Initiative, cross-border capital flows, emerging market economies, US interest rate hike

JEL codes: F36, F55, F65

I. Introduction

In December 2015, the US Federal Reserve raised the benchmark interest rate for the first

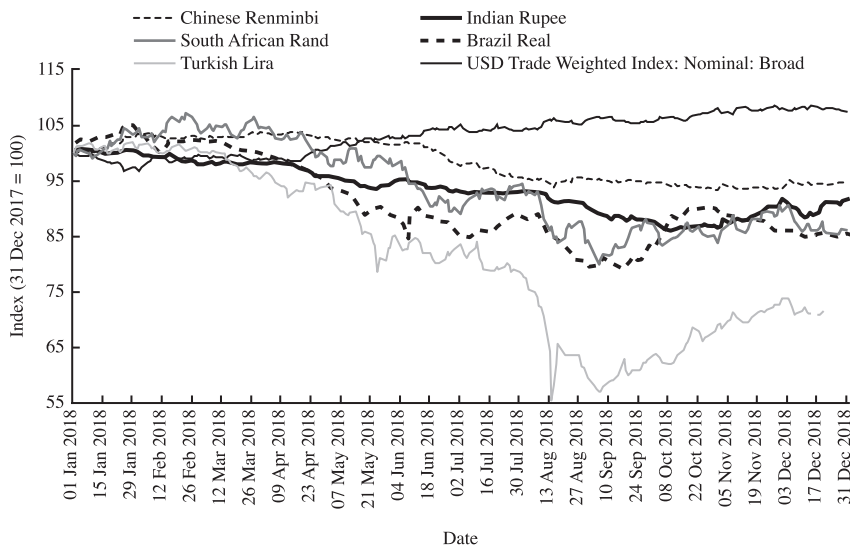
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time since introducing quantitative easing policies in 2008. The rate was changed after an increase in US economic growth from 2.6 percent in 2014 to 2.9 percent in 2015. Since then, the US economy has witnessed consistent economic recovery. There has been an upward trend in GDP growth, from 1.5 percent in 2016 to 2.9 percent in 2018 and the labor market has been stable, with the unemployment rate hitting 3.5 percent, the lowest level in the past 50 years.¹ Much cross-border capital flowed from emerging economies to the US, pushing up the exchange rate of the US dollar. Against this backdrop, the Federal Reserve raised the benchmark rates once in 2016, three times in 2017 and four times in 2018. The current benchmark rate has returned to a normalized level of 2.25–2.5 percent. The US interest rate hike had negative spillover effects on emerging market economies. In 2018, the Chinese RMB and Indian rupee depreciated against the US dollar by 5.4 and 8.3 percent, respectively (Figure 1). The Turkish lira, Brazilian real and South African rand depreciated more violently, approximately 28.5, 14.6 and 13.9 percent, respectively, in the same year. Another spillover effect of the tighter US monetary policy was the panic in emerging markets. As a result of pessimistic investor expectations, interest rates in the bond markets surged, while in some emerging economies the stock markets collapsed. Figures 2 and 3 show that Argentina had a booming stock market index in 2017, but the market slumped in mid 2018. In June 2018, the index had dropped by 25.5 percent compared to the beginning of 2018. Along with fluctuations in the stock markets, the short-term interest rate in Argentina surged from 26.3 percent in January 2018 to 60.3 percent in December. As a country that has also suffered from unfavorable external conditions, Turkey had a short-term interest rate increase of approximately 10 percent in 2018. Moreover, the Borsa Istanbul composite index decreased by approximately 20 percent. The combination of unfavorable international conditions and weak economic fundamentals has led to the accumulation of macro financial risks in Turkey. By the end of 2017, the leverage ratio of the non-financial sector in Turkey had reached 114.6 percent, compared to 80.5 percent in 2007.² With elevated leverage and a current account deficit, Turkey has been put at great risk, as either the sovereign debt problems or the currency mismatches in the banking sector are likely to break its growth momentum. Apart from Argentina and Turkey, the financial markets in some other emerging countries also slightly fluctuated in 2018. For example, the stock markets of Indonesia and South Africa were down by 2.5 and 11.4 percent, respectively, in 2018, while their short-term interest rates were up by 222 and 12 basis points during the same period.

¹Data on the US economy was obtained from the CEIC database.

²Data on Turkey's leverage ratio was obtained from the Bank for International Settlements (BIS).

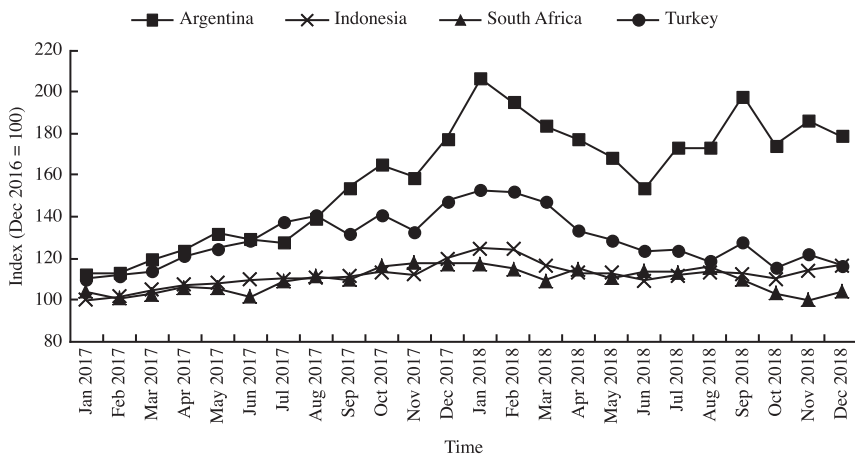
Figure 1. Foreign Exchange Rate Indexes of Main Emerging Market Currencies against the US Dollar



Source: Authors' calculations based on the CEIC database.

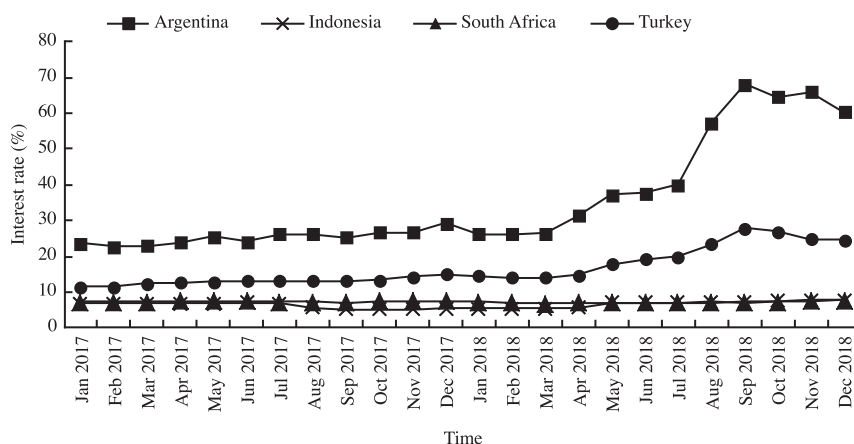
Note: Upward trend indicates appreciation of the emerging market currencies.

Figure 2. Stock Market Indexes of Selected Emerging Market Economies



Source: Authors' calculations based on the CEIC database.

Figure 3. Short-term Interest Rates of Selected Emerging Market Economies



Source: CEIC database.

Monetary policies in advanced countries, particularly countries that issue international currency, have had a significant spillover effect on emerging market economies. Calvo et al. (1993) studied the capital flows in Latin American countries in the 1990s and found that cross-border capital flows were driven by global factors, including US economic fundamentals and interest rate gaps between emerging markets and the US. Fratzscher et al. (2018) confirmed that in the aftermath of the global financial crisis, quantitative easing policies in the advanced countries drove capital out of the US into the emerging markets. Forbes and Warnock (2012) found that small open economies were vulnerable to violent fluctuations or the sudden stop of capital flows, and global risks were transmitted to the emerging markets through trade and finance channels.

While the macroeconomic policy uncertainties of the advanced countries are risk factors influencing the economic performance of emerging market economies, financial volatilities of emerging countries are also significantly correlated to their internal factors. In fact, two types of forces are found to be important for driving cross-border capital flows in emerging markets. One is the pushing force, which includes the monetary policies of advanced countries, and the other is the pulling force, which includes the internal characteristics of emerging countries, such as their macro leverage ratio, the soundness of their banking system and their institutions. Zhang (2016) concluded that seven factors affect the capital flows of emerging markets: contagious, global, economic, institutional, liquidity and exchange rate factors. Cowan et al. (2008) emphasized the importance of internal factors. According to his analysis, the less efficient the domestic financial market, the more likely the emerging market will suffer from sudden stops in

cross-border capital flows. Aguiar and Gopinath (2007) also studied the business cycles of small open economies and found that rather than transitory fluctuations, shocks to trend growth, which include institutions, technologies and resources, were the primary causes of fluctuations in emerging markets.

As the most important emerging market in the world, China inevitably suffers from the macroeconomic shocks of advanced countries. The gap between short-term interest rates in China and the US is a significant factor determining capital inflows (Wang, 2004; Wang, 2006; Chen, 2007; Wang, 2011). Meanwhile, internal pulling factors are also important. Liu (2007) found that speculative capital flows were sensitive to external shocks; however, in the long run, there was no significant correlation between capital flows and interest rate gaps. This demonstrated that internal factors play more important roles in trend capital inflows. Therefore, good institutions and a stable financial market are critical for eliminating macroeconomic financial risks.

Policy adjustments in advanced countries have some spillover effects on emerging economies, causing fluctuations in capital flows, exchange rates and asset prices. Interest rate hikes have different impacts on different emerging countries. For example, Argentina, South Africa and Turkey suffered significantly, while financial markets in Thailand and Vietnam remained stable during the interest rate hike cycle. The question then is: What characteristics help emerging countries to stabilize their financial market in the face of US interest rate hikes? Although there is much evidence on the importance of pulling and pushing forces in determining cross-border capital flows, little research on the interaction between these forces and how an emerging country can be better immune to external shocks has been conducted. This paper contributes to the literature by determining what features protect a country against external risks. Moreover, as stated in the “Vision and Actions on Jointly Building Silk Road Economic Belt and 21st Century Maritime Silk Road” policy, infrastructure, trade and finance connectivity are all important domains in the Belt and Road Initiative (BRI). Previous research on the BRI has focused on the benefits of infrastructure enhancement and trade promotion via opening up and production capacity cooperation, while jointly building the Belt and Road (B&R) may also contribute to improved regional financial stability. This paper will explore how the BRI will help to lower financial risks and promote common prosperity in emerging market economies.

The remainder of the paper is organized as follows. Section II provides a calculation of the cross-border capital flows of 30 emerging countries from 1990 to 2018. After a descriptive analysis of the emerging market capital flows during and after the global financial crisis, the paper proceeds by introducing three categories of influencing factors of capital flows. An empirical model is established to determine the factors affecting

the volatility of cross-border capital flows, particularly in the case of US interest rate hikes. Based on the empirical results, Section III analyzes how the BRI protects emerging countries against external financial shocks from advanced countries from four perspectives. Section IV concludes the paper.

II. Determinants of Emerging Market Capital Flows

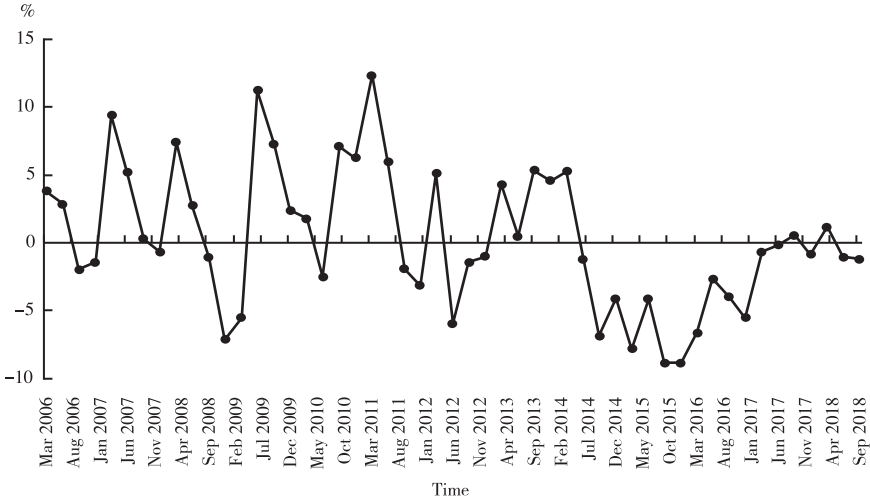
Cross-border capital flows are an important channel through which monetary policy adjustments in advanced countries affect the exchange rates and asset prices of emerging market economies. Therefore, this paper selects the cross-border capital flows as a core indicator to measure financial disturbances. Because foreign exchange reserves are foreign assets held by the central bank, and reserve changes are associated with open market operations rather than adjustments in market expectations, we subtract changes in foreign exchange reserves from financial account balances to calculate the cross-border capital flows, which are then divided by nominal GDP to standardize. The emerging markets we refer to are the 30 developing countries in Asia, Africa, Eastern Europe and Latin America. These countries have developed quite well in the past few decades and were selected by Hu et al. (2018) based on a comprehensive evaluation system.³

The cross-border capital flows of these emerging markets (including China) in the past decades are provided in Figures 4 and 5. As the figures show, similar to other emerging economies, China had consistent capital inflows before the global financial crisis in 2008. The financial crisis started in the US but had negative effects on other advanced countries and emerging markets. During the crisis, there were massive capital outflows in China and other emerging countries. In 2008, capital outflows in China took 7.1 percent of its GDP, and it was the same case in Malaysia, Russia and other emerging countries in Asia and Europe. After the financial crisis, emerging market economies quickly recovered, and their strong growth potential helped to attract significant foreign investment. The capital inflows continued until 2014 when the US Federal Reserve put an end to the quantitative easing policies and started to raise policy rates. Capital flows reversed in some Asian and Eastern European countries; for example, the financial account of the private sector in China turned to deficit, and the average capital outflow as a percent of GDP reached 4.6 percent. By

³Based on development economic theories, Hu et al. (2018) established an evaluation system that took five categories of development into consideration: economic scales, business environment, economic growth, economic structure and development potential. Thirty countries were selected as emerging market economies: Argentina, Brazil, Chile, China, Colombia, Dominica, Ecuador, Egypt, Ghana, Guatemala, India, Indonesia, Iran, Kazakhstan, Malaysia, Mexico, Morocco, Pakistan, Peru, Philippines, Poland, Romania, Russia, Saudi Arabia, South Africa, Thailand, Tunisia, Turkey, Uzbekistan and Vietnam.

contrast, some emerging markets, such as Chile, Mexico and Peru were not significantly affected by the changes in US monetary policies.

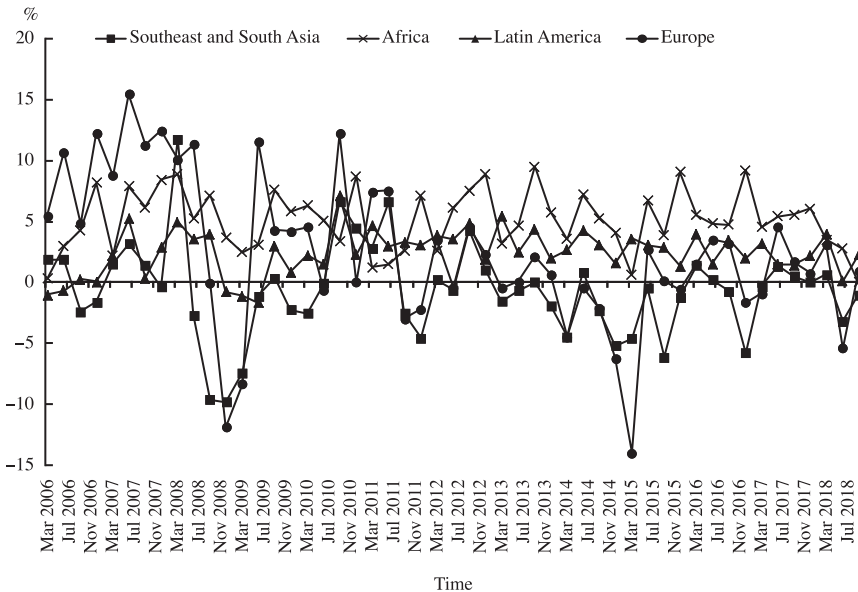
Figure 4. Net Capital Flows as a Percent of GDP in China



Source: Authors' calculations based on the CEIC database.

Note: A positive number denotes net capital inflow, while a negative number denotes net capital outflow.

Figure 5. Net Capital Flows as a Percent of GDP in Emerging Market Economies (Average)



Source: Authors' calculations based on the CEIC database.

What makes an emerging country a good performer in the face of US policy changes? As discussed in the introduction, the influencing factors of cross-border capital flows can be categorized into pushing and pulling forces, where pushing force denotes external factors while pulling forces are the internal characteristics that determine whether an emerging country can withstand external shocks. Under the pushing/pulling framework, we select three categories of variables to study how countries with different characteristics react to US monetary policy changes. Eichengreen and Mody (2002) concluded that US rates had a negative impact on the demand for debt securities in East Asian and Latin American countries. Using a gravity model, Herrmann and Mihaljek (2013) also revealed that decreases in cross-border lending during the global financial crisis were the result of external rather than country-specific factors. Therefore, the first category of variables reflects external pushing forces, of which the short-term interest rate gap between emerging countries and the US is representative. The second category is the financial profitability of the capital market in emerging countries. Mandilaras and Popper (2009) confirmed that the domestic capital market condition measured by financial market capitalization was a strong predictor of emerging market capital flows. We follow their choices and generate the stock market returns of the emerging countries as a measure of the financial profitability of their economies. Moreover, as Mody et al. (2001) indicated under a vector error correction framework, the macroeconomic fundamentals of emerging market economies have significant effects on their cross-border capital flows. They concluded that pulling factors, such as the consumer price index, the short-term debt to reserve ratio and the level of industrial production, were predominant in the determination of emerging market capital flows over external pushing factors, especially in terms of the permanent components of capital flows. There is also evidence that strong GDP growth of emerging economies tends to boost capital inflows (Gupta and Ratha, 2000), while a more liberalized capital market may lead to higher volatility in emerging market capital flows (Stiglitz, 2000). Therefore, the third category affecting cross-border capital flows reflects the macroeconomic fundamentals, and indicators in this category include GDP growth, real effective exchange rates, inflation rate, manufacturing sector value added as a percent of GDP, external debts and capital account openness.

Two further factors are considered to significantly affect the performance of emerging market countries in response to US monetary policy shocks: the soundness of the financial system and the level of investment, especially infrastructure investment. Our hypothesis is that a country with a more sound financial system is more attractive to foreign investment because the risks are lower in the face of external shocks. With underdeveloped direct financing markets, emerging countries primarily rely on banks for financing. Therefore, we selected the non-performance loans ratio of the banking

sector to measure the soundness of a financial market. Another hypothesis is that emerging countries with higher investment and better infrastructure facilities tend to be more attractive investment destinations. We assume that international companies are more likely to establish branches and make direct investments in countries with good infrastructure. Because direct investments are less liquid than securities investments, these countries have better resistance to external shocks.

After taking all of these factors into consideration, we established a model to assess the influencing factors of cross-border capital flows:

$$\begin{aligned} \text{capitalflow}_{it} = & \beta_0 + \beta_1 \text{UShike}_{it} + \beta_2 \text{npl}_{it} + \beta_3 \text{infrastructure}_{it} + \beta_4 \text{UShike}_{it} \times \text{npl}_{it} \\ & + \beta_5 \text{UShike}_{it} \times \text{infrastructure}_{it} + \beta_6 \text{controls}_{it} + u_i + e_{it}. \end{aligned}$$

In this model, UShike_{it} is the dummy variable of US interest rate hikes.⁴ If the US is in the interest rate hike cycle, UShike_{it} is 1, otherwise, it is 0. npl_{it} is the non-performing loan (NPL) ratio. $\text{infrastructure}_{it}$ is the infrastructure index drawn from the Global Competitive Index (GCI).⁵ $\text{UShike}_{it} \times \text{npl}_{it}$ and $\text{UShike}_{it} \times \text{infrastructure}_{it}$ interact the US interest rate hike dummy with the NPL and infrastructure indices, respectively. These interaction variables are used to study whether the soundness of the financial system and the infrastructure level of the emerging countries help to prevent capital outflows when the US raises its policy rates. controls_{it} are the control variables falling into the three categories of variables, including short-term interest rate gaps, stock market returns, economic growth, real effective exchange rates, capital account openness, and so on.

We obtained the quarterly data of the 30 emerging countries from 1990 to 2018. Specifically, the sources of short-term interest rates, inflation, external debt/GDP, real GDP growth, fixed asset investment/GDP, manufacturing value added/GDP, NPL, real effective exchange rate, and stock composite indexes were obtained from the CEIC database. The short-term interest rate gaps are calculated by taking the differences between the three-month interbank rates of emerging countries and the US Treasury

⁴We take four cycles of interest rate hikes into account since 1990. Specifically, the first cycle is between February 1994 and February 1995, during which the target rate was raised seven times from 3 to 6 percent. The second round was from June 1999 to May 2000, when the US Federal Reserve raised the policy rate six times from 4.75 to 6.5 percent. The third round lasted from June 2004 to June 2006, and the US policy rates increased 17 times from 1 to 5.25 percent. The final cycle commenced at the end of 2015 to the present. The hike dummy is set at 1 during this period.

⁵The World Economic Forum developed the GCI. The index gives a separate score for each of the 12 pillars measuring different aspects of a country's competitiveness: institutions, infrastructure, macroeconomic environment, good health and primary education, higher education and training, goods markets efficiency, labor markets efficiency, financial market development, technological readiness, market size, business sophistication and innovation.

bill rates with the same maturity. To measure the level of infrastructure, we select a subindicator from the GCI. The infrastructure indicator evaluates the accessibility of transportation facilities, including roads, railroads and water and air transport, as well as the quality of utility infrastructure, including electricity and water. In terms of the capital account openness of the emerging countries, we use the Chinn and Ito index, which is a widely cited measure of a country's financial openness. After cleaning the data by dropping some extreme observations with super inflation, the description of the variables is provided in Table 1. There is significant variation in the financial market performance and economic fundamentals of the emerging countries, as the short-term interest rate gaps range from -2.73 to 116.5 percent, the stock composite index returns vary from -60.45 to 127 percent and GDP growth ranges from -14.38 to 16.02 percent.

Table 1. Description of Model Variables

Variable	Observation	Mean	Std. Dev.	Min	Max
Short term interest rate gap	1817	7.825	9.438	-2.733	116.5
GCI infrastructure	940	3.846	0.675	2.534	5.506
Inflation	2399	10.41	14.15	-3.027	99.35
External debt/GDP	1949	39.33	20.99	8.401	121.7
GDP growth	1698	4.435	3.679	-14.38	16.02
Fixed asset investment/GDP	1961	24.86	7.417	-2.023	50.23
Manufacturing value added/GDP	1618	17.43	5.971	4.162	32.45
NPL	1165	7.551	7.488	0.900	47.44
Real effective exchange rate	1984	104.4	17.11	52.01	194.6
Stock composite index return	1908	3.869	14.97	-60.45	127.0
Capital account openness	2238	-0.195	1.248	-1.910	2.360
US interest rate hike dummy	2399	0.266	0.442	0	1

Notes: GCI, Global Competitive Index; NPL, non-performing loan; Std. Dev., standard deviation.

To check for multicollinearity problems, we run a simple regression and calculate the variance inflation factor (VIF) of the model. The results in Table 2 show that the VIF is well below the cutoff of 5. The correlation matrix of all explanatory variables also confirms that the correlations between each pair of variables are all below 0.8, and multicollinearity is low. We then perform a Hausman test and the results suggest that a fixed-effect regression model is appropriate. Detailed regression results on the determinants of emerging market capital flows are provided in Table 3.

Table 2. Variance Inflation Factor for the Explanatory Variables

Variable	VIF	1/VIF
Short term interest rate gap	3.410	0.293
Inflation	3.030	0.330
Manufacturing value added/GDP	2.960	0.337
Fixed asset investment/GDP	1.870	0.535
External debt/GDP	1.670	0.597
NPL	1.620	0.615
Real effective exchange rate	1.560	0.643
GCI infrastructure	1.500	0.665
Capital openness	1.460	0.685
GDP growth	1.450	0.687
US interest rate hike dummy	1.070	0.933
Stock composite index return	1.030	0.970
Mean	VIF	1.890

Notes: GCI, Global Competitive Index; NPL, non-performing loan; VIF, variance inflation factor.

The regression results show that higher fixed asset investments are associated with greater capital inflows. Although the level of infrastructure is negatively correlated with net capital inflows, the positive coefficient for the interaction between infrastructure and US interest rate dummy denotes that during the period of US interest rate hikes, capital outflows are significantly lower in countries with higher infrastructure levels. This regression outcome shows that countries with a higher investment rate are more attractive to foreign investors, whereas infrastructure investments help to smooth the volatilities of cross-border investments, especially when the US raises its policy rates, leading to massive capital outflows in the emerging economies.

In terms of the relationship between financial soundness and capital flows, the regression results show that the non-performing loan ratio is negatively correlated with capital flows, meaning that a fragile banking system tends to drive away international capital. The correlation between net capital flows and some control variables is in line with our expectation – the higher the GDP growth and stock composite returns, the higher the capital inflows. However, net capital flows are not significantly correlated with other control variables, such as short-term interest rate gaps, inflation, capital account openness, external debt and manufacturing value added as a percent of GDP.

Table 3. Determinants of Emerging Market Capital Flows

	Cross-border capital flows					
	(1)	(2)	(3)	(4)	(5)	(6)
US interest rate hike dummy		-0.920 (-1.16)		-8.152* (-1.66)		0.0405 (0.02)
NPL	-0.116** (-2.18)	-0.119** (-2.22)				
NPL × US interest rate hike dummy		0.117 (1.19)				
GCI infrastructure			-1.513* (-1.86)	-1.516* (-1.86)		
GCI infrastructure × US interest rate hike dummy				2.046* (1.74)		
Fixed asset investment/GDP					0.315*** (6.83)	0.314*** (6.64)
Fixed asset investment/GDP × US interest rate hike dummy						-0.0151 (-0.23)
GDP growth	0.369*** (5.30)	0.370*** (5.32)	0.525*** (6.42)	0.521*** (6.37)	0.355*** (5.68)	0.357*** (5.70)
Short term interest rate gap	0.0162 (0.21)	0.0154 (0.20)	0.0413 (0.38)	0.0264 (0.24)	-0.126** (-2.01)	-0.127** (-2.02)
Manufacturing value added/GDP	0.611** (2.46)	0.598** (2.40)	0.297 (1.12)	0.286 (1.06)	-0.0233 (-0.16)	-0.0259 (-0.18)
Inflation	0.129 (1.33)	0.118 (1.21)	0.282*** (2.62)	0.311*** (2.86)	0.293*** (3.71)	0.293*** (3.70)
Real effective exchange rate	-0.0210 (-1.00)	-0.0170 (-0.79)	0.00147 (0.06)	0.00535 (0.21)	0.0202 (1.13)	0.0195 (1.09)
Stock composite index return	0.0692*** (4.54)	0.0697*** (4.56)	0.121*** (6.99)	0.121*** (7.00)	0.101*** (7.83)	0.102*** (7.86)
External debt/GDP	-0.0115 (-0.42)	-0.00281 (-0.10)	0.0249 (0.77)	0.0142 (0.41)	0.0222 (1.15)	0.0239 (1.23)
Capital account openness	0.391 (0.70)	0.355 (0.63)	-0.322 (-0.51)	-0.432 (-0.68)	-0.435 (-0.97)	-0.418 (-0.93)
Constant	-6.834 (-1.33)	-7.237 (-1.40)	-1.957 (-0.25)	-1.856 (-0.24)	-10.49*** (-2.83)	-10.36*** (-2.79)
Number of observations	696	696	678	678	934	934

Notes: *, ** and *** represent significance at 10, 5 and 1 percent, respectively. *t* statistics in parentheses. GCI, Global Competitive Index; NPL, non-performing loan.

The regression results verify that because of their heterogeneity, emerging countries perform differently in the face of monetary policy shocks of the advanced countries. The volatility of cross-border capital flows is significantly lower for countries with good infrastructure, while sound banking systems and aggressive GDP growth help attract

cross-border capital inflow. Therefore, infrastructure investment and financial system enhancement help emerging market economies resist cross-border financial risk.

III. The Belt and Road Initiative and the Prevention of Financial Risks in Emerging Countries

In the era of globalization, any open economy is exposed to internal and external economic shocks. Emerging countries have significant growth potential. Although their financial systems are not efficient and their regulation frameworks are not well established, their economies are expanding rapidly. The governments of some emerging economies intervene in the market in an unfavorable way, leading to less efficient markets in terms of resource allocation. Such factors make emerging countries more vulnerable to external financial shocks. The financial volatilities and economic slowdown during the period of US interest rate hikes has exposed internal problems and highlighted the urgency for some emerging countries to strengthen their financial systems and seek new growth engines. Emerging countries need to cooperate to overcome the difficulties they encountered and to prevent potential risks. According to our empirical research, an important method of risk prevention for emerging economies is to jointly build the B&R. This will be beneficial in four aspects.

Firstly, the BRI aims to promote the connectivity of African, Asian and European continents by enhancing infrastructure investment, which is a basic prerequisite for economic takeoff. The empirical analysis shows that countries with higher investment rates attract more cross-border capital inflow, while the quality and quantity of infrastructure significantly affect the financial stability of an emerging country. When monetary policies are tightened in developed countries, emerging economies with higher levels of infrastructure investment are less likely to suffer financial fluctuations. In the past five years, China has launched a large number of infrastructure investment projects in B&R countries. While some projects, such as the China–Thailand high-speed rail and the China–Laos railway, are still under construction, some have been completed and are now playing a role in local development. Examples of successful cooperative projects include the Sahiwal power station in Pakistan and the Mengnei railway in Kenya. These infrastructure projects improve the transportation conditions and energy facilities in B&R countries, lowering trade costs and providing greater opportunities for economic growth, contributing to the stability of financial markets in emerging countries.

Secondly, the BRI is conducive to the development of the manufacturing sector and promotes industrialization. A solid real sector is essential in order to enhance the stability of the financial system and prevent financial crisis. The past failures of

emerging countries that suffered from financial crises are always associated with a problematic real economy and distorted institutions, such as Latin American countries that are resource-dependent for economic development, or Southeast Asian countries that lack growth potential. When the economy is slowing down, governments in emerging markets tend to stimulate economic growth via massive borrowing, which often leads to asset bubbles in the financial market, bad debt in the banking system, and the development of systematic financial risk. To overcome potential risks, emerging countries could make the pragmatic choice to jointly build the B&R with China. Through mutual cooperation, emerging market economies can make full use of China's capital, technology and market to promote their own economic development. Moreover, global cooperation over production capacity will help to optimize the industrial structure of emerging countries, allowing these countries to gain economic potential and eliminate long-term financial risk.

Thirdly, through the BRI, emerging countries will have greater access to China's huge consumer market. Openness is an important factor for promoting economic growth. Furthermore, our empirical results confirm that countries with higher economic growth attract greater foreign investment, which provides the capital and technology essential for economic takeoff. Under the BRI framework, the supply of high-quality agricultural products and commodities from some emerging market countries will match China's huge market demand. This will create extensive foreign exchange earnings and job opportunities. Furthermore, the quality of infrastructure and human capital will be improved through opening up, thus emerging countries will have greater growth potential and be better able to cope with macro-financial risks.

Fourthly, the BRI promotes regional and cross-regional financial cooperation among emerging market economies. The empirical results show that the correlation between banking robustness and cross-border financial risk is significant. A higher non-performing loan rate is associated with a larger amount of cross-border capital outflow. Currently, although emerging countries are the most powerful growth engine and are playing a more important role in the world economy, they are underrepresented in the global governance system. With different economic endowments and similar development problems, the establishment of a cooperative monetary framework among the emerging market countries could be mutually beneficial. A successful example of a regional financial cooperative network is the Chiang Mai agreement between the Association of Southeast Asian Nations (ASEAN), China, Japan and Korea, which was signed after the Asian financial crisis. The agreement is a complement to the International Monetary Fund's (IMF) lending practice, aimed at establishing a regional currency swap framework. Member countries have certain subscriptions in the reserve

pool and can borrow dollars in exchange for local currency when they suffer liquidity crises. This agreement is more efficient than the IMF contingent reserves arrangement in that member countries have access to prompt financial bailout without stringent restrictions. Attractive as they are, institutional arrangements of this kind are limited to some emerging countries in Asia. They are not comparable to the IMF in terms of the amount of reserves and number of member countries. Financial crisis is contagious among countries, and there is a strong necessity to build a financially stable cross-regional network among a wider range of emerging market countries. Financial connectivity is a key element of the BRI. Strengthening financial cooperation under the B&R framework includes providing policy loans for regional infrastructure investment in B&R countries, as well as the joint efforts of central banks to maintain regional financial stability. The construction of regional and cross-regional financial cooperation frameworks will not only enhance the financial systems of emerging market countries along the B&R, but will also maintain the stability of regional and global financial markets.

V. Conclusion

The spillover effect of policies in developed countries is an important topic that has provoked discussion between scholars, policy-makers in emerging market countries and officials in international organizations, such as the IMF, the World Bank, and the Bank for International Settlements. Recently, as the US Federal Reserve raised the policy rates and put an end to asset-purchase programs, emerging market countries responded differently to the policy shocks. Countries such as Argentina, South Africa and Turkey suffered terribly from the external shock with a surge in capital flows, a fall in currency exchange rate, and reduced asset value, while countries such as Thailand and Vietnam maintained a stable financial market and economic growth. This paper investigated the factors that determine the financial volatility of emerging markets in the face of external shocks. After calculating the capital flows of 30 emerging market countries in Africa, Asia, Eastern Europe and Latin America over the past decades, this paper analyzed the influencing factors of cross-border financial risks. The empirical model showed that countries with better infrastructure, more sound banking systems and higher economic growth have significantly lower cross-border financial risks. Therefore, enhancing emerging countries' infrastructure and banking systems are necessary to shelter them from external financial shocks.

To reduce systematic financial risks, a feasible option for emerging countries is to actively take part in the joint construction of the B&R. Intensive infrastructure

investment, rapid economic growth and efficient financial markets are all closely linked to a stable financial environment, and the quality of infrastructure in emerging market countries can be greatly improved by jointly building the B&R. Production capacity cooperation can promote industrialization, and through opening up, emerging countries can gain full access to China's huge consumer market to promote long-term growth. Under a cooperative framework, they can also establish a financial cooperative framework to enhance regional financial stability. The BRI provides a new historical opportunity not only for B&R countries, but also for all emerging market economies.

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