The Cyclical Properties of Capital Inflows in Emerging Market Economies[†]

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This article empirically investigates the cyclical characteristics of capital inflows in 12 emerging economies from the perspectives of their durations, amplitudes and speeds. Among emerging economies, the duration of capital inflows is shown to be on average the longest in Europe while the amplitude of inflows the biggest and the speed of those the fastest in Asia. Furthermore, the threshold effects of cyclical factors on capital inflows are examined. According to a panel smooth transition regression model, there exist the thresholds of cyclical factors such as (excess) global liquidity growth, the change in U.S. long-term interest rate, the change in the VIX and the US dollar index growth, beyond which the impacts on capital inflows change significantly.

Key Words: Capital Inflow Cycle, Duration, Amplitude, Speed, Thresholds of Cyclical factors

JEL Classification: F32, F34

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1. Introduction

Capital inflows are known to play positive roles by boosting economic growth and financial development of emerging market economies (EMEs), which face capital shortages. During the 2008 global financial crisis, however, the negative aspects of capital liberalization were highlighted as sudden stops in capital inflows occurred in most emerging countries simultaneously (IMF, 2011). Accordingly, EMEs have started to introduce policies to regulate excessive capital inflows, and active discussions have been proceeding in global level meetings on trying to reduce the volatility of capital inflows. Future policies related to capital inflows should also be implemented flexibly, in consideration of changes in the environment.

Before discussing the pros and cons of capital inflows, an in-depth analysis of the stylized facts of capital inflows to emerging countries is first needed. Capital inflows generally tend to expand before crises, and shrink during crises. As examples, surges in capital inflows ended up reversing during the Asian foreign exchange crisis and the global financial crisis. With capital inflows to EMEs rising consistently, three episodes of surges in inflows have occurred since the 1990s (IMF, 2011). The first episode was from 1996:Q2 through 1998:Q2. During this period Asian countries saw increases in capital inflows and direct inflows that accounted for 40% of total capital inflows to all EMEs. The second episode (2006:Q2～2008:Q2) was characterized by the fact that the percentage of bank loans rose to 40%, from 20% during the first episode, even though direct inflows still accounted for the highest portion of total capital inflows. More capital found its way into Asia, Emerging Europe and CIS (Commonwealth of Independent States) countries than to other emerging economies. During the third episode (2009:Q3～2010:Q4), portfolio inflows made up half of the total capital inflows, and capital inflows to Asia and Latin America accelerated.

In this sense, several papers have analyzed the patterns of capital flows. Reinhart and Reinhart (2008) find that capital inflow bonanzas are related to higher incidences of economic crisis. As shown in Contessi et al. (2013), capital inflows to most countries have been pro-cyclical, expanding during booms and contracting during busts. Thus, while capital inflows will not increase at the same time in different countries, they often come to an end at the same time. The IMF (2011) defines capital inflows as surges, episodes (prolonged surges), and waves (large numbers of country episodes occurring at the same time). Their analysis, using the quarterly data of 48 emerging economies between 1990Q1 and 2010Q2, identified 718 surges, 125 episodes, and three waves of capital inflows. Forbes and Warnock (2012) identified episodes of “surge”, “stop”, “flight” and “retrenchment” using the quarterly data of 50

countries from 1980 to 2009.[1] Their empirical results showed that there were 170 episodes of surges, 220 of stops, 198 of flight, and 212 of retrenchment during the sample period. In terms of the average length of each type of episode, surges lasted the longest (4.5 quarters) and retrenchment the shortest (3.9 quarters).

Unlike the aforementioned papers, which analyze the cyclical characteristics of capital inflows to emerging countries (or advanced countries) as a whole, this paper investigates the cyclical properties of those to individual emerging countries, broken down by types of inflow. Given the higher volatility of capital inflows, it is important to closely observe the inflows of different types of capital. As far as I know, this is the first study to analyze the characteristics of capital inflows using the business cycle algorithm. This paper focuses on the following questions in order to comprehensively identify the characteristics of capital inflows to emerging countries: Are there differences in the persistence and volatility of capital inflows by type, country and region? Are there threshold effects of cyclical factors on capital inflows?

In this regard, this paper shows the cyclical characteristics of capital inflows in terms of their durations, amplitudes and speeds (the amplitudes for each quarter), in order to investigate the persistence and volatility of capital inflows to emerging markets. Also, the thresholds of cyclical factors such as (excess) global liquidity growth, the change in U.S. long-term interest rate, the change in the VIX and the US dollar index growth, beyond which the impacts on capital inflows change significantly, are investigated by estimating a panel smooth transition regression model.

The rest of this paper proceeds as follows. Section 2 examines the cyclical characteristics of capital inflows to emerging countries, in terms of their persistence and their volatility. Section 3 investigates the threshold effects of cyclical factors on capital inflows through a panel smooth transition regression model. Section 4 then summarizes the results of analysis.

2. Cyclical Characteristics of Capital Inflows

2.1. Measures of cyclical characteristics

In this section, the persistence and volatility of capital inflows to emerging markets are investigated. As we all know, capital inflows increased in the 1990s up until just before the Asian currency crisis,

[1] "Surges" and "stops" are related to capital inflows brought in by foreign investors, while "flight" and "retrenchment" are associated with capital outflows by domestic investors.

and decreased thereafter until the end of 1999. In contrast, increases and decreases of capital inflows have occurred repeatedly several times in the 2000s, indicating that capital inflows have become less persistent in the 2000s. Regarding the volatility of capital inflows, the difference between the size of inflows during the 1990s until right before the Asian currency crisis, when capital inflows were at their peak, and the size of capital inflows at the following trough is smaller than what was witnessed during the global financial crisis in the 2000s. Capital inflow volatility may thus have increased in the 2000s. If the difference between the peak and the trough of capital inflows is large, the shock to the foreign exchange and financial markets will become relatively greater.

Considering all of this, more detailed analysis of the cyclical characteristics of capital inflows are needed. And to this end I address the cyclical process of capital inflows in light of their duration, amplitude and speed.

[Figure 1 here]

First, I define a cycle as meaning the total duration of the expansionary period in which capital inflows increase, plus the contractionary period in which they decline or even become negative, as shown in Figure 1. I use the BBQ (Bry-Boschan Quarterly) algorithm, which is frequently used in analysis of the business cycle, for identification of the trough and the peak to indicate the starts of the expansionary and the contractionary periods. This duration is useful for analyzing the persistence of capital inflows. In the algorithm the peak (trough) is the local maximum (minimum) value of the time series data, the expansionary and contractionary periods continue for at least two quarters, and the length of one cycle is at least five quarters (Harding and Pagan, 2002; Igan et al., 2011).

Amplitude indicates the difference between the sizes of capital inflows at their peak and their trough. The amplitude during the expansionary period is accordingly the difference between the trough and the peak, and that during the contractionary period the difference between the peak and the next trough. The amplitudes of the expansionary and the contractionary periods have different signs, and I therefore compute the absolute values of the different volumes of capital inflows. The bigger the amplitude, the higher the volatility of capital inflows.

Lastly, the speed is obtained by dividing the amplitude by the duration, and indicates the amplitude for one unit of the duration period. In general, the amplitude becomes bigger as the duration period becomes longer. In consideration of such differences, speed can therefore be a more precise indicator for identifying the volatility of capital inflows.

I use quarterly data for the practical analysis, and divide the amount of quarterly capital inflows by that of quarterly nominal GDP in order to control for the effect of a GDP increase on capital inflows.

For the sample period of 2000:Q1-2014:Q4, the processes of capital inflow circulation in 12 emerging market economies (Emerging Asia: Indonesia, Korea, Philippines, Thailand; Emerging Latin America: Argentina, Brazil, Chile, Mexico; Emerging Europe: Czech, Poland, Turkey, Russia) are analyzed. All data are taken from the IMF IFS database.

2.2. Duration, Amplitude and Speed of Capital Inflows

2.2.1. Duration of Capital Inflows

First, the durations of capital inflows to emerging market economies are shown in Table 1. The cycle refers to a period in which capital inflows increase until a peak and then decrease until they reach a trough. The length of cycle in Europe is 11.8 quarters, longer than the lengths of 9.5 quarters in Latin America and of 10.8 quarters in Asia. Regarding the individual country cycles, the 19.5 quarters in Poland are the longest among all countries, followed by 15.0 quarters in Thailand and 11.1 quarters in Argentina. The cycles appear to be relatively shorter in Brazil (7.5 quarters), Indonesia (8.2 quarters) and Turkey (8.3 quarters), however. The expansionary periods meanwhile appear to be longer than the contractionary periods in most emerging market economies. The expansionary period in Europe is longer than those in other regions, whereas the contractionary period in Asia is relatively short compared to those in Europe and Latin America. This indicates that capital inflows persist over a relatively long period of time in Europe, while declining in a relatively short period of time in Asia.

Next I look at the persistence of capital inflows, by type of capital. Among the four capital types, the persistence of FDI is the longest while that of equity investment appears to be the shortest, indicating the short-term characteristic of equity investment. A regional comparison of equity investment and bank loans shows that for both types of capital Europe experienced the shortest persistence of contractionary periods. Regarding bonds investment, the persistence of the expansionary period was the shortest whereas that of the contractionary period the longest in Europe.

[Table 1 here]

2.2.2. Amplitude of Capital Inflows

The changes in amplitude show the fluctuations of capital inflows; the bigger the difference between the sizes of inflows at their peaks and their troughs, the severer the shock to the financial markets. Table 2 shows that the average amplitude of the cycle is 14.1%p in Asia, higher than the 12.3%p in Europe

and the 9.9%p in Latin America. By country, it is 20.6%p in Thailand – about three times higher than the 6.3%p in Indonesia. In the analysis based on the expansionary and contractionary periods, the average amplitudes in Asia are found to be higher than those of the other regions for both periods. This means that the size of capital inflows to Asia is big, and that these inflows will decrease rapidly when external conditions deteriorate. In Thailand, the amplitude during the contractionary period is 18.5%p, nearly one and half the 11.8% for emerging markets as a whole during that period, thus suggesting that foreign capital withdrawals would send big shocks to the country's financial and foreign exchange markets. The amplitude during the expansionary period is higher in both Asia and Latin America than that during the contractionary period, while the reverse holds true in Europe.

The next consideration is the amplitudes of capital inflows by type of capital. A look at the average for emerging markets shows the amplitudes for bonds investment and bank loans to be bigger than those for FDI and equity investment. In particular, the amplitude of bank loans is the biggest during both the expansionary as well as the contractionary periods, in stark contrast to the case of equity investment which is the smallest during both periods. Regional comparison meanwhile shows the amplitude of FDI to be the biggest in Latin America, while the amplitudes of equity investment and bank loans appear to be the greatest in Asia and that of bonds investment the largest in Europe.

[Table 2 here]

2.2.3. Speed of Capital Inflows

As mentioned, the longer the persistence of capital inflows the greater the amplitude is likely to be. The speed of capital inflows hence needs to be examined in consideration of this. The speed is obtained by dividing the amplitude by the duration, and is stated as the amplitude per one unit (one quarter) of the duration period. As shown in Table 3, the speed of capital inflows to Asia (2.8%p) is faster than those to Europe (2.5%p) and Latin America (2.1%p). The speeds are fast in the Philippine and Czech, but slow in Poland. There is little difference in capital inflow speed between the expansionary and the contractionary periods in Latin America, but in Asia and Europe the speed is approximately one and half times as fast during the contractionary period. In the Philippine the speed during the contractionary period is 5.3%p – far higher than the 2.1%p seen during the expansionary period. This indicates that the size of the decrease in quarterly capital inflows is the biggest in that country, thereby making it especially vulnerable to crisis.

The speed of capital inflows is the fastest for bank loans and bonds investment, followed by those for FDI and equity investment. Looking at the emerging markets average, capital inflows into bank

loans appear to be the fastest during the contractionary period, whereas those into equity investment are the slowest during both the expansionary and the contractionary periods. The speeds of equity investment and bank loans are the fastest in Asia, while capital inflows into bonds investment appears the fastest in Europe. The speed of capital inflows into equity investment is faster in Asian countries including Korea and Thailand, which seems to be due to the high level of equity market openness.

[Table 3 here]

[Figure 2 here]

So far I have analyzed the process of capital inflow circulation in view of its duration, amplitude and speed, in order to examine the persistence and volatility of capital inflows. In Asia the amplitude appears to be the greatest and the speed is the fastest. The short duration period is one of the major factors causing the speed of capital inflows to increase in Asia. Especially, the speed of capital inflows during the contractionary period is rapid there, which thus makes the region vulnerable to crisis as capital inflows fall most significantly during that period. Capital inflows for FDI persist over a long period of time, while those for equity investment are done for a short period. The amplitudes are big and the speed fast with respect to bonds investment and bank loans, which may indicate a need for policies to tackle these types of capital inflows.

3. Cyclical Drivers in Capital Inflows

3.1. Cyclical factors

In this section, cyclical factors that cause the cyclicality of capital inflows are discussed. Amid the progress of financial globalization, capital inflows have shown repeated expansions and contractions in line with a variety of factors related to international financial market volatility, but their general trend has been one of increase (Chung et al., 2014). Capital inflows are affected by both cyclical factors reflecting the business cycle and structural factors reflecting changes in economic structure, and both these cyclical and these structural factors can be divided into two types—push factors and pull factors. Push factors are global factors affecting all countries, and pull factors country-specific factors. Pull

factors still play a large role in determining capital inflows in emerging market economies, but the role of push factors has been continuously growing since the 1980s when financial globalization began (IMF, 2011).

Among cyclical factors, global interest rates related to the global financial market environment and global risk appetite are important push factors. The level of US interest rates is one of the most frequently used variables in the empirical analysis of international capital flows. Low interest rates in advanced countries promote international capital flows by encouraging the carry trade, that is the borrowing of funds in currencies with low interest rates from advanced countries (Japan, the US, Europe, etc.) and their investment in the currencies of countries with high interest rates.

Besides interest rates, global liquidity is also sometimes used as an index for indicating global financial market conditions. Regarding portfolio selection, if global investor risk appetites increase, the demand for investing in emerging market assets rises as well, and thereby encourages capital flows (Forbes and Warnock, 2012). A study suggests that when the VIX, a proxy variable for global risk appetite, goes down by 1% (i.e. risk appetite grows), the inflow of portfolio investment to emerging economies expands by 0.5% (IMF, 2011). When the VIX falls the leverage ratios of global banks increase, and such changes in leverage are one important factor explaining the inflows and outflows of bank loans to and from emerging market economies (Bruno and Shin, 2015).

3.2. Threshold effects of cyclical factors

Such cyclical factors might have threshold values beyond which the impacts on capital inflows change significantly. Threshold effects of cyclical factors are also associated with structural factors. Structural factors include relatively high rate of potential growth, favorable fiscal balance and increase in trade openness. Differences in exchange rate regime affect capital inflows. One percent increase in the economic growth rate of emerging market economy leads to 4% growth in capital inflows on average (IMF, 2011). Relatively favorable fiscal situation and quantitative and qualitative growth of the financial market in emerging market economies play roles in capital inflows. Increase in trade openness send positive effects on capital inflows in that it makes the acquisition of information easy (Lane and Milesi-Ferretti, 2008). Fixed/managed floating exchange rate system induces relatively more capital

inflow than floating exchange rate system does due to relatively low exchange rate volatility (Jeanneau and Micu, 2002).

In order to examine the threshold effects of cyclical factors, I consider a panel smooth transition regression model as follows:

$$Y_{it} = \alpha_i + \beta_0 X_{it-1} + \beta_1 X_{it-1} g(q_{it-1}; \gamma, c) + \varepsilon_{it}$$

Where X_{it} is the set of control variables and $g(q_{it}; \gamma, c)$ the transition function denoting the regime, defined by the transition variable (q_{it}), the slope parameter ($\gamma > 0$) and the location parameter (c). The transition function can be written as follows:

$$g(q_{it}; \gamma, c) = 1/\{1+\exp[-\gamma(q_{it} - c)]\}$$

The transition function is normalized to take values ranging from 0 to 1. Following that, when q_{it} is at the level of q* the elasticity of X will be $\beta^* = \beta_0 + \beta_1 g(q_{it}; \gamma, c)$, in which $\beta_0 \leq \beta^* \leq \beta_0 + \beta_1$. As the transition variable's value increases from $-\infty$ to $+\infty$, the elasticity of X_{it} runs from β_0 to $\beta_0+\beta_1$. The panel is also divided into two regimes associated with the low and high values of the transition variable with the change in the coefficients centered around location parameter c. The characteristics of this change depend on the slope parameter γ, which takes values in the range from 0 to ∞. The panel smooth transition regression (PSTR) model is hence useful for analyzing the non-linear effects of the transition variables on the dependent variables, and for classifying regimes in accordance with the threshold values of the transition variables. For $\gamma \rightarrow \infty$, the transition function approaches the indicator function, which is 1 if $q_{it} \geq c$, turning the PSTR model into the Panel Threshold model (Hansen, 1999). For $\gamma \rightarrow 0$ the transition function approaches a constant (0.5), and the PSTR model turns into a linear fixed effects regression model.

The method for estimating parameters in a PSTR model, as in González et al. (2005), is the application of fixed effects estimation and nonlinear least squares (NLS). First, the individual effects μ_i are eliminated by removing individual-specific means, and NLS is then applied to the transformed data.

Another important part of estimating a PSTR model is testing the number of transition functions. The testing procedure can be summarized simply by the following steps. First, a linearity test, which tests

for linearity against nonlinearity (H_0: r = 0 vs H_1: r = 1 with r being the number of transition functions), is conducted. If the linearity hypothesis is rejected, a two-regime PSTR model estimation will be conducted. Next is the test for no remaining nonlinearity (H_0: r = 1 vs H_1: r = 2). If this is rejected, a three-regime PSTR model is estimated. The testing procedure continues until the first acceptance of the null hypothesis of no remaining nonlinearity. At each step the significance level should be reduced by a factor ρ, $0<\rho<1$, to avoid an excessively large model. In this paper, ρ is set to be 0.5. Following Colletaz and Hurlin (2008), three statistics, LM, LMF and LR, are computed for the test of linearity and the test of no remaining nonlinearity.

In this paper, I employ quarterly data covering 12 emerging countries during the period of 2000:Q1~2014:Q4, and divides the quarterly amounts of capital inflows by quarterly GDP. As the dependent variable, gross capital inflows are used first, followed by direct investment, equity investment, bond investment and bank loans in turn, so that the effects by capital type can be examined. The lagged values of the current account-to-nominal GDP ratio, openness, the government debt-to-nominal GDP ratio, the foreign exchange reserves-to-nominal GDP ratio, real GDP growth rate and CPI growth rate are used as the control variables.

The cyclical factors of global liquidity growth and excess global liquidity growth, the change in U.S. long-term interest rate and the change in the VIX are selected as the transition variables. The global liquidity here is defined as the weighted average of the broad money (M2) growth rate in advanced countries (US, Japan, EU, UK). The excess global liquidity is calculated by extracting the GDP growth rate from the M2 growth rate and taking the weighted average value. Most of the data are taken from IMF IFS, except the VIX from Bloomberg and US interest rate from the Federal Reserve Bank of St. Louis. The descriptive data is presented in Table 4.

[Table 4 here]

As shown in Table 5, in terms of the transitions of global liquidity growth and of excess global liquidity growth, beyond which the impacts on capital inflows change, the location parameters in the

two cases are 7.1% and 0.6% respectively. While the change in the case of excess global liquidity is smooth and slow (slope parameter γ=2.95), the change around the location parameter level in the case of global liquidity is relatively rapid (γ=11.15). In both cases of global liquidity and excess global liquidity, the positive estimated coefficients β_1 signify that the positive effects of control variables on capital inflows become stronger as the global liquidity and excess global liquidity increases, which implies the positive effects of these two cyclical factors on capital inflows to emerging countries. On the other hand, the β_1 coefficients in the models with the changes in the VIX and US long-term interest rate are negative, indicating the negative relationship among them and the capital inflows. In addition, the coefficients in the PSTR model with the change in the VIX as the threshold variable are estimated to center around the -3.5 level at a fairly slow speed of transition (γ = 0.0007). The PSTR model with the change in US long-term interest rate is found to have one transition, which center around 0.2%p level.

[Table 5 here]

When categorizing by type I have considered four types of capital inflows—direct investment inflows, equity inflows, bond inflows and bank loan inflows. The threshold variables used for these estimations are the same as the case of capital inflows, which are global liquidity growth, excess global liquidity growth, the change in the VIX and the change in US long-term interest rate. In considering PSTR models with global liquidity growth as the threshold variable, significant transitions are found in the cases of the effects on direct investment and bond inflows. The location levels for these two cases are estimated at 5.4% and 7.1% respectively. There are no presences of transition functions found in the cases of equity and bank loan inflows (as shown in Table 6). Regarding the effects of global liquidity growth on direct investment and bond investment inflows, the β_1 are mostly estimated negative in the case of direct investment, which indicates the negative relationship between global liquidity and direct investment, while those coefficients are positive in the case of bond investment are positive, which implies that the increase in global liquidity will lead to the rising bond investment inflows to emerging

economies.

In the meantime (as in Table 7), excess global liquidity growth is found to have a significant positive relationship with almost all types of capital inflows considered with the exception of direct investment inflows. To be specific, most of the estimated coefficients β_1 in are significantly positive, which means that as excess global liquidity growth increases, the effects of control variables on different types of capital inflows will become more positive. In addition, in all three cases of equity investment, bond investment and bank loans inflows, the slope parameters are estimated to be relatively large, which means the transitions from the lower to the upper regimes are smooth but relatively rapid. Especially, in the case of bond investment inflows the estimated slope is very large (948.1), implying that the PSTR model in this case can be seen as a panel threshold model depending on whether the excess global liquidity growth is less or greater than 0.41%.

When the change in VIX is used as transition variable, the transitions are estimated significant in all four cases, especially in the case of equity inflows, it is found to have two transitions, with the first one around 4.1 and the second one around 0.1 level. The coefficient of transition function β_1 (β_1 and β_2 in case of equity investment) is estimated to be negative in the most cases, which again confirms the negative relationship between the VIX and capital inflows, even in the cases of typical types of capital inflows.

Similarly, the change in US long-term interest rate is also found to have the negative relationship with four types of capital inflows, since the coefficients β_1 of control variables are mostly estimated negative. The transition is found to be insignificant in the case of direct investment, while they are significant in three other cases, with the transition center around 0.1%p ~0 .2%p level.

[Table 6 here]

[Table 7 here]

[Table 8 here]

[Table 9 here]

As the value of the US dollar has emerged as a new global factor recently, I also estimate the PSTR model with the US dollar index growth rate as the transition variable and present the estimation results in Table 10. The US dollar index is taken from the Federal Reserve Bank of St. Louis

[Table 10 here]

The transition in the PSTR model with the US dollar index threshold is found to be significant in the case of total capital inflows, which is estimated to center around -2.4% level of the US dollar index growth rate at a slow speed (0.007). The coefficients β_1 are estimated significantly negative, implying that there exists a negative relationship between the US dollar index growth rate and capital inflows. In four cases of different types of capital inflows, the transitions are all estimated to be significant and center around -3% to -1%. Additionally, in almost of the cases, the coefficients β_1 are negative, which again confirms the negative impacts of the US dollar index growth rate on capital inflows.

4. Conclusion

This paper investigates the cyclical characteristics of capital inflows in 12 emerging economies from the perspectives of their durations, amplitudes and speeds. Among emerging economies, on average, the duration of capital inflows is shown to be the longest in Europe and the amplitude of inflows the biggest in Asian countries. By type of capital, FDI (Foreign Direct Investment) is likely to persist for a long time whereas equity investment inflows are short-lived. The amplitudes of bonds investment and bank loans are bigger and the speeds of their inflows faster compared to other types of capital. Meanwhile, the empirical results of a panel smooth transition regression model show that cyclical factors such as (excess) global liquidity growth, the change in U.S. long-term interest rate, the change in the VIX and the US dollar index growth have the threshold values beyond which the effects on capital inflows vary significantly.

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Table 1. Duration of capital inflows

(Unit: quarter)

	Total			FDI			Equity			Bonds			Bank loans		
	Trough-to-peak	Peak-to-trough	Cycle	Trough-to-peak	Peak-to-trough	Cycle	Trough-to-peak	Peak-to-trough	Cycle	Trough-to-peak	Peak-to-trough	Cycle	Trough-to-peak	Peak-to-trough	Cycle
Asia	**6.3**	**4.4**	**10.8**	**10.5**	**5.9**	**16.4**	**6.8**	**4.7**	**11.5**	**6.8**	**4.9**	**11.7**	**7.8**	**6.1**	**13.9**
Indonesia	4.8	3.3	8.2	5.6	5.8	11.4	6.5	3.8	10.3	10.7	6.3	17.0	10.0	10.0	20.0
Korea	4.3	5.4	9.7	8.7	9.0	17.7	4.8	5.4	10.2	6.2	3.8	10.0	4.6	4.2	8.8
Philippine	7.2	3.0	10.2	20.5	4.5	25.0	11.7	4.3	15.9	4.8	3.8	8.6	7.3	6.0	13.3
Thailand	9.0	6.0	15.0	7.3	4.5	11.8	4.4	5.4	9.8	5.4	5.8	11.2	9.3	4.3	13.6
Latin America	**4.7**	**4.8**	**9.5**	**5.2**	**8.5**	**13.7**	**7.0**	**5.6**	**12.6**	**5.3**	**5.7**	**11.0**	**7.4**	**6.7**	**14.0**
Argentina	4.3	6.8	11.1	7.0	8.3	15.3	8.3	5.0	13.3	4.8	5.8	10.5	6.3	7.0	13.3
Brazil	3.3	4.1	7.5	6.3	6.3	12.5	7.3	5.3	12.5	4.6	5.0	9.6	11.5	7.0	18.5
Chile	5.6	4.6	10.2	4.8	6.0	10.8	8.0	4.0	12.0	3.5	6.0	9.5	5.0	7.8	12.8
Mexico	5.7	3.8	9.5	2.8	13.3	16.1	4.5	8.0	12.5	8.5	6.0	14.5	6.6	5.0	11.6
Europe	**7.0**	**4.7**	**11.8**	**5.4**	**6.1**	**11.5**	**5.8**	**4.6**	**10.4**	**5.1**	**7.6**	**12.7**	**7.5**	**5.4**	**13.0**
Czech	7.0	3.5	10.5	8.0	3.0	11.0	7.0	3.2	10.2	4.3	10.7	15.0	5.0	4.4	9.4
Poland	11.0	8.5	19.5	2.7	10.5	13.2	4.8	3.5	8.3	4.5	9.3	13.8	7.8	5.0	12.8
Turkey	5.7	2.6	8.3	6.5	5.5	12.0	6.4	3.2	9.6	8.0	5.3	13.3	8.8	4.3	13.0
Russia	4.5	4.3	8.8	4.4	5.4	9.8	5.0	8.7	13.7	3.7	5.0	8.7	8.7	8.0	16.7
Average	**6.0**	**4.7**	**10.7**	**7.0**	**6.8**	**13.9**	**6.6**	**5.0**	**11.5**	**5.7**	**6.1**	**11.8**	**7.6**	**6.1**	**13.6**

Note: The total duration (cycle) combines the expansionary period in which capital inflows increase, and the contractionary period in which they decline or even become negative.

Table 2. Amplitude of capital inflows

(Unit: %p)

	Total			FDI			Equity			Bonds			Bank loans		
	Trough-to-peak	Peak-to-trough	Cycle Average	Trough-to-peak	Peak-to-trough	Cycle Average	Trough-to-peak	Peak-to-trough	Cycle Average	Trough-to-peak	Peak-to-trough	Cycle Average	Trough-to-peak	Peak-to-trough	Cycle Average
Asia	**15.0**	**(13.2)**	**14.1**	**3.0**	**(2.9)**	**2.9**	**3.2**	**(3.6)**	**3.4**	**5.9**	**(5.8)**	**5.8**	**8.5**	**(7.8)**	**8.2**
Indonesia	7.2	(5.4)	6.3	3.2	(2.2)	2.7	1.8	(1.8)	1.8	5.4	(4.7)	5.1	3.3	(2.8)	3.1
Korea	15.3	(13.0)	14.2	1.8	(2.0)	1.9	5.0	(5.6)	5.3	5.5	(6.1)	5.8	9.7	(8.6)	9.1
Philippine	14.8	(15.9)	15.4	3.7	(3.7)	3.7	1.7	(1.7)	1.7	7.6	(8.4)	8.0	9.3	(9.7)	9.5
Thailand	22.8	(18.5)	20.6	3.3	(3.4)	3.4	4.3	(5.1)	4.7	4.9	(4.2)	4.5	11.9	(10.3)	11.1
Latin America	**10.1**	**(9.7)**	**9.9**	**6.0**	**(6.4)**	**6.2**	**2.3**	**(1.9)**	**2.1**	**6.2**	**(5.6)**	**5.9**	**6.7**	**(6.7)**	**6.7**
Argentina	8.2	(7.7)	7.9	4.6	(5.9)	5.2	1.4	(0.5)	0.9	8.4	(7.0)	7.7	10.4	(10.2)	10.3
Brazil	8.2	(7.7)	7.9	3.0	(3.3)	3.2	2.4	(2.3)	2.3	4.7	(4.5)	4.6	5.4	(5.2)	5.3
Chile	16.6	(16.7)	16.6	11.5	(11.9)	11.7	3.3	(2.5)	2.9	5.6	(5.6)	5.6	6.7	(7.3)	7.0
Mexico	7.6	(6.7)	7.1	4.7	(4.7)	4.7	2.1	(2.4)	2.3	6.2	(5.5)	5.9	4.4	(4.2)	4.3
Europe	**12.0**	**(12.6)**	**12.3**	**5.4**	**(5.4)**	**5.4**	**2.4**	**(2.5)**	**2.4**	**7.6**	**(6.5)**	**7.0**	**7.9**	**(8.2)**	**8.0**
Czech	14.5	(17.3)	15.9	7.0	(6.3)	6.7	3.3	(3.2)	3.3	7.5	(7.0)	7.3	5.1	(4.8)	5.0
Poland	11.0	(13.3)	12.1	6.0	(8.4)	7.2	1.8	(1.8)	1.8	9.7	(9.3)	9.5	6.0	(6.5)	6.2
Turkey	9.9	(9.6)	9.8	3.2	(2.8)	3.0	2.0	(1.9)	1.9	8.4	(7.0)	7.7	6.9	(8.3)	7.6
Russia	12.8	(10.1)	11.4	5.6	(4.2)	4.9	2.5	(3.0)	2.7	4.9	(2.5)	3.7	13.7	(13.0)	13.4
Average	**12.4**	**(11.8)**	**12.1**	**4.8**	**(4.9)**	**4.9**	**2.6**	**(2.6)**	**2.6**	**6.6**	**(6.0)**	**6.3**	**7.7**	**(7.6)**	**7.7**

Notes: 1) Amplitude indicates the difference between the sizes of capital inflows at their peak and their trough.
2) The values in parentheses denote the decreases in capital inflows.

Table 3. Speed of capital inflows

(Unit: %p)

	Total			FDI			Equity			Bonds			Bank loans		
	Trough-to-peak	Peak-to-trough	Cycle Average	Trough-to-peak	Peak-to-trough	Cycle Average	Trough-to-peak	Peak-to-trough	Cycle Average	Trough-to-peak	Peak-to-trough	Cycle Average	Trough-to-peak	Peak-to-trough	Cycle Average
Asia	**2.4**	**(3.1)**	**2.8**	**0.4**	**(0.6)**	**0.5**	**0.6**	**(0.7)**	**0.7**	**1.0**	**(1.3)**	**1.1**	**1.2**	**(1.6)**	**1.4**
Indonesia	1.5	(1.6)	1.6	0.6	(0.4)	0.5	0.3	(0.5)	0.4	0.5	(0.7)	0.6	0.3	(0.3)	0.3
Korea	3.6	(2.4)	3.0	0.2	(0.2)	0.2	1.0	(1.0)	1.0	0.9	(1.6)	1.3	2.1	(2.1)	2.1
Philippine	2.1	(5.3)	3.7	0.2	(0.8)	0.5	0.1	(0.4)	0.3	1.6	(2.2)	1.9	1.3	(1.6)	1.4
Thailand	2.5	(3.1)	2.8	0.4	(0.8)	0.6	1.0	(0.9)	1.0	0.9	(0.7)	0.8	1.3	(2.4)	1.8
Latin America	**2.2**	**(2.1)**	**2.1**	**1.3**	**(0.9)**	**1.1**	**0.3**	**(0.4)**	**0.4**	**1.3**	**(1.0)**	**1.1**	**1.0**	**(1.0)**	**1.0**
Argentina	1.9	(1.1)	1.5	0.7	(0.7)	0.7	0.2	(0.1)	0.1	1.8	(1.2)	1.5	1.6	(1.5)	1.5
Brazil	2.5	(1.8)	2.2	0.5	(0.5)	0.5	0.3	(0.4)	0.4	1.0	(0.9)	1.0	0.5	(0.7)	0.6
Chile	3.0	(3.6)	3.3	2.4	(2.0)	2.2	0.4	(0.6)	0.5	1.6	(0.9)	1.3	1.3	(0.9)	1.1
Mexico	1.3	(1.8)	1.5	1.7	(0.4)	1.0	0.5	(0.3)	0.4	0.7	(0.9)	0.8	0.7	(0.8)	0.8
Europe	**1.9**	**(3.1)**	**2.5**	**1.2**	**(1.0)**	**1.1**	**0.4**	**(0.6)**	**0.5**	**1.6**	**(0.9)**	**1.2**	**1.0**	**(1.5)**	**1.3**
Czech	2.1	(4.9)	3.5	0.9	(2.1)	1.5	0.5	(1.0)	0.7	1.7	(0.7)	1.2	1.0	(1.1)	1.1
Poland	1.0	(1.6)	1.3	2.2	(0.8)	1.5	0.4	(0.5)	0.4	2.2	(1.0)	1.6	0.8	(1.3)	1.0
Turkey	1.8	(3.7)	2.7	0.5	(0.5)	0.5	0.3	(0.6)	0.5	1.0	(1.3)	1.2	0.8	(2.0)	1.4
Russia	2.9	(2.3)	2.6	1.3	(0.8)	1.0	0.5	(0.3)	0.4	1.3	(0.5)	0.9	1.6	(1.6)	1.6
Average	**2.2**	**(2.8)**	**2.5**	**1.0**	**(0.8)**	**0.9**	**0.5**	**(0.6)**	**0.5**	**1.3**	**(1.1)**	**1.2**	**1.1**	**(1.4)**	**1.2**

Notes: 1) Speed is obtained by dividing the amplitude by the duration, and indicates the amplitude for one unit of the duration period.
2) The values in parentheses denote the decreases in capital inflows.

Table 4. Descriptive Statistics

Variable	Definition	Obs.	Average	Standard Deviation	Min	Max
ka_in	The ratio of capital inflows to nominal GDP (%)	684	4.19	5.48	-29.20	27.98
di_in	The ratio of direct investment inflows to nominal GDP (%)	684	2.79	2.81	-6.97	26.46
eq_in	The ratio of equity investment inflows to nominal GDP (%)	684	0.34	1.15	-5.68	5.73
ds_in	The ratio of bond investment inflows to nominal GDP (%)	684	0.87	2.50	-15.74	10.33
loan_in	The ratio of bank loans inflows to nominal GDP (%)	684	0.20	3.16	-23.49	10.84
gl	Global liquidity (%)	684	5.81	3.09	-4.81	20.53
egl	Excess global liquidity (%)	684	1.70	6.22	-8.88	20.87
dvix	The change in the VIX	684	-0.18	6.64	-13.60	33.52
dusrate	The change in US 10-year interest rate (%)	684	-0.07	0.35	-0.84	0.71
usdollarindex	The US Dollar index growth rate (%)	684	-0.22	2.31	-3.69	10.00
ca	The ratio of current account to nominal GDP (%)	684	0.27	4.58	-12.85	21.61
openness	The ratio of export and import to nominal GDP (%)	684	61.72	32.48	12.91	163.33
reserve	The ratio of reserves to nominal GDP (%)	684	17.62	9.08	4.37	55.33
government debt	The ratio of government debt to nominal GDP (%)	684	38.54	21.18	3.89	135.84
GDP growth	Real GDP growth rate (%)	684	4.12	3.73	-16.34	19.13
inflation	Inflation rate (%)	684	6.47	7.95	-3.30	70.33

Table 5. Effects of cyclical factors on capital inflows

Threshold Variables	Dependent Variable: Capital Inflows							
	Global Liquidity Growth		Excess Global Liquidity Growth		Change in the VIX		Change in US Interest Rate	
	β_0	β_1	β_0	β_1	β_0	β_1	β_0	β_1
ca_{it-1}	0.6706**	-0.7926***	-0.4473***	0.4350***	-0.1065	0.4181	-0.0833	-0.0225
	(0.2640)	(0.2691)	(0.1378)	(0.1402)	(0.0727)	(0.5479)	(0.0847)	(0.1349)
$openness_{it-1}$	-0.0477	0.0786**	-0.0329	0.0702***	0.0477**	-0.0474	0.0461**	-0.0485**
	(0.0403)	(0.0317)	(0.0309)	(0.0235)	(0.0197)	(0.0599)	(0.0206)	(0.0232)
$reserve_{it-1}$	0.2916***	-0.1547	0.3085***	-0.1816**	0.1493***	-0.3528	0.1430***	-0.0049
	(0.1122)	(0.1157)	(0.0839)	(0.0843)	(0.0459)	(0.3273)	(0.0472)	(0.0837)
government $debt_{it-1}$	0.0401	-0.1453***	-0.0323	-0.0812***	-0.1188***	-0.0868	-0.1112***	0.0074
	(0.0463)	(0.0442)	(0.0322)	(0.0292)	(0.0128)	(0.0690)	(0.0169)	(0.0245)
GDP $growth_{it-1}$	0.3683*	-0.2043	0.1508	0.0292	0.1886***	-0.5717	0.1894***	0.0326
	(0.1955)	(0.2072)	(0.1597)	(0.1634)	(0.0461)	(0.5297)	(0.0658)	(0.1261)
$inflation_{it-1}$	-0.5010**	0.5400**	-0.1216*	0.1617**	0.0472*	0.2248	0.0812*	-0.1049
	(0.2164)	(0.2199)	(0.0691)	(0.0720)	(0.0268)	(0.3726)	(0.0439)	(0.0812)
Transition Function								
No. of transition functions	1		1		1		1	
Slope parameter	11.1474		2.9520		0.0007		3.8928	
Location parameter	7.1267		0.5500		-3.5136		0.1539	
Diagnostic								
Observations	684		684		684		684	
Linearity Tests								
LR Linearity Test	5.1217		3.0589		35.6615		18.6797	
p-value	0.0000		0.0058		0.0000		0.0000	
LR Test: H_0: r=1 vs H_1: r=2	4.8575		5.5056		3.3439		2.5241	
p-value	0.5622		0.4808		0.7646		0.8658	

Notes: 1) The values in parentheses are standard errors corrected for heteroskedasticity.
2) *, **, and *** indicate statistical significances at the 10%, 5%, and 1% levels, respectively.

Table 6. Effects of global liquidity on different types of capital inflows

Dependent Variables	Threshold Variable: Global Liquidity Growth							
	Direct Investment Inflows		Equity Inflows		Bond Inflows		Bank Loan Inflows	
	β_0	β_1	β_0	β_1	β_0	β_1	β_0	β_1
ca_{it-1}	-0.0368	-0.0624	-0.0117	0.0453	0.1932***	-0.2182**	-0.0273	-0.0671
	(0.0356)	(0.1043)	(0.0466)	(0.0484)	(0.0740)	(0.0878)	(0.0546)	(0.0595)
$openness_{it-1}$	-0.0186*	0.1005**	-0.0012	0.0061	-0.0068	0.0292**	0.0156	0.0021
	(0.0112)	(0.0463)	(0.0075)	(0.0062)	(0.0144)	(0.0125)	(0.0133)	(0.0089)
$reserve_{it-1}$	-0.0222	-0.1764*	-0.0344	0.0237	0.1152***	-0.0546	0.1428***	-0.0353
	(0.0195)	(0.1070)	(0.0289)	(0.0304)	(0.0412)	(0.0435)	(0.0416)	(0.0383)
government $debt_{it-1}$	-0.0282***	-0.0616**	-0.0127	0.0082	-0.0038	-0.0273*	-0.0416***	0.0095
	(0.0082)	(0.0308)	(0.0132)	(0.0130)	(0.0179)	(0.0160)	(0.0099)	(0.0108)
GDP $growth_{it-1}$	0.0842***	-0.3375**	0.0721	-0.0801	-0.0460	0.0803	-0.0596	0.2467***
	(0.0276)	(0.1419)	(0.0608)	(0.0639)	(0.0635)	(0.0714)	(0.0632)	(0.0706)
$inflation_{it-1}$	-0.0076	0.0709*	0.0160	-0.0211	-0.0769*	0.0746	0.0759***	-0.0597
	0.0137	0.0383	0.0354	0.0364	0.0413	0.0492	0.0250	0.0360
Transition Function								
No. of transition functions	1		None		1		None	
Slope parameters	0.0152		26.4505		2.5944		0.5631	
Location parameters	5.3471		8.0557		7.1461		5.0148	
Diagnostic								
Observations	684		684		684		684	
Linearity Tests								
LR Linearity Test	2.5961		1.2245		15.1444		0.5100	
p-value	0.0171		0.2915		0.0000		0.8010	
LR Test: H_0: r=1 vs H_1: r=2	7.0637				10.3480			
p-value	0.3150				0.1107			

Notes: 1) The values in parentheses are standard errors corrected for heteroskedasticity.
2) *, **, and *** indicate statistical significances at the 10%, 5%, and 1% levels, respectively.

Table 7. Effects of excess global liquidity on different types of capital inflows

Dependent Variables	Threshold Variable: Excess Global Liquidity Growth							
	Direct Investment Inflows		Equity Inflows		Bond Inflows		Bank Loan Inflows	
	β_0	β_1	β_0	β_1	β_0	β_1	β_0	β_1
ca_{it-1}	0.1023	-0.1595*	-1.8196**	1.8489**	-0.4728***	0.5211***	-0.9247*	0.8804*
	(0.0862)	(0.0837)	(0.7501)	(0.7541)	(0.0901)	(0.08780)	(0.4746)	(0.4768)
$openness_{it-1}$	0.0143	-0.0297	0.0832	-0.0790	-0.0274	0.0475**	0.0073	0.0173
	(0.0218)	(0.0202)	(0.1759)	(0.1761)	(0.0206)	(0.0199)	(0.0643)	(0.0630)
$reserve_{it-1}$	-0.0990**	0.0628	-1.3535**	1.3379**	0.2433***	-0.1797***	0.7596***	-0.6305***
	(0.0476)	(0.0522)	(0.5769)	(0.5779)	(0.0508)	(0.0491)	(0.1939)	(0.1955)
government $debt_{it-1}$	-0.0255*	-0.0084	-0.6435***	0.6400***	-0.0295	0.0060	-0.1560***	0.1086*
	(0.0145)	(0.0124)	(0.1718)	(0.1717)	(0.0220)	(0.0212)	(0.0597)	(0.0592)
GDP $growth_{it-1}$	-0.0973	0.1638**	3.7654***	-3.7727***	-0.2137	0.2453	-0.8530	0.9686
	(0.0645)	(0.0659)	(1.0677)	(1.0688)	(0.1561)	(0.1564)	(0.8316)	(0.8322)
$inflation_{it-1}$	0.0098	-0.0174	0.2766	-0.2829	0.0062	-0.0273	0.2776	-0.2337*
	(0.0413)	(0.0409)	(0.2408)	(0.2430)	(0.0189)	(0.0268)	(0.1296)	(0.1318)
Transition Function								
No. of transition functions	1		1		1		1	
Slope parameters	3.1174		74.8245		948.0929		16.2442	
Location parameters	-1.1576		1.6636		0.4121		5.8202	
Diagnostic								
Observations	684		684		684		684	
Linearity Tests								
LR Linearity Test	9.3333		2.3908		3.3743		8.0574	
p-value	0.0000		0.0271		0.0028		0.0000	
LR Test: H_0: r=1 vs H_1: r=2	8.4410		2.0012		2.8349		8.5325	
p-value	0.2075		0.9196		0.8293		0.2016	

Notes: 1) The values in parentheses are standard errors corrected for heteroskedasticity.
2) *, **, and *** indicate statistical significances at the 10%, 5%, and 1% levels, respectively.

Table 8. Effects of the change in the VIX on different types of capital inflows

Dependent Variables	Threshold Variable: Change in the VIX								
	Direct Investment Inflows		Equity Inflows			Bond Inflows		Bank Loan Inflows	
	β_0	β_1	β_0	β_1	β_2	β_0	β_1	β_0	β_1
ca_{it-1}	-0.3653	0.3227	0.0786	-0.0435	-0.0115	-0.0629	0.5223***	-2.7303***	2.7061***
	(0.2870)	(0.2838)	(0.0885)	(0.0597)	(0.0632)	(0.0439)	(0.1590)	(0.6278)	(0.6373)
$openness_{it-1}$	0.3232**	-0.3325**	0.0156	-0.0060	-0.0079	0.0272***	-0.0202	0.1009	-0.0733
	(0.1316)	(0.1318)	(0.0118)	(0.0058)	(0.0096)	(0.0106)	(0.0183)	(0.1057)	(0.1052)
$reserve_{it-1}$	-0.9495**	0.9113**	-0.2645***	0.1159***	0.1413***	0.0633***	0.0398	0.3293	-0.1924
	(0.3806)	(0.3808)	(0.0602)	(0.0303)	(0.0518)	(0.0224)	(0.0662)	(0.5018)	(0.5055)
government $debt_{it-1}$	-0.0572	0.0288	0.0112	0.0122*	-0.0273**	-0.0391***	0.0367**	0.0999	-0.1520
	(0.0490)	(0.0485)	(0.0145)	(0.0073)	(0.0119)	(0.0100)	(0.0176)	(0.1063)	(0.1063)
GDP $growth_{it-1}$	-0.2025	0.2599	0.1774**	-0.0989*	-0.0833*	0.0676**	-0.3508***	-2.7893**	2.9080***
	(0.1858)	(0.1873)	(0.0762)	(0.0600)	(0.0500)	(0.0284)	(0.0932)	(1.1181)	(1.1229)
$inflation_{it-1}$	0.0142	-0.0188	0.0222	-0.0436	0.0137	0.0245	-0.2037*	0.0807	-0.0335
	(0.0458)	(0.0470)	(0.0303)	(0.0275)	(0.0138)	(0.0175)	(0.1075)	(0.5388)	(0.5399)
Transition Function									
No. of transition functions	1		2			1		1	
Slope parameters (1)	133.9849		0.2853			0.0030		158.6641	
Location parameters (1)	0.2516		4.1128			-5.1905		-1.0165	
Slope parameters (2)			13.1373						
Location parameters (2)			0.1298						
Diagnostic									
Observations	684		684			684		684	
Linearity Tests									
LR Linearity Test	3.1796		50.0715			51.6501		7.0063	
p-value	0.0044		0.0000			0.0000		0.0000	
LR Test: H_0: r=1 vs H_1: r=2	3.8254		33.8727			3.4661		7.3276	
p-value	0.7003		0.0000			0.7485		0.2916	
LR Test: H_0: r=2 vs H_1: r=3			34.6812						
p-value			0.0000						

Notes: 1) The values in parentheses are standard errors corrected for heteroskedasticity.
2) *, **, and *** indicate statistical significances at the 10%, 5%, and 1% levels, respectively.

Table 9. Effects of the change in US interest rate on different types of capital inflows

Dependent Variables	Threshold Variable: Change in US interest rate							
	Direct Investment Inflows		Equity Inflows		Bond Inflows		Bank Loan Inflows	
	β_0	β_1	β_0	β_1	β_0	β_1	β_0	β_1
ca_{it-1}	-0.0012	-0.1609**	0.0268	-0.0121	-0.0305	0.0897	-0.0668	0.0184
	(0.0407)	(0.0636)	(0.0229)	(0.0357)	(0.0413)	(0.0763)	(0.0616)	(0.0676)
$openness_{it-1}$	-0.0064	-0.0357***	0.0023	-0.0007	0.0226**	-0.0185	0.0304**	-0.0135
	(0.0102)	(0.0130)	(0.0047)	(0.0057)	(0.0111)	(0.0120)	(0.0136)	(0.0098)
$reserve_{it-1}$	-0.0737***	0.1121***	-0.0102	-0.0162	0.0563**	0.0497	0.1773***	-0.0812**
	(0.0176)	(0.0327)	(0.0123)	(0.0209)	(0.0223)	(0.0388)	(0.0370)	(0.0383)
government $debt_{it-1}$	-0.0262***	-0.0166	0.0007	-0.0104	-0.0307***	0.0044	-0.0703***	0.0303***
	(0.0086)	(0.0104)	(0.0032)	(0.0065)	(0.0120)	(0.0152)	(0.0120)	(0.0114)
GDP $growth_{it-1}$	0.0440	0.0237	-0.0047	0.0102	0.0511	-0.0610	0.0518	0.0977
	(0.0299)	(0.0512)	(0.0134)	(0.0339)	(0.0369)	(0.0834)	(0.0670)	(0.0788)
$inflation_{it-1}$	-0.0070	0.0168	-0.0025	-0.0027	0.0348	-0.1025*	0.0560**	-0.0122
	(0.0143)	(0.0291)	(0.0070)	(0.0169)	(0.0263)	(0.0530)	(0.0264)	(0.0314)
Transition Function								
No. of transition functions	None		1		1		1	
Slope parameter	3.6984		2.2446		3.6283		24.9053	
Location parameter	-0.0718		0.2269		0.1566		0.0668	
Diagnostic								
Observations	684		684		684		684	
Linearity Tests								
LR Linearity Test	1.7882		12.7679		12.8108		11.6506	
p-value	0.0989		0.0000		0.0000		0.0000	
LR Test: H_0: r=1 vs H_1: r=2	2.5430		3.9439		1.7625		5.3770	
p-value	0.8636		0.6843		0.9402		0.4964	

Notes: 1) The values in parentheses are standard errors corrected for heteroskedasticity.
2) *, **, and *** indicate statistical significances at the 10%, 5%, and 1% levels, respectively.

Table 10. Effects of the US Dollar Index growth rate on different types of capital inflows

Dependent Variables	Threshold Variable: US Dollar Index growth rate										
	Capital Inflows		Direct Investment Inflows		Equity Inflows			Bond Inflows		Bank Loan Inflows	
	β_0	β_1	β_0	β_1	β_0	β_1	β_2	β_0	β_1	β_0	β_1
ca_{it-1}	-0.1063	-0.3186	0.3629**	-0.4138**	0.0108	0.0282	-0.0284	-0.0202	0.1412	-0.0926**	0.0396
	(0.0735)	(0.4993)	(0.1788)	(0.1800)	(0.0488)	(0.0420)	(0.0237)	(0.0388)	(0.1887)	(0.0464)	(0.2173)
$openness_{it-1}$	0.0510***	0.0058	-0.0466*	0.0302	-0.0077	0.0108*	0.0007	0.0263**	-0.0267	0.0317***	0.0126
	(0.0190)	(0.0615)	(0.0253)	(0.0223)	(0.0084)	(0.0063)	(0.0043)	(0.0104)	(0.0204)	(0.0115)	(0.0292)
$reserve_{it-1}$	0.1807***	-0.7730**	-0.0697	0.0302	0.0643**	-0.0732***	-0.0334	0.0682***	-0.0048	0.1657***	-0.3579***
	(0.0396)	(0.3104)	(0.0592)	(0.0622)	(0.0293)	(0.0215)	(0.0208)	(0.0197)	(0.0819)	(0.0294)	(0.1123)
government $debt_{it-1}$	-0.1098***	-0.1433**	0.0158	-0.0470***	0.0127	-0.0131*	-0.0063	-0.0322***	-0.0395	-0.0496***	0.0204
	(0.0138)	(0.0722)	(0.0172)	(0.0172)	(0.0085)	(0.0071)	(0.0048)	(0.0109)	(0.0280)	(0.0092)	(0.0362)
GDP $growth_{it-1}$	0.1596***	0.3051	-0.0015	0.0522	-0.0477	0.0228	0.0438	0.0211	-0.0689	0.1019***	0.0523
	(0.0500)	(0.5557)	(0.1165)	(0.1216)	(0.0444)	(0.0334)	(0.0322)	(0.0317)	(0.2132)	(0.0392)	(0.2399)
$inflation_{it-1}$	0.0318	0.3331	-0.1933**	0.1915**	-0.0298	0.0244	0.0053	0.0156	-0.1525	0.0311	0.1910
	(0.0301)	(0.2909)	(0.0797)	(0.0800)	(0.0227)	(0.0200)	(0.0119)	(0.0202)	(0.1525)	(0.0225)	(0.1196)
Transition Function											
No. of transition functions	1		1		2			1		1	
Slope parameters (1)	0.0072		19.0750		1.8700			0.0163		0.0149	
Location parameters (1)	-2.4058		-2.8771		-3.1033			-1.3162		-2.3440	
Slope parameters (2)					0.5900						
Location parameters (2)					-0.4222						
Diagnostic											
Observations	684		684		684			684		684	
Linearity Tests											
LR Linearity Test	65.1884		4.2088		35.7099			41.5133		35.3442	
p-value	0.0000		0.0004		0.0000			0.0000		0.0000	
LR Test: H_0: r=1 vs H_1: r=2	4.3239		3.3167		18.9363			6.2224		12.2799	
p-value	0.6329		0.7682		0.0043			0.3987		0.0560	
LR Test: H_0: r=2 vs H_1: r=3					7.7402						
p-value					0.2578						

Notes: 1) The values in parentheses are standard errors corrected for heteroskedasticity.

2) *, **, and *** indicate statistical significances at the 10%, 5%, and 1% levels, respectively.

Figure 1. Capital inflow cycle

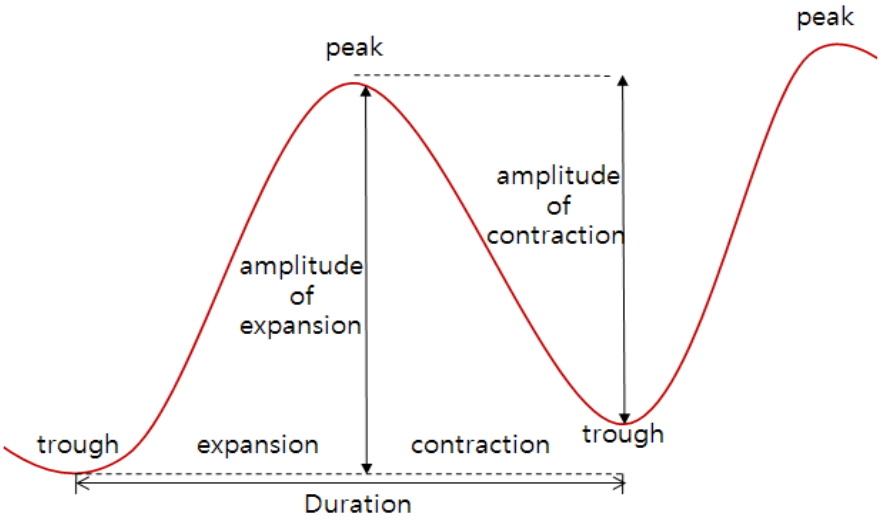
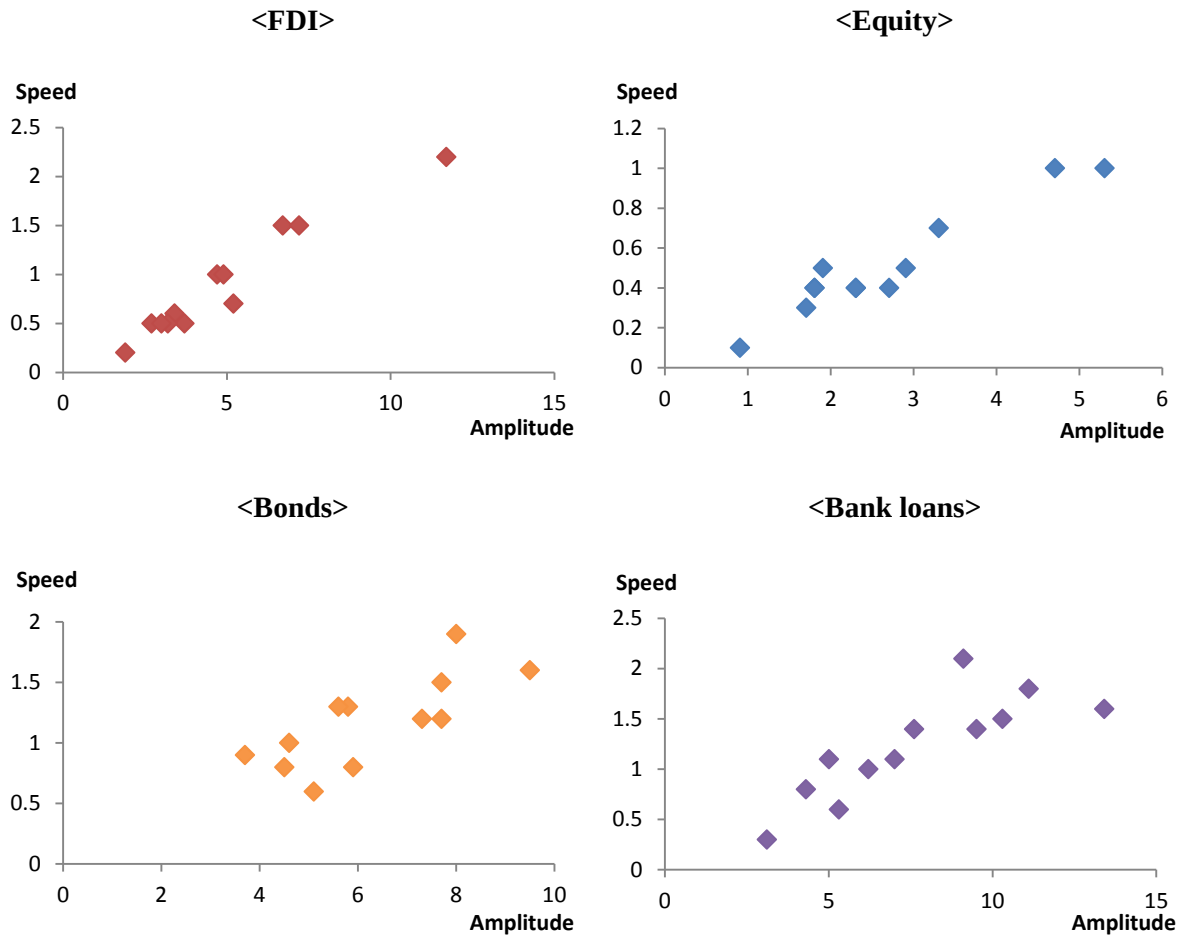


Figure 2. Scatter plots between amplitude and speed of capital inflows



Note: Cycle average basis