SEACEN CAPITAL FLOWS MONITOR 2019

June 2019

The South East Asian Central Banks (SEACEN)
Research and Training Centre

The SEACEN Centre

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The SEACEN Capital Flows Monitor 2019 should not be reported as representing the views of the SEACEN Centre or its member central banks/monetary authorities. The views expressed in this report are those of the author(s) and do not necessarily represent those of SEACEN or its member central banks/monetary authorities.

Notes:

The SEACEN Centre recognizes "China" as People's Republic of China; "Hong Kong" as Hong Kong SAR, China; and "Korea" as Republic of Korea.

USD and US$ refer to U.S. dollar.

IMF data accessed through CEIC Database. Data cut-off as 02 May 2019.

SEG economies include the nineteen economies of the SEACEN member central banks and monetary authorities in addition to Australia and Japan, which are also members of the SEACEN Expert Group (SEG) on Capital Flows. The complete list of twenty-one economies include Australia, Brunei Darussalam, Cambodia, China, Hong Kong, India, Indonesia, Japan, Korea, Lao PDR, Malaysia, Mongolia, Myanmar, Nepal, Papua New Guinea, Philippines, Singapore, Sri Lanka, Chinese Taipei, Thailand and Vietnam.

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ABBREVIATIONS

ASEAN	Association of Southeast Asian Nations
BoP	Balance of Payments
BPM6	Balance of Payments Manual 6
IMF	International Monetary Fund
IIF	Institute for International Finance
IIP	International Investment Position
SEACEN	South East Asian Central Banks Research and Training Centre
SEG	SEACEN Expert Group on Capital Flows

CONCEPTS

Maturity of flows	Short-term pertains to flows that will fall due in one year or less, while long-term are those that will fall due after one year.
Net IIP	Net International Investment Position, computed as the total foreign asset holdings minus total foreign liabilities.
Non-resident capital inflows	Net purchases of domestic assets by non-residents, commonly referred to *gross capital inflows.* This corresponds to financial account liabilities in the BoP's Financial Account Balance.
Net resident capital outflows	Computed as resident capital outflows minus non-resident capital inflows. Positive values may refer to situations where domestic residents are purchasing more foreign assets than non-residents purchasing domestic assets.
Resident capital outflows	Net purchases of foreign assets by domestic residents, commonly referred to *gross capital outflows*. This corresponds to financial account assets in the BoP's Financial Account Balance.
Sectoral flows	Sectoral flows include those flows from central banks/monetary authorities; general government; other deposit-taking corporations excluding central banks (banks); and other sectors which include both other financial corporations and non-financial corporations plus households.

FOREWORD

Capital flows inform us about cross-border financial transactions and investments. They facilitate portfolio diversification and risk-sharing; and aid economic growth, financial development, and knowledge transfer. However, large capital inflows as well as large capital outflows can be disruptive, leading to sharp fluctuations in the exchange rate, asset price bubbles, excessive credit growth, sudden reversals and cross-border spillovers. Monitoring and understanding their recent trends and outlook as well as the underlying drivers remain important steps in managing capital flows.

As the Secretariat of the SEACEN Expert Group (SEG) on Capital Flows, which comprises SEACEN's nineteen-member central banks and monetary authorities including the Reserve Bank of Australia and Bank of Japan, the SEACEN Centre issues a bi-annual report on capital flows - the "*SEACEN Capital Flows Monitor*". It covers the SEG economies of Australia; Brunei Darussalam; Cambodia; China; Hong Kong; India; Indonesia; Japan; Korea; Lao PDR; Malaysia; Mongolia; Myanmar; Nepal; Papua New Guinea; the Philippines; Singapore; Sri Lanka; Chinese Taipei; Thailand and Vietnam. The report is released every June and December of the calendar year and covers a specified review period. The June issue reports on the previous year's trends and the outlook for the current year; while the December issue focuses on the current year's quarterly developments and an updated analysis of the current year.

The report has three sections. The first section serves as a review of recent trends in the composition of capital flows and key internal and external drivers of cross-border flows. It also discusses international investment positions, which is the existing stock of international investment assets and liabilities. The second section is an analytical chapter which focuses on a specific topic related to capital flows and international investment positions. For this issue, the analytical section involves empirical and policy considerations in defining large capital flows in the context of the IMF's Institution View on capital account liberalisation and capital flows management (2012). The third section presents standard indicators of capital flows and international investment positions for the SEG economies.

This report has been reviewed and approved by the Executive Director. Dr. Ole Rummel (Director of Macroeconomic and Monetary Policy Division - MMPM) also reviewed the report and wrote the article for *Box: Modelling KF**. Dr. Rogelio Mercado (Senior Economist, MMPM) authored Sections I and II, and supervised the production of the report. Mrs. Jami'ah Jaffar (Research Associate, MMPM) provided excellent research assistance and compiled data for Section III. Ms. YunYee Seow gave editorial assistance and Mr. Zamri Abu Bakar designed, typeset and layout the report.

The views expressed in this report are those of the authors and do not necessarily represent those of SEACEN or its member central banks/monetary authorities.

Hans Genberg
Executive Director
The SEACEN Centre

June 2019

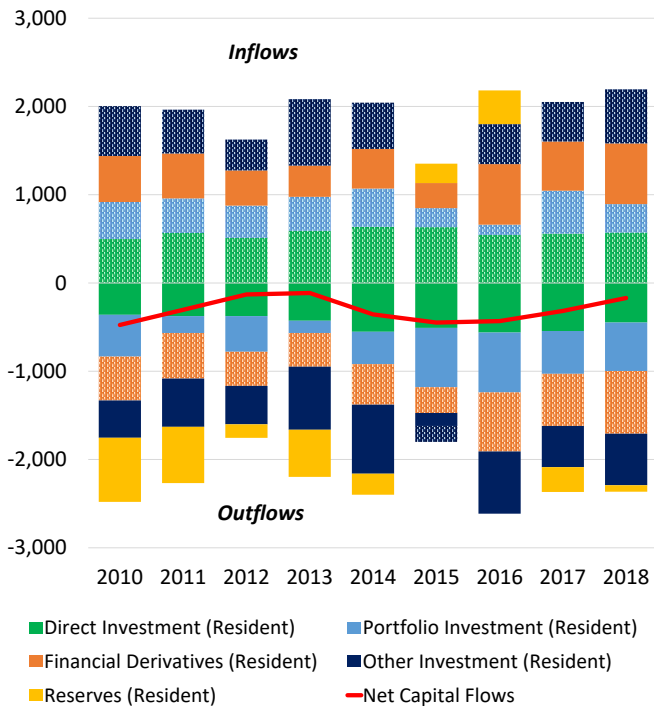
SECTION I: CAPITAL FLOWS TRENDS AND OUTLOOK

This section reviews the recent trends and compositions of capital flows and international investment positions of SEG member economies for 2018.[1] It highlights that SEG economies, as a group, continued to be a net capital exporter over the period. Although the net international investment position inched slightly higher, the decrease in net resident capital outflows in 2018 reflected the decline in portfolio inflows and slowdown of reserve accumulation in line with weaker current account balances.

A. Recent Trends in Capital Flows and International Investment Positions

Net resident capital outflows of SEG member economies amounted to US$170 billion in end-2018.[2] Net purchases of foreign assets by domestic residents (financial account assets) reached US$966 billion, while net purchases of domestic assets by non-residents (financial account liabilities) summed up to US$796 billion, bringing the net resident capital outflows to around US$170 billion, excluding net errors and omissions **(Figure 1.1)**. Most of net purchases of foreign assets were in the form of other investments (including loans) and portfolio investments, respectively. Likewise, net purchases of domestic assets by non-residents were mostly in the form of other investments, followed by direct and portfolio investments, respectively. Net resident capital outflows in 2018 were considerably less compared to 2017 as they dropped by US$147 billion, which is almost half of the US$317 billion net resident outflows for 2017. The decline reflects lower non-resident portfolio inflows and a slowdown in official reserves accumulation and direct investment abroad compared to 2017.

Figure 1.1: Financial Account Flows
(USD billions)



Notes: Solid fill refers to resident capital flows, while those with pattern fill refers to non-resident capital flows. Positive values of net capital flows refer to positive net non-resident inflows, while negative values refer to positive net resident outflows. SEG economies include Australia; Cambodia; China; Hong Kong; India; Indonesia; Japan; Korea; Lao PDR; Mongolia; Nepal; Philippines; Singapore; Sri Lanka; Chinese Taipei; and Thailand. Refer to IMF Balance of Payments Manual 6 for the definitions of resident and non-resident investors.

Sources: SEACEN staff calculations using data from the IMF's Balance of Payment Statistics and national sources accessed through CEIC.

1. SEG economies include the nineteen economies of SEACEN member central banks/monetary authorities in addition to Australia and Japan, which are also members of SEACEN Expert Group (SEG) on Capital Flows. The twenty-one economies are Australia, Brunei Darussalam, Cambodia, China, Hong Kong, India, Indonesia, Japan, Korea, Lao PDR, Malaysia, Mongolia, Myanmar, Nepal, Papua New Guinea, Philippines, Singapore, Sri Lanka, Chinese Taipei, Thailand and Vietnam. However, since not all economies provided annual Balance of Payments (BoP) and International Investment Position (IIP) data to the International Monetary Fund (IMF) as of 02 May 2019, all figures and data included in this section correspond to the subset of SEG member economies with available data as of year-end 2018. The list of economies is noted in each figure. Data from the IMF (downloaded from the CEIC database) are consistently classified and standardised series in U.S. dollars across economies. In cases where IMF data is unavailable, national source data for 2018 are used whenever they are available.

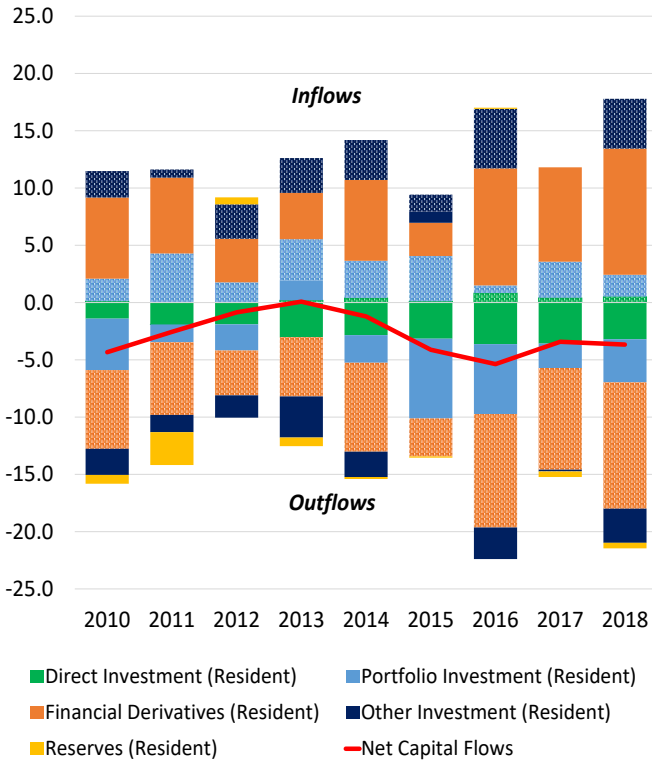
2. The value of US$170 billion net resident capital outflows refers to net acquisition of foreign assets by residents minus net incurrence of liabilities to non-residents. Based on the balance of payments identity, if net errors and omissions is nil, then the net financial account balance should take the opposite value of the current account plus capital account balance. Net resident capital outflows mean that the net acquisition of foreign assets by residents is greater than the net incurrence of liabilities to non-residents.

The decline in net resident capital outflows of SEG economies corresponded to a significant narrowing of current account surplus in 2018 to US$337 billion, which is considerably less than the surplus of US$575 billion reported in 2017. The surpluses recorded by some SEG economies declined in 2018, including those of China, Japan, Chinese Taipei and Thailand. In addition, current account deficits worsened in India and Indonesia, while for other SEG economies there were little changes in 2018. The weaker external positions in most economies relate to the declines in merchandise trade balances. For instance, the merchandise trade balance dropped by US$80 billion and US$32 billion in China and Japan, respectively, in 2018; despite both economies maintaining their overall positive positions. Although there was a marked deterioration in the current account surplus in 2018, the surpluses generated by some SEG economies remained larger than the deficits reported of others, resulting in an overall current account surplus position in 2018 for SEG economies.

U.S. interest rate hikes and trade tensions were the main drivers of lower net resident capital outflows of SEG economies in 2018. The normalisation of U.S. monetary policy, through interest rate hikes in March, June, September and December 2018, amounting up to 100 bps increase of target Federal Funds rate from 2017; and widening credit spreads, led to a decline in non-resident portfolio inflows into SEG economies in 2018. The impact of portfolio sell-offs was first felt in the bond markets in the first half of 2018 and subsequently in the equity markets in the second half. Furthermore, trade tensions and the appreciating US dollar contributed to a weaker current account balance in most SEG economies, which is reflected in the slower accumulation of official reserve assets. In addition, resident direct investment abroad declined in China and Hong Kong, which contributed to lower resident outflows in 2018.

Although SEG economies posted lower net resident capital outflows in 2018, there appeared to be marked differences in the composition of capital flows across member economies. Japan posted net resident capital outflows of around 3.7% of GDP in 2018, mainly driven by large resident direct and portfolio investment abroad **(Figure 1.2a)**. China recorded net non-resident capital inflows (or negative net resident capital outflows) of about 0.8% of GDP, driven by non-resident direct and portfolio investment inflows. Its official reserve accumulation amounted to US$19 billion, which was significantly less than the amount reported in 2017 of US$92 billion **(Figure 1.2b)**. India also reported net non-resident capital inflows of around 2.4% of GDP in 2018. Foreign capital inflows were mostly in the form of other investment followed by foreign direct investment **(Figure 1.2c)**. Australia, likewise, posted net non-resident capital inflows of 2.4% of GDP, which were roughly the same as the value for 2017 **(Figure 1.2d)**. Foreign capital inflows were mostly in the form of direct followed by other investments.

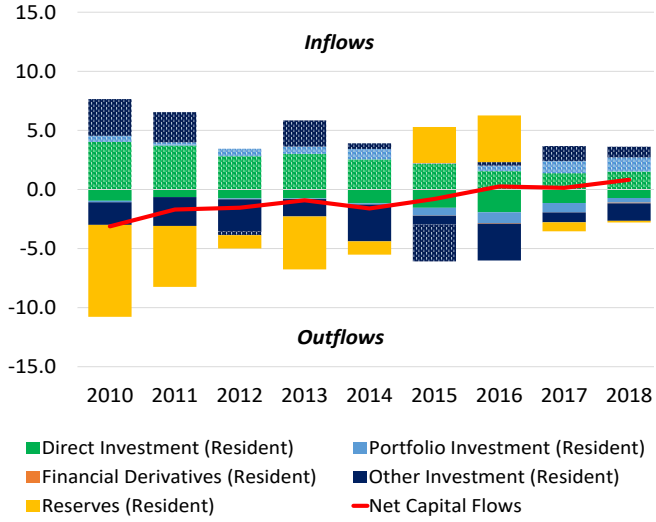
Figure 1.2a: Capital Flows - Japan
(% of GDP)



Notes: Solid fill refers to resident capital flows, while those with pattern fill refers to non-resident capital flows. Positive values of net capital flows refer to positive net non-resident inflows, while negative values refer to positive net resident outflows. Refer to IMF Balance of Payments Manual 6 for the definition of investor resident and non-resident.

Sources: SEACEN staff calculations using data from the IMF's Balance of Payment Statistics and World Economic Outlook Database.

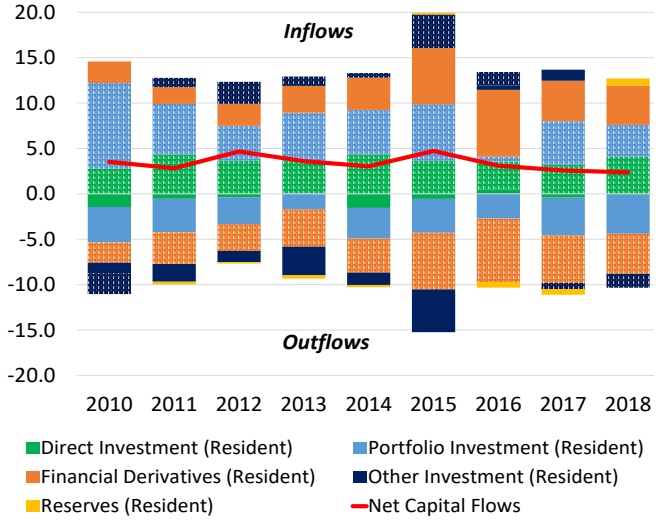
Figure 1.2b: Capital Flows - China
(% of GDP)



Notes: Solid fill refers to resident capital flows, while those with pattern fill refers to non-resident capital flows. Positive values of net capital flows refer to positive net non-resident inflows, while negative values refer to positive net resident outflows. Refer to IMF Balance of Payments Manual 6 for the definition of investor resident and non-resident.

Sources: SEACEN staff calculations using data from the IMF's Balance of Payment Statistics and World Economic Outlook Database.

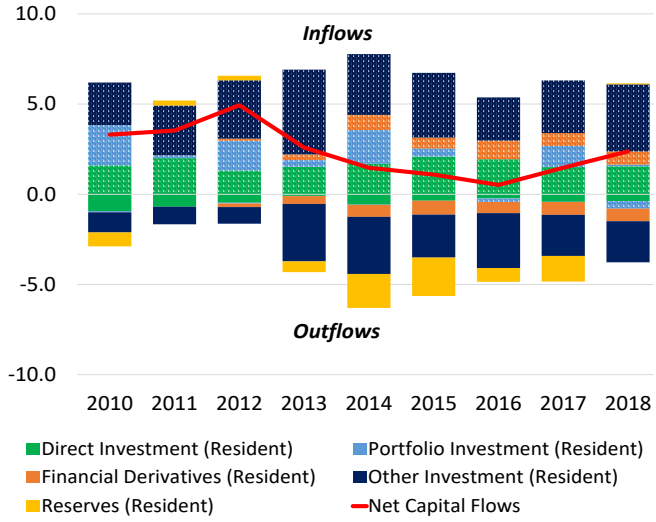
Figure 1.2d: Capital Flows - Australia
(% of GDP)



Notes: Solid fill refers to resident capital flows, while those with pattern fill refers to non-resident capital flows. Positive values of net capital flows refer to positive net non-resident inflows, while negative values refer to positive net resident outflows. Refer to IMF Balance of Payments Manual 6 for the definition of investor resident and non-resident.

Sources: SEACEN staff calculations using data from the IMF's Balance of Payment Statistics and World Economic Outlook Database.

Figure 1.2c: Capital Flows - India
(% of GDP)



Notes: Solid fill refers to resident capital flows, while those with pattern fill refers to non-resident capital flows. Positive values of net capital flows refer to positive net non-resident inflows, while negative values refer to positive net resident outflows. Refer to IMF Balance of Payments Manual 6 for the definition of investor resident and non-resident.

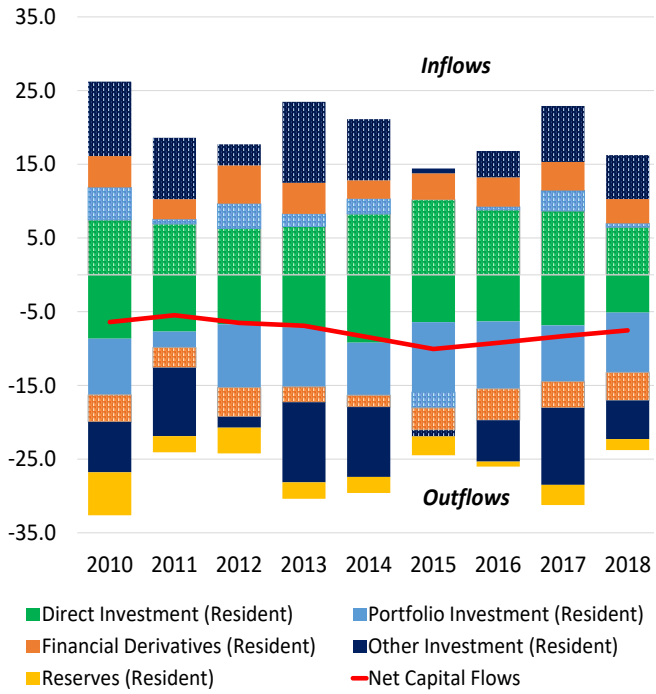
Sources: SEACEN staff calculations using data from the IMF's Balance of Payment Statistics and World Economic Outlook Database; and national source.

As a subgroup, SEG High Income Economies, which include Hong Kong, Korea, Singapore and Chinese Taipei, registered net resident capital outflows of around 7.5% of group GDP **(Figure 1.2e)**. The net resident capital outflows broadly corresponded to the subgroup's overall current account surplus of about US$224 billion. In fact, each of the member economies sustained their current account surpluses in 2018. Across investment types, net resident capital outflows from these highly open economies were mainly in the form of portfolio flows, followed by official reserves. In contrast, the ASEAN3 economies, which include Indonesia, Philippines and Thailand, registered net non-resident capital inflows (or negative net resident capital outflows) of about 0.7% of group GDP **(Figure 1.2f)**.[3] Within the group, net non-resident capital inflows to Indonesia and Philippines outweighed Thailand's net resident capital outflows, resulting in the overall net non-resident capital inflows for the group. Foreign direct investment remained the largest investment type for the group. SEG Other Emerging and Developing

3. Malaysia does not report the breakdown of its other investment flows. Hence, we excluded it from the ASEAN grouping.

Economies (EME/DEV), which include Cambodia, Lao PDR, Mongolia, Nepal and Sri Lanka, also reported net non-resident capital inflows of about 6.5% of group GDP **(Figure 1.2g)**. Net non-resident capital inflows were mostly in foreign direct and other investments.

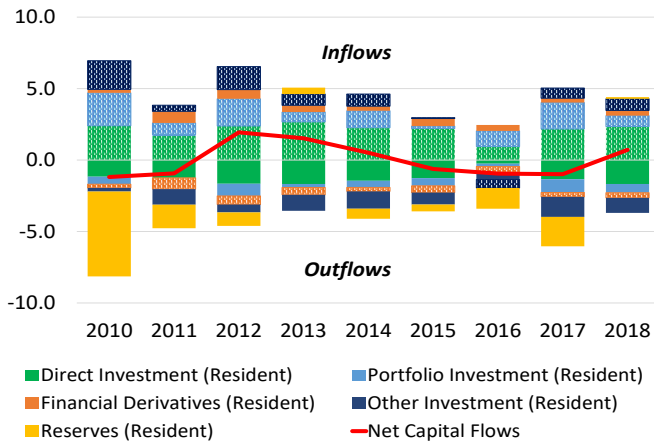
Figure 1.2e: Capital Flows - SEG High Income Economies
(% of GDP)



Notes: Solid fill refers to resident capital flows, while those with pattern fill refers to non-resident capital flows. Positive values of net capital flows refer to positive net non-resident inflows, while negative values refer to positive net resident outflows. SEG High Income Economies include Hong Kong, Korea, Singapore, and Chinese Taipei. Refer to IMF Balance of Payments Manual 6 for the definition of investor resident and non-resident.

Sources: SEACEN staff calculations using data from the IMF's Balance of Payment Statistics, World Economic Outlook Database; and national sources.

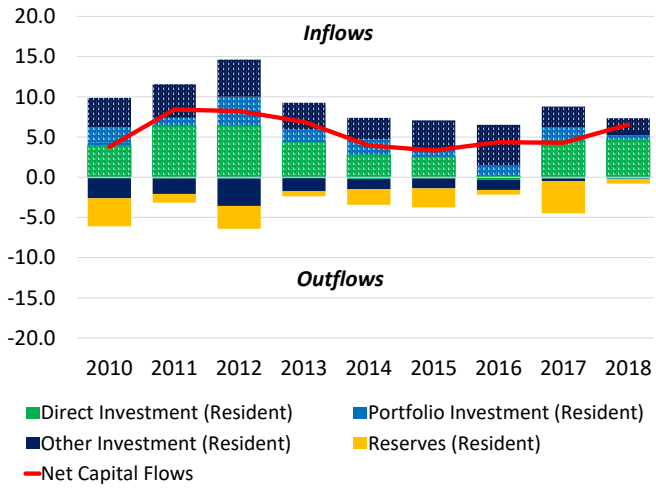
Figure 1.2f: Capital Flows - ASEAN3 (Indonesia, Philippines and Thailand)
(% of GDP)



Notes: Solid fill refers to resident capital flows, while those with pattern fill refers to non-resident capital flows. Positive values of net capital flows refer to positive net non-resident inflows, while negative values refer to positive net resident outflows. Refer to IMF Balance of Payments Manual 6 for the definition of investor resident and non-resident.

Sources: SEACEN staff calculations using data from the IMF's Balance of Payment Statistics and World Economic Outlook Database; and national sources.

Figure 1.2g: Capital Flows - SEG Emerging and Developing Economies
(% of GDP)

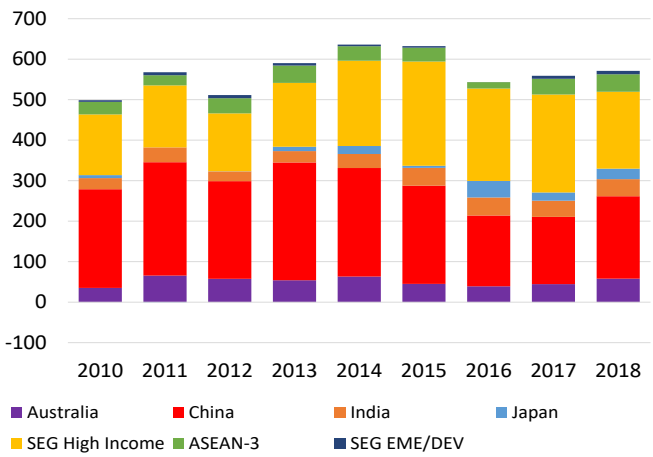


Notes: Solid fill refers to resident capital flows, while those with pattern fill refers to non-resident capital flows. Positive values of net capital flows refer to positive net non-resident inflows, while negative values refer to positive net resident outflows. SEG Emerging and Developing Economies include Cambodia, Lao PDR, Mongolia, Nepal, and Sri Lanka. Refer to IMF Balance of Payments Manual 6 for the definition of investor resident and non-resident.

Sources: SEACEN staff calculations using data from the IMF's Balance of Payment Statistics and World Economic Outlook Database; and national sources.

The composition of non-resident capital inflows continued to vary within SEG member economies, reflecting diverse economic structures and different levels of financial development. Foreign direct investment inflows in 2018 mostly went to China and SEG High Income Economies, reflecting their continued attractiveness as export-oriented investment destinations. Australia received US$58 billion in foreign direct investments, followed by both the ASEAN3 and India which received roughly equal amounts of around US$40 billion each. Both Japan and SEG EME/DEV had less than US$30 billion each **(Figure 1.3a)**. In terms of portfolio investments, China received the most non-resident investments of around US$160 billion in 2018, followed by Japan with around US$95 billion portfolio inflows. The rest of the SEG economies saw smaller foreign portfolio inflows; while India experienced a reversal of foreign portfolio inflows **(Figure 1.3b)**. For other investment flows, Japan posted the largest non-resident inflows of around US$220 billion in 2018, followed by SEG High Income Economies with US$175 billion**,** and then China and India both with around US$100 billion **(Figure 1.3c)**. Other investment non-resident inflows to other SEG economies were significantly smaller. Among the SEG economies under review, SEG High Income Economies accumulated the largest official reserve assets of about US$45 billion. In contrast, Australia, India, and ASEAN3 undertook reserve decumulation in 2018, albeit less than US$15 billion in total **(Figure 1.3d)**.

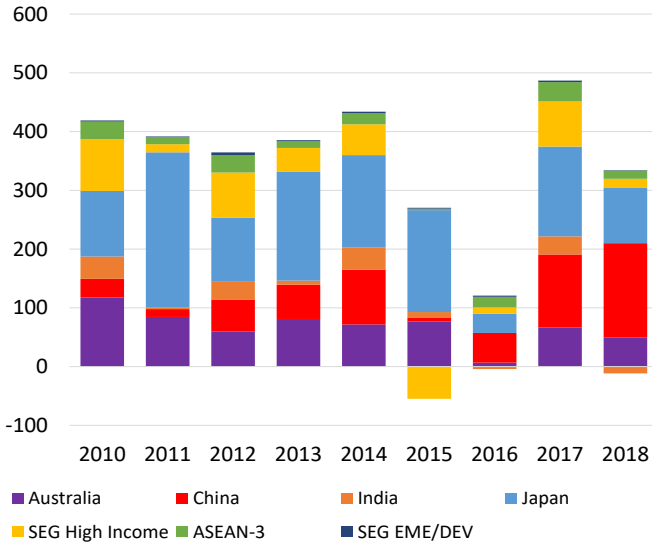
Figure 1.3a: Foreign Direct Investment Inflows
(USD billions)



Notes: SEG EME/DEV includes Cambodia, Lao PDR, Mongolia, Nepal, and Sri Lanka. ASEAN3 includes Indonesia, Philippines, and Thailand. SEG High Income includes Hong Kong, Korea, Singapore, and Chinese Taipei.

Sources: SEACEN staff calculations using data from the IMF's Balance of Payment Statistics and World Economic Outlook Database; and national sources accessed through CEIC Database.

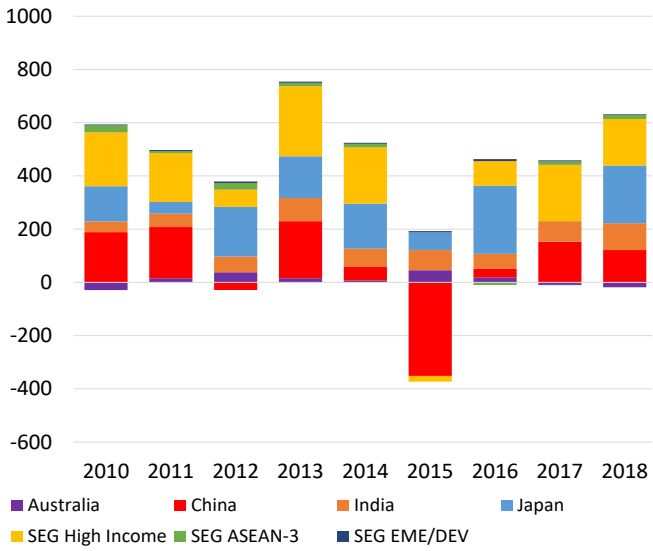
Figure 1.3b: Portfolio Investment Inflows
(USD billions)



Notes: SEG EME/DEV includes Cambodia, Lao PDR, Mongolia, Nepal, and Sri Lanka. ASEAN3 includes Indonesia, Philippines, and Thailand. SEG High Income includes Hong Kong, Korea, Singapore, and Chinese Taipei.

Sources: SEACEN staff calculations using data from the IMF's Balance of Payment Statistics and World Economic Outlook Database; and national sources accessed through CEIC Database.

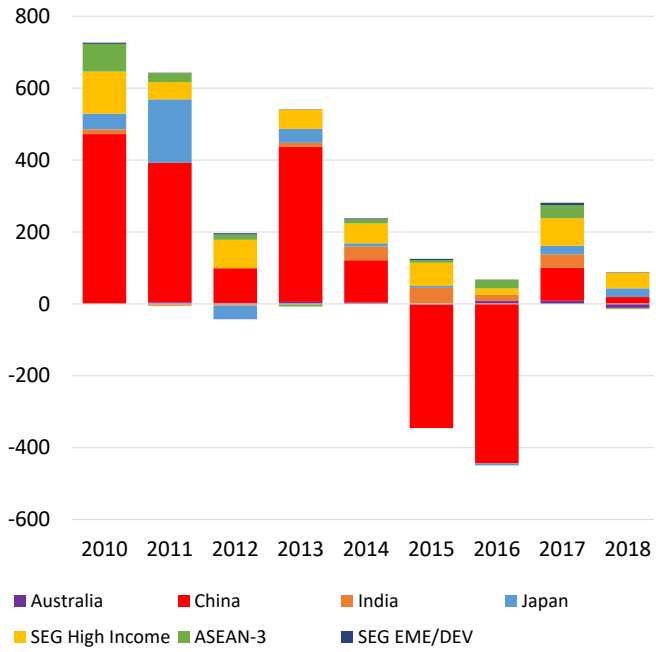
Figure 1.3c: Other Investment Inflows
(USD billions)



Notes: SEG EME/DEV includes Cambodia, Lao PDR, Mongolia, Nepal, and Sri Lanka. ASEAN3 includes Indonesia, Philippines, and Thailand. SEG High Income includes Hong Kong, Korea, Singapore, and Chinese Taipei.

Sources: SEACEN staff calculations using data from the IMF's Balance of Payment Statistics and World Economic Outlook Database; and national sources accessed through CEIC Database.

Figure 1.3d: Official Reserve Flows
(USD billions)

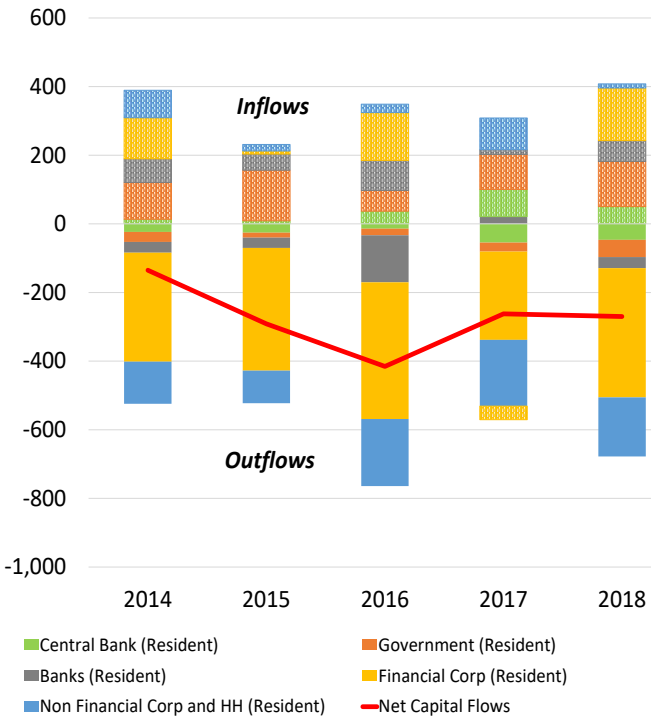


Notes: SEG EME/DEV includes Cambodia, Lao PDR, Mongolia, Nepal, and Sri Lanka. ASEAN3 includes Indonesia, Philippines, and Thailand. SEG High Income includes Hong Kong, Korea, Singapore, and Chinese Taipei.

Sources: SEACEN staff calculations using data from the IMF's Balance of Payment Statistics and World Economic Outlook Database; and national sources accessed through CEIC Database.

The sectoral composition of capital flows in 2018 indicates that capital flows were driven primarily by financial corporations, non-financial corporations plus households, and general government. Recent initiatives of reporting sectoral breakdown of the BoP Financial Account Balance allow us to identify which sector account for cross-border flows. For selected SEG economies with available data on sectoral flows to and from five sectors, namely, central bank/monetary authority; general government; banks; financial corporations; and non-financial corporations plus households, capital flows in 2018 were mostly driven by financial corporations, non-financial corporations plus households, and general government **(Figure 1.4)**.[4] Resident capital outflows mostly came from financial corporations and non-financial corporations plus households; while non-resident capital inflows mostly went to financial corporations and general government.

Figure 1.4: Sectoral Flows - Selected SEG Economies
(USD billions)



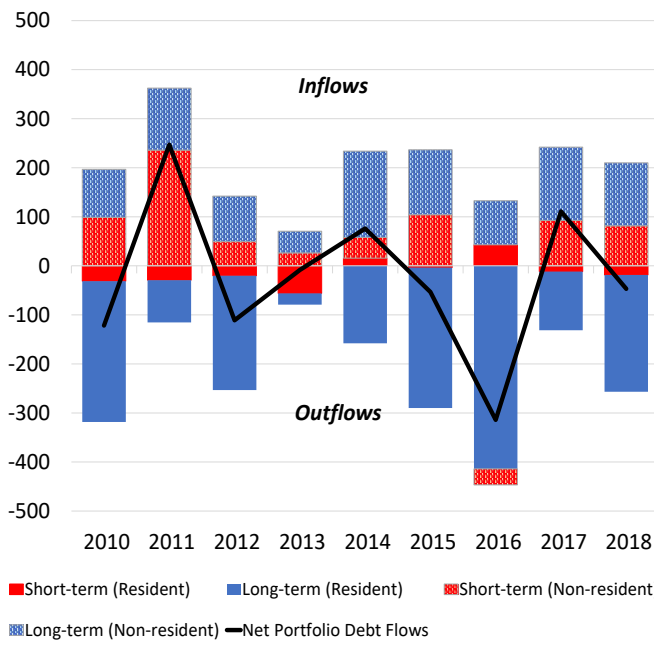
Notes: HH refers to households. Corp refers to corporations. Solid fill refers to resident capital flows, while those with pattern fill refers to non-resident capital flows. Positive values of net capital flows refer to positive net non-resident inflows, while negative values refer to positive net resident outflows. SEG economies include Japan; Korea; Mongolia; Philippines; and Thailand. Refer to IMF Balance of Payments Manual 6 for the definition of investor resident and non-resident. Foreign direct investment flows are classified under non-financial corporations and households.

Sources: SEACEN staff calculations using data from the IMF's Balance of Payment Statistics and national sources accessed through CEIC.

4. Although most SEG economies report sectoral breakdown of capital flows, we limit our analysis to those that report the breakdown for the five sectors, i.e., other sectors are decomposed into financial corporations and non-financial corporations plus households. The sample includes Japan, Korea, Mongolia, Philippines, and Thailand.

The maturity structure of portfolio debt flows in 2018 indicates that SEG economies invested more in long-term portfolio debt. Most SEG economies also report the maturity breakdown of their portfolio debt flows into short- and long-term flows.[5] For SEG economies with available data, the maturity structure of portfolio debt flows shows that SEG residents almost doubled their investments in long-term portfolio debt in 2018 as compared to 2017 **(Figure 1.5)**. In addition, resident long-term portfolio debt flows were larger than non-resident long-term flows. In contrast, resident short-term portfolio debt flows were smaller than non-resident short-term flows, which is the same pattern in both 2017 and 2018.

Figure 1.5: Portfolio Debt Flows by Maturity - Selected SEG Economies
(USD billions)



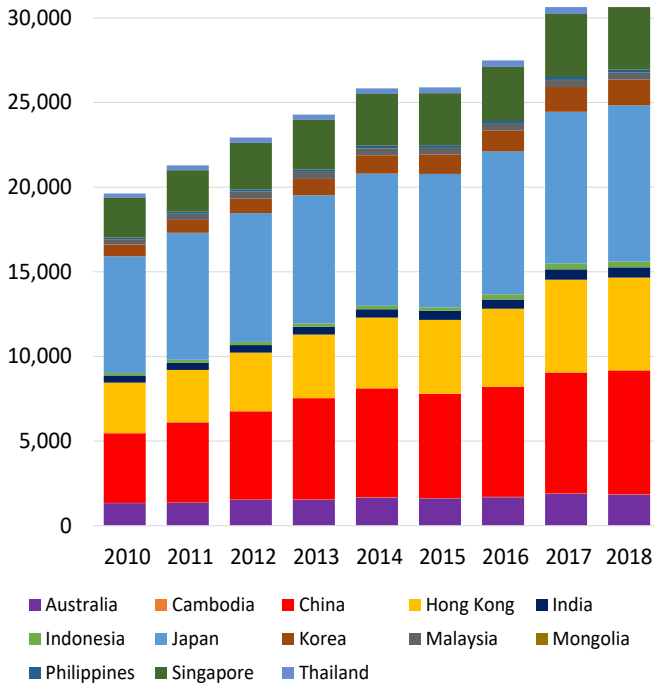
Notes: Positive values of net portfolio debt flows refer to positive net non-resident portfolio debt inflows, while negative values refer to positive net resident portfolio debt outflows. Selected SEG economies include Australia, Cambodia, Hong Kong, India, Japan, Korea, Lao PDR, Mongolia; Philippines; and Chinese Taipei. Refer to IMF Balance of Payments Manual 6 for the definition of investor resident and non-resident. Short-term refers to maturity of less than one year, while long-term pertains to maturity of greater than one year.

Sources: SEACEN staff calculations using data from the IMF's Balance of Payment Statistics and national sources accessed through CEIC.

5. Short-term portfolio debt flows are defined as those that will fall due within one year, while long-term portfolio debt flows are those which will fall due after one year.

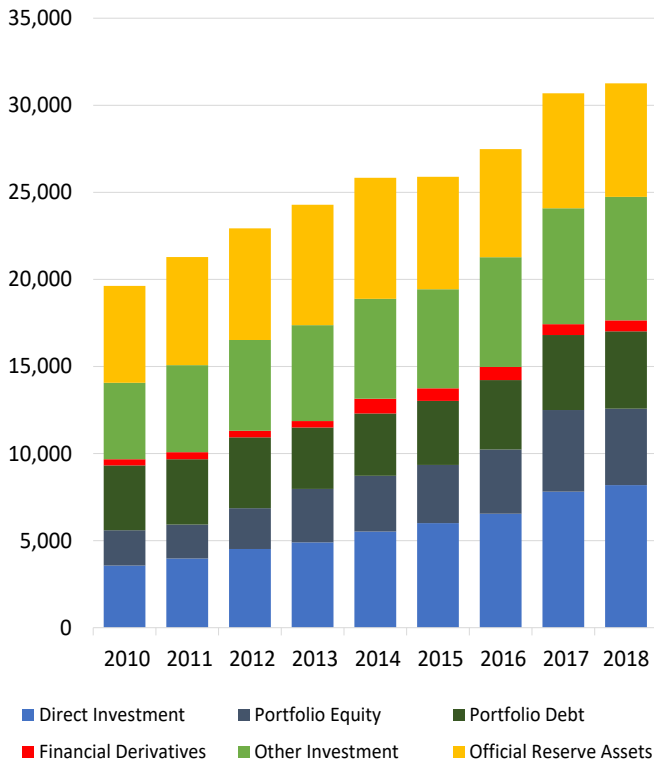
Total international investment assets of SEG economies reached US$31.3 trillion in 2018, up by 1.9% from US$30.7 trillion at end-2017. Among SEG economies, Japan had the highest international financial assets amounting to US$9.2 trillion, followed by China and Hong Kong with US$7.3 trillion and US$5.5 trillion, respectively. These three SEG economies alone accounted for more than two-thirds of the group's total international investment assets in 2018 **(Figure 1.6a)**. Across asset types, portfolio investments dominated asset holdings, followed by foreign direct investment, other investment, and official reserve assets, each amounting to around US$6.5 trillion as of end-2018. But portfolio investment assets were equally distributed between portfolio equities and portfolio debt **(Figure 1.6b)**. Excluding financial derivatives and official reserves, the debt-equity ratio stood at 0.92 as of end-2018, which was slightly higher than 0.88 at end-2017. Compared to 2014-16 when the debt-equity ratio stood at 1.0, the decline in the ratio for international investment assets indicates a continued preference for equity-type investments which offer better returns during normal market conditions.

Figure 1.6a: International Investment Position Assets
(USD billions)



Sources: SEACEN staff calculations using data from IMF's International Investment Position and national sources accessed through CEIC.

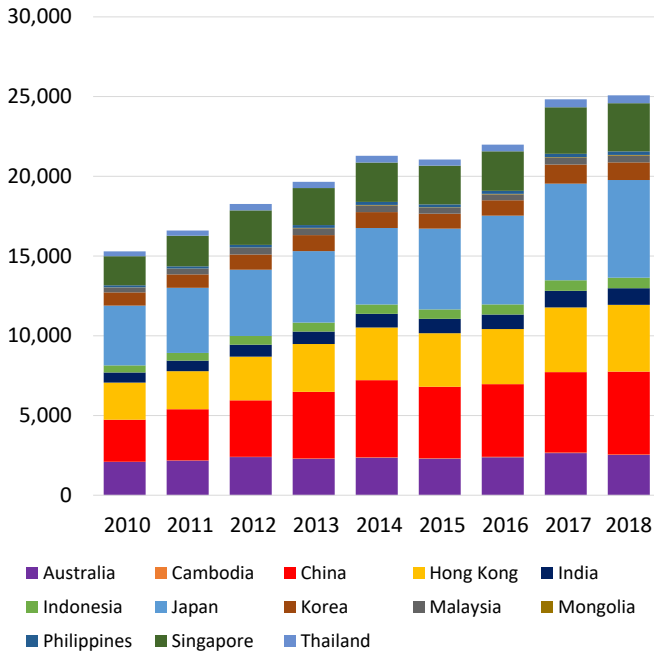
Figure 1.6b: International Investment Position Assets, by Investment Type
(USD billions)



Sources: SEACEN staff calculations using data from IMF's International Investment Position and national sources accessed through CEIC.

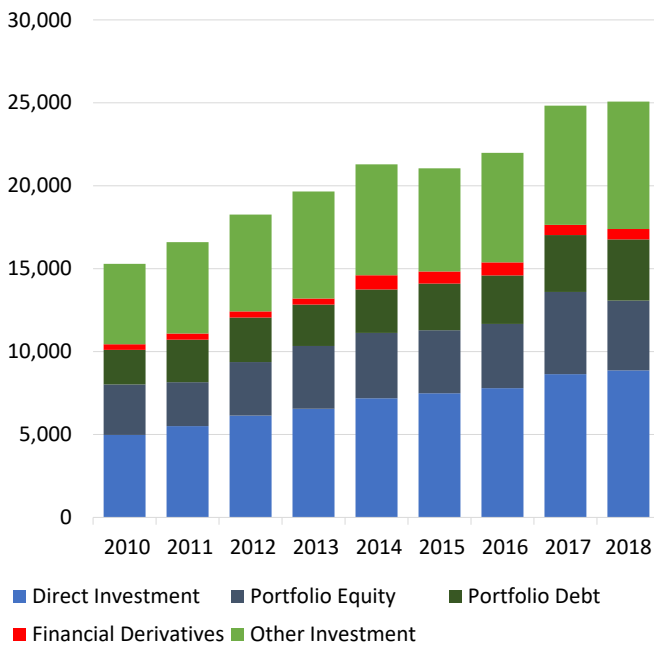
Total international investment liabilities of SEG economies also increased to US$25.0 trillion as of end-2018, slightly up by 1.0% from US$24.8 trillion at end-2017. Among SEG economies, Japan had the highest international financial liabilities amounting to US$6.1 trillion, again followed by China and Hong Kong with US$5.2 trillion and US$4.2 trillion, respectively **(Figure 1.7a)**. Across investment types, direct investments stood at US$8.9 trillion, followed by portfolio and other investment liabilities of around US$7.7 trillion each. But for portfolio investment, portfolio equities were significantly larger at US$4.2 trillion than portfolio debt liabilities at US$3.7 trillion **(Figure 1.7b)**. The debt-equity ratio for foreign liabilities stood at 0.87 at end-2018, higher than 0.78 at end-2017, reflecting a tilt towards debt liabilities.

Figure 1.7a: International Investment Position Liabilities
(USD billions)



Sources: SEACEN staff calculations using data from IMF's International Investment Position and national sources accessed through CEIC.

Figure 1.7b: International Investment Position Liabilities, by Investment Type
(USD billions)



Sources: SEACEN staff calculations using data from IMF's International Investment Position and national sources accessed through CEIC.

SEG economies remained a net capital exporter as of end-2018 with their positive net international investment position at US$6.2 trillion, higher than US$5.9 trillion at end-2017. However, within SEG economies, there was a clear divide between net capital exporters and net capital importers. China, Hong Kong, Japan, Korea, and Singapore have been net capital exporters since 2014; whereas Australia, Cambodia, India, Indonesia, Mongolia, Philippines, and Thailand have been net capital importers since 2014. Net external positions not only depend on cumulative current account balances, but also on valuation effects, which could increase or decrease the value of international assets relative to international liabilities or vice-versa, thereby affecting the overall net position.

B. Outlook on Capital Flows[6]

As a group, SEG economies will most likely sustain its net resident capital outflow and net foreign asset position in 2019, albeit narrower compared to 2018 as downside risk factors remain. First, higher tariffs affecting some SEG economies will most likely continue to weigh down on the current account balance in 2019. The weaker current account balance will slow the pace of reserve accumulation and may adversely affect investors' decisions to undertake cross-border investments. Second, policy uncertainties in non-regional advanced and emerging economies might also dampen market sentiment which can depress portfolio flows. Third, slower growth in some SEG economies may weaken foreign investments in the region.

But upside factors may offset downside risks to cross-border flows. First, the pause in U.S. interest rate hike as signaled in March 2019 by the Federal Reserve will lessen potential resident and non-resident capital outflows. Second, better financial conditions may sustain improved market sentiments which will encourage cross-border flows. Lastly, investors may continue to differentiate among emerging economies based on the individual economy's fundamentals and country-specific factors. For instance, inclusion in global benchmark indices and issuances of sovereign bonds by large emerging economies in the region may help attract non-resident capital inflows.

6. The outlook discussed in this section is mostly based on SEACEN staff assessment of economic and financial projections and prospects from the IMF (World Economic Outlook, April 2019; and Global Financial Stability Report, April 2019); and International Institute of Finance reports (2019). Moving forward, the SEACEN Centre will include benchmark capital flows to assess expected direction of capital flows for SEG economies as a group. The Box: Modelling KF* provides details on benchmarking portfolio flows.

BOX: Modelling KF*

Many emerging market economies can attest to the policy challenges associated with large capital inflows and subsequent large outflows, as a warranted policy response will depend on whether inflows/outflows are permanent or temporary. In this regard, the modelling of period-to-period movements in volatile capital flow series presents an ongoing challenge. While the empirical and theoretical literature has made great strides in identifying potential drivers of capital flows, such as positive and negative push and pull factors, a notion of what constitutes an equilibrium level of capital flows has proved elusive. So much so, in fact, that in late 2016, the profession was challenged to assess whether the sharp decrease in emerging market economies' (EME) portfolio inflows at the time was temporary or likely to persist. The latest empirical approach to addressing this question is provided by Burger, Warnock and Warnock (2018) and their notion of benchmark capital flows. Similar to other equilibrium concepts in economics, this measure has been referred to as *KF**, the * indicating an equilibrium measure.[1] To gauge the amount of portfolio inflows a country can expect to receive, Burger, Warnock and Warnock (2018) created a benchmark, a longer-term baseline path around which actual flows fluctuate, for 45 countries for the 2000 to 2017 period.

In general, any capital flows benchmark ought to be assessed on three characteristics:

- is it simple and intuitive?
- does it have theoretical/structural foundations?
- does the benchmark serve as a baseline around which actual capital flows fluctuate?

The *KF** measure fulfils all three criteria. To begin with, it is straightforward to calculate.[2] Data are either annual or quarterly gross portfolio inflows from the rest-of-the-world (ROW) for 28 EMEs and 17 advanced economies for the period 2000 to 2017, sourced from the IMF WEO dataset. Even if there are no domestic data, the benchmark measure can still be calculated based on other countries' reporting data. ROW portfolio holdings are either from a country's International Investment Position (IIP) data or the Lane and Milesi-Ferretti (2018) *External Wealth of Nations II* dataset. The ROW portfolio weights are scaled by the stock of total financial assets to satisfy any adding-up constraints. In addition, benchmark portfolio flows have the intuitive definition of the amount of new money available for international capital flows allocated according to lagged portfolio weights, where the weights can be interpreted as pre-determined investment rules. It thus captures the international supply of capital provided by ROW savings. Benchmark capital flows arise from macroeconomic conditions in the ROW and represent the flows that recipient countries should expect to receive regardless of what occurs in the home economy. Most academic work trying to identify an appropriate level of capital flows has been empirical, largely ignoring longer-term structural factors and theoretical insights into what an equilibrium level of capital flows should be. *KF**, by contrast, draws on some recent theoretical work on portfolio growth and reallocation flows.[3] The benchmark represents capital flows that occur in the absence of any shocks to expected returns and expected risk, and while shocks to either of these two factors can push flows away from the benchmark, the benchmark should continue to serve as the anchor flows return to.

Figure B1 illustrates some stylised facts as well as the empirical performance of *KF** for emerging Asian and Latin American economies. Benchmarks (blue line) have been increasing in line with an expanding global economy and increased global savings. There is a significant long-run relationship between actual portfolio flows (red line) and *KF**. Flows adjust quickly to deviations from the benchmark, with *KF** helping to distinguish movements **towards** the benchmark, which are of a more permanent nature, and temporary movements **away from** the benchmark.

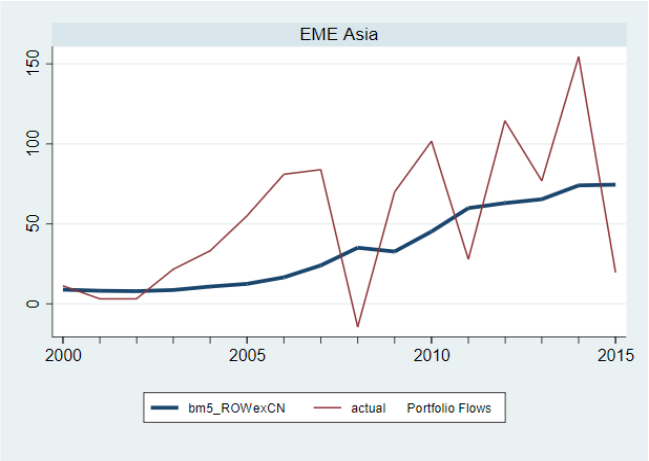
1. Other areas of macroeconomics have concepts such as potential output (y^*), the natural rate of interest (r^*), the non-accelerating inflation rate of unemployment (u^*) and purchasing power parity as a medium-term equilibrium for exchange rates (e^*).

2. All code and data files for the *IMF Economic Review* paper are available to authorised users in a zip file from https://doi.org/10.1057/s41308-018-0062-8.

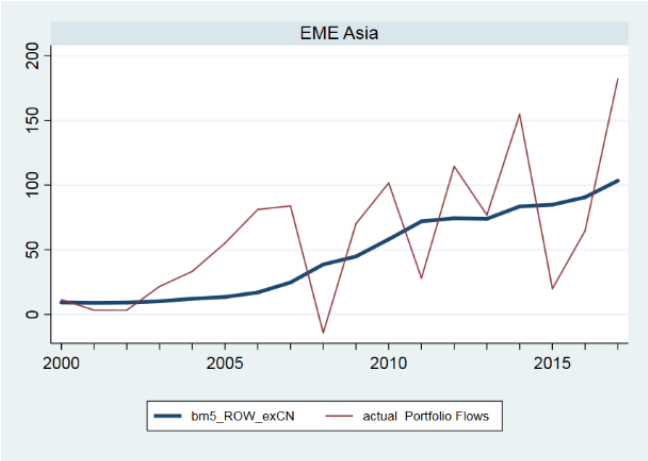
3. Tille and van Wincoop (2010), Devereux and Sutherland (2011), Kraay and Ventura (2000, 2002) and Meng and van Wincoop (2018).

Figure B1: Burger, Warnock and Warnock (2018) Benchmark Portfolio Flows

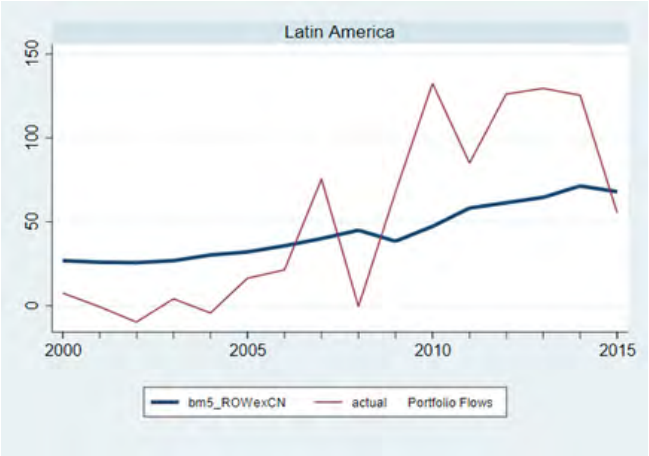
(a) Benchmark and Actual Portfolio Flows for EME Asia, 2000-2015



(b) Benchmark and Actual Portfolio Flows for EME Asia, 2000-2017



(c) Benchmark and Actual Portfolio Flows for Latin America, 2000-2015

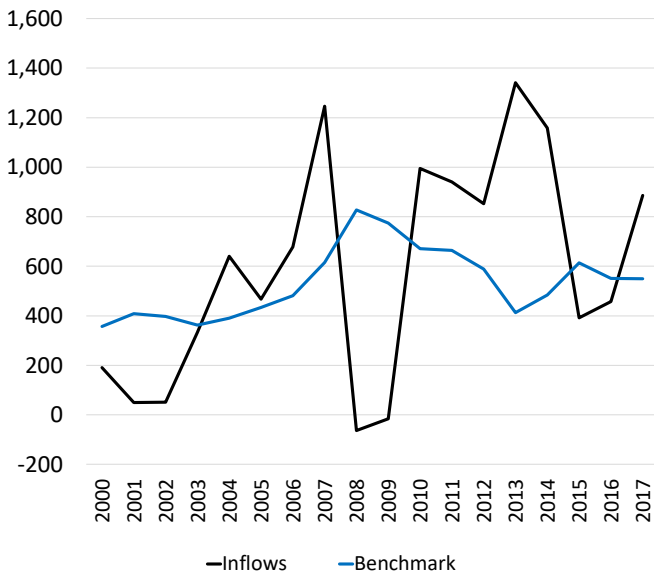


(d) Benchmark and Actual Portfolio Flows for Latin America, 2000-2017

The *KF** estimate for EM Asia suggested that the 2015 decline in inflows overshot (Panel (a)) and that inflows should increase thereafter. When flows dropped below the benchmark in 2015, an expected rebound did occur (Panel (b)). Similarly for Latin America, the *KF** estimate suggested that the 2015 decline in inflows was a return to normal levels (Panel (c)), which was borne out by subsequent data (Panel (d)). Going forward, based on the benchmark analysis, flows into EME Asia were quite high in 2017, due to elevated flows into Chinese and Indonesian bonds (Panel (b)). According to the large positive gap to *KF**, EM Asia should see a decline in inflows going forward, although inflows are expected to remain sizeable.

Figure B2: SEACEN Capital Flows Monitor 2018 Update – Benchmark Capital Flows

Figure B2: Capital Inflows - SEG Economies
(in US billion)



Notes: SEG economies include Australia, Brunei, Cambodia, China, Hong Kong, India, Indonesia, Japan, Korea, Lao PDR, Mongolia, Myanmar, Nepal, Papua New Guinea, Philippines, Singapore, Sri Lanka, Chinese Taipei, Thailand, and Vietnam. Values refer to the sum of individual economy gross capital inflows. Benchmark values are lagged five-year moving average values.

Source: SEACEN staff calculations using data from the Balance of Payments Statistics of IMF accessed through CEIC Database.

In the SEACEN Capital Flows Monitor 2018 Update, we undertook the exercise of constructing our own capital flows benchmarks for SEG member economies, which include foreign direct investment and other investment inflows. We found that comparing actual and benchmark inflows reveal that for most SEG economies, actual inflows oscillate around the benchmark; while for other economies, actual inflows are either consistently above or below the benchmark, reflecting varying degrees of economic and financial development as well as foreign investors' differentiation of SEG economies.

The use of *KF** can contribute to macro-financial surveillance. By having some benchmark values for capital inflows, the direction of subsequent oscillations around benchmark values may be used as a tool to predict the future direction of capital inflows. In fact, Burger, Warnock and Warnock (2018) tested the forecasting ability of portfolio benchmark flows, and found it performed relatively well. Moving forward, the SEACEN Capital Flows Monitor will use this approach to provide an outlook for the expected direction of capital inflows for SEG economies.

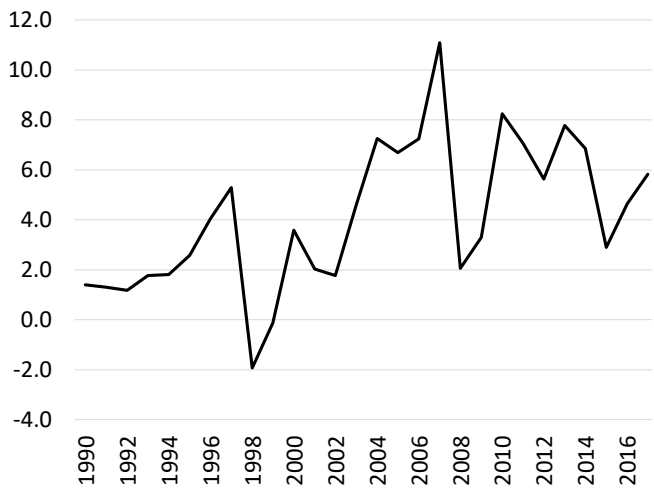
SECTION II: LARGE CAPITAL FLOWS—SOME CONSIDERATIONS

This section discusses the IMF's Institutional View on Liberalization and Management of Capital Flows (2012). It highlights the importance of identifying and defining the size or magnitude of gross capital inflows and outflows that may warrant policy consideration. The Fund's Institutional View (2012) has not clarified this empirical issue. In addition, this section traces the evolution of selected macroeconomic and financial variables around episodes of large capital flows to SEG economies for 1990-2018.

A. IMF Institutional View on Managing Capital Flows

The experience of SEG economies over the past years highlights the volatile nature of foreign-driven capital flows. Non-resident financial flows to SEG economies witnessed identified periods of peaks and troughs driven by both domestic and global factors **(Figure 2.1)**.[1] For instance, gross capital inflows reached peaks prior to and subsequent troughs around the Asian and global financial crises of 1997-98 and 2008-09. In both cases, pre-crisis surges were driven by the low global interest rate, high risk appetite, and stronger growth prospects in SEG economies. But the reversals of foreign capital inflows during crises years were caused by either domestic factors like the Asian financial crisis, or external factors in the case of the global financial crisis. In contrast, the strong rebound of gross inflows in 2010-11 and tepid flows in 2015 were attributed to diverging differentials in growth prospects between the rest of the world and SEG economies. With the increasing volume of capital flows, such volatility of non-resident capital flows will most likely continue to pose challenges to policy makers.

Figure 2.1: Gross Capital Inflows
(% of GDP)



Notes: Data refer to the ratio o f total non-resident inflows to nominal GDP. Sample includes 21 SEG member economies.

Source: SEACEN staff calculations using IMF data on Balance of Payments Statistics and nominal GDP in US dollars.

Despite the intended benefits of global financial integration, financial flows remain a challenge for policy makers as they have become a potent agent of risk transfers and/or policy transmissions. Capital account openness facilitates efficient allocation of financial resources; encourages risk-sharing thus increasing or limiting risk exposures of individual economies; brings indirect benefits including transfer of technology, best practices, and international standards; and allows consumption smoothing where economies can borrow to consume more in a given period but pay back in the future by consuming less. Yet capital flows expose economies to various financial risks. For instance, foreign liability flows have maturity and currency risks. Economies are also exposed to default risks particularly for debt flows; as well as significant sectoral and/or asset exposures. Sudden and abrupt swings in foreign investor confidence may exacerbate these risks causing capital flow reversals, thereby rendering recipient economies vulnerable to financial and macroeconomic difficulties. Moreover, external policy changes may weaken capital flows as foreign investors reassess their investment positions. For example, an interest rate hike in the United States can trigger U.S. global banks to tap their internal bank fund market leading to a lower lending of U.S. global

1. In this section, SEG economies include Australia; Brunei Darussalam; Cambodia; China; Hong Kong; India; Indonesia; Japan; Korea; Lao PDR; Malaysia; Mongolia; Myanmar; Nepal; Papua New Guinea; Philippines; Singapore; Sri Lanka; Chinese Taipei; Thailand; and Vietnam.

banks in their host economies. This illustrates how policy actions in large open economies can lead to tighter credit conditions in other economies through banking sector flows.

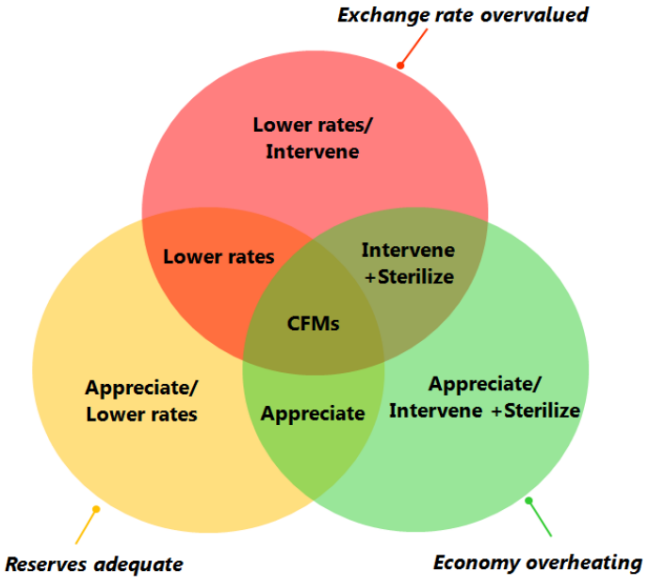
Consequently, policy measures dealing with the effects of large capital flows have gained importance particularly in the aftermath of the global financial crisis. The collapse of global capital flows at the height of the global financial crisis of 2008-09 and the subsequent surge of capital flows into SEG economies after the crisis raised a dilemma among policy makers. Specifically, policy makers were concerned about their exposures to foreign risks as well as transmissions of policy actions from large economies. Sudden changes in the international risk appetite can trigger a collapse of cross-border flows, regardless of macroeconomic conditions in recipient economies. Moreover, policy actions in advanced economies can trigger sudden surges or reversals of capital flows. These external factors driving the magnitude and volatility of capital flows warrant the use of policy frameworks and measures by recipient economies to safeguard their domestic macroeconomic and financial stability.

In 2012, the International Monetary Fund (2012) proposed an integrated framework for liberalising and managing capital flows known as the Institutional View, which proposed a comprehensive, flexible, and balanced approach for the liberalisation and management of capital flows. It highlights several key points of relevance for both source and recipient economies. First, the degree of capital account liberalisation depends on country specific circumstances including the level of institutional and financial development. Second, capital account liberalisation needs to be well planned, timed, and sequenced. Third, potential risks to capital account liberalisation must be considered. Fourth, in terms of capital flows management, economic resiliency must be enhanced particularly during normal times through sound macroeconomic policies; deeper financial markets; stronger financial regulation and supervision; and improved institutional capacity. Fifth, macroeconomic policies, such as monetary, fiscal, and exchange rate, along with sound financial supervision and regulation play a key role in managing capital inflow surges and disruptive outflows. Sixth, capital flow management measures (CFMs), including measures designed to limit capital flows, can be useful and appropriate in situations where the room for macroeconomic policy adjustment is limited or appropriate policies take time to be effective. But the Fund stresses that such measures should not be used as substitutes for warranted macroeconomic adjustments. Seventh, capital flow management measures should be targeted, transparent, and temporary. Moreover, they should be non-discriminatory between resident and non-resident investors, although residency measures may be justified particularly when non-discriminatory measures are ineffective.

Initial assessments of the Fund's Institutional View (2012) indicate that economies relied primarily on macroeconomic policies in managing capital flows, which is envisaged in the framework. Following the release and promotion of the Institutional View in 2012, the IMF has assessed country experiences (IMF, 2016). It found that economies relied on a combination of macroeconomic policies in managing capital flows, including exchange rate flexibility, foreign exchange intervention, and monetary and fiscal policy adjustments, in managing capital flow surges and reversals. In some cases, CFMs and macroprudential measures (MPMs) were used. Some economies used MPMs to manage financial cycle risks related to capital flows. However, in most cases, exchange rate flexibility has been the main policy tool used in addressing large capital flows.

Although the Fund's Institutional View (2012) has become known to policy makers, there remain key issues meriting further clarifications or elaborations. First, the relationship between CFMs and MPMs in the context of systemic financial risks inherent in cross-border flows needs to be fully understood. MPMs, such as the leverage cap on banks' foreign exchange (FX) derivative positions, levy on FX funding, limit to FX loan-to-deposit ratio of banks, and the like, are used to address systemic financial risks, but they could alter the composition and impact the size of capital flows. Second, more empirical work and assessment of the effectiveness of CFMs could be done. Country case studies and cross-country evidences on the effectiveness of CFMs are needed to inform future policy measures. Third, further clarifications are needed on the conditions warranting the imposition of CFMs. **Figure 2.2** illustrates conditions when CFMs, in the face of capital inflow surges, can be useful in supporting needed macroeconomic adjustments according to the IMF's Institutional View (2012).

Figure 2.2: Managing Capital Inflows Surges



Each circle represents cases where the relevant condition is met. For example, the top circle ("Exchange rate overvalued") represents cases where the exchange rate is assessed to be overvalued. The intersection of all three circles reflects cases where the exchange rate is overvalued, reserves are judged to be adequate, and the economy is overheating.

In such cases of limited policy flexibility, as represented by the intersection of all three circles, CFMs can be useful to support, and not substitute for, the needed macroeconomic adjustment.

CFMs could also be useful **to safeguard systemic financial stability** under certain circumstances. At other times, CFMs can help gain time when taking the needed policy steps requires time, when the macroeconomic adjustments require time to take effect, or when there is heightened uncertainty about the underlying economic stance due to the surge.

Source: International Monetary Fund (2012, page 19), *The Liberalization and Management of Capital Flows: An Institutional View.* IMF, Washington DC.

B. Defining Large Capital Flows

The IMF's Institutional View (2012) leaves room for policy makers to determine how large capital inflows and outflows are before appropriate policies are considered. The IMF Institutional View (2012) specified the conditions where CFMs may be helpful during episodes of large capital inflows and outflows. Yet it did not elaborate any empirical measures on how large these flows are. Conversely, identifying episodes of large capital flows is an important step in their management as it will inform policy makers of the size or magnitude of capital flows that may be potentially disruptive and could pose a greater threat to macroeconomic and financial stability under specific conditions as shown in **Figure 2.2**. Moreover, identifying "*how large*" are large capital flows can serve as basis on which CFMs are either imposed or removed under the conditions laid out in the Fund's Institutional View (2012) or individual country's framework on managing capital flows.

Although identifying large capital flows is helpful in assessing the size of capital flows that may warrant policy considerations, the use of CFMs must still be guided by sound framework either through the Fund's Institutional View (2012) or an individual country's framework. The identified size of large capital inflows and outflows should not serve as a basis for implementing CFMs alone. More importantly, macroeconomic and financial conditions must be the primary consideration for which CFMs are to be used. In fact, the Institutional View (2012) provided very specific conditions for which CFMs may be used. For instance, CFMs may be warranted when the economy experiences all three conditions of 1) overvalued exchange rate; 2) adequate reserves; and 3) overheating economy, conditional on a surge episode, as these three conditions entail limited policy flexibility. Identifying "*how large*" are large capital flows contributes to improving the management framework by showing that capital flows are indeed "*large*" in the first place.

Empirical literature on extreme episodes of capital flows offers potential methods of identifying large non-resident capital flows. For large non-resident capital inflows, there are two broad classifications of capital flow surges. Surges are usually defined to imply more than the usual increase in capital inflows. However, there are various approaches to measuring "more than the usual". Crystallin et al. (2015) provide

a survey of the various measures of surges and show that these measures affect the number of surges identified. Common to the six methods they identified and tested is their finding that surges have been increasing in occurrence over time. The six identified methods for surges enumerated by Crystallin et al. (2015) can be broadly classified into two groups. First, surges are periods when capital inflows increase more than the usual based on some deviation from benchmark of what "usual" is. Deviation could refer to one or two standard deviation from the benchmark which can either be the historic mean, filtered trend, or magnitude (size relative to GDP) such as those from Balakrishnan et al. (2013), Benigno et al. (2015), Caballero (2016), Levan et al. (2017), Forbes and Warnock (2012a and 2012b), IMF (2011), Magud et al. (2014), Mercado (2018 and 2019), and Sula (2010). Second, surges are also identified based on some threshold percentile for the entire sample. This is the approach taken by Benigno et al. (2015), Ghosh et al. (2014 and 2016) and Reinhart and Reinhart (2009).

In terms of non-resident capital flow reversals or "sudden stops", the earlier literature such as Calvo et al. (2008) defined sudden stops as a sharp fall in *net* capital inflows (defined as current account balance minus reserve changes). A "sharp fall" pertains to a one standard deviation drop of the year-on-year change of the 12-month moving sum of net capital inflows relative to its historic mean (which includes all data points), provided it drops two standard deviation within the episode. In contrast, Forbes and Warnock (2012a and 2012b) defined "stops" as a sharp decline in gross capital inflows (non-resident flows). A sharp decline pertains to a one standard deviation drop of the year-on-year change of the 12-month moving sum of gross capital inflows relative to its five-year rolling historic mean, provided it drops two standard deviation at some point within the episode. These methods have been used in subsequent empirical literature, including Mercado (2018 and 2019) who followed the definition of Forbes and Warnock (2012a) in the context of capital flow episode transitions such as a surge episode to a stop episode.

Empirical evidence points to strong covariation between the occurrence of large capital flows and domestic and global factors. For this reason, the IMF Institutional View (2012) emphasizes the importance of determining economic drivers of large capital flows. High occurrence of "stops" or large non-resident outflows relates to lower domestic growth, more financially open economies, large dollarization of domestic liabilities, dependence on commodity exports, low global growth, high global risk, large banking inflows, large exchange rate depreciation, and contagion effects. In contrast, economies more open to trade are less vulnerable to "stops" as foreign investors associate trade openness with lower probability of debt default, while those with more stable economies also experience less "stops".[2] For "surges" or large non-resident inflows, low global interest rates that make debt payment and access to international funding easier, low global risk aversion, and business cycles in advanced economies are the relevant global factors. Policy reforms, trade and financial openness, sound macroeconomic policy, growth shocks, external financing needs, and exchange rate regime are the significant domestic factors. Contagion factor is also relevant for surges.[3]

C. What Happens During Episodes of Large Capital Flows?

Using a simple method for identifying large capital flows for SEG economies reveals trends of key macroeconomic and financial indicators that covary with capital flows around episodes of large capital flows. Using annual capital inflows to GDP ratio, sourced from the IMF's Balance of Payments Statistics, we defined large non-resident capital inflows as the upper 10th percentile of non-resident capital inflows to each SEG economies from 1990-2018, whenever data is available. For large non-resident capital outflows, we include the bottom 10th percentile of non-resident capital inflows from 1990-2018, provided that there was a marked reversal of capital inflows such that the annual capital inflow is negative. We select the sample median values of key macroeconomic and financial indicators 4 years before and 4 years after the identified large episode of non-resident flows to trace the behaviour of key variables around episodes of large capital inflows and outflows, following Reinhart and Reinhart (2009).

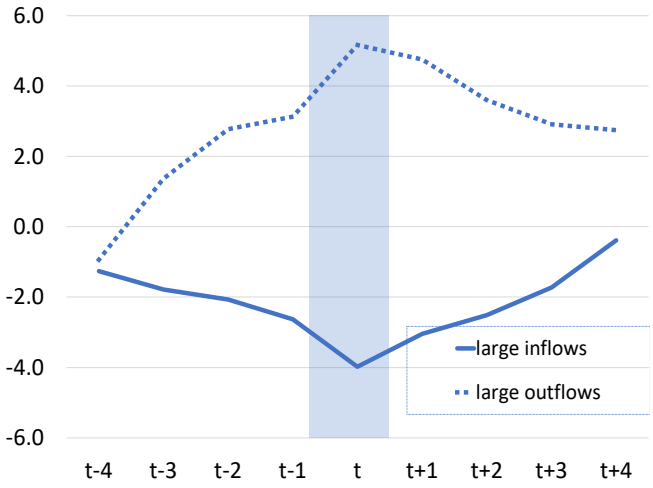
2. Refer to the studies of Calderon and Kubota (2013), Calvo et al. (2008), Cavallo and Frankel (2008), Forbes and Warnock (2012a), Levchenko and Mauro (2007), Milesi-Ferretti and Tille (2011), and Rothenberg and Warnock (2011).

3. See the papers of Caballero (2016), Calvo (1998), Calvo et al. (1993 and 1996), Forbes and Warnock (2012a and 2012b), Ghosh et al. (2014), Magud et al. (2014), Mercado (2018) and Reinhart and Reinhart (2009).

Several patterns are noted around episodes of large capital inflows. The current account balance in SEG economies tends to deteriorate during a surge year **(Figure 2.3)**. This pattern is consistent with Reinhart and Reinhart (2009) where they found a V-shape pattern for the current account balance around surge episodes. SEG economies tend to accumulate official reserves during surges **(Figure 2.4)**. Their output growth is usually stronger during surges, while their government budget balance deteriorates before and during surges; and then remains weak afterwards **(Figures 2.5 and 2.6)**. Exchange rate slightly appreciates during a surge year; and becomes slightly less volatile around surges **(Figures 2.7 and 2.8)**. Moreover, asset prices tend to rise before, during, and immediately after surge episodes, but stabilise a year after a surge episode **(Figure 2.9)**. These patterns closely mirror the observed patterns of Reinhart and Reinhart (2009) for a larger sample and time period for emerging and developing economies.

The observed patterns for the episodes of large non-resident outflows are mostly the mirror-image of those around episodes of large non-resident inflows. The current account balance in SEG economies tends to improve during episodes of capital flow reversals, perhaps due to the need to reduce domestic demand **(Figure 2.3)**. SEG economies tend to de-accumulate official reserves during stop episodes, which is exactly the reverse of what happens around surge episodes **(Figure 2.4)**. Output growth is usually weaker during stops as capital flow reversals are often associated with economic slowdowns, contractions, or even crises **(Figure 2.5)**. Interestingly, the government budget balance deteriorates before and during stops as a weak fiscal position could signal greater investment risks. Nonetheless, the government budget balance improves afterwards **(Figure 2.6)**. Exchange rate depreciates once a stop episode occurs, and it becomes significantly more volatile **(Figures 2.7 and 2.8)**. Finally, asset prices tend to decrease during and after stop episodes and recover two years after stop episodes **(Figure 2.9)**.

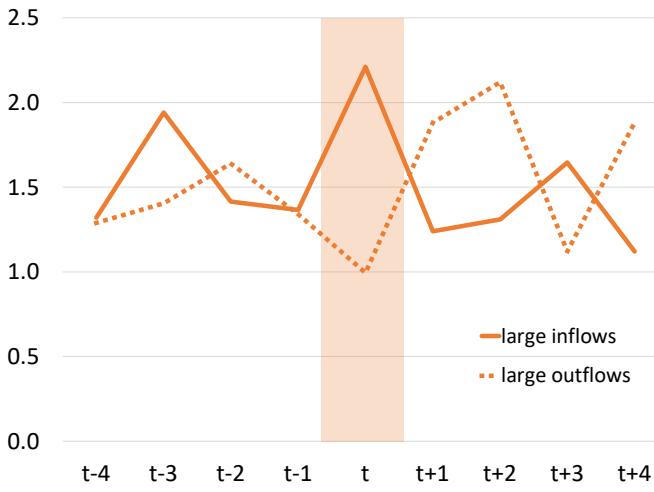
Figure 2.3: Current Account Balance
(% of GDP)



Notes: Values refer to the median data of SEG economies with data four years before (t-4) up to four years after (t+4) the year when large gross non-resident inflows and outflows occurred. Current account balance in percent of nominal GDP.

Source: SEACEN staff calculations using data from IMF's Balance of Payments Statistics and World Economic Outlook Database.

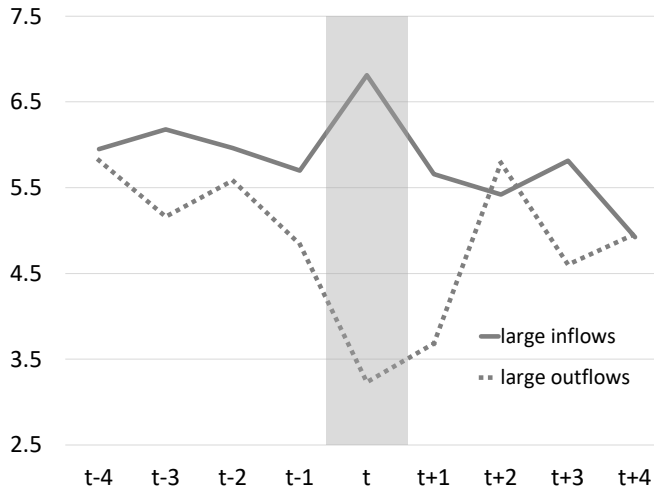
Figure 2.4: Reserve Assets Accumulation
(% of GDP)



Notes: Values refer to the median data of SEG economies with data four years before (t-4) up to four years after (t+4) the year when large gross non-resident capital inflows and outflows occurred. Reserve asset accumulation refers to official reserve assets of the Balance of Payment Statistics in percent of nominal GDP.

Source: SEACEN staff calculations using data from IMF's Balance of Payments Statistics and World Economic Outlook Database.

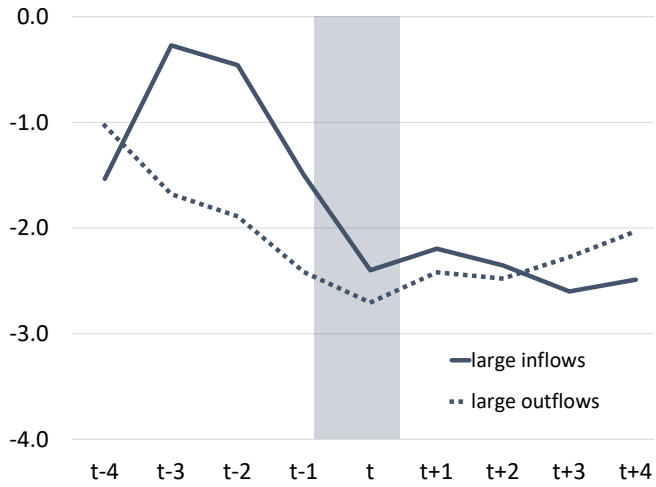
Figure 2.5: Output Growth
(Annual growth in %)



Notes: Values refer to the median data of SEG economies with data four years before (t-4) up to four years after (t+4) the year when large gross non-resident capital inflows and outflows occurred. Output growth refers to the year-on-year change of real GDP.

Source: SEACEN staff calculations using data from IMF's World Economic Outlook Database.

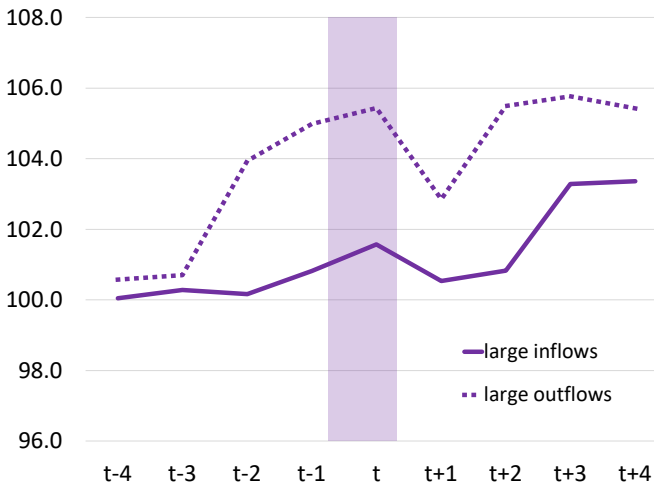
Figure 2.6: Government Budget Balance
(% of GDP)



Notes: Values refer to the median data of SEG economies with data four years before (t-4) up to four years after (t+4) the year when large gross non-resident capital inflows and outflows occurred. Government budget balance refers to general government net lending/borrowing in percent of nominal GDP.

Source: SEACEN staff calculations using data from IMF's World Economic Outlook Database.

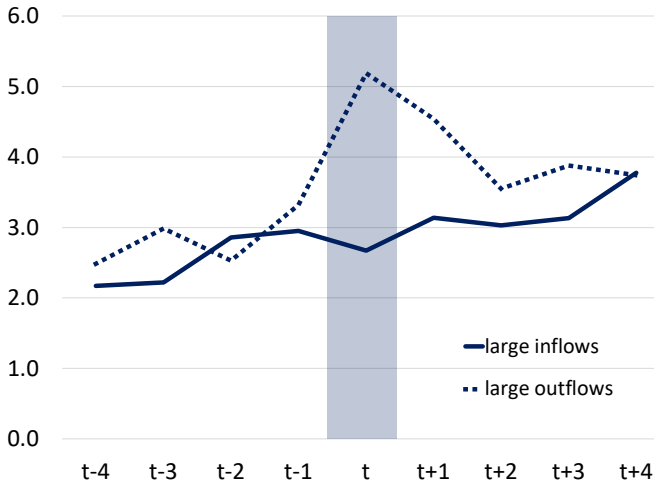
Figure 2.7: Real Exchange Rate
(Index)



Notes: Values refer to the median data of SEG economies with data four years before (t-4) up to four years after (t+4) the year when large gross non-resident capital inflows and outflows occurred. Data were computed based on year-on-year change in real effective exchange rate rebased to 100 in t-5.

Source: SEACEN staff calculations using data from IMF's International Financial Statistics and Bank for International Settlements' Exchange Rate Index.

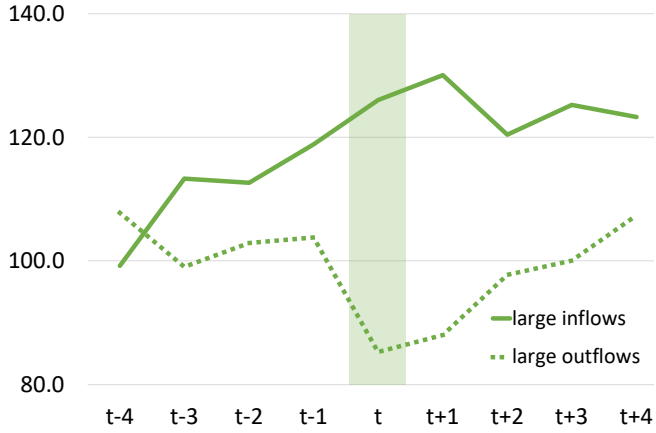
Figure 2.8: Exchange Rate Volatility



Notes: Values refer to the median data of SEG economies with data four years before (t-4) up to four years after (t+4) the year when large gross non-resident capital inflows and outflows occurred. Volatility pertains to annual standard deviation of monthly changes in the nominal exchange rate.

Source: SEACEN staff calculations using data from IMF's International Financial Statistics.

Figure 2.9: Real Equity Price
(index)



Notes: Values refer to the median data of SEG economies with data four years before (t-4) up to four years after (t+4) the year when large gross non-resident capital flows occurred. Data were computed based on year-on-year change in real stock price index rebased to 100 in t-5. Real stock price is computed as stock price index divided by consumer price index.

Source: SEACEN staff calculations using data from IMF's International Financial Statistics and national sources.

D. Empirical and Policy Considerations

The preceding subsection illustrates that episodes of large non-resident capital flows are often associated with marked co-movement in output, current account balance, official reserves, fiscal balance, and asset prices, suggesting potential risks and disruptive effects of large capital flows. Based on these observed patterns for SEG economies in the period of 1990-2018, several considerations are provided.

First, manage and use CFMs during episodes of large capital inflows and outflows. The IMF Institutional View (2012) indicates that the use of CFMs can coincide with specific domestic macro-financial conditions where there is limited policy flexibility. For instance, conditional on capital flow surge, CFMs may be helpful under conditions of an overvalued exchange rate, adequate reserves, and overheating economy. But empirical evidence shows that the use of CFMs must correspond with episodes of extreme capital inflows or outflows (such as surges and sudden stops) as it is during these episodes where capital flows are most destabilising. Caution must be taken in using CFMs in managing capital flows that are not extremely large in historic context as this may run contrary to reaping the benefits of capital account liberalisation. Capital flows are fickle, and they will continue to be so as financial globalisation intensifies. Hence, macroeconomic adjustments must be the first policy option in dealing with capital flows, as suggested by the IMF's Institutional View (2012).

Second, identifying episodes of large capital flows is an integral part of monitoring and managing capital flows. Although existing empirical literature offers a wealth of methods in identifying extreme episodes of capital flows, other methods may be explored depending on individual economic conditions. Common empirical features across alternative measures indicate that identified large capital flows must be significantly large or small relative to some past values which an economy usually receives. Moreover, large episodes tend to have identified start and end dates. Pinning down when an episode begins and ends offers a window in which measures can be considered, implemented, and removed. In addition, identifying episodes of capital flows will aid in the understanding of past durations which can inform the likely duration of current episodes.

Third, enhanced policy dialogue and greater cooperation at the regional and global levels are needed to clarify and elaborate on existing issues related to the IMF's Institutional View (2012) as well as the individual economic framework in managing capital flows. Clarifications and elaborations on the conditions in which CFMs, particularly those that limit capital flows, are needed or warranted. For instance, the IMF Institutional View (2012) suggests that CFMs must be non-discriminatory based on investor residency. But if capital flow surges or stops are attributed to the actions of non-residents, then CFMs targeting specific investor type may be warranted for CFMs to be effective. In this regard, regional and international policy dialogue discussing said conditions will be useful in refining and improving capital flow management frameworks. Policy dialogue and regional cooperation can take the form of collaborative research work on case studies dealing with policy considerations and actions during episodes of large capital flows; assessing the effectiveness of CFMs; understanding policy implications of the interaction between CFMs and MPMs; and further scope for regional cooperation.[4]

4. For instance, ASEAN (2019) has released a study covering different approaches and safeguards on capital flows in the context of ASEAN economies. Similar work can be done covering SEG economies while considering differences in the level of economic and financial development; and individual economic characteristics and experiences.

SECTION III: KEY INDICATORS

Table 3.1: Net Resident Capital Outflows

	USD billion				% of GDP			
	2015	2016	2017	2018	2015	2016	2017	2018
Australia	-58.3	-39.3	-35.7	-33.7	-4.7	-3.1	-2.6	-2.4
Brunei	4.5	6.5	4.6	...	34.9	57.3	38.3	...
Cambodia	-1.3	-1.4	-1.5	-2.4	-7.1	-6.9	-6.6	-9.9
China	91.5	-27.6	-18.0	-111.7	0.8	-0.2	-0.1	-0.8
Hong Kong	16.6	13.0	9.7	23.3	5.4	4.0	2.8	6.4
India	-22.9	-11.8	-39.0	-64.5	-1.1	-0.5	-1.5	-2.4
Indonesia	-17.9	-17.2	-17.1	-32.2	-2.1	-1.8	-1.7	-3.2
Japan	180.9	264.7	166.3	182.2	4.1	5.4	3.4	3.7
Korea	101.0	103.3	92.7	71.8	7.3	7.3	6.1	4.4
Lao PDR	-2.7	-2.7	-2.0	-2.3	-19.1	-17.0	-11.5	-12.7
Malaysia	0.5	1.3	2.9	...	0.2	0.5	0.9	...
Mongolia	-1.1	-0.8	-1.1	-2.2	-9.0	-7.4	-9.9	-17.1
Myanmar	-4.0	-3.9	-4.8	...	-6.7	-6.1	-7.2	...
Nepal	2.6	0.5	-0.2	-1.0	11.9	2.6	-1.0	-3.4
Papua New Guinea	4.9	5.2	5.3	...	23.8	27.1	26.2	...
Philippines	4.9	-0.9	-3.7	-10.1	1.7	-0.3	-1.2	-3.1
Singapore	52.5	55.0	54.0	62.8	17.1	17.4	16.0	17.4
Sri Lanka	-2.3	-2.2	-2.2	-3.3	-2.9	-2.7	-2.5	-3.8
Chinese Taipei	98.6	77.8	71.8	83.5	18.8	14.6	12.5	14.2
Thailand	22.7	33.7	38.4	29.2	5.6	8.2	8.4	6.0
Vietnam	-7.6	-2.6	-7.7	...	-4.0	-1.3	-3.5	...

Notes: ... data unavailable from the IMF. Positive (negative) values mean an increase (decrease) in net resident flows investment abroad.
Net resident flows refer to financial account assets minus financial account liabilities.
Data accessed through CEIC Dataset as of 2 May 2019.

Sources: SEACEN staff calculations and estimates using data from IMF BoP Statistics and World Economic Outlook Database, and national sources.

Table 3.2: Financial Account Assets (Resident Capital Outflows)

	USD billion				% of GDP			
	2015	2016	2017	2018	2015	2016	2017	2018
Australia	32.3	-63.0	-6.6	-6.8	2.6	-5.0	-0.5	-0.5
Brunei	4.2	6.2	5.2	…	32.8	54.4	43.0	…
Cambodia	1.2	1.5	2.0	0.7	6.8	7.6	8.8	2.8
China	-9.5	232.0	423.9	372.1	-0.1	2.1	3.5	2.8
Hong Kong	90.6	91.5	250.8	135.2	29.3	28.5	73.4	37.2
India	118.4	107.0	128.3	87.0	5.6	4.7	4.8	3.2
Indonesia	20.4	-3.8	30.0	13.0	2.4	-0.4	3.0	1.3
Japan	279.8	106.5	-93.2	-29.0	6.4	2.2	-1.9	-0.6
Korea	88.3	110.9	129.4	114.0	6.4	7.8	8.5	7.0
Lao PDR	0.4	0.1	0.5	0.3	2.6	0.3	2.9	1.8
Malaysia	-1.6	16.2	15.6	…	-0.6	5.5	5.0	…
Mongolia	0.0	0.4	1.3	-0.1	0.0	3.7	10.9	-0.6
Myanmar	0.5	-1.1	-0.1	…	0.9	-1.7	-0.2	…
Nepal	3.0	1.2	0.6	0.4	13.8	5.5	2.6	1.2
Papua New Guinea	5.0	4.9	4.4	…	24.3	25.8	21.6	…
Philippines	8.8	4.6	5.9	3.7	3.0	1.5	1.9	1.1
Singapore	119.9	169.0	184.1	177.2	39.2	53.4	54.7	49.1
Sri Lanka	0.9	0.0	2.9	-0.6	1.1	0.0	3.4	-0.7
Chinese Taipei	74.8	98.9	94.3	82.6	14.2	18.6	16.4	14.0
Thailand	11.1	32.2	61.1	35.6	2.8	7.8	13.4	7.3
Vietnam	9.3	14.4	23.0	…	4.9	7.1	10.4	…

Notes: … data unavailable from the IMF. Positive (negative) values refer to an increase (decrease) in resident investment abroad. Data accessed through CEIC Dataset as of 2 May 2019.

Sources: SEACEN staff calculations and estimates using data from IMF BoP Statistics and World Economic Outlook Database, and national sources.

Table 3.3: Financial Account Liabilities (Non-Resident Capital Inflows)

	USD billion				% of GDP			
	2015	2016	2017	2018	2015	2016	2017	2018
Australia	90.7	-23.6	29.0	27.0	7.3	-1.9	2.1	1.9
Brunei	-0.3	-0.3	0.6	…	-2.1	-2.9	4.6	…
Cambodia	2.5	2.9	3.4	3.1	13.9	14.4	15.4	12.7
China	-101.0	259.6	441.9	483.8	-0.9	2.3	3.7	3.6
Hong Kong	74.1	78.5	241.1	111.9	23.9	24.5	70.6	30.8
India	141.2	118.8	167.3	151.6	6.7	5.2	6.3	5.6
Indonesia	38.3	13.4	47.1	45.2	4.5	1.4	4.6	4.4
Japan	98.8	-158.2	-259.5	-211.2	2.3	-3.2	-5.3	-4.2
Korea	-12.6	7.6	36.8	42.2	-0.9	0.5	2.4	2.6
Lao PDR	3.1	2.8	2.5	2.7	21.8	17.3	14.4	14.6
Malaysia	-2.1	14.9	12.8	…	-0.7	5.0	4.1	…
Mongolia	1.1	1.2	2.4	2.2	9.0	11.2	20.8	16.5
Myanmar	4.5	2.8	4.7	…	7.6	4.4	7.0	…
Nepal	0.4	0.6	0.9	1.3	1.9	2.9	3.6	4.6
Papua New Guinea	0.1	-0.3	-0.9	…	0.5	-1.3	-4.5	…
Philippines	3.8	5.5	9.5	13.9	1.3	1.8	3.0	4.2
Singapore	67.4	114.1	130.1	114.4	22.0	36.0	38.6	31.7
Sri Lanka	3.2	2.2	5.1	2.7	4.0	2.7	5.9	3.1
Chinese Taipei	-23.8	21.2	22.5	-0.9	-4.5	4.0	3.9	-0.2
Thailand	-11.6	-1.5	22.7	6.4	-2.9	-0.4	5.0	1.3
Vietnam	16.9	16.9	30.6	…	8.8	8.4	13.9	…

Notes: … data unavailable from the IMF. Positive (negative) values mean an increase (decrease) in non-resident investment in the domestic economy.
Data accessed through CEIC Dataset as of 2 May 2019.

Sources: SEACEN staff calculations and estimates using data from IMF BoP Statistics and World Economic Outlook Database, and national sources.

Table 3.4: Current Account Balance

	USD Billion				% of GDP			
	2015	2016	2017	2018	2015	2016	2017	2018
Australia	-57.4	-41.2	-35.8	-30.5	-4.6	-3.2	-2.6	-2.2
Brunei	2.2	1.5	2.0	…	16.7	12.9	16.7	…
Cambodia	-1.6	-1.7	-1.7	-2.8	-8.7	-8.4	-7.8	-11.3
China	304.2	202.2	195.1	49.1	2.7	1.8	1.6	0.4
Hong Kong	10.3	12.7	15.9	15.6	3.3	4.0	4.6	4.3
India	-22.5	-12.1	-38.2	-64.9	-1.1	-0.5	-1.4	-2.4
Indonesia	-17.5	-17.0	-16.2	-31.1	-2.0	-1.8	-1.6	-3.0
Japan	136.5	197.0	201.6	174.7	3.1	4.0	4.1	3.5
Korea	105.1	97.9	75.2	76.4	7.6	6.9	4.9	4.7
Lao PDR	-2.3	-1.4	-1.2	-1.4	-15.8	-8.7	-7.0	-7.8
Malaysia	9.1	7.1	9.4	…	3.1	2.4	3.0	…
Mongolia	-0.9	-0.7	-1.2	-2.2	-8.1	-6.3	-10.1	-16.9
Myanmar	-2.8	-1.8	-4.5	…	-4.8	-2.8	-6.7	…
Nepal	2.4	-0.2	-0.8	-2.8	11.4	-0.8	-3.3	-9.6
Papua New Guinea	4.5	5.2	5.5	…	22.0	27.2	27.2	…
Philippines	7.3	-1.2	-2.1	-7.9	2.5	-0.4	-0.7	-2.4
Singapore	52.0	55.5	53.9	63.9	17.0	17.5	16.0	17.7
Sri Lanka	-1.9	-1.7	-2.3	-2.8	-2.3	-2.1	-2.6	-3.2
Chinese Taipei	74.9	72.8	82.8	68.3	14.2	13.7	14.4	11.6
Thailand	32.1	48.2	50.2	35.2	8.0	11.7	11.0	7.2
Vietnam	0.9	8.2	6.1	…	0.5	4.1	2.8	…

Notes: … data unavailable from the IMF. Data accessed through CEIC Dataset as of 2 May 2019.

Sources: SEACEN staff calculations using data from IMF BoP Statistics and World Economic Outlook Database, and national sources.

Table 3.5: Net International Investment Position (Net IIP)

	USD billion				% of GDP			
	2015	2016	2017	2018	2015	2016	2017	2018
Australia	-674.2	-699.8	-755.6	-688.6	-54.6	-55.2	-54.5	-48.6
Brunei	...	...	...	...	...	...	...	...
Cambodia	-7.6	-9.0	-13.8	-18.2	-42.0	-45.0	-61.9	-74.1
China	1,672.8	1,950.4	2,100.7	2,130.1	14.9	17.4	17.4	15.9
Hong Kong	1,003.1	1,153.8	1,421.2	1,294.3	324.3	359.6	415.9	356.5
India	-368.4	-367.3	-426.6	-438.4	-17.5	-16.0	-16.1	-16.1
Indonesia	-376.8	-333.8	-323.4	-317.8	-43.8	-35.8	-31.8	-31.1
Japan	2,815.0	2,879.2	2,909.1	3,102.1	64.1	58.4	59.9	62.4
Korea	204.4	281.1	261.7	412.9	14.8	19.9	17.1	25.5
Lao PDR	...	...	...	...	...	...	...	...
Malaysia	25.4	15.6	-6.2	-18.8	8.6	5.3	-2.0	-5.3
Mongolia	-28.6	-29.3	-32.0	-33.4	-243.7	-263.0	-280.1	-255.9
Myanmar	-9.8	-25.2	-30.3	...	-16.4	-39.9	-45.4	...
Nepal	4.0	4.3	3.8	...	18.6	20.3	15.1	...
Papua New Guinea	...	...	...	...	...	...	...	...
Philippines	-28.2	-28.0	-42.4	-48.8	-9.6	-9.2	-13.5	-14.8
Singapore	647.1	721.0	809.5	812.0	211.3	227.8	240.4	224.9
Sri Lanka	-43.0	-44.6	-48.4	...	-53.4	-54.5	-55.4	...
Chinese Taipei	1,080.9	1,106.7	1,180.8	...	205.6	208.3	205.4	...
Thailand	-42.8	-32.4	-41.6	-2.5	-10.7	-7.8	-9.1	-0.5
Vietnam	...	...	...	...	...	...	...	...

Notes: ... data unavailable from the IMF. Net IIP refers to total international investment assets minus total international investment liabilities.
Data accessed through CEIC Dataset as of 2 May 2019.

Sources: SEACEN staff calculations using data from IMF International Investment Position and World Economic Outlook Database; and national sources.

Table 3.6: Total International Investment Assets

	USD billion				% of GDP			
	2015	2016	2017	2018	2015	2016	2017	2018
Australia	1,621.0	1,685.1	1,887.7	1,834.0	131.2	132.9	136.2	129.3
Brunei	…	…	…	…	…	…	…	…
Cambodia	16.3	18.1	17.5	17.6	90.1	90.5	78.5	71.7
China	6,155.8	6,507.0	7,148.8	7,324.2	54.8	58.0	59.3	54.6
Hong Kong	4,364.2	4,609.1	5,478.6	5,480.4	1,410.7	1,436.4	1,603.4	1,509.6
India	531.3	543.1	614.3	603.7	25.3	23.7	23.2	22.2
Indonesia	212.4	300.5	338.4	347.0	24.7	32.2	33.3	33.9
Japan	7,883.1	8,444.1	8,967.4	9,222.9	179.6	171.4	184.5	185.5
Korea	1,144.0	1,245.1	1,461.6	1,520.4	82.7	88.0	95.5	93.9
Lao PDR	…	…	…	…	…	…	…	…
Malaysia	387.6	385.7	413.9	406.8	130.7	130.0	131.5	114.8
Mongolia	3.9	4.3	5.6	6.2	33.3	38.7	48.6	47.6
Myanmar	10.7	9.5	9.6	…	17.9	15.0	14.3	…
Nepal	9.4	10.2	10.7	…	43.7	48.4	43.0	…
Papua New Guinea	…	…	…	…	…	…	…	…
Philippines	155.1	161.3	171.6	175.6	53.0	52.9	54.7	53.1
Singapore	3,078.3	3,199.0	3,725.2	3,835.7	1,005.1	1,010.6	1,106.5	1,062.2
Sri Lanka	10.7	10.3	12.4	…	13.3	12.6	14.2	…
Chinese Taipei	1,664.6	1,789.3	1,982.7	…	316.7	336.7	344.9	…
Thailand	339.0	382.4	458.4	486.9	84.5	92.7	100.7	99.9
Vietnam	…	…	…	…	…	…	…	…

Notes: … data unavailable from the IMF. Data accessed through CEIC Dataset as of 2 May 2019.

Sources: SEACEN staff calculations using data from IMF International Investment Position and World Economic Outlook Database, and national sources.

Table 3.7: Total International Investment Liabilities

	USD billion				% of GDP			
	2015	2016	2017	2018	2015	2016	2017	2018
Australia	2,295.1	2,384.9	2,643.3	2,522.6	185.8	188.1	190.7	177.9
Brunei	...	...	...	...	...	...	...	...
Cambodia	23.9	27.2	31.2	35.8	132.1	135.5	140.5	145.8
China	4,483.0	4,556.7	5,048.1	5,194.1	39.9	40.6	41.9	38.7
Hong Kong	3,361.0	3,455.3	4,057.5	4,186.1	1,086.5	1,076.8	1,187.5	1,153.1
India	899.8	910.5	1,040.9	1,042.1	42.8	39.8	39.2	38.4
Indonesia	589.3	634.3	661.7	664.8	68.5	68.1	65.2	65.0
Japan	5,068.1	5,564.9	6,058.4	6,120.8	115.5	113.0	124.7	123.1
Korea	939.5	964.0	1,199.9	1,107.5	67.9	68.1	78.4	68.4
Lao PDR	...	...	...	...	...	...	...	...
Malaysia	362.1	370.0	420.1	425.6	122.1	124.7	133.5	120.1
Mongolia	32.5	33.7	37.6	39.6	276.9	301.7	328.7	303.6
Myanmar	20.5	34.7	39.8	...	34.3	54.9	59.7	...
Nepal	5.4	5.9	6.9	...	25.2	28.0	27.9	...
Papua New Guinea	...	...	...	...	...	...	...	...
Philippines	183.3	189.3	214.0	224.4	62.6	62.1	68.3	67.8
Singapore	2,431.2	2,478.0	2,915.7	3,023.7	793.8	782.8	866.0	837.3
Sri Lanka	53.7	54.9	60.7	...	66.7	67.1	69.5	...
Chinese Taipei	583.7	682.5	801.8	...	111.1	128.4	139.5	...
Thailand	381.8	414.8	500.0	489.4	95.1	100.6	109.8	100.4
Vietnam	...	...	...	...	...	...	...	...

Notes: ... data unavailable from the IMF. Data accessed through CEIC Dataset as of 2 May 2019.

Sources: SEACEN staff calculations using data from IMF International Investment Position and World Economic Outlook Database, and national sources.

Table 3.8: Official Reserve Assets

	USD billion				% of GDP			
	2015	2016	2017	2018	2015	2016	2017	2018
Australia	49.3	55.1	68.8	57.5	4.0	4.3	5.0	4.1
Brunei	...	...	...	...	...	...	...	...
Cambodia	5.1	6.8	8.8	10.2	28.2	33.7	39.5	41.5
China	3,406.1	3,097.8	3,235.9	3,168.0	30.3	27.6	26.8	23.6
Hong Kong	358.8	386.2	431.6	424.4	116.0	120.4	126.3	116.9
India	350.0	359.5	409.7	396.1	16.6	15.7	15.4	14.6
Indonesia	105.9	116.4	130.2	120.7	12.3	12.5	12.8	11.8
Japan	1,232.8	1,220.4	1,261.3	1,265.3	28.1	24.8	26.0	25.4
Korea	367.9	371.1	389.2	403.6	26.6	26.2	25.4	24.9
Lao PDR	...	...	...	...	...	...	...	...
Malaysia	95.3	94.5	102.1	101.3	32.1	31.8	32.4	28.6
Mongolia	1.3	1.3	3.0	3.5	11.3	11.7	26.4	27.2
Myanmar	4.4	4.9	5.2	...	7.3	7.8	7.8	...
Nepal	8.2	8.9	9.4	...	38.3	41.8	37.7	...
Papua New Guinea	...	...	...	...	...	...	...	...
Philippines	80.7	80.7	81.6	79.2	27.6	26.5	26.0	23.9
Singapore	248.2	246.3	279.8	287.3	81.1	77.8	83.1	79.6
Sri Lanka	7.3	6.0	8.0	...	9.1	7.4	9.1	...
Chinese Taipei	430.7	439.0	456.7	...	81.9	82.6	79.4	...
Thailand	156.5	171.9	202.6	205.6	39.0	41.7	44.5	42.2
Vietnam	...	...	...	...	...	...	...	...

Notes: ... data unavailable from the IMF. Data accessed through CEIC Dataset as of 2 May 2019.

Sources: SEACEN staff calculations using data from IMF International Investment Position and World Economic Outlook Database, and national sources.

References:

Association of Southeast Asian Nations (ASEAN), (2019), Capital Account Safeguard Measures in the ASEAN Context, Mimeo, Available at: https://asean.org/storage/2012/05/2019-02-25-ASEAN-Paper-The-Role-of-Safeguard-Measures-in-ASEAN.pdf

Balakrishnan R.; S. Nowak; S. Panth and Y. Wu, (2013), "Surging Capital Flows to Emerging Asia: Facts, Impacts and Responses," *Journal of International Commerce, Economics and Policy*, 4 (2).

Benigno, G., N. Converse and L. Fornaro, (2015), "Large Capital Inflows, Sectoral Allocation, and Economic Performance," *Journal of International Money and Finance*, 55, pp. 60-87.

Burger, J.D.; F. E. Warnock and V. C. Warnock, (2018), "Benchmarking Portfolio Inflows," *IMF Economic Review*, 66(3):527-563.

Caballero, J., (2016), "Do Surges in International Capital Inflows Influence the Likelihood of Banking Crises?" *The Economic Journal*, 126(591), pp. 281-316.

Calderon, C. and M. Kubota, (2013), "Sudden Stops: Are Global and Local Investors Alike?" *Journal of International Economics*, 89 (1), pp. 122-142.

Calvo, G., (1998), "Capital Flows and Capital-Market Crises: The Simple Economics of Sudden Stops," *Journal of Applied Economics*, 1, pp. 35-54.

Calvo, G.; L. Leiderman and C. Reinhart, (1993), "Capital Inflows and Real Exchange Rate Appreciation in Latin America: The Role of External Factors," *IMF Staff Papers,* 40(1), pp. 108-151.

Calvo, G., L. Leiderman, and C. Reinhart, (1996), "Inflows of Capital to Developing Countries in 1990s," *Journal of Economic Perspectives*, 10(2): 123-139.

Calvo, G.; A. Izquierdo and L.-F. Mejia, (2008), "Systemic Sudden Stops: The Relevance of Balance-Sheet Effects and Financial Integration," *NBER Working Paper Series,* 14026.

Cavallo, E. and J. Frankel, (2008), "Does Openness to Trade Make Countries More Vulnerable to Sudden Stops, or Less? Using Gravity to Establish Causality," *Journal of International Money and Finance*, 27, pp. 1430-1452.

Crystallin M.; L. Efremidze; S. Kim; W. Nugroho; O. Sula and T. Willett, (2015), "How Common Are Capital Flows Surges? How They Are Measured Matters a Lot," *Open Economics Review*, 26, pp. 663-682.

Devereux, M., and A. Sutherland, (2011), "Country Portfolios in Open Economy Macro-models," *Journal of the European Economic Association* 9(2): 337–369.

Forbes, K. and F. Warnock, (2012a), "Capital Flow Waves, Surges, Stops, Flights and Retrenchment," *Journal of International Economics*, 88 (2), pp. 235-251.

Forbes, K. and F. Warnock, (2012b), "Debt- and Equity-Led Capital Flows Episodes," *NBER Working Paper Series,* 18329.

Ghosh, A.; J. Kim; M. Qureshi and J. Zalduendo, (2014), "Surges," *Journal of International Economics*, 92(2), pp. 266-285.

Ghosh, A.; J. Ostry and M. Qureshi, (2016), "When Do Capital Inflow Surges End in Tears?" *American Economic Review*, 106(5), pp. 581-585.

Institute for International Finance, (2019), Capital Flows Report: The EM Positioning Overhang, Institute for International Finance, Washington DC.

International Monetary Fund, (2011), Recent Experiences in Managing Capital Inflows - Cross-Cutting Themes and Possible Policy Framework, Washington D.C.

International Monetary Fund, (2012), "The Liberalization and Management of Capital Flows: An Institutional View," *IMF Policy Paper*, Washington D.C.

International Monetary Fund, (2016), "Capital Flows —Review of Experience with the Institutional View," *IMF Policy Paper*, Washington D.C.

International Monetary Fund, (2019), World Economic Outlook April 2019, International Monetary Fund, Washington D.C.

International Monetary Fund, (2019), Global Financial Stability Report April 2019, International Monetary Fund, Washington D.C.

Kraay, A. and J. Ventura, (2000), "Current Account in Debtor and Creditor Countries," *Quarterly Journal of Economics* XCV, pp. 1137–1166.

Kraay, A. and J. Ventura, (2002), "Current Accounts in the Long and Short Run," *NBER Macroeconomics Annual*, 17, pp. 65-94.

Lane, P. R. and G. M. Milesi-Ferretti, (2018), "The External Wealth of Nations Revisited: International Financial Integration in the Aftermath of the Global Financial Crisis," *IMF Economic Review*, 66(1): 189-222.

Levan E.; S. Kim; O. Sula and T. D. Willett, (2017), "The Relationships Among Capital Flow Surges, Reversals and Sudden Stops," *Journal of Financial Economic Policy*, 9(4), pp. 393-413.

Levchenko, A. and P. Mauro, (2007), "Do Some Forms of Financial Flows Help Protect Against "Sudden Stops"?" *The World Bank Economic Review*, 21(3), pp. 389-411.

Magud, N.; C. Reinhart and E. Vesperoni, (2014), "Capital Inflows, Exchange Rate Flexibility, and Credit Booms," *Review of Development Economics*, 18(3), pp. 415-430.

Meng, G. and E. van Wincoop, (2018), A Decomposition of International Capital Flows, Mimeo.

Mercado, R., (2018), "Not All Surges of Gross Capital Inflows Are Alike," *Journal of Economic Studies*, Vol. 45 (2), pp. 326-347.

Mercado, R., (2019), "Capital Flow Transitions: Domestic Factors and Episodes of Gross Capital Inflows," *Emerging Markets Review*, 38(1), pp. 251-264.

Milesi-Ferretti, G.-M. and C. Tille, (2011), "The Great Retrenchment: International Capital Flows during the Global Financial Crisis," *Economic Policy*, 26(66), pp. 285-342.

Reinhart, C. and V. Reinhart, (2009), "Capital Flow Bonanzas: An Encompassing View of the Past and Present," NBER International Seminar on Macroeconomics 2008.

Rothenberg, A. and F. Warnock, (2011), "Sudden Flight and True Sudden Stops," *Review of International Economics*, 19(3), pp. 509-524.

SEACEN, (2018), SEACEN Capital Flows Monitor 2018 Update, The SEACEN Centre.

Sula, O., (2010), "Surges and Sudden Stops of Capital Flows to Emerging Markets," *Open Economics Review*, 21, pp. 589-605.

Tille, C., and E. van Wincoop, (2010), "International Capital Flows," *Journal of International Economics*, 80(2), 157–175.

SEACEN Capital Flows Monitor 2019

The SEACEN Capital Flows Monitor 2019 is a bi-annual report on cross-border capital flows of SEACEN member economies, including Australia and Japan which are members of the SEACEN Expert Group (SEG) on Capital Flows. The report discusses recent trends and outlook on capital flows and international investment positions; and includes a thematic chapter on empirical and policy considerations in defining large capital flows. It also presents statistical tables on key external indicators related the Balance of Payments Statistics and International Investment Position.

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