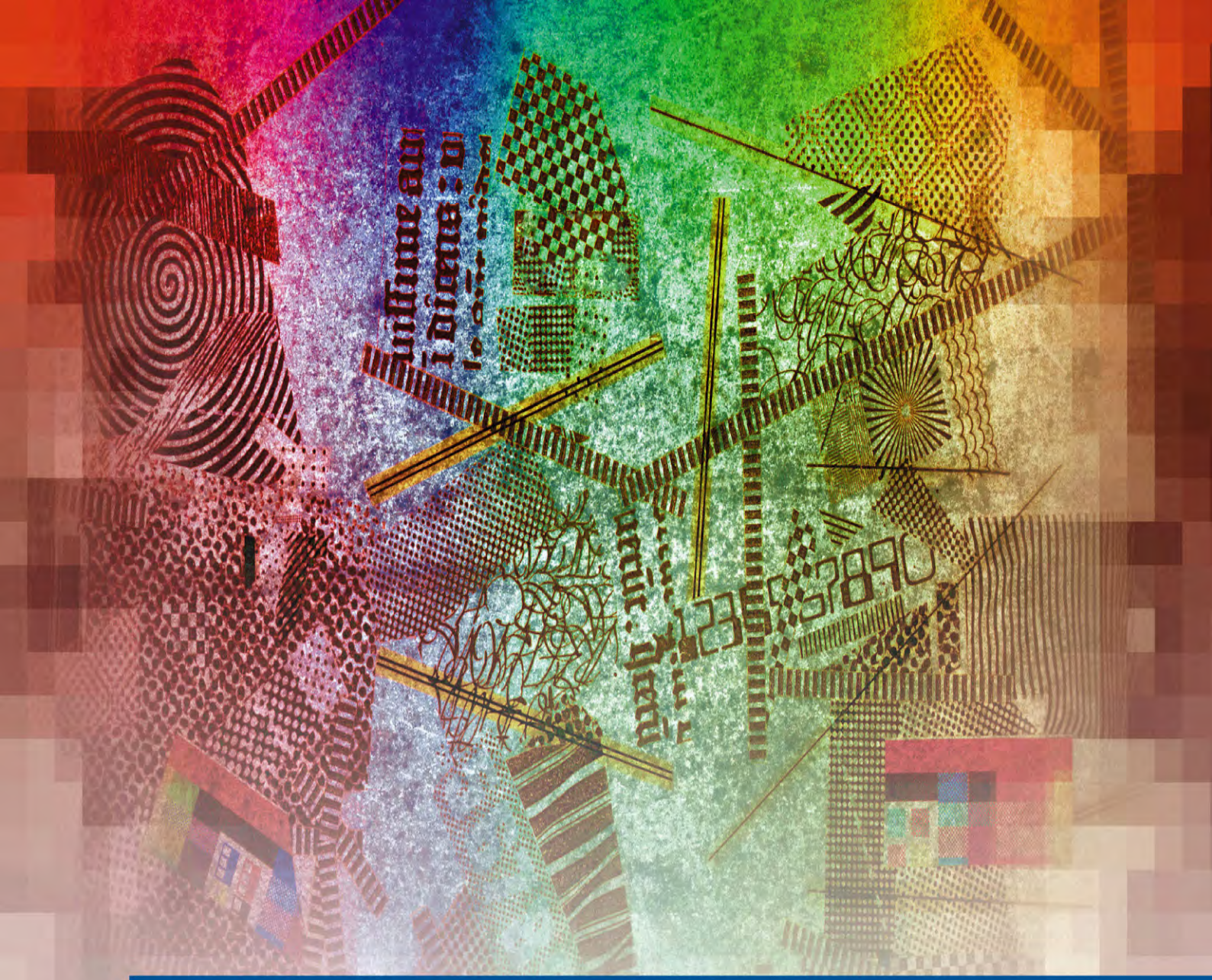

SEACEN CAPITAL FLOWS MONITOR 2018

June 2018

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

The SEACEN Centre

SEACEN
CAPITAL FLOWS MONITOR
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Research and Training Centre

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The SEACEN Capital Flows Monitor 2018 should not be reported as representing the views of the SEACEN Centre's member central banks and monetary authorities. The views expressed in this report are those of the authors and do not necessarily represent those of SEACEN's member central banks and monetary authorities.

Notes:

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

US$ refers to U.S. dollar.

IMF data accessed through CEIC Database. Data update cut-off period is 20 June 2018.

CONTENTS

FOREWORD

Capital flows inform us about the amount and patterns of 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 exchange rates, asset price bubbles, excessive credit growth, sudden reversals and cross-border spillovers. Monitoring and understanding recent trends, their underlying drivers as well as their outlook remain important steps in managing capital flows.

As the Secretariat of the SEACEN Expert Group (SEG) on Capital Flows, which is composed of SEACEN's 20 member central banks and monetary authorities (plus the Reserve Bank of Australia and the Bank of Japan), the SEACEN Centre is issuing a new bi-annual report on capital flows called "SEACEN Capital Flows Monitor". It covers SEG economies including Australia; Brunei Darussalam; Cambodia; China; Hong Kong, China; Fiji; 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 will be released every June and December of the calendar year and covers specified review periods. The June issue reports on the previous year's trends and outlook for the current year; while the December issue focuses on the current year's quarterly developments and an updated outlook for the current year.

The report comprises 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 section which focuses on a specific topic related to capital flows and international investment positions. For this inaugural issue, the analytical section looks at recent trends in official reserve assets. The third section presents standard indicators of capital flows and international investment positions for all 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 box article on "IMF's Official Reserve Adequacy Assessment – Some Reconsiderations". 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) and Ms. Yui Miura (Graduate Student, Harvard Kennedy School) provided excellent research assistance and compiled data for Section III. Ms. YunYee Seow gave editorial assistance and Mr. Zamri Abu Bakar designed, typeset and laid out the report.

The views expressed in this report are those of the authors and do not necessarily represent those of the SEACEN Centre's member central banks and monetary authorities.

Hans Genberg
Executive Director
The SEACEN Centre

June 2018

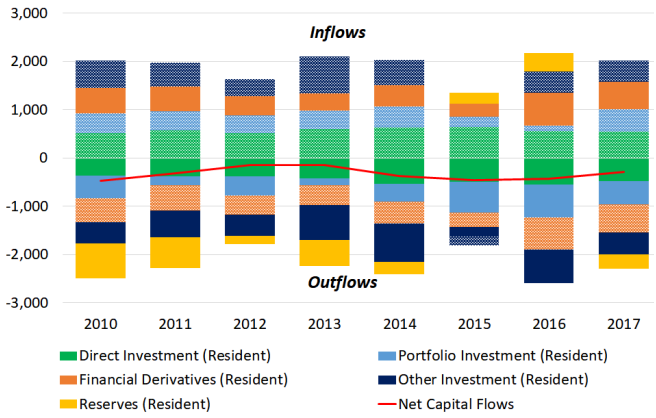
SECTION I: CAPITAL FLOWS TRENDS AND OUTLOOK

This section reviews the recent trends and compositions of capital flows and international investment positions of SEG member economies as of end-2017.[1] *It shows that SEG economies are net capital exporters at end-2017, as measured by net capital outflows and the net international investment position. However, there are heterogeneous positions across SEG member economies as some registered net capital inflows while some are net capital importers in terms of their net international investment position.*

A. Recent Trends in Capital Flows and International Investment Positions

Net capital outflows of SEG member economies amounted to around US$300 billion as of end-2017.[2] Gross resident capital outflows (financial account assets) reached US$1,158 billion, while gross non-resident capital inflows (financial account liabilities) summed up to US$869 billion, bringing the net capital outflows to US$289 billion, excluding net errors and omissions **(Figure 1.1)**.[3] Resident capital outflows were evenly spread among direct investment abroad, portfolio investment, and other investment, each amounting to around US$480 billion. In contrast, non-resident capital inflows were mostly in the form foreign direct investment of around US$540 billion, while portfolio and other investment inflows each amounted to about US$450 billion. Net capital outflows in 2017 were significantly less than net outflows in 2016, which amounted to about US$436 billion. The decline reflects lesser resident portfolio and other investment outflows (including banking flows) and greater non-resident portfolio inflows in 2017 compared to 2016.

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. Net capital flows are computed as financial account liabilities minus financial account assets. SEG economies include Australia; China; Hong Kong, China; Fiji; India; Indonesia; Japan; Korea; Mongolia; Nepal; Philippines; Singapore; Sri Lanka; Chinese Taipei; Thailand; and Vietnam. Refer to IMF Balance of Payments Manual 6 for the definition of investor resident and non-resident.
Source: SEACEN staff calculations using data from the IMF's Balance of Payment Statistics and national source accessed through CEIC.

1. SEG economies include the economies of SEACEN member central banks and monetary authorities in addition to Australia and Japan, which are members of SEACEN Expert Group (SEG) on Capital Flows. The complete list of twenty-two economies include Australia; Brunei Darussalam; Cambodia; China; Hong Kong, China; Fiji; India; Indonesia; Japan; Korea; Lao PDR; Malaysia; Mongolia; Myanmar; Nepal; Papua New Guinea; the Philippines; Singapore; Sri Lanka; Chinese Taipei; Thailand and Vietnam. However, since not all economies reported complete Balance of Payments (BoP) and International Investment Position (IIP) data to the International Monetary Fund (IMF) for long series (from 2010 onwards), all figures and data included in this report correspond to the subset of SEG member economies with available data. The list of economies is enumerated for all figures and tables. Data from the IMF downloaded from the CEIC database are consistently classified and standardised data series in U.S. dollars across economies. The IMF BoP Statistics are largely the same as the SEG Database, although the IMF data provides a more detailed and granular presentation which is needed for the analysis in this report.
2. The value of US$289 billion net capital outflows does not include Brunei Darussalam, Cambodia, Lao PDR, Malaysia, Myanmar and Papua New Guinea as they do not have complete or updated data from the IMF BoP and IIP.
3. Net capital outflows refer to total financial account assets (direct investment, portfolio investment, financial derivatives, other investments and official reserves), which are resident capital flows, minus total financial account liabilities (direct investment, portfolio investment, financial derivatives and other investment), which are non-resident capital flows. 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.

The net capital outflows of SEG economies corresponded with their overall current account surplus of US$555 billion in 2017, which was less than the surplus of US$625 billion posted the previous year. The trade surplus remained the key driver of the current account surplus, particularly for China, Korea, Singapore and Chinese Taipei. For Japan, the current account surplus came mainly from overseas investment earnings. However, there were SEG economies which had current account deficits such as Australia, India, Indonesia, Mongolia, Nepal, and the Philippines. But the surplus generated by other economies was larger than the deficits of others, resulting in an overall current account surplus.

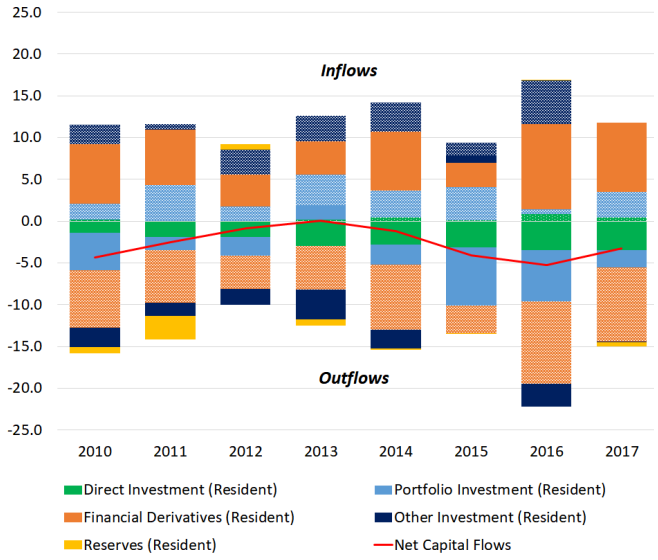
The rising U.S. policy rate and a strong rebound in global trade of both advanced and emerging economies were some of key drivers of net capital outflows in SEG economies in 2017. The normalisation of U.S. monetary policy through interest rate hikes in 2017 resulted in net portfolio outflows of US$16 billion in SEG economies as rising U.S. interest rates made U.S. portfolio assets more attractive. Likewise, increased cross-border banking coupled with the 5% year-on-year growth in trade volume in 2017 helped boost other investment outflows to US$28 billion. More importantly, sustained current account surplus in SEG economies of around US$555 billion in 2017 aided official reserve accumulation of around US$292 billion. The increase in official foreign reserves is a marked turnaround from the official reserve deaccumulation of around US$374 billion in 2016.

Although SEG economies posted net capital outflows in 2017, there appeared to be marked differences in the composition of capital flows across member economies. Japan posted net capital outflows of around 3.2% of its nominal GDP, mainly driven by large resident direct investment abroad **(Figure 1.2a)**. China recorded net capital inflows of around 0.5% of its nominal GDP, driven by foreign direct investment and other investment inflows. However, China's net capital inflows did not include the US$222 billion unclassified outflows, which could suggest continued diversification of investment overseas. Its official reserve accumulation amounted to 0.8% of GDP, which is a significant turnaround from two consecutive years of official reserve deaccumulation in 2015-2016 **(Figure 1.2b)**. India also had net capital inflows in 2017, amounting to 1.4% of its nominal GDP, backed by fiscal reforms and foreign investment liberalisation. Foreign capital inflows were mostly in the other investment category, followed by the foreign direct and portfolio investment categories **(Figure 1.2c)**. Australia, likewise, posted net capital inflows of around 2.4% of GDP **(Figure 1.2d)**. Net capital inflows were mostly from non-resident direct and portfolio investment inflows. Australia's overall net capital inflows mirrored its current account deficit, which slightly narrowed in 2017.

As a subgroup, SEG High Income Economies (HIEs), which include Hong Kong, China; Korea; Singapore and Chinese Taipei, registered net capital outflows of around 8.9% of the subgroup's nominal GDP **(Figure 1.2e)**. The net capital outflows broadly corresponded to the subgroup's overall current account surplus. In fact, each of the member economies posted current account surpluses, with Chinese Taipei having a US$83 billion surplus, followed by Korea (US$79 billion), Singapore (US$61 billion) and Hong Kong, China (US$15 billion). Within investment types, net capital outflows for the highly-open economies of Hong Kong, China and Singapore were mainly in the form of resident other investment abroad, which include banking flows. In contrast, for Korea and Chinese Taipei, net capital outflows were mostly driven by resident portfolio investment abroad. The ASEAN3 economies, which include Indonesia, Philippines and Thailand, also registered net capital outflows in 2017, reaching 1.3% of the subgroup's nominal GDP **(Figure 1.2f)**.[4] But unlike SEG HIEs, the composition of net capital outflows differed substantially across economies. Both Indonesia and the Philippines had net capital inflows, although the Philippines' net capital inflows were considerably less at round US$3 billion. In contrast, Thailand had around US$44 billion net capital outflows, which was enough to offset the net capital inflows to Indonesia and the Philippines. SEG Emerging and Developing Economies (EME/DEV), which include Fiji, Mongolia, Nepal, Sri Lanka and Vietnam, reported net capital inflows of about 4.5% of the subgroup's nominal GDP **(Figure 1.2g)**. Net capital inflows were mostly in non-resident foreign direct investment and other investment. Among the economies, Vietnam received the largest net capital inflows.

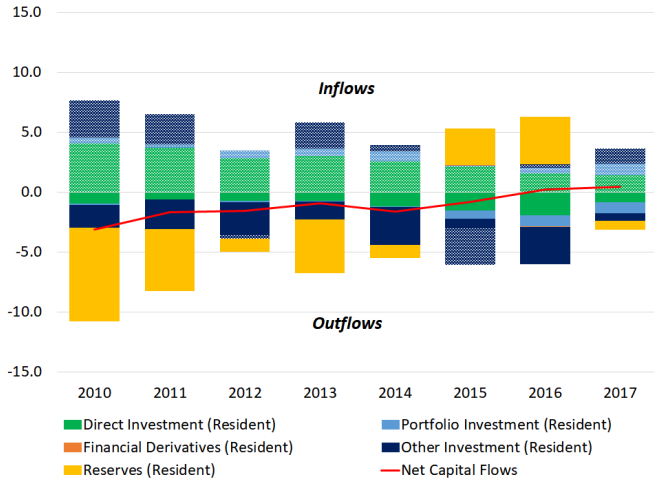
4. Malaysia does not report its breakdown of its other investment assets and liabilities.

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



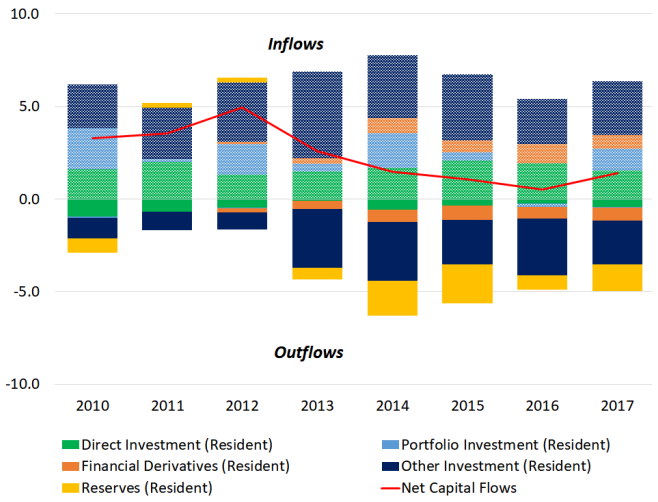
Notes: Solid fill refers to resident capital flows, while those with pattern fill refers to non-resident capital flows. Net capital flows are computed as financial account liabilities minus assets. Refer to IMF Balance of Payments Manual 6 for the definition of investor resident and non-resident.
Sources: 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)



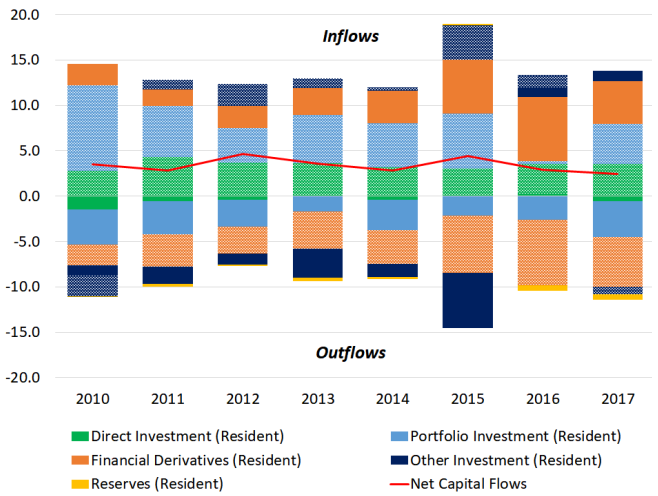
Notes: Solid fill refers to resident capital flows, while those with pattern fill refers to non-resident capital flows. Net capital flows are computed as financial account liabilities minus assets. Refer to IMF Balance of Payments Manual 6 for the definition of investor resident and non-resident.
Sources: 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)



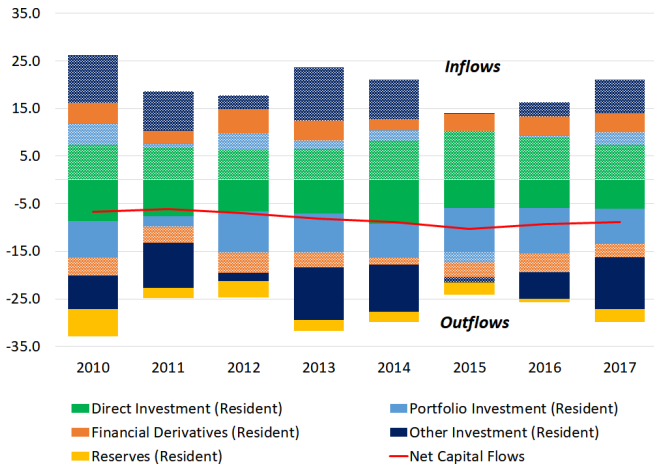
Notes: Solid fill refers to resident capital flows, while those with pattern fill refers to non-resident capital flows. Net capital flows are computed as financial account liabilities minus assets. Refer to IMF Balance of Payments Manual 6 for the definition of investor resident and non-resident.
Sources: 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)



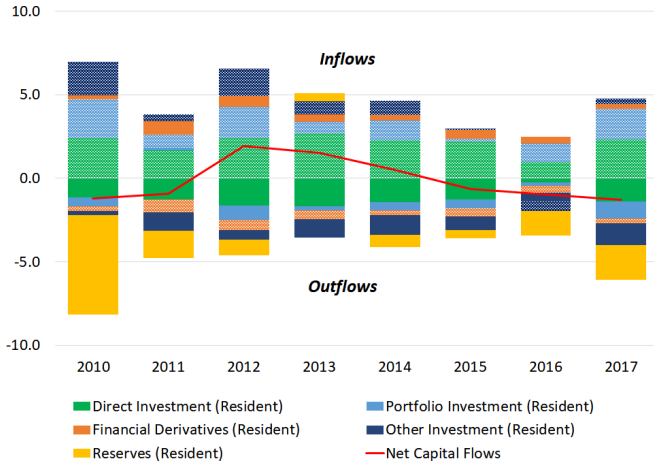
Notes: Solid fill refers to resident capital flows, while those with pattern fill refers to non-resident capital flows. Net capital flows are computed as financial liabilities minus assets. Refer to IMF Balance of Payments Manual 6 for the definition of investor resident and non-resident.
Sources: SEACEN staff calculations using data from the IMF's Balance of Payment Statistics and World Economic Outlook Database.

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



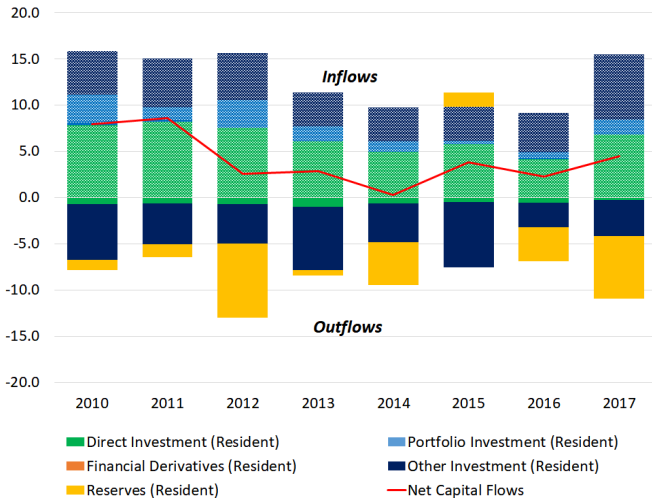
Notes: Solid fill refers to resident capital flows, while those with pattern fill refers to non-resident capital flows. Net capital flows are computed as financial liabilities minus assets. SEG High Income Economies include Hong Kong, China; Korea; Singapore; and Chinese Taipei. Refer to IMF Balance 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 and World Economic Outlook Database; and national source.

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. Net capital flows are computed as financial account liabilities minus assets. 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 1.2g: Capital Flows - SEG Emerging and Developing Economies
(% of GDP)

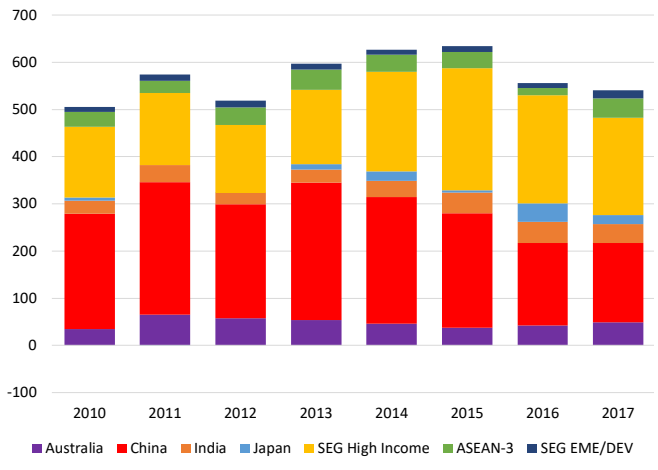


Notes: Solid fill refers to resident capital flows, while those with pattern fill refers to non-resident capital flows. Net capital flows are computed as financial account liabilities minus assets. SEG Emerging and Developing Economies include Fiji, Mongolia, Nepal, Sri Lanka, and Vietnam. Refer to IMF 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.

Although net capital flows remained stable in recent years, gross capital inflows and outflows as well as the composition of gross flows showed variation. As a group, SEG economies registered net capital outflows of around 1.1% of the group's nominal GDP, which is slightly less than 1.8% of the group's GDP reported in 2016, albeit within the range of the group's five-year average net capital outflows of 1.3% of GDP. This suggests that net capital inflows have been relatively stable. However, as shown in **Figures 1.1** to **1.2g**, there have been varying magnitudes of gross capital inflows and outflows in the SEG economies as a whole as well as across individual and subgroups of economies. Furthermore, not only do the magnitudes of gross flows differ, the composition of capital flows also changes across years and across economies and subgroupings.

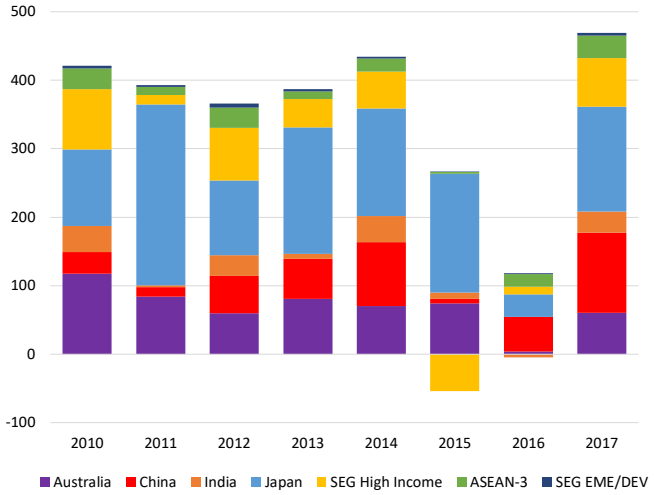
The composition of non-resident gross capital inflows varied within SEG member economies, reflecting diverse economic structures and levels of financial development across economies. Foreign direct investment inflows mostly went to China and SEG HIEs, suggesting their attractiveness as export-oriented investment destinations. Australia, ASEAN3 and India received roughly the same amount of FDI at about US$40 billion. Both Japan and SEG EME/DEV had less than US$20 billion **(Figure 1.3a)**. Given that Japan is a highly industrialised advanced economy, it receives less foreign direct investment inflows, possibly due to high investment costs. But in terms of portfolio inflows, Japan had the most inflows at US$153 billion in 2017, reflecting its financial market depth and range of investment assets. China also received very large foreign portfolio inflows at US$117 billion, possibly also due to the large size of its financial markets. In contrast, SEG EME/DEV had the least foreign portfolio investments due to its underdeveloped financial markets **(Figure 1.3b)**. China and SEG HIEs took the largest share of other investment inflows, which includes banking flows **(Figure 1.3c)**. Consequently, both China and SEG HIEs had the largest official reserve accumulation in line with their current account surpluses as well as non-resident capital inflows **(Figure 1.3d)**.

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



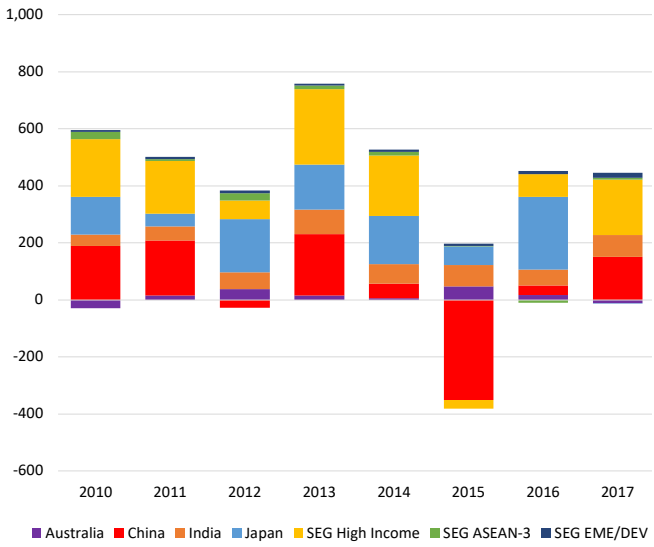
Notes: SEG EME/DEV includes Fiji, Mongolia, Nepal, Sri Lanka and Vietnam. ASEAN3 includes Indonesia, Philippines, and Thailand. SEG High Income includes Hong Kong, China; Korea; Singapore; and Chinese Taipei.
Sources: SEACEN staff calculations using data from the IMF's Balance of Payment Statistics and World Economic Outlook Database; and national source accessed through CEIC Database.

Figure 1.3b: Portfolio Investment Inflows
(USD billions)



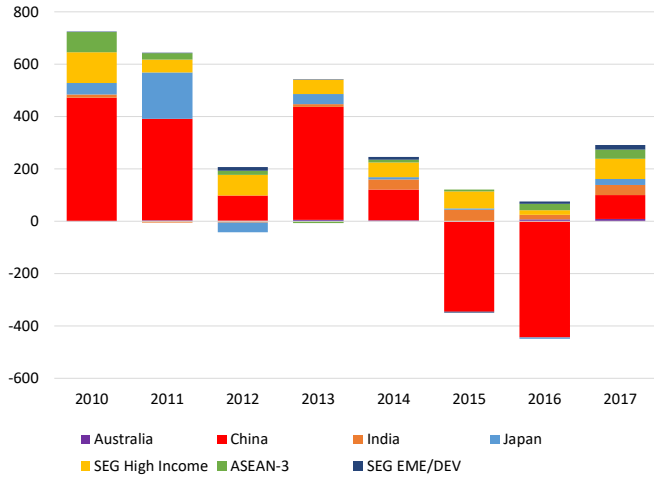
Notes: SEG EME/DEV includes Fiji, Mongolia, Nepal, Sri Lanka and Vietnam. ASEAN3 includes Indonesia, Philippines, and Thailand. SEG High Income includes Hong Kong, China; Korea; Singapore; and Chinese Taipei.
Sources: SEACEN staff calculations using data from the IMF's Balance of Payment Statistics and World Economic Outlook Database; and national source accessed through CEIC Database.

Figure 1.3c: Other Investment Inflows
(USD billions)



Notes: SEG EME/DEV includes Fiji, Mongolia, Nepal, Sri Lanka and Vietnam. ASEAN3 includes Indonesia, Philippines, and Thailand. SEG High Income includes Hong Kong, China; 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 source accessed through CEIC Database.

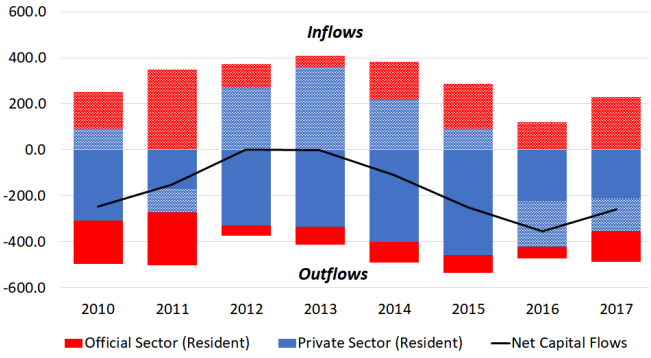
Figure 1.3d: Official Reserves Flows
(USD billions)



Notes: SEG EME/DEV includes Fiji, Mongolia, Nepal, Sri Lanka and Vietnam. ASEAN3 includes Indonesia, Philippines, and Thailand. SEG High Income includes Hong Kong, China; 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 source accessed through CEIC Database.

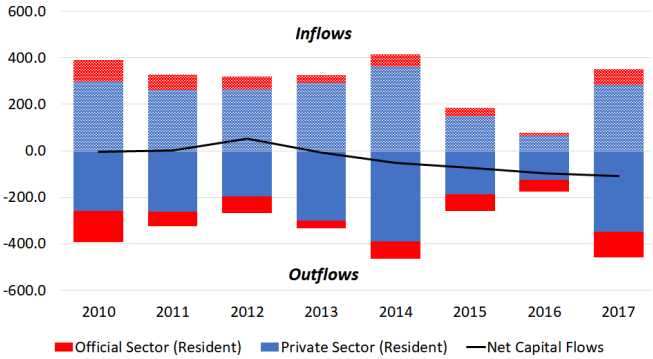
For selected SEG economies, capital flows were mostly private sector flows. However, for Japan, official sector flows were also large. Breaking down the composition of capital flows into private and official sector flows for selected SEG economies with available sectoral data reveals some interesting patterns. For Australia; Fiji; Hong Kong, China; Indonesia; Japan; Korea; Mongolia; Nepal; the Philippines; Sri Lanka and Thailand, net capital outflows in 2017 were mostly driven by resident private sector outflows which include those from banks, the non-bank financial sector, the non-financial sector (private corporations) and other sectors such as non-profit institutions and households. In contrast, the official sector, which includes the monetary authority and general government, registered net capital inflows, suggesting non-resident official sector inflows were larger than resident official sector outflows **(Figure 1.4a)**. However, excluding Japan reveals another pattern. For selected SEG economies excluding Japan, both private and official sectors recorded larger resident capital outflows than non-resident inflows, leading to net capital outflows **(Figure 1.4b)**. In contrast, for Japan in 2017, the official sector's net capital inflows were almost half of the private sector's net capital outflows, implying the importance of non-resident official sector flows to Japan **(Figure 1.4c)**.

Figure 1.4a: Private and Public Capital Flows - Selected Economies
(USD billions)



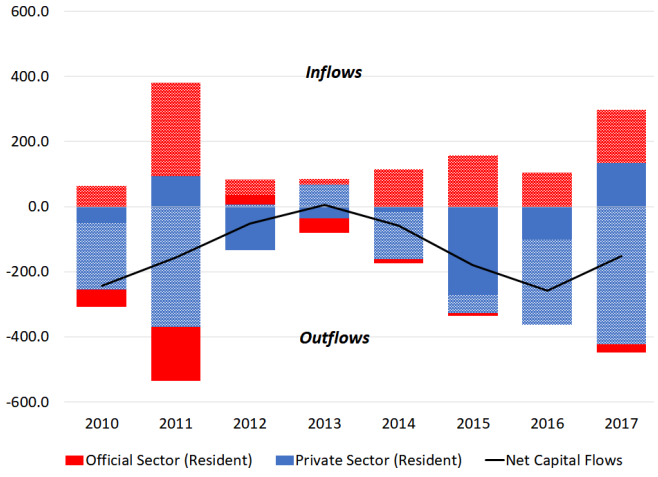
Notes: Solid fill refers to resident capital flows, while those with pattern fill refers to non-resident capital flows. Economies include Australia; Hong Kong, China; Fiji; Indonesia; Japan; Korea; Mongolia; Nepal; Philippines; Sri Lanka and Thailand. Official sector includes general government and monetary authority. Private sector includes deposit-taking corporations excluding central bank, other financial corporations, non-financial corporations, and other sectors. Direct investment flows are classified as private sector flows. Net capital flows refer to financial account liabilities minus assets.
Source: SEACEN staff calculations using IMF Balance of Payment Statistics.

Figure 1.4b: Private and Public Capital Flows - Selected Economies Excluding Japan
(USD billions)



Notes: Solid fill refers to resident capital flows, while those with pattern fill refers to non-resident capital flows. Economies include Australia; Hong Kong, China; Fiji; Indonesia; Korea; Mongolia; Nepal; Philippines; Sri Lanka and Thailand. Official sector includes general government and monetary authority. Private sector includes deposit-taking corporations excluding central bank, other financial corporations, non-financial corporations, and other sectors. Direct investment flows are classified as private sector flows. Net capital flows refer to financial account liabilities minus assets.
Source: SEACEN staff calculations using IMF Balance of Payment Statistics.

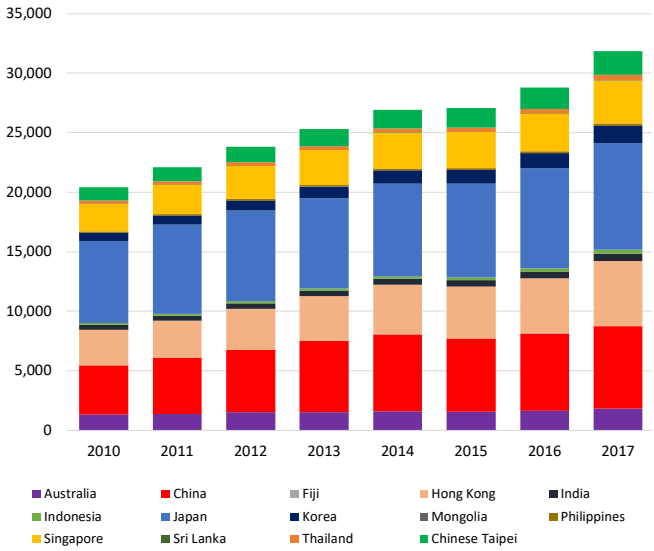
Figure 1.4c: Private and Public Capital Flows - Japan
(USD billions)



Notes: Solid fill refers to resident capital flows, while those with pattern fill refers to non-resident capital flows. Official sector includes general government and monetary authority. Private sector includes deposit-taking corporations excluding central bank, other financial corporations, non-financial corporations, and other sectors. Direct investment flows are classified as private sector flows. Net capital flows refer to financial account liabilities minus assets.
Source: SEACEN staff calculations using IMF Balance of Payment Statistics.

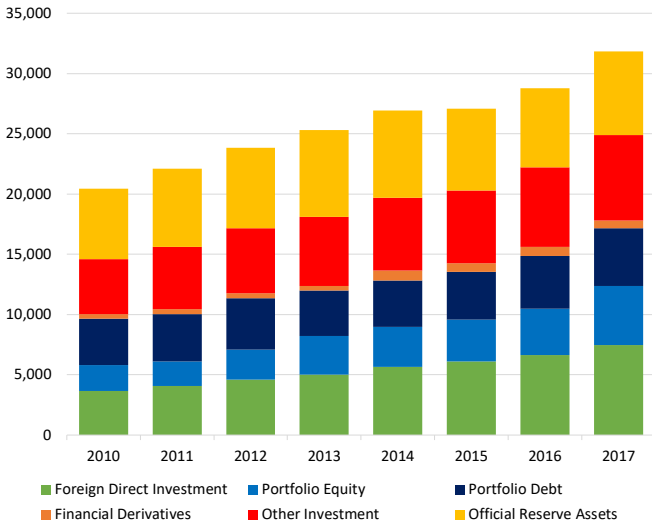
Total international investment assets of SEG economies reached US$32 trillion as of end-2017, up by 11% year-on-year from US$29 trillion at end-2016. Among SEG economies, Japan had the highest international financial assets amounting to US$9 trillion, followed by China and Hong Kong, China with US$6.9 trillion and US$5.5 trillion, respectively. These three economies alone accounted for over two-thirds of the group's total international investment assets **(Figure 1.5a)**. Across asset types, portfolio investments dominated asset holdings, followed by foreign direct investment, other investment, and official reserve assets, each having around US$7 trillion. But portfolio investment assets were equally distributed between portfolio equities and portfolio debt **(Figure 1.5b)**. Excluding financial derivatives and official reserves, the debt-equity ratio stood at 1.0 as of end-2017, slightly lower than 1.1 in 2016. This suggests that a growing proportion of SEG's international assets are being allocated to equity-type investments such as foreign direct investment and portfolio equity investments, compared to debt investments such as portfolio debt and other investments.

Figure 1.5a: International Investment Position Assets
(USD billions)



Source: SEACEN staff calculations using data from IMF's International Investment Position.

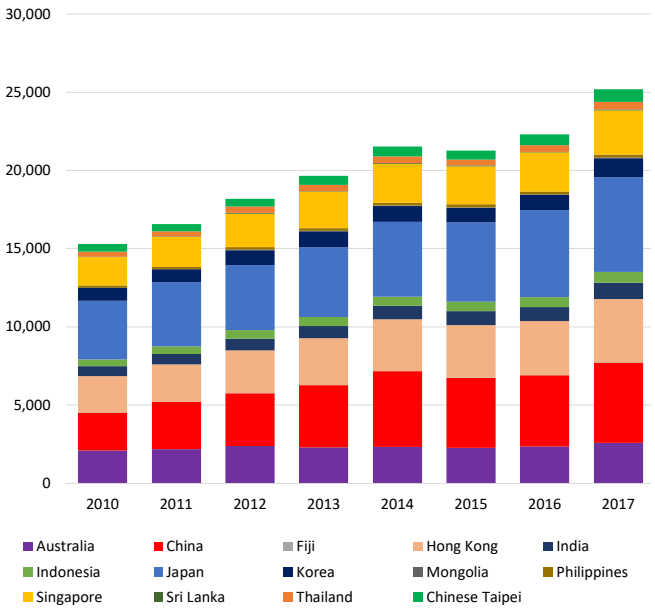
Figure 1.5b: International Investment Position Assets, by Investment Type
(USD billions)



Source: SEACEN staff calculations using data from IMF's International Investment Position.

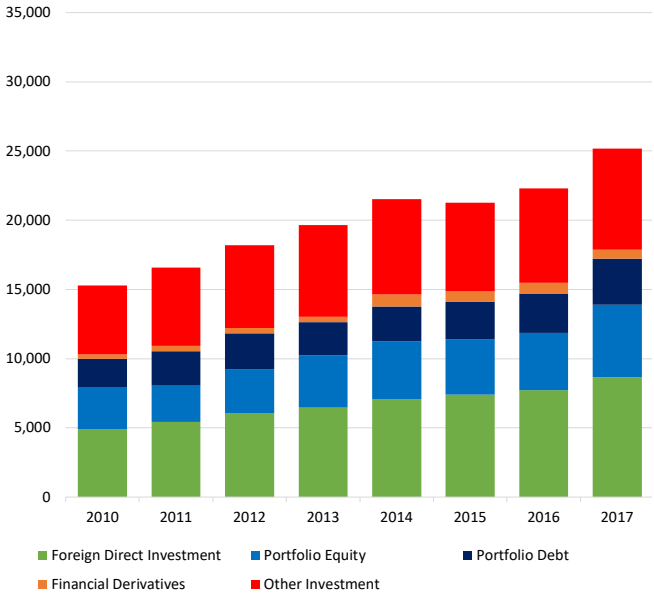
Total international investment liabilities of SEG economies increased to US$25 trillion as of end-2017, up by 13% year-on-year from US$22.3 trillion at end-2016. Among SEG economies, Japan had the highest international financial liabilities amounting to US$6 trillion, again followed by China and Hong Kong, China with US$5.1 trillion and US$4 trillion, respectively. Both Australia and Singapore had around US$2.5 trillion each **(Figure 1.6a)**. Across asset types, both foreign direct investment and portfolio investment liabilities had around US$8.5 trillion. But for portfolio investment, portfolio equities were significantly larger at US$5.2 trillion than portfolio debt at US$3.3 trillion **(Figure 1.6b)**. The debt-equity ratio stood at 0.77 as of end-2017, slightly lower than 0.82 in 2016, implying that most of SEG economies' liabilities were in equity-type investments. The debt-equity profiles of both international investment assets and liabilities indicate a continued tilt towards equity investments as of end-2017.

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



Source: SEACEN staff calculations using data from IMF's International Investment Position.

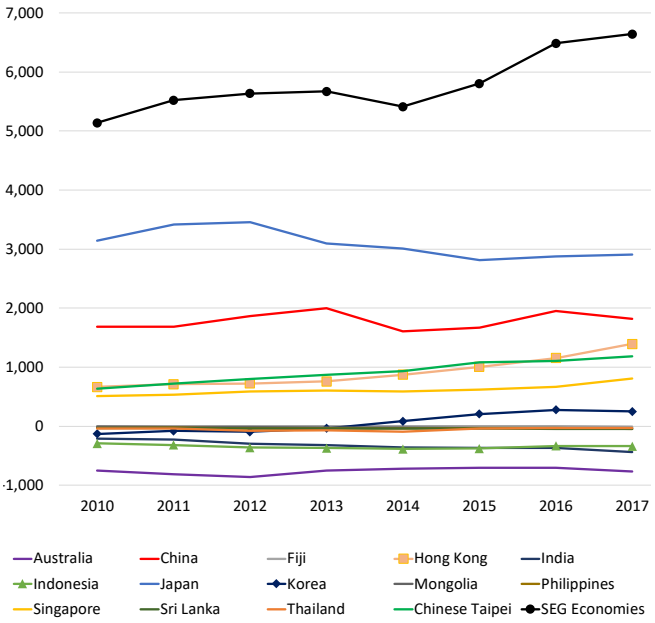
Figure 1.6b: International Investment Position Liabilities, by Investment Type
(USD billions)



Source: SEACEN staff calculations using data from IMF's International Investment Position.

As of end-2017, SEG economies continued to be a net capital exporter to the rest of the world as their net international investment position stood at US$6.6 trillion, slightly higher than US$6.5 trillion in 2016. However, within SEG economies, there was a clear divide between net capital exporters and net capital importers **(Figure 1.7)**. Japan; China; Hong Kong, China; Korea; Singapore and Chinese Taipei have been net capital exporters since 2014; whereas Australia, Fiji, India, Indonesia, Mongolia, the Philippines, Sri Lanka and Thailand have been net capital importers since 2010. However, 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.

Figure 1.7: Net International Investment Position
(USD billions)



Source: SEACEN staff calculations using data from IMF's International Investment Position.

B. Outlook on Capital Flows[5]

Moving forward, SEG economies will most likely sustain their net capital outflows and net capital exporter position in 2018, albeit slightly narrower compared to 2017 due to downside risk factors. First, rising U.S. interest rates will likely pose a drag on portfolio debt inflows and could encourage greater portfolio debt outflows in SEG economies due to portfolio diversification. However, portfolio equity inflows could remain strong, backed by healthy corporate earnings. Second, higher U.S. interest rates and a stronger U.S. dollar could lead to higher U.S. dollar funding costs, which could weaken cross-border banking deposit and loan creation.[6] Furthermore, rising trade barriers could also dampen other investment flows through trade credits and cross-border financing; and weaken trade balances as the region is highly integrated into global value chains. Third, slightly weaker projected current account balances in 2018 for some SEG economies including two of the largest member economies will most likely slow the pace of reserve accumulation.[7]

Nonetheless, upside factors could offset downside risks. First, stronger-than-expected global growth will help sustain foreign direct investment, portfolio equity and other investment flows.[8] Second, a continued recovery in world trade in goods and services could help strengthen current account balances and reserve accumulation, provided that global merchandise trade conditions do not deteriorate further due to rising trade barriers.[9] Third, economic policy reforms to encourage investment in SEG emerging and developing economies will help attract foreign capital flows given the stronger projected growth rates in 2018 for some large advanced economies.[10]

5. The Outlook is based on SEACEN staff assessment of economic forecasts and prospects from both public- and private-sector institutions, including the IMF, the OECD, the World Bank, AMRO, and the IIF.

6. The first two downside risk factors are in line with more recent outlook from the Institute for International Finance (IIF) "Capital Flows to Emerging Markets Report (May 2018)". The SEACEN Centre accessed IIF reports on free trial basis.

7. Refer to the IMF World Economic Outlook April 2018 forecasts for World current account balance as percentage of GDP (https://www.imf.org/en/Publications/WEO/Issues/2018/03/20/world-economic-outlook-april-2018).

8. IMF's World Economic Outlook April 2018 projects World output to grow by 3.9% year-on-year in 2018. (https://www.imf.org/en/Publications/WEO/Issues/2018/03/20/world-economic-outlook-april-2018).

9. IMF's World Economic Outlook April 2018 forecasts World trade in goods and services volume to grow by 5.1% year-on-year in 2018, up from 4.9% in 2017 (https://www.imf.org/en/Publications/WEO/Issues/2018/03/20/world-economic-outlook-april-2018).

10. IMF's World Economic Outlook April 2018 projects U.S. output to grow by 2.9% year-on-year, significantly higher than 2.3% year-on-year growth in 2017, while Euro Area output to increase by 2.4% year-on-year in 2018, slightly up from 2.3% year-on-year in 2017. (https://www.imf.org/en/Publications/WEO/Issues/2018/03/20/world-economic-outlook-april-2018).

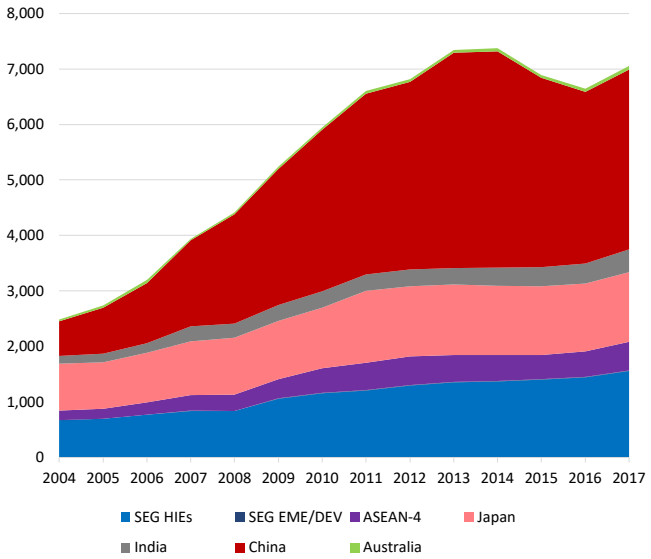
SECTION II: RECENT TRENDS IN OFFICIAL RESERVE ASSETS

As of end-2017, SEG economies accounted for about 60% of the world's official reserve assets. Given the group's holdings, it is important to track ongoing and emerging trends which could affect the management of their official reserve assets. This section focuses on the recent trends in reserve accumulation across SEG economies and offers some policy considerations.[1]

A. Recent Trends and Outlook

Official reserve assets of SEG member economies reached US$7.1 trillion as of end-2017, up from US$6.7 trillion as of end-2016. SEG economies now account for around 60% of the world's official reserve assets. Starting with the rapid accumulation of reserves in the early 2000s, six SEG member economies now belong to the ten largest reserve holding economies, with both China and Japan topping the rank with combined reserves of over US$4.5 trillion.[2] Other large holders include Chinese Taipei; Hong Kong, China; India and Korea. The current value of SEG reserve holdings reflects the turnaround from its decline in 2014-16, although they are still lower than the historic peak of US$7.3 trillion in 2013-14 (**Figure 2.1**). The drop in 2015-16 corresponds to the narrowing of China's current account surplus and lower foreign capital inflows on the prospect of increasing U.S. interest rates; while the recovery in 2017 reflects the improvement in foreign capital inflows. In contrast, Australia, India and SEG HIEs witnessed sustained increases in official reserves, while Japan's reserves remain constant. ASEAN-4 also experienced a slowdown in reserve accumulation starting in 2012, before improving in 2015. Overall, although SEG economies' total holdings increased as of end-2017, their overall share dipped slightly from 60.2% at end-2016 to 59.1% at end-2017 as the holdings of non-SEG economies also rose.

Figure 2.1: Official Reserve Assets, Selected SEG Economies
(USD billion)



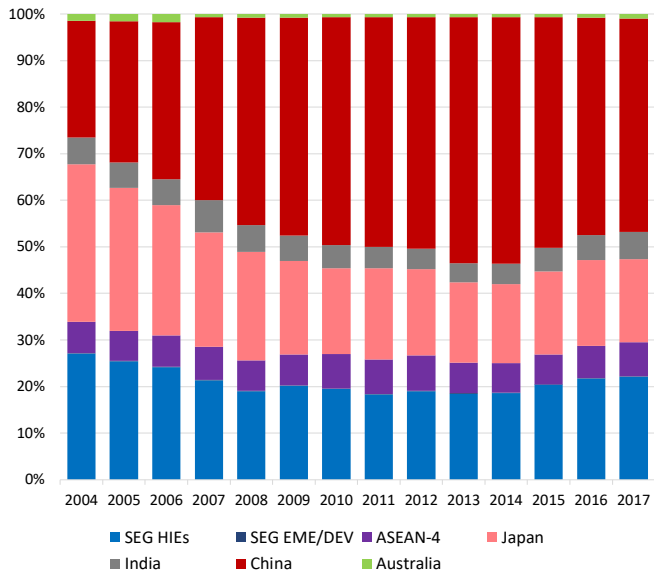
Notes: ASEAN-4 includes Indonesia, Malaysia, Philippines, and Thailand. SEG HIEs include Hong Kong, China; Korea; Singapore and Chinese Taipei. SEG EME/DEV includes Fiji and Myanmar.
Sources: SEACEN staff calculations using data from IMF's International Investment Position and national source accessed through CEIC Database.

The varying pace of reserve accumulation in recent years led to changing proportional shares among SEG member economies. In 2014, China accounted for more than half (53%) of SEG official reserves, Japan for around 17%, SEG HIEs for 19%, ASEAN-4 for 6% and India and Australia for 4% and 1%, respectively (**Figure 2.2**). By 2017, China's share dropped to 46% while SEG HIEs now account for 22% of the economic group's official reserves. These reflect the decline in China reserve assets in 2015-16, and the sustained increase in SEG HIEs over the same period.

1. This Section follows the IMF's definition of official reserve assets, which refer to "those external assets that are readily available to and controlled by monetary authorities for meeting balance of payments financing needs, for intervention in exchange markets to affect the currency exchange rate, and for other related purposes (such as maintaining confidence in the currency and the economy and serving as a basis for foreign borrowing."

2. Data on official reserve assets are taken from the IMF's International Investment Position accessed through the CEIC database on 20 June 2018.

Figure 2.2: Official Reserve Assets, Selected SEG Economies
(% share to total SEG Reserve Assets)

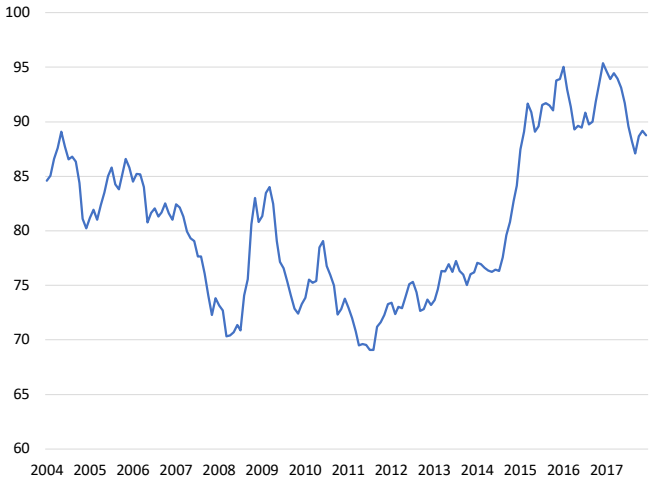


Notes: ASEAN-4 includes Indonesia, Malaysia, Philippines, and Thailand. SEG HIEs include Hong Kong, China; Korea; Singapore; and Chinese Taipei. SEG EME/DEV includes Fiji and Myanmar.
Sources: SEACEN staff calculations using data from IMF's International Investment Position and national source accessed through CEIC Database.

The pace of reserve accumulation varies across economies with different exchange rate regimes. The link between fixed exchange rate regimes and foreign reserve holdings has been well-reported in the academic literature and institutional reports (ECB, 2006; Sunner, 2017; and Wooldridge, 2006). For instance, the depreciation of the U.S. dollar versus major currencies in 2002-2008 exerted upward pressure on exchange rates, including those in SEG member economies **(Figures 2.3a and 2.3b)**. To limit the appreciation, monetary authorities intervened in the foreign exchange market by buying foreign currency using local currency. This led to a build-up in foreign exchange reserves. In contrast, the strengthening of the U.S. dollar starting in 2014 put downward pressure on exchange rates. To limit the depreciation, authorities intervened by buying local currency using foreign currency reserves, leading to declining official reserve assets. These responses to U.S. dollar fluctuations led to changes in foreign reserve holdings by SEG member economies.[3]

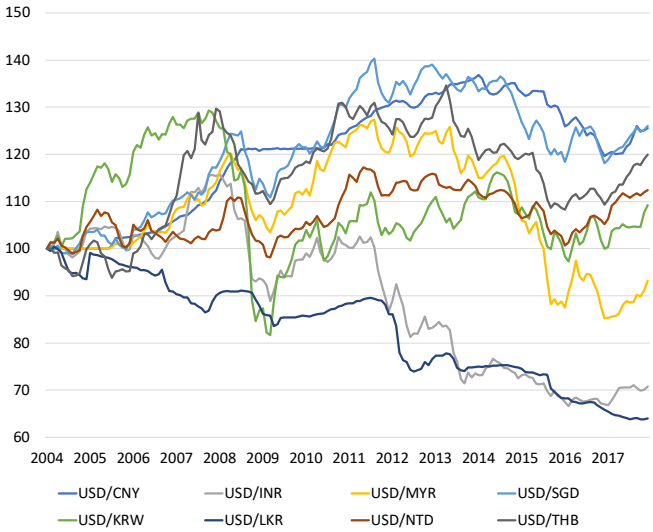
3. Aside from foreign exchange intervention and balance of payments purposes, other changes in foreign reserve holdings can be attributed to valuation effects of official reserves.

Figure 2.3a: US Dollar Trade Weighted Nominal Index: Major Currencies



Notes: Major currencies index include the Euro Area, Canada, Japan, United Kingdom, Switzerland, Australia, and Sweden. Monthly average of trade weighted index rebased to 100 in March 1973. An increase is an appreciation of the U.S. dollar.
Source: Federal Reserve Board accessed through the CEIC Database.

Figure 2.3b: Monthly Average Foreign Exchange Spot Rate Index- Selected SEG Economies
(January 2004 = 100)

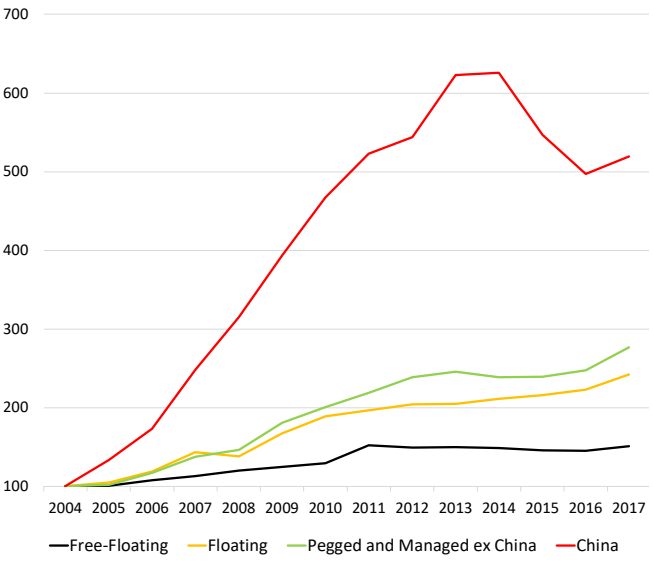


Notes: Monthly average spot rate rebased to 100 in January 2004. Spot exchange rate expressed in US dollar per local currency unit. An increase is an appreciation of local currency.
Source: SEACEN staff calculations using data from Federal Reserve Board accessed through CEIC Database.

SEG economies with "freely-floating" exchange rate regimes tend to have smaller increase in official reserve assets (**Figure 2.4**).[4] Those with "floating" exchange rate systems have seen higher increases than "free-floaters", but smaller increases compared to those with "pegged or managed" exchange rate regimes.[5] With China having a managed exchange rate regime, Figure 2.4 suggests that economies with "pegged or managed" exchange rate regimes tend to accumulate more foreign reserves, while those with more flexible exchange rate arrangements accumulate less. This covariation between exchange rate regimes and the pace of reserve accumulate is attributed to the need for fixed and managed exchange rate regimes to have reserves as a buffer against speculative currency attacks. But this relation holds true for other economies and not just those within SEG economies.

Official reserve assets are mostly still held in securities, in line with the ongoing trend of allocating reserves to higher yielding assets, including equities. Around 82% of SEG official reserve assets at end-2017 were allocated in "securities", offering higher returns compared to "currencies and deposits" and "gold", which are the traditional instruments of reserve allocation **(Figures 2.5a and 2.5b)**. However, there has been a noticeable upturn in holdings of gold since the Great Financial Crisis of 2008-09, as the gold spot price peaked in 2011-13; while holdings of "currencies and deposits" have been rising since 2013, attaining a share of 14% at end-2017. Within "securities" holdings, SEG economies with available data in 2017 show a move towards "long-term debt securities" and "equities"; and less "short-term debt securities", in line with rising long-term government bond yields of advanced economies **(Table 2.1).** But there exist marked differences in the allocation of securities holdings across economies. For instance, Australia and the Philippines hold short- and long-term debt securities as well as equities; whereas Indonesia holds mostly long-term debt securities. Mongolia holds only short-term debt securities, while Sri Lanka strictly prefers long-term debt securities.

Figure 2.4: Official Reserve Assets of Selected SEG Economies, by Exchange Rate Arrangement
(Index 2004 = 100)

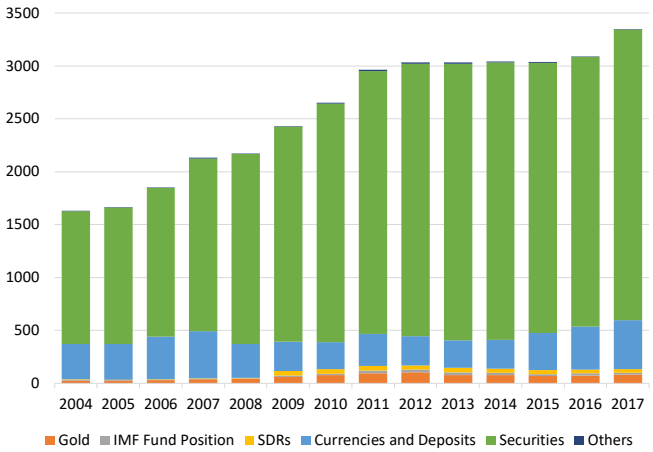


Notes: Values are rebased to 100 in 2004. SEG economies include Australia; China; Fiji; Hong Kong, China; India; Indonesia; Japan; Korea; Myanmar; Malaysia; Philippines; Singapore; Chinese Taipei; and Thailand. Exchange rate regime classification based on IMF's Annual Report on Exchange Arrangements and Exchange Restrictions 2016 and national source.
Sources: SEACEN staff calculations using data from IMF's International Investment Position and national source accessed through CEIC Database.

4. Exchange rate arrangement classification for SEG economies is based on the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions 2016*. For the country list, please refer to: https://www.imf.org/en/Publications/Annual-Report-on-Exchange-Arrangements-and-Exchange-Restrictions/Issues/2017/01/25/Annual-Report-on-Exchange-Arrangements-and-Exchange-Restrictions-2016-43741

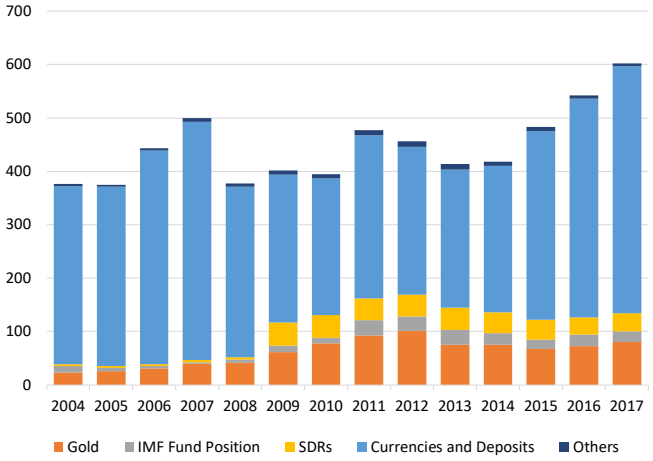
5. IMF classifies "floating" exchange rates as largely market determined without a prescribed target, but intervention is conducted occasionally. "Free-floating" exchange rates are floating rates, but interventions are rare, i.e., limited to three instances of intervention over six months. For this Section, we classify all other IMF categories as "pegged and managed" exchange rates, which include no separate legal tender, currency board, conventional peg, stabilised arrangement, crawling peg, crawl-like arrangement, pegged exchange rate within horizontal bands and other managed arrangements.

Figure 2.5a: Allocation of Official Reserve Assets by Instruments, Selected SEG Economies
(in USD billions)



Notes: SEG economies include Australia; Hong Kong, China; India; Indonesia; Japan; Korea; Malaysia; Myanmar; Philippines; Singapore; and Thailand. Hong Kong, China and Singapore exclude 'others' reserve assets.
Source: SEACEN staff calculations using data from the IMF's International Investment Position.

Figure 2.5b: Allocation of Official Reserve Assets by Instruments Excluding Securities, Selected SEG Economies
(in USD billions)



Notes: SEG economies include Australia; Hong Kong, China; India; Indonesia; Japan; Korea; Malaysia; Myanmar; Philippines; Singapore; and Thailand. Hong Kong, China and Singapore exclude 'others' reserve assets.
Source: SEACEN staff calculations using data from the IMF's International Investment Position.

Table 2.1: Allocation of Official Reserve Securities Assets, Selected SEG Economies
(% of total)

	2011	2014	2016	2017
Short-term Debt Securities	29.40	28.53	15.65	10.98
Long-Term Debt Securities	69.99	70.76	83.62	88.27
Equities	0.61	0.71	0.73	0.75

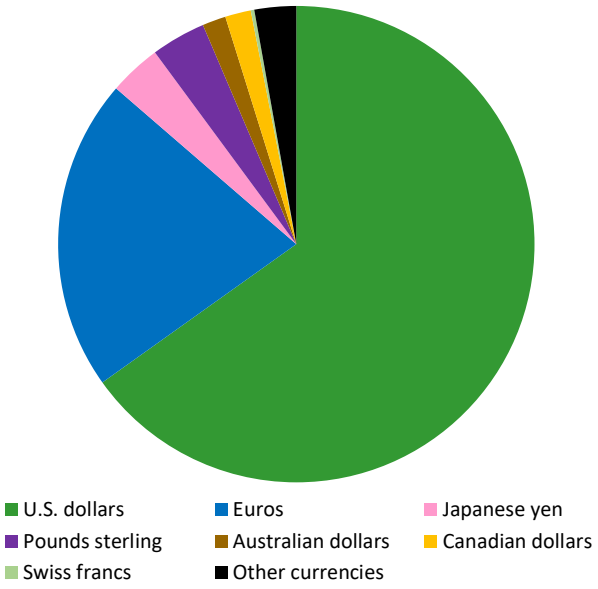
Note: SEG economies include Australia, Indonesia, Mongolia, Myanmar, Philippines, and Sri Lanka.
Source: SEACEN staff calculations using data from IMF's International Investment Position.

Holdings of different types of securities as of end-2017 suggest the contrasting need for liquidity and capital preservation. For small open emerging economies like Mongolia and Sri Lanka, official reserve assets are equally allocated between currencies and deposits and debt securities. This implies the importance of having easy access to reserve holdings in aid of balance of payments disequilibria and/or exchange rate management. But the choice between short- or long-term debt securities still involves a trade-off between short or long maturity versus lower or higher yields. For Indonesia and the Philippines, portfolio diversification and return considerations might outweigh liquidity requirements, as holdings of securities are more than twice that for currency and deposits. However, the securities mix for these economies differs. Indonesia holds more long-term than short-term debt securities; and does not hold equities. The Philippines invest in long-term debt securities, then equities and finally in short-term debt securities. Holdings of currencies and deposits provide quick access but offer no or negligible returns. Debt securities like treasury bills, sovereign bonds and quasi-government (agency) bonds offer low and stable returns. However, corporate bonds entail more risks compared to treasury bills and sovereign bonds. On the other hand, equities, particularly equity funds, offer higher but volatile returns. The choice of which instruments to use for reserve management largely depends on the need to access highly liquid assets and preserve or even increase the value of official reserve holdings.

The U.S. Treasury's Portfolio Holdings of Foreign Securities Report as of 30 June 2017 indicated sustained foreign official holdings of long-term U.S. treasury debt and higher foreign official holdings of U.S. short-term corporate debt and equities. Given that the data on official reserve holdings by country and instrument are confidential, the U.S. Treasury Report provides a broad idea on the allocation of official reserve holdings of U.S. securities issuances of other economies. It is reasonable to assume that the stylised facts presented in the report should be in line with SEG official reserve holdings, which comprise 60% of world official reserves, and that most of its holdings are in advanced economies assets including the U.S. Foreign official holdings of long-term U.S. treasury debt dipped slightly to US$3.7 trillion, but remained close to the 2014-16 value of US$3.8 trillion.[6] Foreign official investments in U.S. corporate short-term debt reached US$33 billion, which has been rising since 2013. In addition, foreign official holdings of U.S. equities now stand at about US$1.0 trillion. Taken together, these numbers suggest that although U.S. long-term treasury debt remains the top choice for official reserve assets, there is a clear move towards high-yielding and higher-risk assets such as short-term corporate bonds and equities.

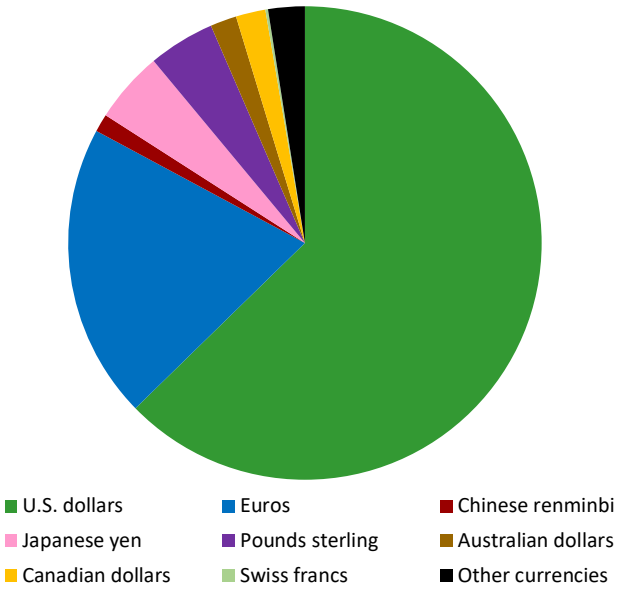
In terms of currency composition of official reserve assets, the IMF's Currency Composition of Official Foreign Exchange Reserves (COFER) show that the U.S. dollar remained the largest reserve currency in 2017, although holdings denominated in non-traditional currencies have been rising.[7] Holdings of the U.S. dollar accounted for 63% of the currency composition of the world's official reserve assets **(Figures 2.6a and 2.6b)**. It was followed by the Euro with a 20% share, slightly lower than its 21% share in 2014, possibly due to the weaker value of the euro relative to the US dollar. Both the pound sterling and Japanese yen have a 5% share each, while the share of the Swiss franc continued to drop. The latest available data indicate that an increasing proportion of official reserve assets is held in non-traditional currencies such as the Australian dollar, Canadian dollar and the Chinese renminbi, having a

Figure 2.6a: World Currency Composition of Official Foreign Exchange Reserves, 2014
(in percent)



Source: Currency Composition of Official Foreign Exchange Reserves (COFER), International Monetary Fund.

Figure 2.6b: World Currency Composition of Official Foreign Exchange Reserves, 2017
(in percent)



Source: Currency Composition of Official Foreign Exchange Reserves (COFER), International Monetary Fund.

6. Foreign official holdings of U.S. securities include non-SEG economies. "Foreign official" includes central banks/ monetary authorities and other official entities listed in ticdata.treasury.gov/Publish/foi-aug2014.html. The value of foreign official holdings might be larger than reported as some securities are held by custodians on behalf of the foreign official sector.

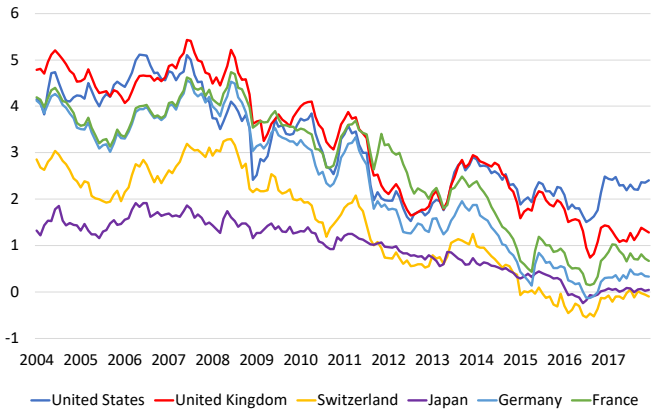
7. Refer to: http://data.imf.org/?sk=E6A5F467-C14B-4AA8-9F6D-5A09EC4E62A4

combined share of around 5% as of end-2017. As SEG economies account for a significant share of official reserve assets, it is expected that similar currency allocation patterns hold for SEG economies.[8]

The move towards non-traditional currencies and high-yielding but higher-risk assets in recent years reflects the gradual shifting of reserve allocations. The downward trend in long-term interest rates and the rapid recovery of benchmark stock prices in advanced economies following the Great Financial Crisis of 2008-09, facilitated the reallocation of official reserves to higher yielding but riskier securities such as corporate debt and equities **(Figures 2.7a and 2.7b)**. As most holdings of securities are long-term in maturity, lower long-term sovereign bond yields from advanced economies will reduce the value of official reserve holdings, requiring the need to reallocate some portion to high-yielding securities. The shift to non-traditional currencies such as the Australian dollar and Canadian dollar is driven by the need to diversify reserve holdings to economies with very high sovereign credit ratings, safe-haven status and higher yields compared to traditional reserve currencies. But the reallocation to a specific asset precedes the choice of currency as fund managers avail themselves of foreign exchange swaps or options to achieve their desired currency exposures.

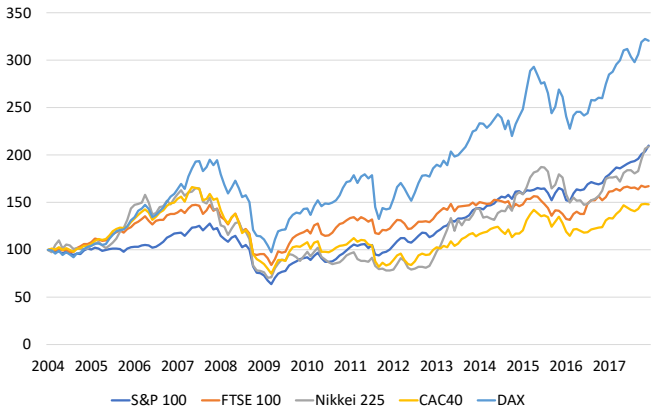
The gradual shifting of official reserve composition has corresponding benefits and associated risks. As the move towards high-yielding securities leads to more diversified reserve holdings, risks associated with a specific investment type will decrease, resulting in lower losses should risks intensify. Moreover, high-yielding securities offer higher returns which could result in capital gains on official reserve assets. However, credit, liquidity and currency risks inherent in high-yielding securities such as short- and long-term corporate debt securities and equities are greater compared to more traditional types of instruments, such as long-term sovereign bonds and quasi-sovereign bonds.

Figure 2.7a: Long-Term Government Bond Yields - Advanced Economies
(in % p.a.)



Note: Long-term bond yields refer to 10-year government bond yields, except for Germany where yields are based on 8-15 year government bonds.
Sources: National sources and the International Monetary Fund accessed through CEIC Database.

Figure 2.7b: Benchmark Stock Price Index - Advanced Economies
(January 2004 = 100)



Sources: SEACEN staff calculations using data from national sources accessed through CEIC Database.

In the medium term, the normalisation of monetary policy in the U.S. could dampen the demand for high-yielding assets and non-traditional reserve currencies. Whether such developments will halt the gradual shift in reserve allocation depends on size of reserve balances. As economic growth and inflation solidifies in advanced economies, particularly in the U.S., the likelihood of a tighter monetary policy stance increases, putting an end to the long-lasting accommodative policy scenario. This could reduce the demand for high-yielding

8. Australia; Cambodia; China; Hong Kong, China; India; Japan; Korea; Nepal; Papua New Guinea; Philippines and Singapore are the SEG member economies which agreed to have their names released by the IMF as COFER participating economies. According to the IMF website, China has reported a representative portfolio on a partial basis, and will gradually increase the reported portfolio to full coverage of foreign reserve assets in the coming years (http://data.imf.org/?sk=E6A5F467-C14B-4AA8-9F6D-5A09EC4E62A4&sId=1442948906947).

assets and increase demand for safer assets such as long-term government bonds. The pace of accumulating high-yielding assets will most likely slow down. However, changes in foreign currency reserve compositions tend to occur slowly. As such, the shift to high-yielding but higher-risk assets will most likely continue, albeit at slower pace, particularly for economies with adequate reserves. Moreover, although allocation in equities has been increasing for some economies, its relative size compared to traditional reserve assets remains small. Hence, there appears to be scope to diversify official reserve asset holdings for those economies with sufficient reserves.

A strengthening of the U.S. dollar will put downward pressure on SEG currencies, increasing the need to smoothen the fluctuations in the exchange rate. However, the impact of a U.S. dollar appreciation on SEG official reserve assets will differ according to the exchange rate regime of member economies. For economies with floating and freely-floating exchange rate regimes, a U.S. dollar appreciation, or a depreciation of the local currency, will most likely not be resisted by foreign exchange intervention, especially if depreciation occurs gradually. For economies with pegged and managed exchange rate arrangements, a U.S. dollar appreciation could lead to foreign exchange intervention to maintain stable exchange rates or, alternatively, by having higher domestic interest rates.

B. Policy Considerations

Official reserve holdings remain an integral part of monetary policy management, as they are used as a protective buffer against balance of payments disequilibria and an instrument to intervene in the currency markets to dampen excessive exchange rate volatility. Given the diverse nature of the economies that make up the SEG, policy measures must consider the existing level of reserve balances and economic conditions prevailing in each member economy. Nonetheless, some important measures could be considered.

Official reserve accumulation and management must be aligned with the exchange rate regime. For free-floating and floating exchange rate regimes, allowing the exchange rate to appreciate or depreciate against major currencies will lessen the need to have prolonged and frequent intervention in the currency market. Interventions could also take place in cases where there is significant volatility and distress in the domestic and international financial markets, which put undue pressure on the exchange rate. For pegged and managed exchange rate regimes, reserve accumulation and management of existing reserve holdings remain important. Reserves must be easily liquidated in a prompt and efficient manner to provide the necessary foreign exchange for the implementation of policy objectives such as market intervention and meeting balance of payments or debt servicing needs.

Splitting existing reserve holdings into a liquidity and investment portfolio requires an appropriate assessment of adequacy of reserves. As some SEG economies hold sufficient amounts of reserves, determining the appropriate level of reserves needed for liquidity and precautionary purposes will guide how holdings can be allocated across different types of assets.[9] Shifting to high-yielding but higher-risk securities might be costly for economies with reserve balances close to what is needed to cover liquidity and precautionary requirements. An allocation to more liquid and safer assets might be more appropriate in this regard. For economies with sufficient reserve holdings, a gradual reallocation of official reserve assets to high-yielding but higher risk securities will maximise the benefits of portfolio diversification, although a constant assessment and evaluation of existing and emerging risks are important in preserving the value of official reserve holdings. Moreover, the reallocation between safer and high-yielding assets also warrants considering the desired currency composition and exposures.

Regional cooperation through macroeconomic surveillance and policy coordination will aid in managing large reserve balances by identifying common ongoing and emerging risks. Regional cooperation can help identify episodes of great financial market stress affecting several member economies. This will allow for greater policy discussions and coordination during times of distress. More importantly, regional cooperation through macroeconomic and financial surveillance can aid in knowing the underlying causes of turbulent currency fluctuations that give rise to precautionary motives of holding foreign currency reserves.

9. Refer to the Chapter 2 Box on the "IMF's Official Reserve Adequacy Assessment – Some Reconsiderations" for a discussion of the IMF's reserve adequacy measure.

BOX: IMF'S OFFICIAL RESERVE ADEQUACY ASSESSMENT – SOME RECONSIDERATIONS

Potential benchmarks for assessing an 'optimal' level of foreign exchange reserves range from the simple traditional ratios in terms of imports, short-term debt and broad money to the fully-optimised theoretical cost-benefit model of Jeanne and Rancière (2011). Somewhere in between lies the IMF's (2011, 2013, 2015 and 2016) new analytical framework for assessing official reserve adequacy.

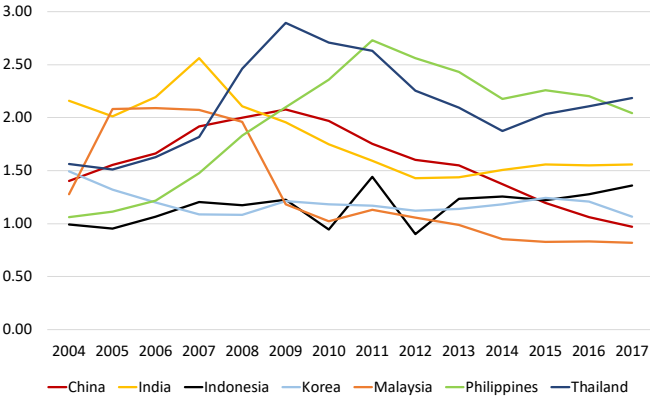
Cross-country experiences on outflows during times of exchange market pressure have demonstrated that the external vulnerability of the Balance of Payments can arise from several sources. If reserves are accumulated for precautionary motives, reliance on a single metric of reserve adequacy is therefore potentially unreliable and may result in picking the wrong one. The IMF's new approach tries to meet this challenge by constructing a broader metric that focuses on four specific liability sources of risks that play separate, essentially non-overlapping, roles: (i) export earnings, (ii) short-term debt, (iii) medium- and long-term debt and equity liabilities and (iv) broad money. From these four measures, the IMF estimates a single composite risk-weighted adequacy metric to assess precautionary reserve adequacy for three types of economies: mature markets, deepening financial markets and credit-constrained economies.[10]

Given the large uncertainty surrounding the estimates, the composite index comes with a suggested adequacy range—reserves in the range of 1 to 1.5 of its composite metric are considered adequate for precautionary purposes, although that range is to some extent based on the IMF's judgement rather than rigorous statistical analysis. For instance, as of end-2017, India, the Philippines and Thailand had ratios above 1.5, suggesting these economies have more than adequate reserves **(Figure 2.8).**

Results in IMF (2011) show that this composite measure, which reflects a broader range of potential pressures, outperforms other – simpler – adequacy metrics in predicting exchange market pressure events. Still, the IMF advises discretion and judgement in an excessively mechanical application of the new composite adequacy metric. Experience with the new methodology has shown that the IMF's composite adequacy metric results in a sufficient amount of reserves, but that it does not always capture the correct sources of outflows. For instance, economies that had large falls in exports were most likely to experience reserve losses across areas of the sovereign balance sheet **not** covered by the IMF metric. In technical terms, there is a distinct lack of country specificity, i.e., the weight attached to each of the components in the composite adequacy metric is common across all countries. Since weights are estimated based on historical patterns, they need to be adjusted as the structure of financial linkages evolves over time. In addition, while the metric purports to be based upon empirical observations from previous crises, it puts considerably less weight on other portfolio liabilities than the empirical facts would suggest. The consequence is that for some countries, adequate reserve levels appear lower than they would otherwise be.

The IMF's composite adequacy measure is a welcome step forward from crude measures based on single factors. But Obstfeld *et al.* (2010) still caution that the internationalisation of finance may have created a fundamental indeterminacy in the demand for reserves, which also holds for the appropriate benchmarks used to assess reserve adequacy.

Figure 2.8: Ratio of Reserve/ARA Metric
(index)



Notes: Values refer to the ratio of reserves to IMF's assessing reserve adequacy metric. A ratio between 1 to 1.5 is considered adequate.
Source: Assessing Reserve Adequacy, International Monetary Fund.

10. The relative risk weights for each potential source of outflows used in the metric are estimated and different risk weights apply for fixed and floating exchange rate regimes.

SECTION III: KEY INDICATORS

Table 3.1: Net Capital Outflows

	USD billion				% of GDP			
	2014	2015	2016	2017	2014	2015	2016	2017
Australia	-41.3	-54.9	-36.9	-33.7	-2.8	-4.5	-2.9	-2.4
Brunei	4.3	4.5	6.5	…	25.0	34.9	57.2	…
Cambodia	-1.4	-1.6	-1.5	…	-8.4	-8.9	-7.5	…
China	169.1	91.5	-27.6	-57.1	1.6	0.8	-0.2	-0.5
Hong Kong, China	9.4	16.6	13.0	19.8	3.2	5.4	4.0	5.8
Fiji	-0.7	-0.2	-0.2	-0.3	-14.6	-4.0	-4.3	-6.4
India	-30.0	-22.9	-11.8	-36.9	-1.5	-1.1	-0.5	-1.4
Indonesia	-29.7	-17.9	-17.2	-18.2	-3.3	-2.1	-1.8	-1.8
Japan	58.7	180.9	261.7	157.5	1.2	4.1	5.3	3.2
Korea	89.3	106.3	102.6	87.1	6.3	7.7	7.3	5.7
Lao PDR	-1.5	-3.0	-2.7	…	-11.0	-20.7	-17.0	…
Malaysia	11.0	0.5	1.3	2.9	3.2	0.2	0.5	0.9
Mongolia	-2.0	-1.1	-0.8	-1.1	-16.2	-9.0	-7.5	-10.2
Myanmar	-0.6	-4.3	-3.9	-5.3	-1.0	-7.2	-6.1	-7.9
Nepal	0.8	2.6	0.5	-0.2	4.0	11.9	2.6	-1.0
Papua New Guinea	3.1	4.9	5.2	…	13.5	21.4	22.9	…
Philippines	6.8	4.9	-0.9	-3.1	2.4	1.7	-0.3	-1.0
Singapore	59.7	54.9	58.8	61.1	19.2	18.1	19.0	18.9
Sri Lanka	-1.5	-2.3	-2.2	-2.2	-1.9	-2.9	-2.7	-2.5
Chinese Taipei	64.9	81.2	65.8	79.8	12.2	15.5	12.4	13.8
Thailand	14.7	22.7	33.9	44.2	3.6	5.6	8.2	9.7
Vietnam	2.8	-7.6	-2.6	-7.7	1.5	-4.0	-1.3	-3.5

Notes: … data unavailable from the IMF. Positive (negative) values mean an increase (reversal) in net capital outflows. Net capital outflows refers to financial account assets minus financial account liabilities. Data accessed through CEIC Dataset as of 20 June 2018.

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

Table 3.2: Financial Account Assets (Resident Capital Outflows)

	USD billion				% of GDP			
	2014	2015	2016	2017	2014	2015	2016	2017
Australia	27.0	26.4	-64.4	-11.0	1.9	2.1	-5.1	-0.8
Brunei	5.2	4.2	6.2	…	30.6	32.8	54.3	…
Cambodia	1.6	1.8	3.0	…	9.5	10.2	14.8	…
China	580.6	-9.5	232.0	378.2	5.5	-0.1	2.1	3.1
Hong Kong, China	255.8	90.6	91.5	236.3	87.8	29.3	28.5	69.2
Fiji	-0.1	0.2	0.0	0.2	-3.0	5.4	-1.1	4.5
India	128.5	118.4	107.0	129.3	6.3	5.6	4.7	5.0
Indonesia	26.0	20.4	-3.8	29.6	2.9	2.4	-0.4	2.9
Japan	28.1	279.8	101.9	-102.8	0.6	6.4	2.1	-2.1
Korea	124.2	95.5	115.2	133.5	8.8	6.9	8.2	8.7
Lao PDR	0.5	0.1	-0.2	…	3.9	0.4	-1.1	…
Malaysia	…	…	…	…	…	…	…	…
Mongolia	-0.1	0.0	0.4	1.3	-0.6	0.0	3.8	11.2
Myanmar	1.8	0.5	-1.1	-0.1	2.7	0.9	-1.7	-0.2
Nepal	1.2	3.0	1.2	0.6	6.0	13.8	5.5	2.6
Papua New Guinea	2.8	5.0	4.9	…	12.1	21.8	21.8	…
Philippines	12.1	8.8	4.6	5.7	4.3	3.0	1.5	1.8
Singapore	192.4	114.0	158.8	163.7	61.8	37.5	51.3	50.5
Sri Lanka	2.6	0.9	0.0	2.9	3.3	1.1	0.0	3.4
Chinese Taipei	90.1	58.4	90.9	105.5	17.0	11.1	17.1	18.2
Thailand	17.5	11.1	32.6	62.2	4.3	2.8	7.9	13.7
Vietnam	17.1	9.3	14.4	23.0	9.2	4.9	7.1	10.4

Notes: … data unavailable from the IMF. Positive (negative) value refers to an increase (reversal) in resident investment abroad. Data accessed through CEIC Dataset as of 20 June 2018.

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

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

	USD billion				% of GDP			
	2014	2015	2016	2017	2014	2015	2016	2017
Australia	68.4	81.4	-27.5	22.6	4.7	6.6	-2.2	1.6
Brunei	0.9	-0.3	-0.3	…	5.5	-2.1	-2.9	…
Cambodia	3.0	3.5	4.5	…	17.9	19.1	22.3	…
China	411.5	-101.0	259.6	435.3	3.9	-0.9	2.3	3.6
Hong Kong, China	246.4	74.1	78.5	216.5	84.5	23.9	24.5	63.4
Fiji	0.5	0.4	0.1	0.6	11.6	9.4	3.2	10.9
India	158.5	141.2	118.8	166.3	7.8	6.7	5.2	6.4
Indonesia	55.7	38.3	13.4	47.8	6.3	4.5	1.4	4.7
Japan	-30.5	98.8	-159.8	-260.3	-0.6	2.2	-3.2	-5.3
Korea	34.8	-10.8	12.6	46.4	2.5	-0.8	0.9	3.0
Lao PDR	2.0	3.0	2.5	…	14.9	21.1	15.9	…
Malaysia	…	…	…	…	…	…	…	…
Mongolia	1.9	1.1	1.2	2.4	15.6	9.0	11.3	21.4
Myanmar	2.4	4.8	2.8	5.1	3.7	8.1	4.4	7.7
Nepal	0.4	0.4	0.6	0.9	2.0	1.9	2.9	3.6
Papua New Guinea	-0.3	0.1	-0.3	…	-1.4	0.5	-1.1	…
Philippines	5.4	3.8	5.5	8.7	1.9	1.3	1.8	2.8
Singapore	132.7	59.1	100.0	102.6	42.6	19.4	32.3	31.7
Sri Lanka	4.1	3.2	2.2	5.1	5.2	4.1	2.7	5.9
Chinese Taipei	25.2	-22.8	25.1	25.7	4.8	-4.3	4.7	4.4
Thailand	2.7	-11.6	-1.3	18.0	0.7	-2.9	-0.3	4.0
Vietnam	14.3	16.9	16.9	30.6	7.7	8.8	8.4	13.9

Notes: … data unavailable from the IMF. Positive (negative) value means an increase (reversal) in non-resident investment in the domestic economy. Data accessed through CEIC Dataset as of 20 June 2018.

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

Table 3.4: Current Account Balance

	USD billion				% of GDP			
	2014	2015	2016	2017	2014	2015	2016	2017
Australia	-42.3	-58.1	-37.0	-32.7	-2.9	-4.7	-2.9	-2.4
Brunei	5.3	2.2	1.8	…	30.7	16.7	15.5	…
Cambodia	-1.6	-1.7	-1.8	…	-9.8	-9.3	-8.8	…
China	236.0	304.2	202.2	164.9	2.2	2.7	1.8	1.4
Hong Kong, China	4.1	10.3	12.7	14.7	1.4	3.3	4.0	4.3
Fiji	-0.3	-0.2	-0.2	-0.3	-7.5	-3.6	-5.1	-6.2
India	-27.3	-22.5	-12.1	-39.1	-1.3	-1.1	-0.5	-1.5
Indonesia	-27.5	-17.5	-17.0	-17.3	-3.1	-2.0	-1.8	-1.7
Japan	36.4	136.5	194.0	195.8	0.7	3.1	3.9	4.0
Korea	84.4	105.9	99.2	78.5	6.0	7.7	7.0	5.1
Lao PDR	-1.2	-2.3	-1.2	…	-8.9	-15.9	-7.8	…
Malaysia	14.8	9.1	7.1	9.4	4.4	3.1	2.4	3.0
Mongolia	-1.9	-0.9	-0.7	-1.2	-15.9	-8.1	-6.3	-10.4
Myanmar	-2.1	-2.8	-1.8	-3.9	-3.2	-4.8	-2.8	-5.9
Nepal	0.5	2.4	-0.2	-0.8	2.5	11.4	-0.8	-3.3
Papua New Guinea	1.9	4.2	4.9	…	8.4	18.2	21.5	…
Philippines	10.8	7.3	-1.2	-2.5	3.8	2.5	-0.4	-0.8
Singapore	58.2	56.5	58.8	61.0	18.7	18.6	19.0	18.8
Sri Lanka	-2.0	-1.9	-1.7	-2.3	-2.5	-2.4	-2.2	-2.6
Chinese Taipei	61.8	75.2	72.2	82.8	11.7	14.3	13.6	14.3
Thailand	15.2	32.1	48.2	48.1	3.7	8.0	11.7	10.6
Vietnam	9.4	0.9	8.2	6.1	5.0	0.5	4.1	2.8

Notes: … data unavailable from the IMF. Positive (negative) values refer to current account surplus (deficit). Data accessed through CEIC Dataset as of 20 June 2018.

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

Table 3.5 Net International Investment Position

	USD billion				% of GDP			
	2014	2015	2016	2017	2014	2015	2016	2017
Australia	-721.4	-703.6	-707.3	-769.2	-49.6	-57.1	-55.9	-55.8
Brunei	…	…	…	…	…	…	…	…
Cambodia	-6.2	-8.2	-13.3	…	-37.1	-45.1	-65.7	…
China	1,602.8	1,672.8	1,950.4	1,814.1	15.2	14.9	17.4	15.1
Hong Kong, China	870.2	1,003.1	1,153.8	1,394.1	298.6	324.3	359.6	408.0
Fiji	-3.4	-3.4	-3.6	-4.1	-76.2	-79.1	-77.7	-80.3
India	-361.5	-368.4	-367.5	-435.0	-17.7	-17.5	-16.2	-16.7
Indonesia	-384.0	-376.8	-333.8	-340.7	-43.1	-43.8	-35.8	-33.6
Japan	3,012.4	2,815.0	2,879.2	2,909.1	62.1	64.1	58.2	59.7
Korea	84.2	204.4	277.9	248.2	6.0	14.8	19.7	16.1
Lao PDR	…	…	…	…	…	…	…	…
Malaysia	-5.0	25.4	15.6	-6.2	-1.5	8.6	5.3	-2.0
Mongolia	-27.2	-28.6	-29.3	-32.0	-223.3	-244.2	-265.5	-287.6
Myanmar	-6.4	-9.4	-13.4	-18.3	-9.7	-15.9	-21.2	-27.6
Nepal	2.0	4.0	4.3	3.9	10.2	18.6	20.4	15.8
Papua New Guinea	…	…	…	…	…	…	…	…
Philippines	-40.9	-28.2	-28.0	-43.4	-14.4	-9.6	-9.2	-13.8
Singapore	584.9	622.5	666.7	804.3	187.7	204.7	215.2	248.3
Sri Lanka	-41.6	-43.0	-44.6	-48.4	-52.5	-54.1	-55.1	-55.2
Chinese Taipei	936.1	1,080.9	1,106.7	1,180.8	176.4	205.6	208.6	203.8
Thailand	-97.3	-42.8	-33.6	-33.3	-23.9	-10.7	-8.2	-7.3
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 20 June 2018.

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

Table 3.6: Total International Investment Assets

	USD billion				% of GDP			
	2014	2015	2016	2017	2014	2015	2016	2017
Australia	1,615.4	1,562.8	1,635.3	1,824.0	111.0	126.8	129.3	132.2
Brunei	…	…	…	…	…	…	…	…
Cambodia	17.3	18.5	21.5	…	103.2	101.8	106.7	…
China	6,438.3	6,155.8	6,507.0	6,925.6	61.1	54.8	58.0	57.6
Hong Kong, China	4,176.6	4,364.2	4,609.1	5,469.0	1,433.1	1,410.7	1,436.4	1,600.7
Fiji	1.6	1.7	1.7	2.0	36.6	40.0	35.8	38.8
India	493.0	531.3	543.1	607.9	24.2	25.3	23.9	23.3
Indonesia	201.9	212.4	300.5	338.1	22.7	24.7	32.2	33.3
Japan	7,811.7	7,883.1	8,444.1	8,967.4	161.1	179.4	170.6	184.1
Korea	1,078.5	1,144.0	1,244.5	1,453.7	76.4	82.7	88.2	94.5
Lao PDR	…	…	…	…	…	…	…	…
Malaysia	415.8	387.6	385.7	413.9	123.0	130.7	130.1	131.6
Mongolia	4.0	3.9	4.3	5.6	33.2	33.3	39.1	49.9
Myanmar	10.7	10.7	9.5	9.6	16.3	18.0	15.0	14.4
Nepal	7.2	9.4	10.2	10.7	36.2	43.7	48.5	43.7
Papua New Guinea	…	…	…	…	…	…	…	…
Philippines	148.0	155.1	161.3	170.6	52.0	53.0	52.9	54.4
Singapore	3,051.3	3,050.8	3,150.4	3,620.2	979.4	1,003.3	1,017.1	1,117.7
Sri Lanka	11.2	10.7	10.3	12.4	14.1	13.5	12.7	14.1
Chinese Taipei	1,568.9	1,664.6	1,789.3	1,982.7	295.7	316.7	337.2	342.3
Thailand	329.4	339.0	382.0	456.1	80.9	84.4	92.8	100.2
Vietnam	…	…	…	…	…	…	…	…

Notes: … data unavailable from the IMF. Data accessed through CEIC Dataset as of 20 June 2018.
Sources: SEACEN staff calculations using data from IMF International Investment Position and World Economic Outlook Database, and national source.

Table 3.7: Total International Investment Liabilities

	USD billion				% of GDP			
	2014	2015	2016	2017	2014	2015	2016	2017
Australia	2,336.7	2,266.4	2,342.6	2,593.2	160.6	183.8	185.2	188.0
Brunei	…	…	…	…	…	…	…	…
Cambodia	23.4	26.7	34.8	…	140.3	146.9	172.4	…
China	4,835.6	4,483.0	4,556.7	5,111.5	45.9	39.9	40.6	42.5
Hong Kong, China	3,306.4	3,361.0	3,455.3	4,074.9	1,134.5	1,086.5	1,076.8	1,192.7
Fiji	5.1	5.2	5.3	6.0	112.9	119.1	113.5	119.0
India	854.5	899.8	910.6	1,042.9	41.9	42.8	40.1	39.9
Indonesia	585.9	589.3	634.3	678.8	65.8	68.5	68.0	66.8
Japan	4,799.3	5,068.1	5,564.9	6,058.4	98.9	115.3	112.4	124.3
Korea	994.3	939.5	966.6	1,205.4	70.5	67.9	68.5	78.4
Lao PDR	…	…	…	…	…	…	…	…
Malaysia	420.8	362.1	370.0	420.1	124.5	122.2	124.8	133.6
Mongolia	31.3	32.5	33.7	37.6	256.4	277.5	304.6	337.6
Myanmar	17.1	20.1	22.9	27.9	26.0	33.8	36.2	41.9
Nepal	5.2	5.4	5.9	6.8	26.0	25.2	28.1	27.9
Papua New Guinea	…	…	…	…	…	…	…	…
Philippines	188.9	183.3	189.3	214.0	66.4	62.6	62.1	68.3
Singapore	2,466.4	2,428.4	2,483.7	2,816.0	791.6	798.6	801.8	869.4
Sri Lanka	52.8	53.7	54.9	60.7	66.6	67.5	67.7	69.3
Chinese Taipei	632.8	583.7	682.5	801.8	119.3	111.1	128.6	138.4
Thailand	426.7	381.8	415.6	489.4	104.8	95.1	100.9	107.5
Vietnam	…	…	…	…	…	…	…	…

Notes: … data unavailable from the IMF. Data accessed through CEIC Dataset as of 20 June 2018.
Sources: SEACEN staff calculations using data from IMF International Investment Position and World Economic Outlook Database, and national source.

Table 3.8: Official Reserve Assets

	USD billion				% of GDP			
	2014	2015	2016	2017	2014	2015	2016	2017
Australia	53.9	49.3	55.1	68.8	3.7	4.0	4.4	5.0
Brunei	…	…	…	…	…	…	…	…
Cambodia	4.4	5.1	6.8	…	26.3	28.1	33.5	…
China	3,899.3	3,406.1	3,097.8	3,235.9	37.0	30.3	27.6	26.9
Hong Kong, China	328.5	358.8	386.2	431.6	112.7	116.0	120.4	126.3
Fiji	0.9	0.9	0.9	1.1	20.3	21.4	19.6	22.0
India	322.5	350.0	359.5	409.7	15.8	16.6	15.8	15.7
Indonesia	111.9	105.9	116.4	130.2	12.6	12.3	12.5	12.8
Japan	1,252.5	1,232.8	1,220.4	1,261.3	25.8	28.0	24.7	25.9
Korea	363.6	367.9	371.1	389.2	25.8	26.6	26.3	25.3
Lao PDR	…	…	…	…	…	…	…	…
Malaysia	116.0	95.3	94.5	102.1	34.3	32.2	31.9	32.5
Mongolia	1.7	1.3	1.3	3.0	13.5	11.3	11.8	27.1
Myanmar	4.5	4.4	4.9	5.2	6.8	7.4	7.8	7.8
Nepal	6.2	8.2	8.9	9.4	31.1	38.3	42.0	38.3
Papua New Guinea	…	…	…	…	…	…	…	…
Philippines	79.5	80.7	80.7	81.6	27.9	27.6	26.5	26.0
Singapore	257.7	248.2	246.3	279.8	82.7	81.6	79.5	86.4
Sri Lanka	8.2	7.3	6.0	8.0	10.3	9.2	7.4	9.1
Chinese Taipei	423.9	430.7	439.0	456.7	79.9	81.9	82.7	78.8
Thailand	157.1	156.5	171.9	202.6	38.6	39.0	41.7	44.5
Vietnam	…	…	…	…	…	…	…	…

Notes: … data unavailable from the IMF. Data accessed through CEIC Dataset as of 20 June 2018.
Sources: SEACEN staff calculations using data from IMF International Investment Position and World Economic Outlook Database, and national source.

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SEACEN Capital Flows Monitor 2018

The SEACEN Capital Flows Monitor 2018 is a bi-annual report on cross-border capital flows of SEACEN member economies, including Australia and Japan who 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 section on official reserve assets. It also presents several tables on key external indicators related to the Balance of Payments Statistics and International Investment Position.

The SEACEN Centre

Since its inception in the early 1980's, The South East Asian Central Banks Research and Training Centre (the SEACEN Centre) has established its unique regional position in serving its membership of central banks in the Asia-Pacific region through its learning programmes in key central banking areas (including Macroeconomic and Monetary Policy Management; Financial Stability and Supervision, and Payment and Settlement System; and Leadership and Governance), research work, and networking and collaboration platforms for capability building in central banking knowledge.

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