

# **Asia and the CMIM in the Evolving International Monetary System**

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**ASEAN+3 Macroeconomic Research Office**

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### Abstract

Concerted reforms following the Asian Financial Crisis and strong accumulation of foreign exchange reserves fortified the region against the headwinds from the Global Financial Crisis. However, with the international financial system set to grow in size and complexity, financial crises will undoubtedly recur in the future. A pragmatic approach to global crisis management is to address spillovers by further strengthening the Global Financial Safety Net. For the ASEAN+3 members, buffers at the regional level are sizable, in the form of foreign exchange reserves and Bilateral Swap Arrangements. However, the support available to some of the smaller members is still quite thin across the various facilities. With the Chiang Mai Initiative Multilateralization as the center of the Regional Financial Safety Net, the effectiveness of the regional mechanism could be enhanced. This paper analyzes why the CMIM should be strengthened to support macroeconomic and financial stability in Asia.

JEL classification: F15, F32, F33, G01

Keywords: Financial crisis; Chiang Mai Initiative Multilateralization; Global Financial Safety Net; International Monetary System; financial networks; Regional Financing Arrangement; swaps

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## Glossary

ADB	Asian Development Bank
AE	Advanced economy
AFC	Asian Financial Crisis
AMF	Arab Monetary Fund
ASA	ASEAN Swap Arrangement
ASEAN	Association of South-East Asian Nations
BI	Bank Indonesia
BIS	Bank for International Settlements
BNM	Bank Negara Malaysia
BoC	Bank of Canada
BoP	Balance of Payments
BRICS	Brazil, Russia, India, China and South Africa
BSA	Bilateral Swap Arrangement
CDIS	Coordinated Direct Investment Survey
CLMV	Cambodia, Lao PDR, Myanmar and Vietnam
CMI	Chiang Mai Initiative
CMIM	Chiang Mai Initiative Multilateralization
CPIS	Coordinated Portfolio Investment Survey
CRA	Contingent Reserve Arrangement
DoTS	Direction of Trade Statistics
ECF	Extended Credit Facility
EFSD	Eurasian Fund for Stabilization and Development
EFSF	European Financial Stability Facility
EME	Emerging market economy
ESCAP	Economic and Social Commission for Asia and the Pacific
ESDC	European Sovereign Debt Crisis
ESM	European Stability Mechanism
FCL	Flexible Credit Line
FDI	Foreign direct investment
FLAR	Fondo Latinoamericano de Reservas
FX	Foreign exchange
GFC	Global Financial Crisis
GFSN	Global Financial Safety Net
IFI	International financial institution
IFS	International Financial Statistics
IMF	International Monetary Fund
IMS	International Monetary System
JMoF	Japan Ministry of Finance
NPLs	Non-performing loans
PBoC	People's Bank of China
PL	Precautionary Line
PRGT	Poverty Reduction and Growth Trust
RBA	Reserve Bank of Australia
RFA	Regional Financing Arrangement
RFSN	Regional Financial Safety Net
SBA	Stand-by Arrangement
SDR	Special Drawing Right
SF	Stability Facility
WEO	World Economic Outlook

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*“No one that encounters prosperity does not also encounter danger.”*

*~ Heraclitus of Ephesus (535–475 B.C.)*

## I. Introduction

The Chiang Mai Initiative Multilateralization (CMIM) has a very important role to play in a constantly changing International Monetary System (IMS). Since the 1970s, numerous countries have been hit by economic and financial crises and many have had to rely on the International Monetary Fund (IMF) for financial and technical support. The number of crises peaked in the early 1980s, and then again in the second-half of the 1990s, culminating more recently in the Global Financial Crisis (GFC) (Figure 1). The Chiang Mai Initiative (CMI) was introduced in the wake of the Asian Financial Crisis (AFC) to support the region and was subsequently expanded to become the CMIM in 2010, during the GFC. Members reaffirmed their commitment in Yokohama in May 2017 to further strengthen the CMIM as a center of the Regional Financial Safety Net (RFSN) ([ASEAN+3, 2017](#)).

The nature of crises has clearly changed over time, attributable in part to improvements in countries’ macro-policy settings. Currency, along with sovereign debt, crises were predominant during the 1970s and 1980s, but the former has declined in number over time, coinciding with the adoption of more flexible exchange rate regimes and the building of additional foreign exchange (FX) reserve buffers by many emerging market economies (EMEs) (Figures 2 and 3). The GFC and European Sovereign Debt Crisis (ESDC) are timely reminders that crises could also originate in advanced economies (AEs)—the former as a consequence of out-of-control complex financial engineering and the latter as a result of profligate bank lending, which imposed huge fiscal burdens (Figure 4). Indeed, banking crises have come to the fore since the 1990s as financial deepening intensified and interlinkages grew (Figure 5).

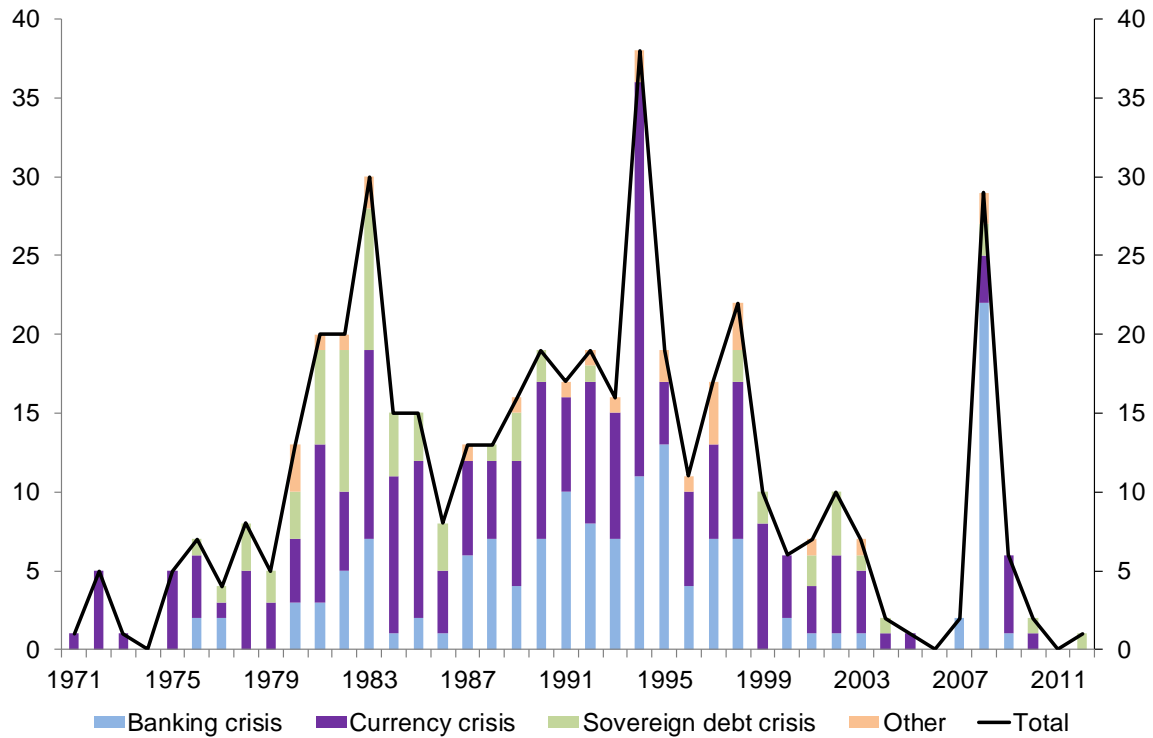
While the incidence of crises was less frequent during the 2000s, they have been more systemic when they occurred. The speed of financial development does matter—the evidence suggests that too fast a pace leads to financial instability ([Sahay and others, 2015](#)). Rapid credit growth and credit booms typically signal a banking crisis several years before the event.<sup>3</sup> While robust credit growth reflects desirable financial deepening and market development, strong credit demand by households and corporations raises concerns when these balance sheets become stretched ([Jeasakul, Lim and Lundback, 2015](#)). Indeed, our estimates suggest that financial deepening is likely to happen exponentially over the next 15–20 years if long-term trends persist, with the attendant risk of larger and more widespread crises (Figure 5 and Appendix I).

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<sup>3</sup> See [Arregui and others, 2013](#) for a discussion on the literature.

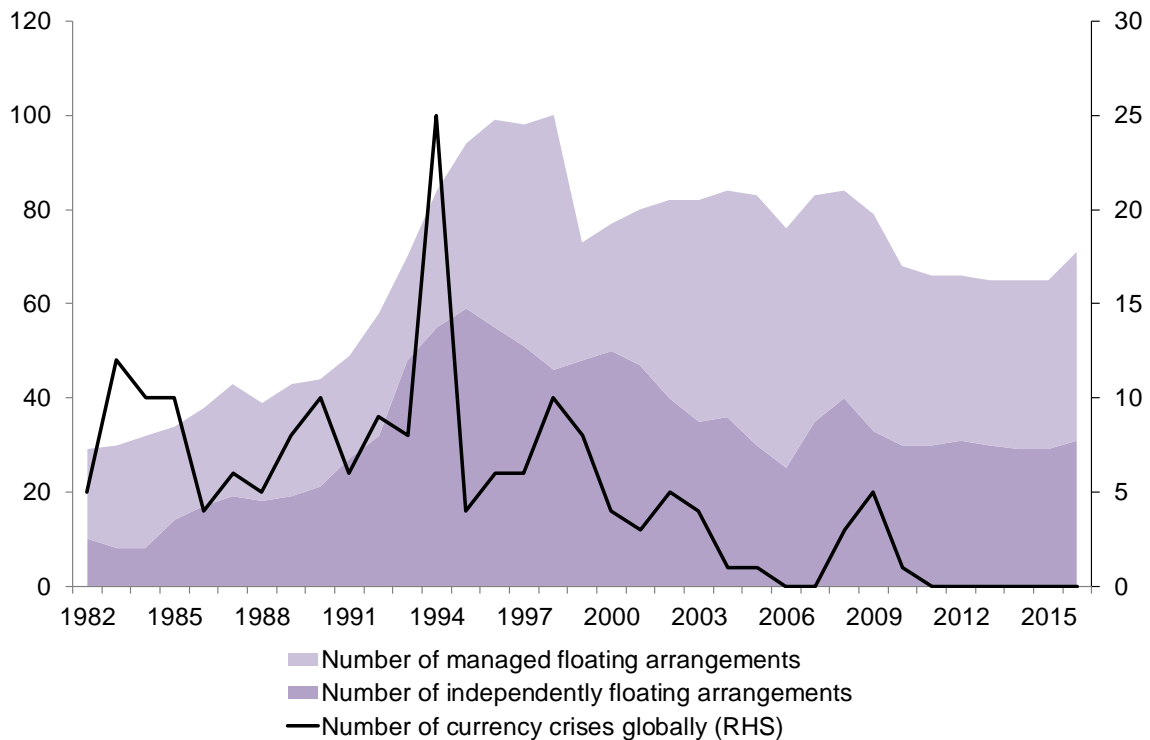


**Figure 1. The Changing Nature of Economic and Financial Crises**  
(In number of crises)



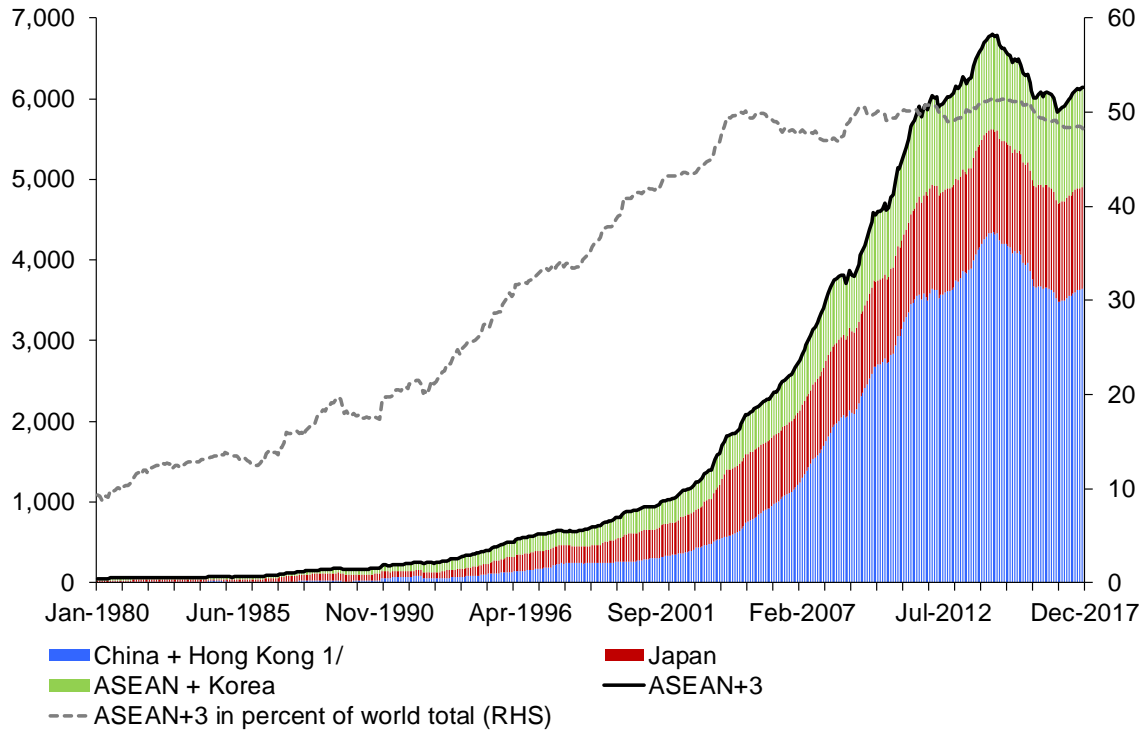
Source: [Laeven and Valencia \(2012\)](#).

**Figure 2. Exchange Rate Arrangements and Currency Crises**



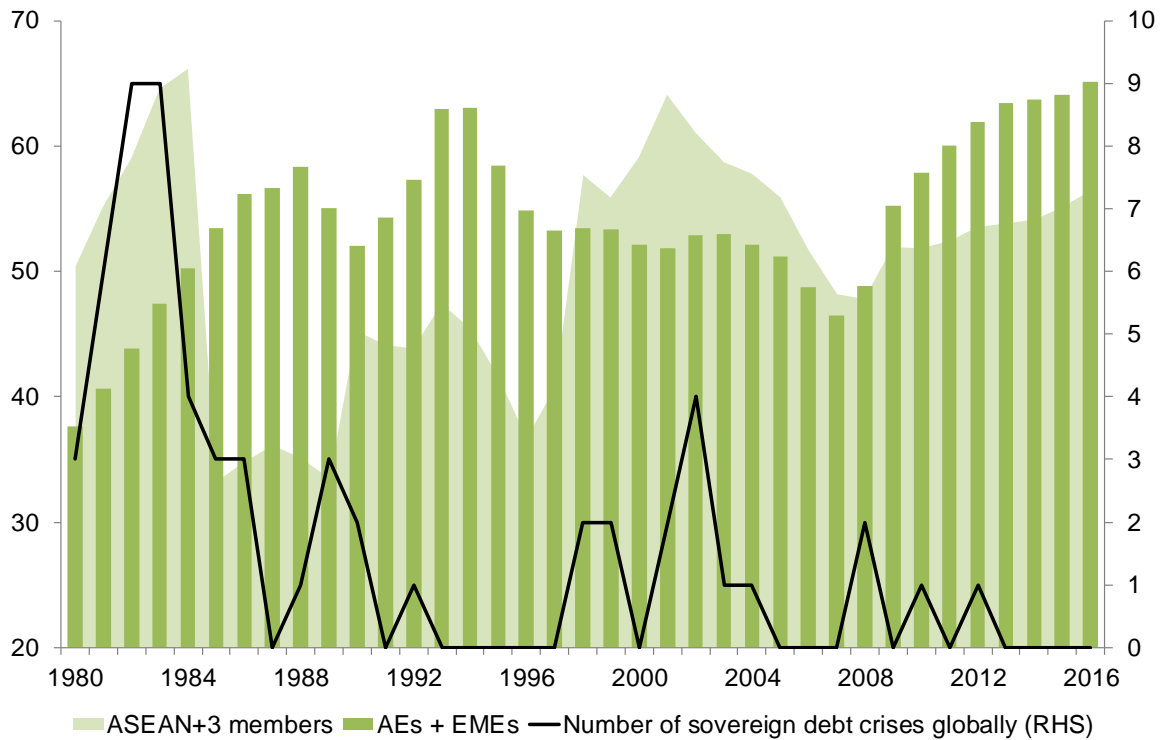
Sources: [IMF AREAER](#); [Laeven and Valencia \(2012\)](#); and authors' calculations.

**Figure 3. ASEAN+3: Foreign Exchange Reserves**  
(In billions of U.S. dollars)



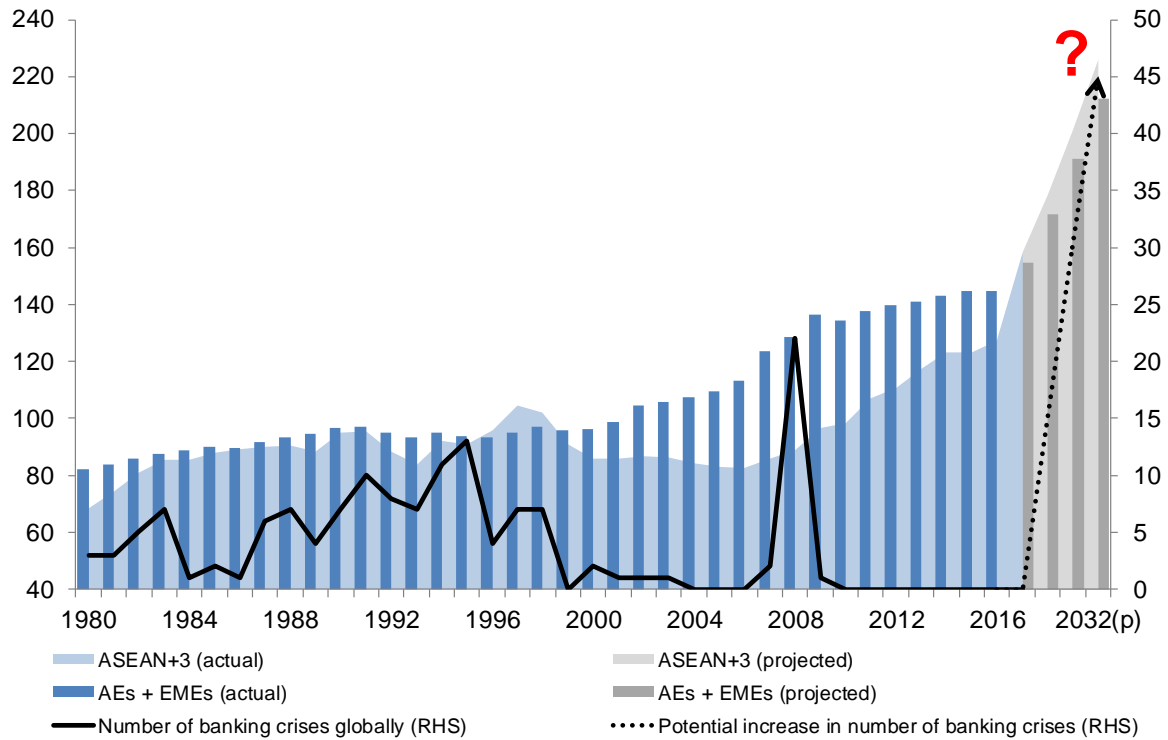
Sources: IMF International Financial Statistics (IFS); and authors' calculations.  
1/ Officially "Hong Kong, China," hereafter "Hong Kong" for brevity.

**Figure 4. Government Debt and Sovereign Debt Crises**  
(In percent of GDP)



Sources: Bank for International Settlements (BIS); IMF World Economic Outlook (WEO); [Laeven and Valencia \(2012\)](#); and authors' calculations.

**Figure 5. Financial Deepening and Banking Crises**  
(Credit in percent of GDP)



Sources: BIS; IMF WEO; [Laeven and Valencia \(2012\)](#); and authors' estimates.

With financial systems set to continue expanding and growing in complexity going forward, financial crises will happen again in the future. In an environment where financial markets are increasingly integrated at the global and regional levels but are regulated at the national level, persistent global imbalances, ever-larger capital flows and the lack of a coordinated framework to cope with volatile capital flows point to the recurrence of crises that will be unpredictable in their nature, size and timing ([Enrique Garcia, 2014](#)). Meanwhile, excessive reliance on the U.S. dollar as the main international reserve currency means that even countries with sound fundamentals and policies could still come under pressure if U.S. dollar liquidity dries up.

A pragmatic approach to global crisis management is to address spillovers by further strengthening the Global Financial Safety Net (GFSN). While strong macroeconomic fundamentals and management as well as buffers at the national level should act as the first line of defence, countries that have adhered to “best practices” have also been affected by the adverse impact of spillovers and contagion. Of relevance for many countries in the Asian region, crises have tended to be costlier for EMEs compared to AEs ([Laeven and Valencia, 2012](#)). Although many EMEs have accumulated sizable FX reserves as self-insurance, this strategy is also costly and introduces imbalances ([Aizenman, 2009](#); [Prasad and Sorkin, 2009](#); Steiner, 2014).

Importantly, the IMF may not have the requisite resources to deal with large-scale crises by itself in the future. While the IMF has been modernizing its lending and conditionality framework to keep up with the needs of member countries, and has reformed its quota to better reflect the composition of its membership, private international capital flows are growing at a much faster rate than its resources ([Moghadam, 2009](#)). As one country after another approached the IMF for financial assistance during the GFC, the institution had to seek significant additional financing support from its membership. Since 1980, the IMF has

committed an average of about 20 percent of its available resources to assisting countries but at the peak of the GFC alone, it committed about 70 percent of its available quota resources ([Malpass, 2017](#)).

Clearly, Regional Financing Arrangements (RFAs) have an important role to play in the GFSN. RFAs have been around for a very long time and, not surprisingly, they were introduced during or in the aftermath of regional or global financial crises. For example, the CMI was introduced in the wake of the AFC and evolved to become the CMIM in 2010 during the GFC, while the European Financial Stability Facility (EFSF) was introduced in 2010 during the GFC, and the European Stability Mechanism (ESM) in 2012 at the height of the ESDC. International policy coordination, such as that by the G-20, to mitigate spillovers will be further fostered by members; however, there is skepticism that significant progress would be made given their prioritization of domestic policies (Obstfeld and Rogoff, 2002; [Coeure, 2015](#)).

This paper examines Asia's role in the IMS and explores why the CMIM should be enhanced in an increasingly integrated international trade and financial environment. It is structured as follows: Section II analyses the risks to the IMS focusing, in particular, on the Asian region and more specifically, on the ASEAN+3 countries. Section III provides an overview of the CMIM in the context of existing RFAs and explores its potential as well as its shortcomings. Section IV concludes. The results of AMRO staff's market survey on the risks to regional financial stability and the market's perception of the importance of having a RFSN are summarized in the Annex.

## II. Risks to the IMS and Asia

### A. Spillovers

Financial market liberalization has increased cross-border financing activities globally (Figures 6 and 7). Traditional financing methods in the form of bank loans, debt securities and stock issuances continue to collectively dominate, especially in EMEs (Figure 8). However, non-bank financial institutions, including shadow banks—which are less well-regulated than their banking counterparts—are expanding rapidly in both AEs and EMEs ([Financial Stability Board, 2017](#)) and may have introduced new risks to the IMS.

Meanwhile, countries have become more dependent on external trade as a source of economic growth. Global trade has expanded at a rapid rate over the past four decades. Since 1980, world trade volumes have increased by more than six times while world real GDP has tripled during this period (Figures 9 and 10). Both vertical trade and horizontal trade have increased as EMEs benefitted from strong demand and technological advances while AEs benefitted from the lower price of imported goods produced with cheap labor and the growing middle-class markets of EMEs.<sup>4</sup>

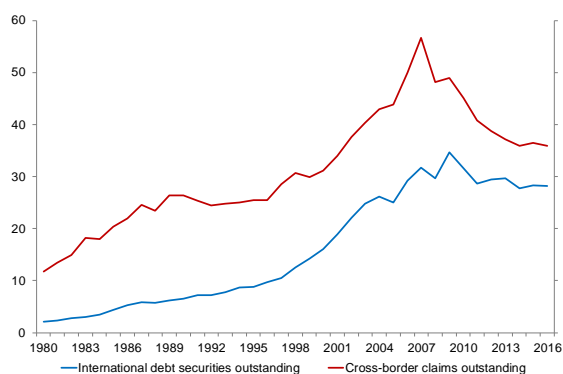
Consequently, cross-border spillovers, when they have occurred, have been quicker and more widespread in nature. The expansion in international trade and the increasing intricacies in the financial networks that support it and other activities have increased the risks to capital flows. Spillovers across countries have intensified with the growing importance of financial factors relative to trade ([IMF, 2016a](#)). Financial spillovers of emerging market shocks to both AEs and EMEs have risen substantially; economic spillovers also continue to shape the global

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<sup>4</sup> See [ECB \(2012\)](#); Jha and others (2014); Jha, Amerasinghe and Calverley (2015) for a more detailed discussion on the issues.

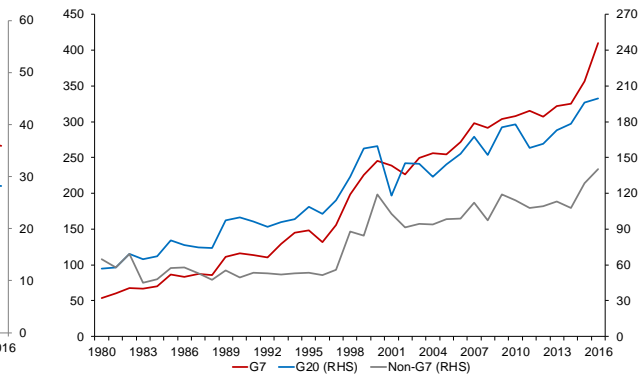
outlook. While spillovers had previously been attributable largely to shocks emanating from AEs, the rising share of EMEs in global GDP (to more than 50 percent of GDP in purchasing power parity terms) means that the latter are now playing a crucial role in this area as well ([IMF, 2016b](#)).

**Figure 6. International Credit Activity**  
(In percent of world GDP)



Sources: BIS; IMF WEO; and authors' calculations.  
Note: Cross-border claims also include intra-bank loans.

**Figure 7. External Financial Openness**  
(Gross international investment position, in percent of GDP, median)

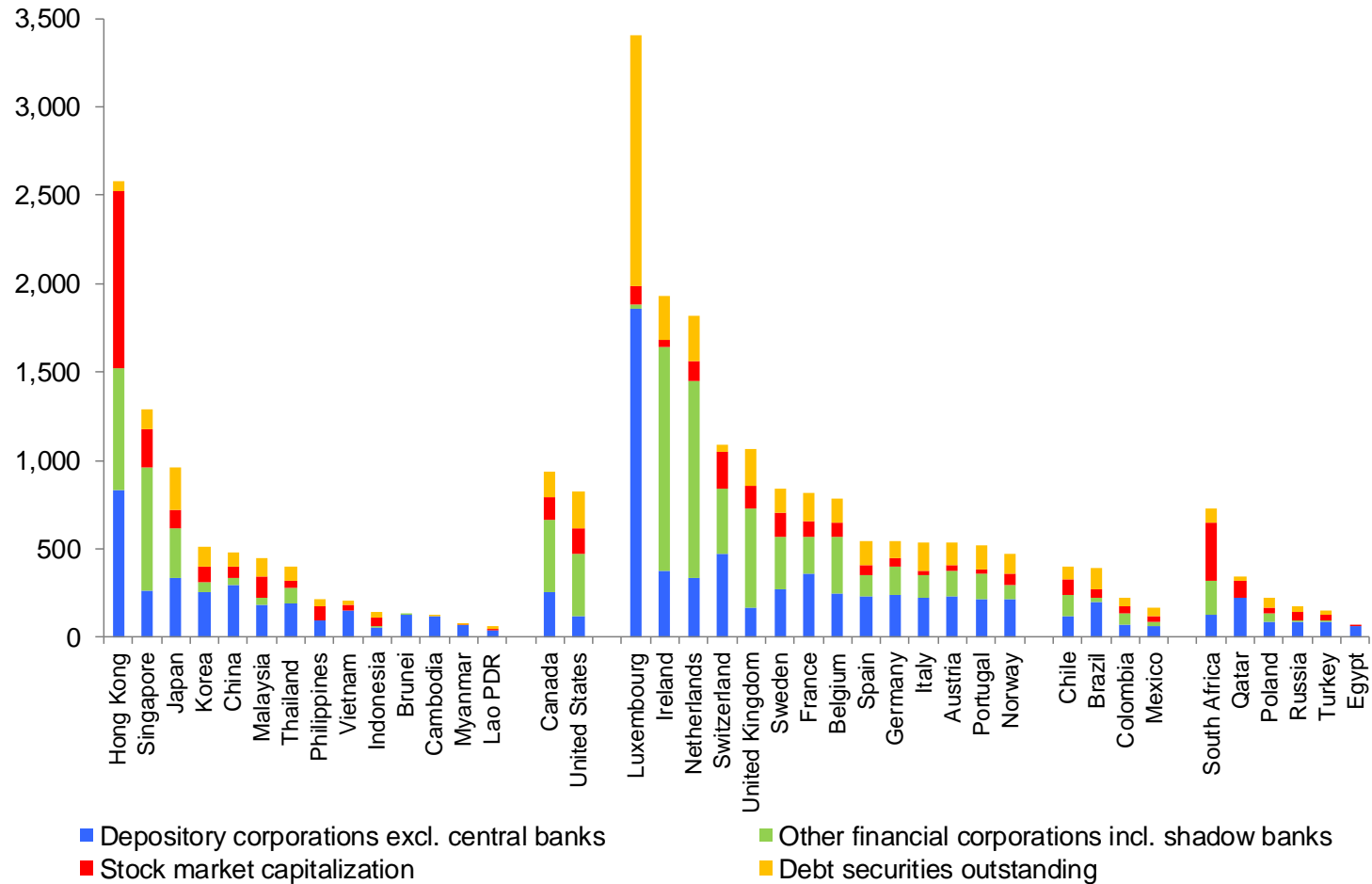


Sources: IMF IFS, WEO; and authors' calculations.

Asia is becoming more important in global economic and financial networks and intra-regional ties continue to strengthen. Its global market shares across sectors are rising and international and regional inter-linkages have become more extensive (Appendix II, Figures A2 and A3):

- Overall, the size of global trade of the ASEAN+3 members has doubled over the past 4 decades, to almost 30 percent of the total. China is the key destination for Asian exports, while the United States—the most systemically important “node” in the global network—is a very important extra-regional market for some members.
- Many ASEAN+3 members’ most significant trading relationships are with regional partners (Figure 11). Rising intra-regional trade is underpinned by strong growth drivers, expanding global value chain networks, Chinese demand for raw materials, intermediate goods and, increasingly, consumption goods. Intra-regional trade amounts to USD 4.5 trillion and accounts for 47 percent of members’ total trade, comparable with the share (46 percent) within the Euro Area.
- Led by China, Asia’s share of inward global foreign direct investment (FDI) grew by five percentage points between 2009–15. Outward FDI by Asian countries also rose slightly during the same period. These transactions are largely attributable to Asian investors themselves, with the intra-regional share of inward FDI within Asia growing from 32 percent in 2007 to 55 percent in 2016 ([ADB, 2017a](#)).
- Asia’s intra-regional share of total cross-border asset holdings has also increased. Cross-border debt asset investments have increased to almost 17 percent in 2015 from around 12 percent in 2010, while its share intra-regional bank claims rose to 22 percent from 16 percent during the same period ([ADB, 2017b](#)). The share of foreign bank claims on Asia has also been rising in recent years after plummeting sharply in the aftermath of the AFC. This increase has been driven largely by foreign currency lending to the region via cross-border loans and the local affiliates of foreign banks.

**Figure 8. Financial Market Structure: ASEAN+3, North America, Europe, Latin America and Other Major EMEs**  
(In percent of GDP)

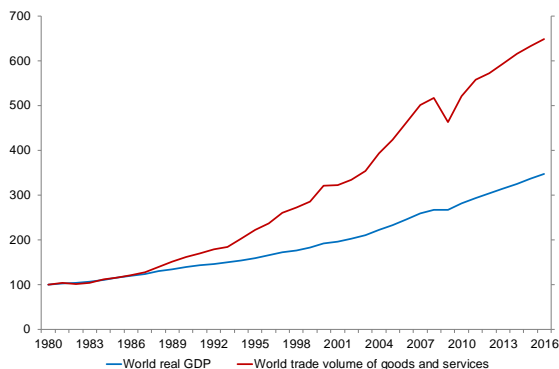


Sources: Asian Development Bank (ADB); BIS; IMF IFS; national agencies; and authors' estimates.

Notes:

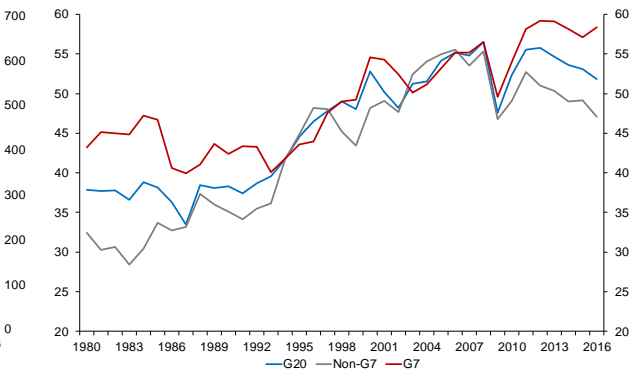
- (i) Data are as of end-2016 or if not available, end-2015.
- (ii) Amounts are not mutually exclusive, i.e., financial corporations' assets also include stocks and debt securities.
- (iii) Where asset data are not available for Other Financial Corporations, assets under management (liabilities) is used as an approximate proxy given that the equity component is typically very small.

**Figure 9. World Trade Volume**  
(Index 1980 = 100)



Source: IMF WEO; and authors' calculations.

**Figure 10. External Trade Openness**  
(Gross trade value in percent of GDP, median)



Sources: IMF IFS, WEO; and authors' calculations.

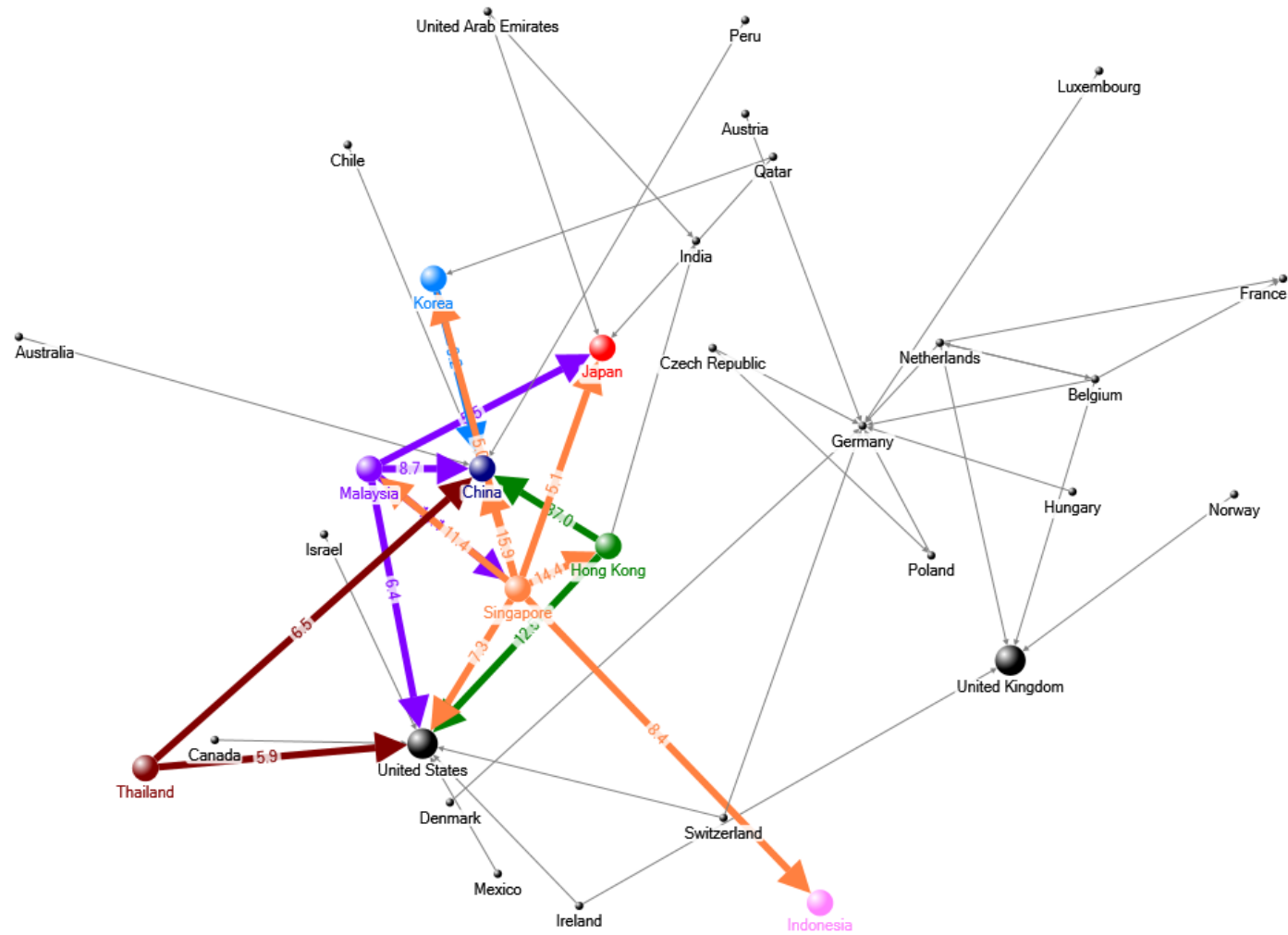
In turn, Asia's growth has become more dependent on and exposed to global trade and finance in general. It has been increasingly exporting and investing more as a percentage of its own GDP over time (Appendix III, Appendix Figure 4). ASEAN+3 exports as a percentage of GDP have been trending upwards since the early 1980s; although they dropped very sharply for some members following the GFC, are still up from where they were three decades ago. The only exception is Japan, where exports have remained stable relative to GDP for almost 40 years. Separately, outward FDI and investment in portfolio assets as a percentage of GDP have continued to rise for most members since the early-2000s, post AFC.

Financial networks are much more concentrated and integrated across regions, notably through the all-important banking system (Figure 12). Among ASEAN+3 members, Japan is the most important "node" in the international banking network. As a major creditor, any sudden stop in lending by Japanese banks could have important repercussions for borrowers in the region as well as in other parts of the world if a domino effect manifests throughout the global banking network. Asian financial centers also receive significant amounts of credit from their European peers such as the United Kingdom and Switzerland.

If long-term trends continue, the demand for credit by ASEAN+3 members, and the associated risks, will grow strongly. We estimate that members could account for almost 40 percent of total borrowing by AEs and EMEs in 20 years' time, on par with the other AEs, from the current 27 percent (Figure 13 and Appendix I). The outcome would be a heightening of financial risks in these countries as domestic banks become more exposed to credit risks while some economies become susceptible to sudden stops in foreign bank credit.

Hence, ensuring Asia's financial stability should be considered a "global public good" given its rising importance to the world and vice-versa. As the role of the ASEAN+3 in international trade and finance continues to grow in significance, the region is becoming more exposed to developments elsewhere in the world. In turn, it is also posing greater risks to the rest of the world. Any spillover is likely to have a large impact on both AEs and EMEs as the domino effect becomes increasingly magnified.

**Figure 11. Major AEs and EMEs: Trade Network, as of October 2017**  
(In percent of GDP)

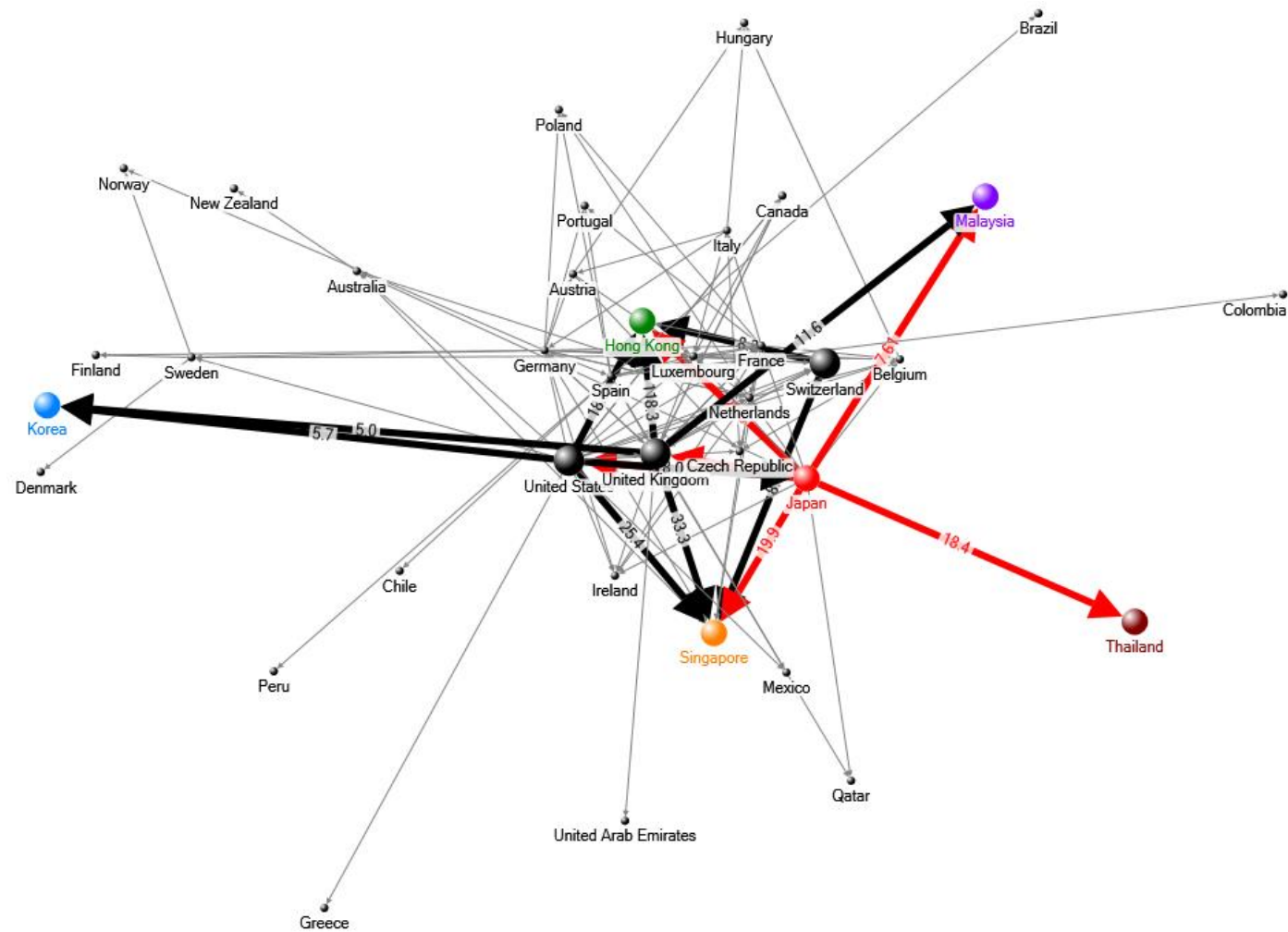


Sources: IMF Direction of Trade Statistics (DoTs) and IFS; and authors' estimates.

Note: Figure shows relationships where trade is 5 percent of exporter GDP or greater. The size of colored vertices and edges merely highlight the ASEAN+3 members as well as their links with the United Kingdom and United States; the direction of each arrow denotes exports from one country to another.



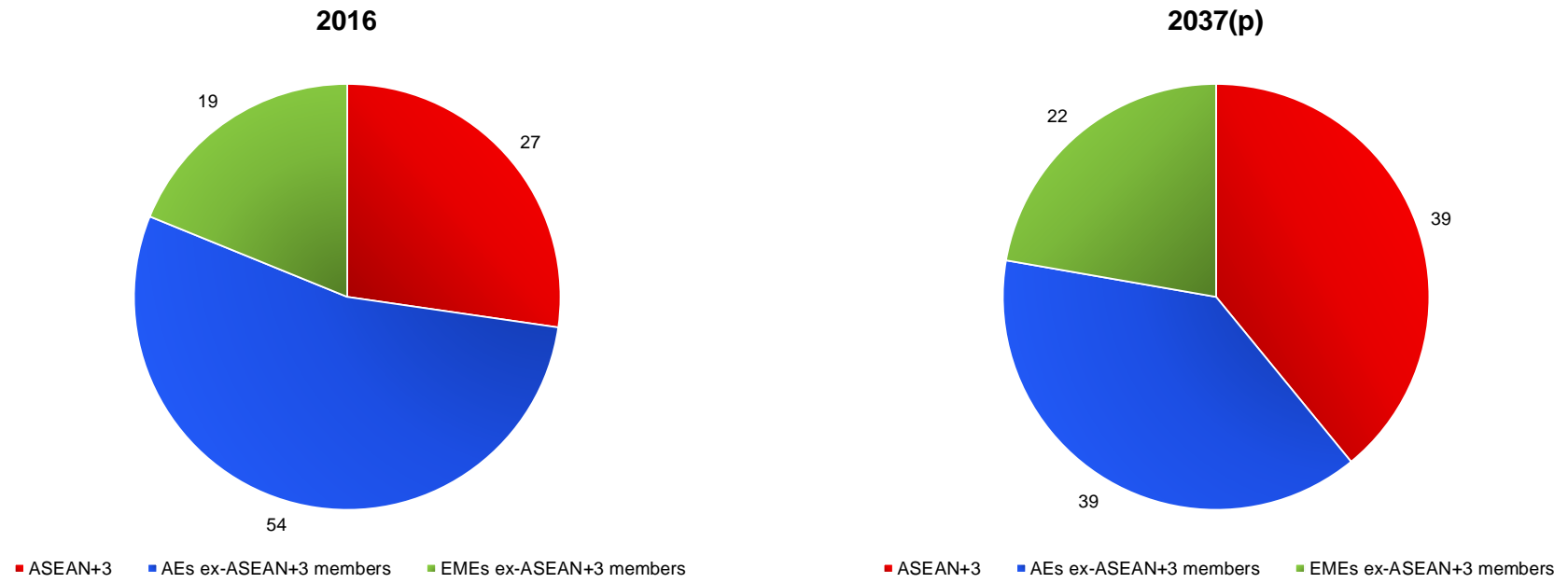
**Figure 12. Major AEs and EMEs: Network of Bank Claims, as of September 2017**  
(In percent of GDP)



Sources: BIS; IMF IFS; and authors' estimates.

Note: Figure shows relationships where bank claims are 5 percent of debtor GDP or greater. The size of colored vertices and edges merely highlight the ASEAN+3 members as well as their links with Switzerland, the United Kingdom and United States; the direction of each arrow denotes the direction of lending.

**Figure 13. AEs and EMEs: Share of Total Credit**  
(In percent of total)



Sources: BIS; IMF WEO; and authors' estimates.

## B. Asia and the Financial Crises

The AFC affected both the real and financial sectors. A build-up in economic imbalances triggered a loss of investor confidence in the financial sector: portfolio investors pulled out and foreign banks stopped rolling over their loans. Even though government budgets were largely balanced at the time and inflation rates were modest, widening current account deficits in some countries, strong private capital inflows and investments in non-productive assets, notably real estate, became unsustainable. The appreciation of the U.S. dollar, to which the currencies of the economies were either formally or informally pegged, exposed weak risk management practices in the financial and corporate sectors. The broad similarities in vulnerabilities across countries caused investors to “lump” the countries together, resulting in regional contagion.

In the decade following the AFC, Asian countries implemented concerted financial and structural reforms to rebuild their economies.<sup>5</sup> Stricter financial regulations were introduced, supervision and risk management were strengthened, and financial institutions were either closed down or recapitalized (see Box 1 on Indonesia and Malaysia). In the private sector, banks and non-financial corporations deleveraged and repaired their balance sheets and eventually returned to profitability. In both areas—supervision and commerce—governance and transparency were improved; growth resumed and investors returned to these markets. The wide-ranging measures also lowered Asia’s external and financial vulnerabilities and the region was consequently less affected by the GFC than elsewhere.

However, Asia’s underlying economic fundamentals and financial conditions weakened somewhat in the years following the GFC. This time, regulators were more vigilant against the potential risks from massive capital flows and implemented macroprudential measures to contain their build-up. Nonetheless, concerns grew over the rapid credit growth and elevated asset prices in some countries, increased leverage in the private non-financial sector and, in some cases, weakening external positions. While no single factor dominated, the emerging market stress events in 2013-14 underscored the market’s focus on countries’ external financing needs, especially short-term ones, financial sector vulnerabilities, and weak growth prospects coupled with wider fiscal deficits and rising inflation ([Jeasakul, Lim and Lundback, 2015](#)). Indeed, these concerns resulted in the identification by markets of the “Fragile Five” countries during that period.<sup>6</sup>

Since then, improvements in global growth and trade, supported by firming domestic demand, have contributed to robust economic expansion in the Asian region, although risks continue to lurk. Going forward, AMRO’s key concerns surrounding capital flows to the ASEAN+3 are largely external, namely, faster-than-expected tightening in global financial conditions and an escalation in U.S. trade protectionism in the near term (Appendix IV), both of which are consistent with the market’s views (see Annex). For the medium-term, AMRO assesses the possibility of a sharp slowdown in and capital flight from China as low-likelihood tail-risk events. Other perennial risks that may result in large and unpredictable shocks to the region include geopolitical events, natural disasters (in some cases from climate change) and cyber-attacks.

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<sup>5</sup> See [AMRO \(2017\)](#) and [IMF \(2015\)](#) for detailed analyses on ASEAN+3 economic and policy developments following the AFC.

<sup>6</sup> Brazil, India, Indonesia, South Africa and Turkey.

While Asian countries have continued to build “insurance” against capital outflows, the accumulated FX reserves may still be insufficient if key risks were to materialize. The buffers appear very comfortable during “peacetime” but may come under significant pressure in the event of sharp and sustained capital outflows amid the region’s growing trade and financial positions (Figure 14). It is especially pertinent for the members with low import coverage and for those whose foreign portfolio liabilities and foreign bank borrowings are substantially greater than their FX reserves (Appendix III, Appendix Figure A4). These countries could struggle to defend against large, protracted outflows occurring simultaneously on some or all fronts.

### **Box 1. Indonesia and Malaysia: Different Paths from Crisis to Recovery**

Struck by the crisis that first engulfed Thailand in July 1997, Indonesia and Malaysia took separate routes to recovery and reform following the AFC. While Indonesia entered into an IMF program in October 1997, Malaysia chose to implement more unconventional measures after initial efforts to adhere to standard IMF prescriptions of tight monetary policy and fiscal prudence appeared to amplify the effects of the crisis. Notwithstanding the different approaches, both countries emerged stronger from the AFC although their respective experiences in terms of crisis impact, length of recovery, policy choices and remaining challenges were very different.

The AFC was characterized by the collapse of the currencies of the affected Asian countries which unmasked problems in their banking and external sectors. Up until then, countries had implicitly or explicitly pegged their currencies to the U.S. dollar, instilling a false sense of security in borrowers who saw little need in managing their FX exposures. The globalization of financial markets and the attractiveness of the region’s high growth and relatively stable currencies contributed to the rapid inflows of portfolio money and bank debt. In the wake of the crisis, Indonesia adopted a floating exchange rate regime that allows the rupiah to act as a “shock absorber” while incentivizing better risk management among those with FX exposures. In contrast, Malaysia fixed its exchange rate and imposed tough capital controls to quickly stanch the large outflows and restore stability to the ringgit, while implementing countercyclical fiscal policy to stimulate demand. However, concerns over those capital control measures kept foreign investors away from the Malaysian market for some time.

A key step to the recovery from the AFC was to reverse the credit crunch and restore credit intermediation. In Indonesia, the rupiah’s steep depreciation exposed the private sector’s high (and unhedged) foreign currency borrowings that resulted in a raft of non-bank corporate bankruptcies. They led to the forced liquidation of a number of domestic banks, which wreaked significant damage to the country’s financial intermediation, resulting in a slower recovery in credit. In contrast, Malaysia took a more systematic approach to resolving its banking problems, in setting up an asset management company, Danaharta, to take non-performing loans (NPLs) off the books of the banks and then consolidating and recapitalizing the banking sector via its recapitalization fund, Danamodal.

Post-AFC, the respective focus on developing the financial sector differed markedly. Malaysia executed a comprehensive strategy to strengthen its capital markets and financial sector by introducing the Capital Market Master Plan I and the Financial Sector Master Plan in 2001. The aim was to build a deep, diversified and resilient sector, including the development a domestic corporate bond market (which eventually became the largest in South-East Asia) to move away from relying solely on bank credit. These policies were supplemented with a step-by-step relaxation of capital flows measures. Indonesia’s government also implemented policies to develop its local currency bond market in a bid to address the currency mismatch risks experienced during AFC. The bond market has expanded significantly for the past two decades, but is largely limited to the sovereign sector and is relatively illiquid owing to small issuances across different types of instruments and the smaller domestic investor base compared to regional peers. Foreign holdings of Indonesia’s

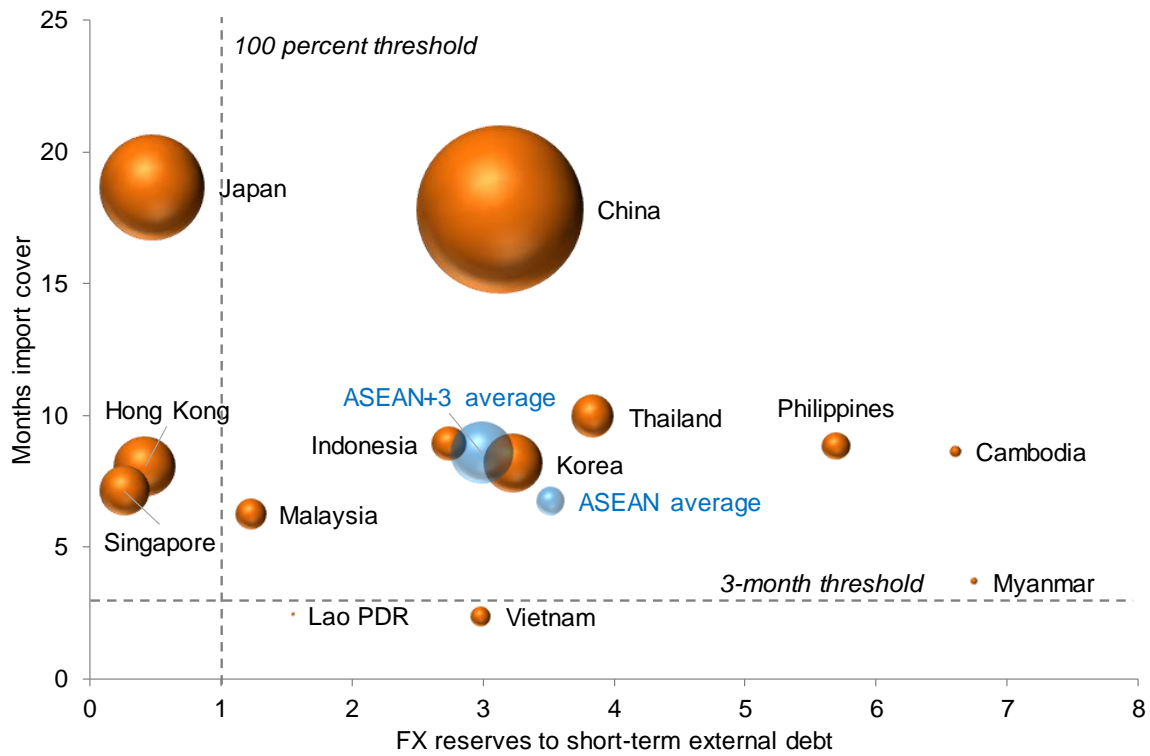
government bonds are highest in the region at almost 40 percent of total (Malaysia is next highest at around 27 percent).

New macro-policy frameworks were introduced and deposit insurance was institutionalized in both countries. In Indonesia, fiscal rules were adopted in 2003 to limit the budget deficit to 3 percent of GDP and the debt-to-GDP ratio to 60 percent, as proof of the government's commitment to fiscal soundness. Bank Indonesia (BI) adopted inflation targeting in 2005, establishing inflation as the main nominal anchor for monetary policy, to which it has adhered in the face of domestic and external shocks. Meanwhile, the adoption of the Central Bank of Malaysia Act in 2009 formalized the autonomy and independence of Bank Negara Malaysia (BNM) in formulating monetary policy. BNM has also been empowered as the financial stability authority, imbued with the capability to provide liquidity assistance to or resolve systemically important financial institutions to prevent spillovers. On the banking front, the Indonesia Deposit Insurance Corporation was tasked with providing limited guarantees for bank deposits, while Malaysia passed the Deposit Insurance Act and established a government agency, Perbadanan Insurans Deposit Malaysia, to administer the deposit insurance system, both in 2005.

Macroprudential policy has assumed a greater role in the financial stability toolkit in the aftermath of the GFC. Unconventional monetary policies adopted by the United States and other AEs have resulted in the surge of capital flows into EMEs as investors search for yield, leaving the latter vulnerable to reversals of flows (such as those seen during the taper tantrum), credit booms and surges in property prices. To counter this development, countries such as Malaysia and Indonesia have more actively employed macroprudential measures to curb strong growth in the property sector, typically via rules on the loan-to-value ratio, and in Malaysia's case, additional measures such as real property gains taxes, floor prices on foreign purchasers and maximum mortgage terms.

Contributed by: Ruperto Majuca and Jade Vichyanond.

**Figure 14. ASEAN+3: FX Reserves Coverage, as of September 2017**



Sources: IMF IFS; national agencies; The World Bank; and authors' calculations.

Notes:

- (i) The size of the bubbles show the relative amounts of FX reserves size across countries. Brunei is excluded given that it does not publish external debt data.
- (ii) FX reserves data as of September 2017 are used to be consistent with the timing lag in the publication of import and short-term debt numbers. Cambodia's FX reserves are actually lower than the reported amount, which includes unrestricted foreign currency deposits parked at the National Bank of Cambodia.
- (iii) Short-term external debt data for Lao PDR, Malaysia, Myanmar and Vietnam are only published on an annual basis and are as of end-2016. The latest quarterly import data are used for Lao PDR (June 2017) and Myanmar (March 2017).

### III. The Role of RFAs and the CMIM

#### A. RFAs in the IMS

Globally, RFAs have been in place since 1976. There are presently eight RFAs representing 80 members with around USD 1 trillion in total financial resources (Table 1). Indeed, RFAs have become comparable to those of IMF lending facilities and central bank swap lines in terms of size and are an indispensable component of the GFSN (Figure 15).

RFSNs typically consist of several components, with each financial support facility having its own advantages and disadvantages (Table 2). They complement the IMF's role in some areas and supplement it in others. Key plusses include the following:

- They are able to provide additional resources amid the increasing size and volatility of capital flows (Figure 16). The importance of RFA financing became evident in the wake of the AFC and then the GFC when IMF funds were insufficient to cover the financing gap and regional neighbors were asked to provide additional support to fill the “hole” (Figure 17).
- They provide motivation for having regional cooperation frameworks in place. These are strategically sensible given the heightened risk of spillovers from close trade and financial linkages during crises.
- They may incentivize members who want to avoid the lingering stigma of IMF programs to seek support pre-emptively, hence reducing the risk of speculative attacks.
- They reduce the need for countries to accumulate excessively large FX reserves, which carry significant opportunity costs, as evidenced by many EMEs that consider such buffers their first line of defence.
- They mitigate the risk of group-think and blind spots that could arise if there were only one institution involved, which is beneficial for both borrowers and lenders.

A survey of market participants indicate that many consider an RFSN to be important for financial stability (Appendix V). By far, most consider a precautionary liquidity to be the most useful. Central bank swap lines are considered most important by the second largest group of respondents. Other types of financial support that are currently available through the IMF or the ESM in Europe are considered relatively less effective. Participants see merit in having a central regional institution that formally coordinates and manages all the facilities that are available to the region.

**Table 1: Summary of RFAs**

Arrangements	Membership	Establishment	Regular Surveillance 1/	Size of Financial Resources
Arab Monetary Fund (AMF)	22 members in the Middle East and North Africa	1976	No	USD 2.6 billion
ASEAN Swap Arrangement (ASA) Initiative	Originally 5 members of ASEAN; expanded to all 10 ASEAN members in 2000	1977	No	USD 2 billion
Fondo Latinoamericano de Reservas (FLAR)	8 members in Latin America	1978	No	USD 3.6 billion
Chiang Mai Initiative Multilateralization (CMIM)	14 members of ASEAN+3	2000	Yes (by AMRO)	USD 240 billion
European Union—Balance of Payments (EU-BoP) Facility	8 members of non-Euro Area EU	2002	No	EUR 50 billion
Eurasian Fund for Stabilization and Development (EFSD)	6 members in Eurasia	2009	No	USD 8.5 billion
European Stability Mechanism (ESM)	19 members of the Euro Area	2012	No	EUR 704.8 billion
BRICS Contingent Reserve Arrangement (CRA)	5 members of BRICS (Brazil, Russia, India, China, South Africa)	2014	No	USD 100 billion

Sources: [IMF \(2017\)](#); and various RFAs.

1/ By affiliated organization.

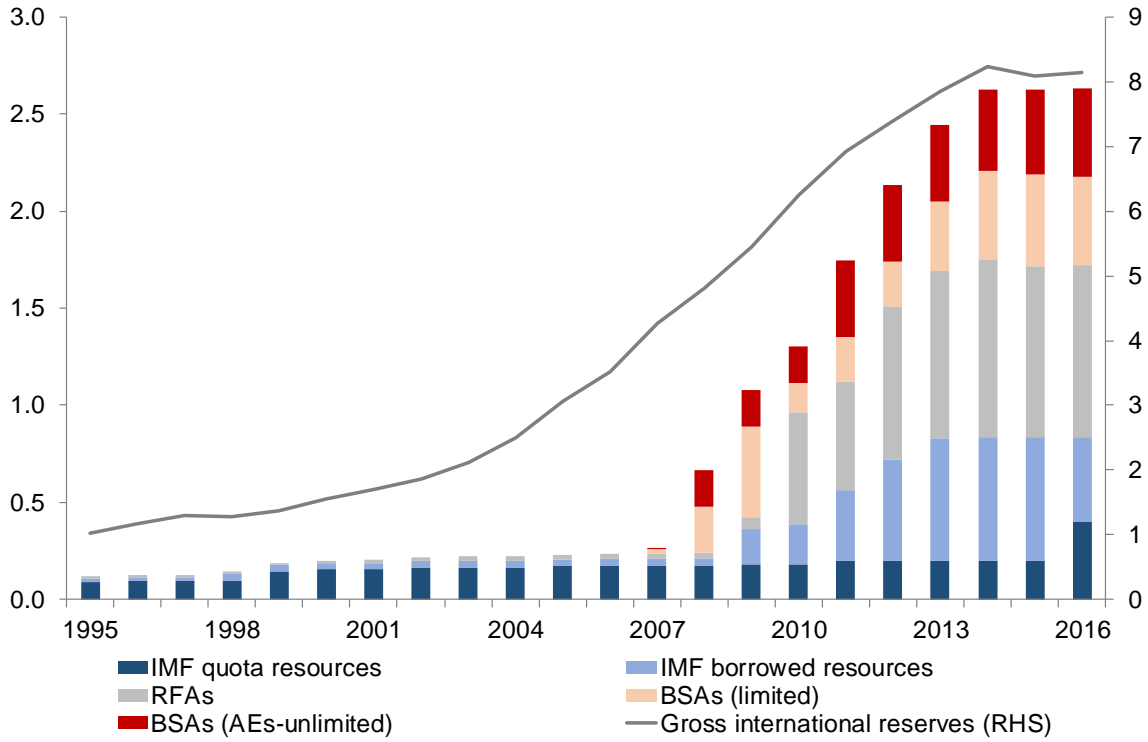
Notes:

(i) The CMI was established in 2000 and subsequently expanded to become the CMIM in 2010.

(ii) The EFSF was set up in June 2010 as a temporary solution and succeeded by the ESM. The EFSF still exists as a legal entity and is a big issuer of bonds but it can no longer make new loans. The EFSF and ESM remain separate legal entities but share staff, facilities and operations.

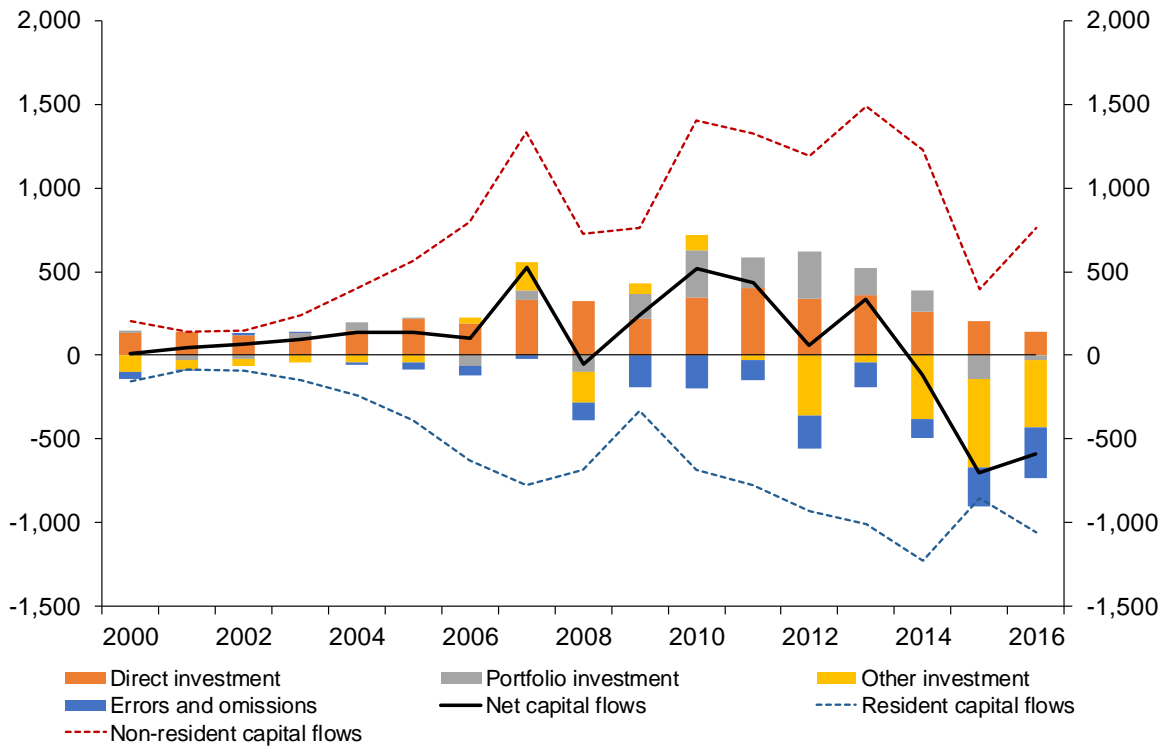


**Figure 15. Composition of the GFSN**  
(In trillions of Special Drawing Rights (SDRs))



Source: IMF.

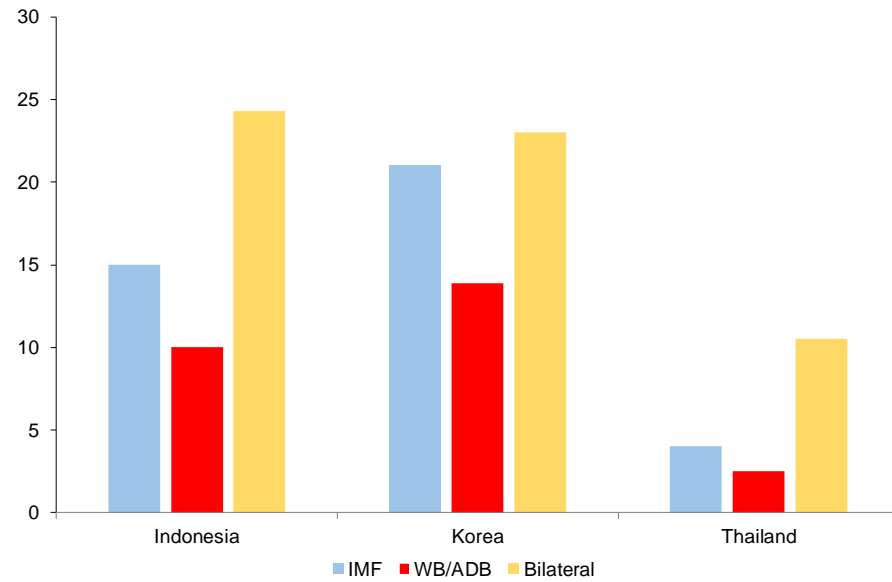
**Figure 16. Capital Flows to Emerging Markets**  
(In billions of U.S. dollars)



Source: The Institute of International Finance.

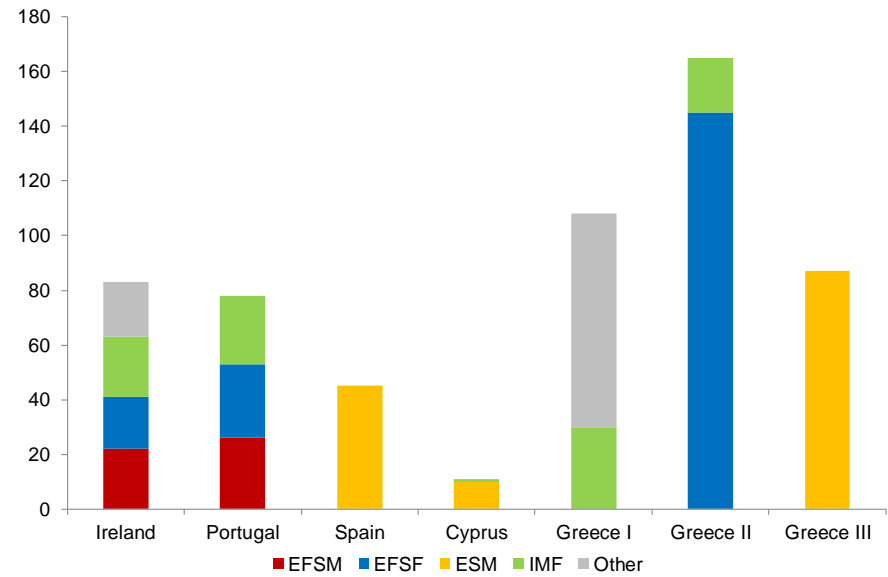
**Figure 17. Financial Crises: Sources of Bailout**

**AFC**  
(In billions of U.S. dollars)



Sources: IMF; and EFSF/ESM.

**GFC**  
(In billions of euro)



Sources: IMF; and EFSF/ESM.

**Table 2. Comparisons across RFSNs**

Facility	Advantage	Disadvantage
IMF	<ul style="list-style-type: none"> <li>• Universal membership (189 members as of October 2017), covering almost all countries in the world.</li> <li>• Significant resources for economic and financial surveillance.</li> <li>• Well-equipped with technical expertise and a long history of experience with crisis management, particularly, in designing policy adjustment programs for enforcement by borrowing countries.</li> <li>• A wide array of precautionary and financing instruments.</li> <li>• Catalytic role, whereby its lending programs induce other sources of financing.</li> </ul>	<ul style="list-style-type: none"> <li>• Stigma issue.</li> <li>• Limited resources owing to quota-based requirements (no leverage in the form of debt issuance); borrowed resources only play a supplementary role.</li> <li>• Governance structure that still does not reflect the rising importance of EMEs and the retained veto power of the United States.</li> </ul>
RFAs	<ul style="list-style-type: none"> <li>• Knowledge of local/regional economic circumstances or situation and political landscape.</li> <li>• Focus on instruments specific to regional situation.</li> <li>• Reduce stigma relative to IMF borrowing owing to regional ownership.</li> <li>• More cost-effective than accumulating FX reserves.</li> </ul>	<ul style="list-style-type: none"> <li>• Limited coverage in terms of facilities—some have precautionary facilities, others not.</li> <li>• Limited experience as crisis manager.</li> <li>• Less suitable for dealing with region-wide (as opposed to country-specific) or global economic shocks.</li> </ul>
Bilateral Swap Arrangements (BSAs)	<ul style="list-style-type: none"> <li>• Prompt activation with fewer parties and simple decision making process.</li> <li>• No/less stringent conditionality and less expensive (attractive for borrowers who “qualify”).</li> <li>• Little stigma.</li> </ul>	<ul style="list-style-type: none"> <li>• More likely bound by bilateral relationship.</li> <li>• Mainly covers short-term funding needs.</li> <li>• Risk of moral hazard given that there is no conditionality requirement.</li> </ul>
FX reserves	<ul style="list-style-type: none"> <li>• Quick and independent decision making process.</li> <li>• Direct method of ensuring external stability.</li> </ul>	<ul style="list-style-type: none"> <li>• Costly, inefficient and exposed to the risk of losses in the event of foreign currency depreciation.</li> <li>• A fear of losing FX reserves during the crisis; not all FX reserves can be used.</li> </ul>

Sources: [Aizenman and Sun \(2009\)](#); [Denbee, Jung and Paterno \(2016\)](#); [Eichengreen \(2016\)](#); IMF (2016c, 2016d); [Lamberte and Morgan \(2012\)](#); [Rhee, Sumulong and Vallée \(2013\)](#); and [Muhlich and Fritz \(2016\)](#).

## B. Readiness of the CMI and CMIM

The CMI was introduced in the aftermath of the AFC in response to countries' dissatisfaction with the perceived heavy-handedness and undue harshness of IMF programs in the region. Japan's proposal to set up the Asian Monetary Fund soon after Thailand approached the IMF for support in July 1997 eventually led to the establishment of the "Manila Framework" in November 1999, which was aimed at promoting regional peer surveillance.<sup>7</sup> The ASEAN+3 Finance Ministers' Meeting in May 2000 subsequently noted the "*need to establish a regional financing arrangement to supplement the existing international facilities*" ([ASEAN+3, 2000](#)). The CMI features BSAs that are underpinned by the FX reserves of the ASEAN+3; it was expanded and multilateralized to become the CMIM in 2010 after the GFC.

However, the CMI was not called upon during the GFC with some countries opting instead to use other facilities. Korea, Singapore and Indonesia requested BSAs: Korea approached the United States (October 2008), China (December 2008) and Japan (December 2008) to maintain liquidity and support confidence in its markets; Singapore established a bilateral swap with the United States and Japan. Indonesia secured USD 5.5 billion of funding from the World Bank, the ADB, Australia and Japan.

So why did countries eschew the CMI during the GFC and the CMIM during the 2013 "taper tantrum"? In the wake of the AFC, Asian countries implemented reforms and adopted policies that strengthened their economic fundamentals and financial systems, which subsequently increased their resilience against the impact of the GFC. For members who came under liquidity pressure, their reluctance to use the CMI facility has been attributed to several factors:

- *"IMF stigma" of the CMI and CMIM.* The high IMF-linked portion of the CMI/CMIM evoked the possibility of eventual IMF involvement, which raised concerns about the stigma of an IMF program for Asian countries (Eichengreen, 2016; [Grimes, 2011](#); [Lamberte and Morgan, 2012](#); Kawai, 2015). The conditionality requirement of the CMIM further added to the negative association with IMF programs during the AFC.
- *Lack of operational readiness of an untested CMIM.* At the time of the taper tantrum, technical operational guidelines had not been put in place nor had test runs been conducted. Also, bilateral local currency accounts had not been established.
- *Limited size of the CMI.* The CMI facility was too small to be effective ([West, 2017](#)). In May 2008, members reached an in-principle agreement on a self-managed reserve pooling arrangement, the total size of which was about USD 80 billion. As of end-2008, the then-CMI amounted to USD 83 billion on a bilateral basis.<sup>8</sup>
- *Lack of precautionary liquidity facility.* The CMIM only had a stability facility for actual funding needs at that time but no precautionary liquidity facility (Kawai, 2015).
- *Lack of conditionality and strong surveillance.* There was neither a surveillance unit to support the CMI/CMIM ([Rana, 2011](#)) nor a conditionality framework to support a program ([Siregar and Chabchitichaidol, 2013](#)). Consequently, potential borrowers

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<sup>7</sup> The Manila Framework was terminated in 2004.

<sup>8</sup> Korea's share was USD 23 billion under CMI as of end-2008, which was equivalent to 2 percent of GDP at the time; Singapore was entitled to USD 3 billion or 1.7 percent of its 2008 GDP.

were concerned that members would be reluctant to lend without any assurance of repayment in the face of moral hazard considerations.

The CMIM remains at an early stage although progress has been made towards addressing some of the initial concerns:

- In March 2010, the CMIM Agreement came into effect with a facility for USD 120 billion; the size was doubled to USD 240 billion in July 2014.
- In July 2014, a precautionary facility was introduced, the IMF de-linked portion was raised to 30 percent and the maturity of the CMIM facilities was extended.
- AMRO was established in April 2011 as the surveillance unit of the CMIM and upgraded to International Organization status in February 2016.
- More recently, the effectiveness of the CMIM has been reviewed through test runs, peacetime preparations and periodic reviews in the context of the enhanced GFSN. The capacity of AMRO has been improved in terms of surveillance, supporting the implementation of the CMIM, and providing technical assistance to members (Nemoto, [2015a](#), [2015b](#)).

Nonetheless, areas such as operational readiness, surveillance capacity, facility design and uncertainties around the evolving GFSN remain works-in-progress.

### C. Regional Buffers

The ASEAN+3 countries have several options in the event that financing is needed. A comparison of financing sources reveals that there is no one best option for all countries, with some facilities able to provide more support for some countries relative to others (Table 3):

- *FX reserves represent the most sizable buffer for the ASEAN+3 economies* (Figure 15). The FX reserves (defined here as “international reserves including gold”) of the ASEAN+3 countries account for almost half of the world total of USD 12.8 trillion as of end-2017, with those of the Middle-East and North Africa group of countries a distant second at 8.1 percent of the total (Figure 18). In absolute terms, China holds the largest amount at USD 3.2 trillion while Japan accounts for USD 1.3 trillion. ASEAN countries plus Korea make up the remainder. However, adequacy differs among the +3 and bigger ASEAN economies compared to Lao PDR, Myanmar and Vietnam (Figure 14). The major ASEAN countries have accumulated a considerable amount of FX reserves since the AFC: The FX reserves of Indonesia, Thailand and the Philippines are able to cover around nine months of imports and are at least twice their respective accessible amounts at the CMIM or IMF. On the other hand, the FX reserves in Lao PDR, Myanmar and Vietnam are below or only just at the borderline of the conventional three-month import threshold.
- For some ASEAN countries, namely, Indonesia, Singapore and Malaysia, the size of BSAs significantly exceeds the maximum amount of the CMIM swap and IMF arrangement (Box 2). The combined size of BSAs in the ASEAN+3 region is over USD 290 billion; the majority of BSAs are denominated in local currencies, with China and Japan the biggest contributors in the region. The objective of the majority of regional BSAs is to promote bilateral trade and investment and maintain bilateral financial

stability. However, those of the Japan Ministry of Finance (JMoF) have short-term U.S. dollar liquidity and BoP objectives and are linked to the CMIM and to IMF arrangements.

- For some ASEAN members, the maximum amounts that CMIM facilities are able to provide are comparable to or larger than those from the IMF. Different purchasing multiples were designed for ASEAN members during the CMI multilateralization process to improve support.

It is clear that Cambodia, Lao PDR, Myanmar and Vietnam (CLMV) are disadvantaged in terms of financial safety nets. Their FX reserves buffers are weak; they do not have any BSA arrangement with regional members; and they are only able to access relatively small amounts of financing from both the CMIM and IMF (Box 3). While the IMF has established concessional facilities for low-income countries, such as the Extended Credit Facility (ECF), Standby Credit Facility (SCF) and Rapid Credit Facility (RCF) under the Poverty Reduction and Growth Trust (PRGT), these amounts are also limited.

**Table 3. ASEAN+3: Comparison of Financing Sources**  
(In billions of U.S. dollars)

Member	FX Reserves	BSA			CMIM		IMF				ADB Asia Pacific Disaster Response Fund (per event)
		ASEAN+3 (BoP)	ASEAN+3 (Trade and financial stability)	Other	IMF Delinked Portion (30 percent)	Total (100 percent)	Stand-By Arrange- ment (435 percent)	Precaution- ary and Liquidity Line (500 percent)	SCF and ECF Access per year (75 percent)	Total credit (225 percent)	
China	3,235.4		212.0	290.8	10.2	34.2	188.8	217.1			0.003
Hong Kong	431.4		60.2		1.9						0.003
Japan	1,264.1	43.8 1/	9.7 2/	64.2	11.5	38.4	190.9	219.5			0.003
Korea	389.2		67.8	7.8+unlimited local currency with BoC	11.5	38.4	53.17	61.1			0.003
<b>+3</b>	<b>5,320.1</b>				<b>35.2</b>	<b>117.3</b>	<b>432.9</b>	<b>497.6</b>			
Indonesia	130.2	22.8 1/	109.3	7.4	6.8	22.8	28.8	33.1			0.003
Malaysia	102.4	3.0 1/	31.5		6.8	22.8	22.5	25.9			0.003
Philippines	81.6	12.0 1/			6.8	22.8	12.7	14.5			0.003
Singapore	279.9	3.0 1/	54.8		6.8	22.8	24.1	27.7			0.003
Thailand	202.6	3.0 1/	10.5		6.8	22.8	19.9	22.9			0.003
Vietnam	43.9				3.0	10.0	7.2	8.2	0.9	2.6	0.003
Cambodia	12.2				0.4	1.2	1.1	1.2	0.1	0.4	0.003
Myanmar	5.2				0.2	0.6	3.2	3.7	0.4	1.2	0.003
Brunei	3.3				0.1	0.3	1.9	2.1			0.003
Lao PDR	1.3				0.1	0.3	0.7	0.8	0.1	0.2	0.003
<b>ASEAN</b>	<b>862.9</b>				<b>37.9</b>	<b>126.2</b>	<b>121.9</b>	<b>140.1</b>			
<b>Total</b>	<b>6,183.1</b>	<b>43.8</b>	<b>235.4</b>	<b>370.2</b>	<b>73.1</b>	<b>243.5</b>	<b>554.9</b>	<b>637.8</b>			

Sources: ADB; IMF; various central banks; and authors' estimates.

1/ JMoF 2/ Bank of Japan (BoJ).

Notes:

(i) Exchange rate: USD 1 = SDR 0.7022 as of 29 December 2017.

(ii) Data on FX reserves are as of December 2017, except for Brunei (latest September 2017), and Vietnam (latest November 2017).

(iii) There is no cap on access to the IMF Flexible Credit Line (FCL) facility and a case-by-case modality is adopted. The IMF ECF/SCF facility is targeted at low-income countries.

(iv) Besides IMF and CMIM resources, there is an ASEAN swap arrangement that amounts to USD 2 billion among ASEAN countries.

(v) The amounts that ASEAN+3 members could request from the CMIM Precautionary Line (PL) facility are the same as those from the CMIM Stability Facility (SF). Members cannot apply for both the CMIM-PL and the CMIM-SF at the same time.

(vi) For BSAs, the JMoF signed agreements with ASEAN-5 countries and India to provide U.S. dollar liquidity. The rest of the BSAs are denominated in local currencies in order to facilitate bilateral trade and maintain financial stability. The most recent one is the agreement in local currency between the Bank of Korea (BoK) and the Bank of Canada (BoC) in November 2017. The BoJ has standing liquidity facilities with the U.S. Board of Governors of the Federal Reserve ("Fed"), European Central Bank, Bank of England, BoC and Swiss National Bank. In May 2017, the JMoF proposed establishing a new type of BSA totaling up to JPY 4 trillion to address short-term liquidity problems in ASEAN countries.

## Box 2. ASEAN+3: Bilateral Swap Arrangements

In recent years, BSAs have grown rapidly in the region. They have increased to more than USD 290 billion, helping to support regional financial stability (Box Table 1). Most BSAs between the ASEAN and +3 countries were established after the GFC and are denominated in local currencies. The objectives of the various BSAs may be different, with the majority focusing on promoting bilateral trade and investment and maintaining financial stability, while others are more like the CMIM arrangement with BoP objectives, and linked to IMF arrangements.

**Box Table 1. ASEAN+3: BSAs in the Region**  
(In billions of U.S. dollars)

Member	Lender										Total	Percent of GDP	Percent of Imports
	CHN	HKG	IDN	JPN	KOR	MYS	PHP	SGP	THA				
Borrower	CHN	-	61.4	20.0	-	59.8	27.6	-	46.1	10.7	225.6	1.8	10.4
	HKG	61.4	-	-	-	-	-	-	-	-	61.4	18.0	9.8
	IDN	20.0	-	-	22.8	10.0	-	-	-	-	52.8	5.2	30.3
	JPN	-	-	-	-	-	3.0	12.0	3.0 (JMoF) 9.8 (BoJ)	3.0	30.7	0.6	3.8
	KOR	59.8	-	10.0	-	-	4.7	-	-	-	74.5	5.0	13.2
	MYS	27.6	-	-	3.0	4.7	-	-	-	-	35.3	11.2	18.1
	PHP	-	-	-	12.0	-	-	-	-	-	12.0	3.8	10.9
	SGP	46.1	-	-	3.0 (JMoF) 9.7 (BOJ)	-	-	-	-	-	58.8	18.1	12.7
	THA	10.7	-	-	3.0	-	-	-	-	-	13.7	3.0	5.7
	Total	225.6	61.4	30.0	53.5	74.5	35.3	12.0	58.8	13.7	293.8	-	-

Sources: ASEAN+3 central banks.

Notes:

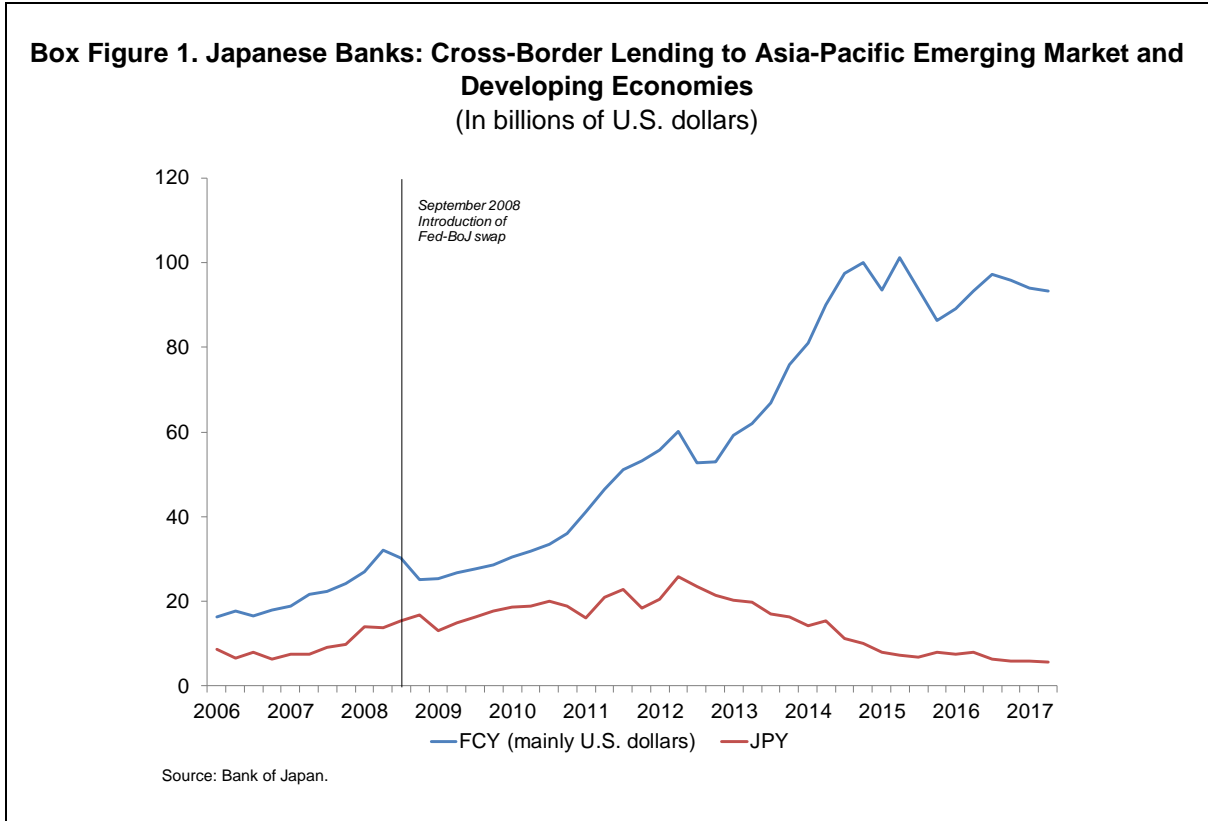
- (i) Exchange rate: USD 1 = RMB 6.512, USD 1 = JPY 112.9, USD 1 = KRW 1,070.5 as of end-December 2017.
- (ii) Nominal GDP is for the 12 months to December 2017, except for Korea, which is for the 12 months to September 2017; imports are for the 12 months to September 2017.
- (iii) Figures in red show U.S. dollar BSAs signed between JMoF and the ASEAN-5 countries, of which the BSA between Japan and Indonesia is one-way (from Japan to Indonesia) and others are two-way. The other BSAs are signed in local currencies.
- (iv) The grand total of USD 293.8 is not equal to the sum of the member sub-totals so as not to double-count.
- (v) In addition to the BSAs within the region, regional members also signed BSAs with countries outside the region. The People's Bank of China (PBoC) has BSAs with 30 other countries (USD 291 billion). The BoJ signed a BSA with the Reserve Bank of Australia (RBA) (USD 14 billion) and the JMoF signed a BSA with the Reserve Bank of India (USD 50 billion). The BoK has BSAs with the RBA (USD 7.8 billion) and the BoC (no limit on amount and maturity) in local currency. BI signed a BSA with the RBA in local currency (USD 7.4 billion) in order to promote bilateral trade and other purposes.

As the two largest economies in the region, China and Japan have contributed significantly to regional BSAs. The BoJ is the sole Asian central bank that can swap local currency to the U.S. dollar without limit through its standing liquidity swap arrangement with the Fed. This capability allows Japanese private banks operating within ASEAN+3 to secure U.S. dollar funding when necessary, thereby supporting financial stability in the region by ensuring the smooth functioning of interbank markets. 1/ Indeed, cross-border interbank lending in U.S. dollars from Japan to the rest of Asia rose immediately following the introduction of the swap and has continued to grow at an even greater pace than that of the yen (Box Figure 1).

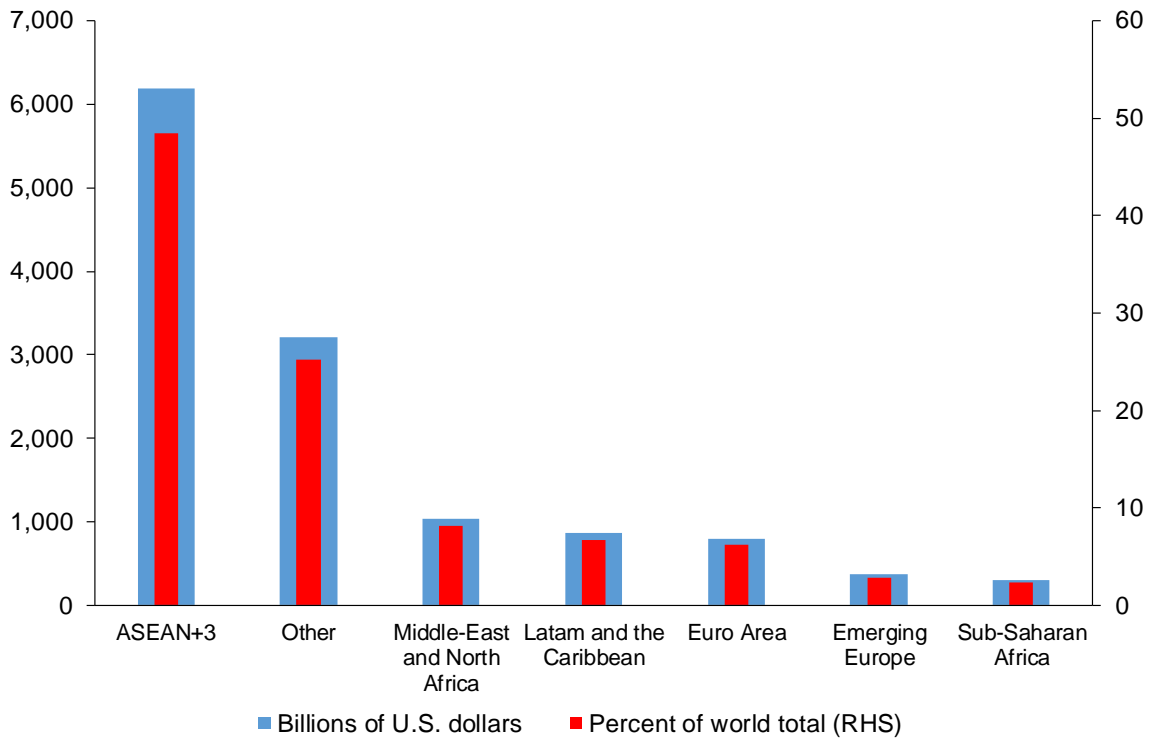
Separately, the PBoC began entering into local currency BSAs to meet the needs of some EMEs, especially those in Asia, during the GFC in 2008. As of end-2017, the total size of the BSAs between the PBoC and other 36 central banks or monetary authorities has exceeded CNY 3.3 trillion (over USD 500 billion), of which about 45 percent is within the region. Indeed, the PBoC's BSAs with Asian countries account for nearly 80 percent of the BSAs in the region.

1/ In addition to Japanese banks, branches of foreign banks are able to tap the BoJ facility. Among the ASEAN+3, the Bank of China, Hongkong and Shanghai Banking Corporation and Bank Negara Indonesia were selected as eligible financial institutions as of December 2017.





**Figure 18. FX Reserves by Region, as of December 2017**



Sources: IMF IFS; and authors' calculations.

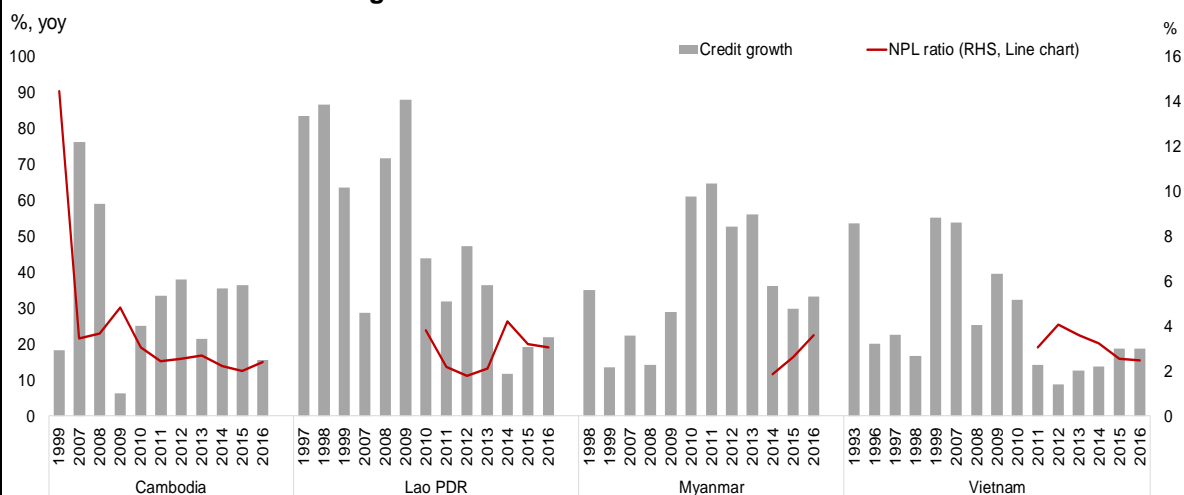
Note: For countries and/or regions where December 2017 data are not yet available, the latest figures are used.

### Box 3. Financial Support for the CLMV

Financial vulnerabilities in CLMV remain high despite strong growth and continuing efforts to bolster financial stability. Rapid financial sector growth amid low supervisory capacity, weak risk management and inadequate corporate governance is a potential source of instability. The risks are intensified through CLMV's expanding links with global financial markets, which increase the channels for spillovers and contagion. Indeed, CLMV did not go unscathed during the GFC. The four countries were affected to various degrees, with Cambodia the most affected—its growth plummeted to almost zero in 2009 from a 10-year average of 9.5 percent between 1999–2008.

Across the four economies, high credit growth and NPLs remain major concerns (Box Figure 2). The credit risk in banks' portfolios is high; the weak asset quality is attributable to either legacy high NPLs that need to be resolved, as in the case of Lao PDR and Vietnam, or rising NPLs in the case of Cambodia and Myanmar. Moreover, a significant complication hindering an accurate analysis of financial vulnerabilities in CLMV is data quality, as accounting standards are not in line with international best practices. The classification of NPLs is also a weakness, with direct implications for the provisioning by and profitability of banks.

Box Figure 2. CLMV: Credit Growth and NPL Ratios

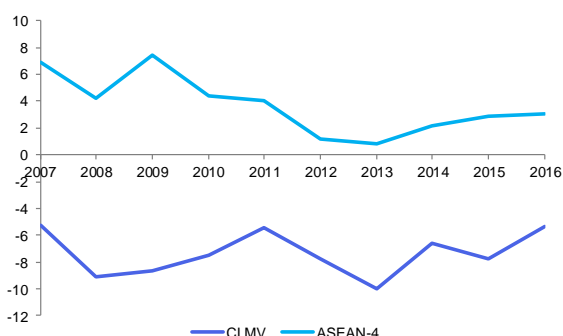


Sources: IMF IFS; national agencies; and authors' calculations.

As a group, CLMV are more vulnerable to external shocks compared to the other ASEAN countries. Although they have been able to improve their external position after the GFC, the commodity price shock in 2013 affected the exports of Lao PDR and Myanmar, which resulted in a sharp deterioration in their current account deficits. Although continued current account deficits are expected for CLMV owing to their stage of development, they are in sharp contrast to the surpluses of the ASEAN-4 countries of Indonesia, Malaysia, the Philippines and Thailand (Box Figure 3). Fortunately, the deficits are largely financed by Official Development Assistance and FDI, which are longer-term flows and more “sticky” than portfolio investment or commercial bank borrowings. Nevertheless, the external debt of CLMV has risen over the past three years, which makes these countries more vulnerable to external shocks (Box Figure 4).

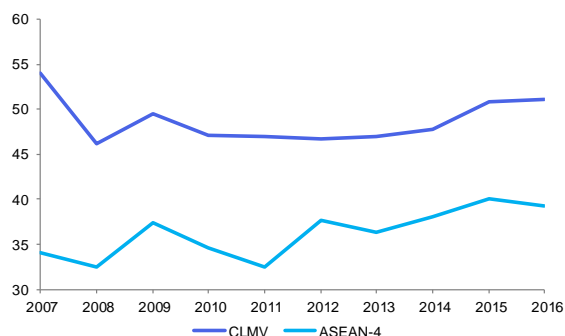
The ability of CLMV to respond to future crises is likewise limited by rising fiscal deficits and government debt. Fiscal deficits are large in Lao PDR and Myanmar, mainly owing to lower revenues from the resources sector as a result of weaker commodity prices and continuing challenges on raising non-resource revenue (Box Figure 5). The result has been rising debt levels, tighter fiscal space and little ability for stimulus in the event of a severe economic downturn (Box Figure 6).

**Box Figure 3. ASEAN-4: Current Account Balance**  
(In percent of GDP, simple average)



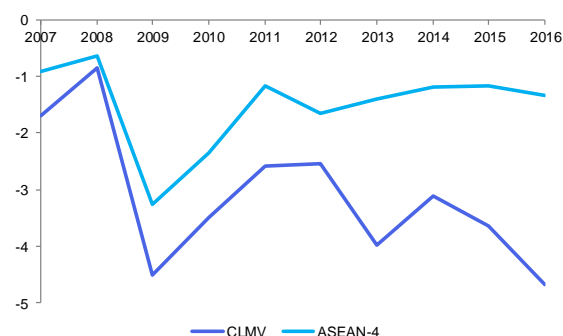
Sources: AMRO; and national agencies.

**Box Figure 4. ASEAN-4: External Debt**  
(In percent of GNI, simple average)



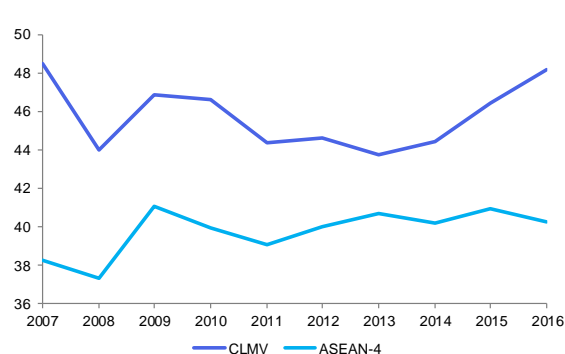
Sources: AMRO; and The World Bank.

**Box Figure 5. ASEAN-4: Fiscal Balance**  
(In percent of GDP, simple average)



Sources: AMRO; and national agencies.

**Box Figure 6. ASEAN-4: Government Debt**  
(In percent of GDP, simple average)

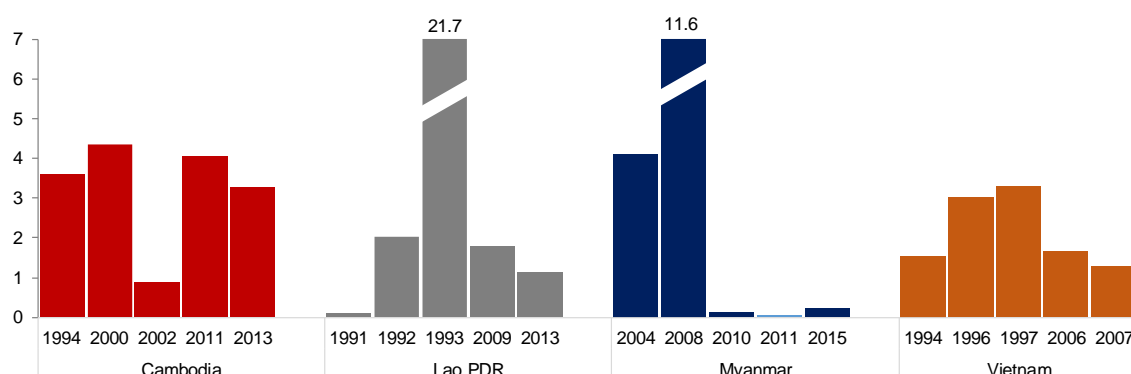


Sources: AMRO; and national agencies.

Aside from macro-financial and policy issues, CLMV are also exposed to risks of frequent natural disasters. The result has been severe and protracted damage to the economy and, in some instances, exports were affected:

- In Lao PDR and Myanmar, economic damage from a single natural catastrophe exceeded 10 percent of GDP in the year of occurrence (Box Figure 7). In Lao, exports turned negative following the typhoon in 2009, although the decline was partly attributable to weak demand as a result of the GFC.
- In Cambodia, where agriculture contributed about 35 percent of GDP in 2011, the sector's growth declined to 3.1 percent in 2011, from an average of 5.2 percent during 2001–10, as a result of floods. In 2015, *el Niño*-induced drought dragged Cambodia's agricultural sector down to near-zero growth, from a 10-year average of around 5.1 percent during 2005–14.
- Vietnam was also negatively impacted by *el Niño*. The drought led to a sharp decline in growth of exports of aquatic products and agricultural products, from 16.9 percent and 8.3 percent in 2014 to -16.1 percent and -2.6 percent in 2015, respectively. Given their sizeable share (of over 13 percent) of Vietnam's total exports in 2015, the sharp decline contributed to the slowdown in growth of total exports from 13.8 percent in 2014 to 7.9 percent in 2015.

**Box Figure 7. CLMV: Total Economic Damage in the Year of Disaster Occurring**  
(In percent of GDP)



Sources: United Nations Economic and Social Commission for Asia and the Pacific (ESCAP).

Note: This figure shows each country's top 5 ranking of total economic damage as a percentage of GDP. According to the United Nations ESCAP, the economic consequences of a disaster are usually direct (e.g., damage to infrastructure, crops and housing) and indirect (e.g., loss of revenues, unemployment and market destabilization). In each case, the registered figure represents the value of damage at the moment of the event; i.e., the figures relate to the year of the event.

Against this backdrop, tapping on both regional and international financial arrangements is necessary to safeguard macro-financial stability but the eligible amount of assistance is limited for these economies. So far, the CLMV economies have been able to call on numerous support programs and lending facilities from various international financial institutions, including the IMF, World Bank and ADB. However, the financing amounts remains small, while conditions of some facilities may make it difficult for the countries to access (Box Table 2). In addition, funds from other international financial institutions (IFIs) and bilateral donors, i.e. the ADB and World Bank, for disaster risk response and management, and emergency natural disaster reconstruction, are also small. Hence, there appears to be room for the CMIM to play a complementary role to help safeguard stability in CLMV.

**Box Table 2. CLMV: Selected Eligible Financing Arrangements and Lending Terms**

Lending Terms	Maximum Amount	CMIM	IMF Stand-By Arrangement (SBA)	IMF Rapid Financing Instrument (RFI)	IMF Poverty Reduction and Growth Trust (PRGT)			Asia Pacific Disaster Response Fund
					Extended Credit Facility (ECF)	Standby Credit Facility (SCF)	Rapid Credit Facility (RCF)	
Maximum Amount (In millions of U.S. dollars)								
Cambodia		1,200	1,067	184	552	552	184	3 per event
Lao PDR		300	645	111	334	334	111	3 per event
Myanmar		600	3,151	543	1,630	1,630	543	3 per event
Vietnam		10,000	7,032	1,212	3,637	3,637	1,212	3 per event
Duration and Lending Terms								
Interest rate		3.115-4.615 percent	3.657-4.657 percent	3.657-4.657 percent	0 percent	0 percent	0 percent	-
Commitment fee		0.15 percent/year	0.15-0.6 percent/year	0.15-0.6 percent/year	-	0.15 percent/year	-	-
Service charge		-	0.5 percent	0.5 percent	-	-	-	-
Duration		2-3 years	1-3 years	-	3-5 years	1-2 years	One-off but with a scope of repeated use within any three-year period	-
Grace period		-	-	-	5½ years	4 years	5½ years	-
Final Maturity		-	3¼ to 5 years	3¼ to 5 years	10 years	8 years	10 years	-

Sources: AMRO; ADB; IMF; and authors' calculations.

Notes:

- (i) The Asia Pacific Disaster Response Fund is provided to ADB's developing member countries (DMCs) in the form of grants.
- (ii) The CMIM interest rate comprises: (i) the LIBOR rate for six-month U.S. dollar deposits (1.615 percent as of 10 November 2017); and (ii) margins varying from 150 to 300 basis points, depending on the number of drawings with regard to IMF-linked and de-linked portions.
- (iii) The IMF RFI shares the same financing terms with the Flexible Credit Line (FCL), the Precautionary and Liquidity Line (PLL) and the SBA.

Even though the CMIM facilities are developed to forestall crises among its members, CLMV remain vulnerable because of their limited access. First, these countries may not be eligible for the CMIM-PL because of significant weaknesses in some important assessment areas and their likely inability to meet the corresponding qualification criteria. Additionally, given their small contributions, these countries are only able to withdraw small amounts of funds from the CMIM. For Lao PDR and Myanmar, the eligible amounts of assistance from the CMIM are also lower than those from other financing arrangements (Box Table 3). More importantly, even after adding the lending facilities into their FX reserves, import coverage ratios are below or only slightly above the conventional threshold of 3 months of imports of goods and services with the exception of Cambodia. Taking into account the grace period, interest rates and maturity, the CMIM is more costly for CLMV, compared to some facilities provided by other IFIs, i.e. the IMF PRGT. Hence, there is significant room for further enhancements to the CMIM to help safeguard macro-financial stability in CLMV.

**Box Table 3. CLMV: Projected FX Reserves in 2020, Including Lending Facilities**

Country	CMIM	IMF Stand-By Arrangement (SBA)	IMF Rapid Financing Instrument (RFI)	IMF Poverty Reduction and Growth Trust (PRGT)		
				Extended Credit Facility (ECF)	Standby Credit Facility (SCF)	Rapid Credit Facility (RCF)
Projected Reserves 2020, Including Lending Facilities (In millions of U.S. dollars)						
Cambodia	12,700	12,567	11,684	12,052	12,052	11,684
Lao PDR	1,278	1,623	1,089	1,312	1,312	1,089
Myanmar	8,006	10,557	7,949	9,036	9,036	7,949
Vietnam	68,066	65,098	59,278	61,703	61,703	59,278
Projected Reserves 2020, Including Lending Facilities (In months of imports)						
Cambodia	8.1	8.0	7.5	7.7	7.7	7.5
Lao PDR	1.6	2.1	1.4	1.7	1.7	1.4
Myanmar	3.0	3.9	3.0	3.4	3.4	3.0
Vietnam	2.6	2.5	2.3	2.4	2.4	2.3

Sources: AMRO; IMF; and authors' calculations.

Notes:

- (i) Building on the past study on disaster risk insurance under Future Priorities of ASEAN+3 Financial Cooperation in 2015, the initiative by Cambodia, Lao PDR and Myanmar to create the Southeast Asia Disaster Risk Insurance Facility (SEADRIF), with initial financial support from Japan, is key to establishing a regional catastrophic risk pool.
- (ii) The World Bank has approved Southeast Asia Disaster Risk Management Project for Cambodia, Lao PDR and Myanmar worth USD 60, 30 and 116 million respectively, and Emergency Natural Disaster Reconstruction Project for Vietnam worth USD 118 million.

Contributed by: Paolo Hernando, Xianguo Huang, Vanne Khut and Thi Kim Cuc Nguyen.

#### D. Use of Regional Currencies

An increase in local currency use in intra-regional transactions is a welcome development given that it could reduce currency mismatches and FX liquidity risks. Asian local currency use increased between 2013 and 2016 albeit from a very low base (Box 4). In addition, the major Asian hubs, Singapore, Hong Kong and Tokyo, witnessed a rise in their combined share of global FX transactions to 21 percent in 2016, from 15 percent in 2013 ([BIS, 2016](#)), larger than the U.S. market share of 19 percent. The main benefit of local currency use in transactions lies in the reduction of U.S. dollar liquidity risk to firms; it could be further encouraged by the inclusion of local currency swaps in the CMIM.

That said, the U.S. dollar continues to international dominate trade and finance, including in Asia (Figure 19). Indeed, U.S. dollar turnover in Japan even exceeds that of the yen (Figure 20). Moreover, U.S. dollar turnover in many countries have increased markedly between 2013 and 2016. The yen is the next most important currency in the Asian financial centers and its turnover has also increased over the past three years. The use of the renminbi has increased somewhat in Hong Kong and Singapore but turnover in the Hong Kong dollar is still larger in these financial centers as well as in China.

Encouragement for greater use of regional currencies could go hand in hand with enhancing the effectiveness of the CMIM. One obvious strategy would be to add regional currency swaps to the CMIM arsenal, further solidifying its role in the RFSN while promoting regional currency use in the region (Figure 21). The introduction of regional currency swaps would be a less costly alternative compared to increasing the size of U.S. dollar swaps if the borrowing members require the currency of the lending members—the latter would be able to use their own currencies rather than draw on their FX reserves that would then have to be converted anyway. Market participants see a strong role for local currencies in a RFSN although the U.S. dollar should remain the main transaction currency (see Annex).

The inclusion of the renminbi in the SDR basket is an important development for Asia. The ASEAN+3 region now has two SDR currencies—the yen being the other—which lends further support to local currency use (Figure 22). Given the yen's role as an international reserve currency, the renminbi's inclusion further increases confidence in Asian currencies, providing a good opportunity for stimulating their use in trade and financial transactions. More active use of the renminbi and yen would reduce dependence on the U.S. dollar in regional trade and financial transactions. It also strengthens the case for including local currencies in the CMIM. China and Japan already have many local currency BSAs that could, at least in theory, be enlarged given that these central banks are able to issue their own currency.<sup>9</sup> Some ASEAN members are already starting to include the CNY in their FX reserves and shifting away from U.S. dollars.

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<sup>9</sup> Of course, a sizable issuance of local currency for swap use is inadvisable as it has implications on domestic inflation and exchange rates. However, given that the GDP of China and Japan are far larger compared to ASEAN countries, even a "small" amount from China and Japan would be significant in supporting the liquidity needs of ASEAN countries.

#### Box 4. Asia: Trade and Settlements in Local Currencies

The use of Asian currencies for global payments continues to grow steadily. According to the Society of Worldwide Interbank Financial Telecommunication (SWIFT), the renminbi rose from a rank of 11, with a share of 0.87 percent in global payments in June 2013, to fifth, with a share of 2.45 percent in June 2016. The latest data as of September 2017 shows that the renminbi ranked sixth with a share of 1.85 percent. Despite this decline in the renminbi's ranking, the total share of the six Asian currencies—including the yen—rose to 8.52 percent from 6.43 percent in June 2013.

Trade invoicing data shows a rising trend in local currency use. Presently, only Japan and Thailand regularly disclose their currency shares of trade invoicing. Japanese firms mainly use the U.S. dollar as their invoicing currency for both exports and imports; the share of Asian currency use remains very low (Box Figure 8). However, the renminbi share of Japanese exports to Asia increased more than four times from 0.5 percent in 2012 H2 to 2.2 percent in 2016 H2, and the won share of Japanese exports also increased slightly from 0.4 percent to 0.7 percent. Similarly, the renminbi share of Japanese imports from Asia increased as well, from 0.3 percent in 2012 H2 to 1.6 percent in 2016 H2, while the baht share doubled, from 0.4 percent to 0.8 percent over the same period reflecting its increasing use for trade with ASEAN neighbors especially with CLMV.

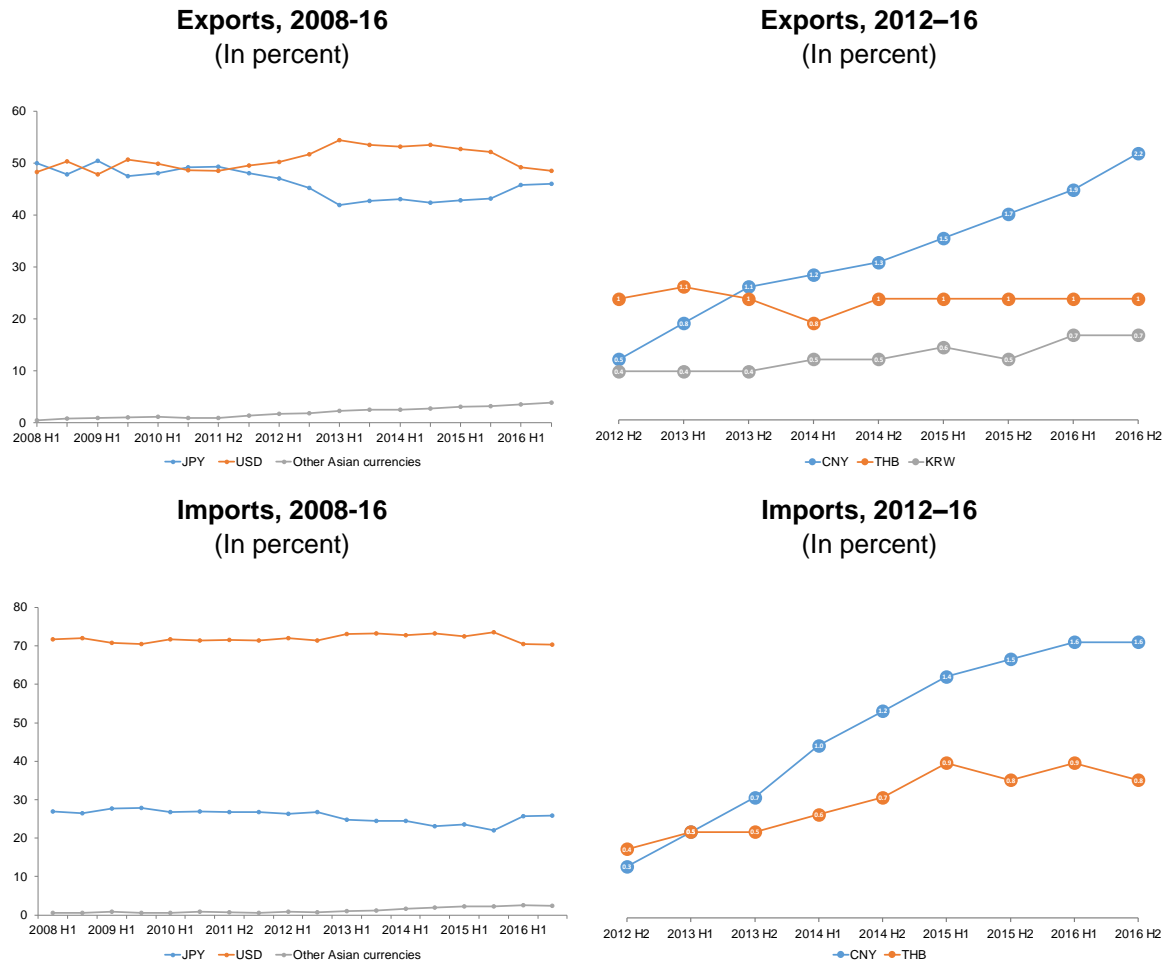
Japanese firm-level data show that the use of the renminbi for cross-border settlements has been rising as a result of the increasing size of the market for manufactured goods in China as well as improved access to and transactions in the renminbi market. Based on information obtained from the large-scale surveys conducted in 2010 and 2014, renminbi invoicing has gradually increased particularly for intra-firm trade between production subsidiaries in China and headquarters in Japan ([Sato and Shimizu, forthcoming](#)). There are two reasons underpinning this development: First, the Chinese economy is becoming a larger final market for products from Japanese firms. Second, Japanese subsidiaries were found to have had fewer difficulties using the renminbi for trade transactions in the 2014 survey than in the 2010 survey. Since the renminbi's official inclusion in the SDR basket in 2016, some Japanese firms have also decided to use the renminbi as their transaction currency given its role as an international reserve currency. However, some Japanese firms remain hesitant to transact in renminbi owing to their uncertainty about China's foreign exchange policy, but they see significant potential for future transactions in renminbi.

To meet the demand for renminbi settlement of cross-border trades and investments, China has been gradually improving the policy framework since 2009 to remove some obstacles and implement financial system reform. The international use of the renminbi has been broadened in recent years (Box Figure 9), notably in the region, with renminbi settlement accounting for 16.9 percent of China's total trade in 2016 ([PBoC, 2017](#)). Some ASEAN countries and Hong Kong were among the early pilots; Hong Kong, Japan, Korea and Singapore currently rank among the top 10 in terms of cross-border renminbi receipts and payments (Box Figure 10).

Separately, Thailand's baht use in trades with ASEAN countries has been increasing steadily. The baht's share increased to 23.7 percent in 2017 Q1 from 5.3 percent in 2000 in exports to ASEAN countries, while the U.S. dollar share declined to 71.4 percent from 90.5 percent during the same period (Box Table 4). In terms of imports from ASEAN countries, the baht's share increased to 13.2 percent in 2017Q1 from 3.7 percent. The changes reflect their expanding cross-border transactions with neighboring countries with baht settlements now actively utilized in cross-border trade between Thailand and CLMV.

The use of other Asian currencies for bilateral trade is also expected to rise on the back of strengthened policy efforts. Following the inception of the ASEAN Economic Community in 2015, the Bank of Thailand and BNM established direct local currency settlements between the baht and the ringgit. In December 2016, Bank Indonesia also announced its intention to join this group. This initiative would help lower the transaction costs for Asian local currencies, in turn supporting and further promoting local currency use in Asian countries.

**Box Figure 8. Japan: Currency Share of Trade within Asia**



Source: Japan Customs.

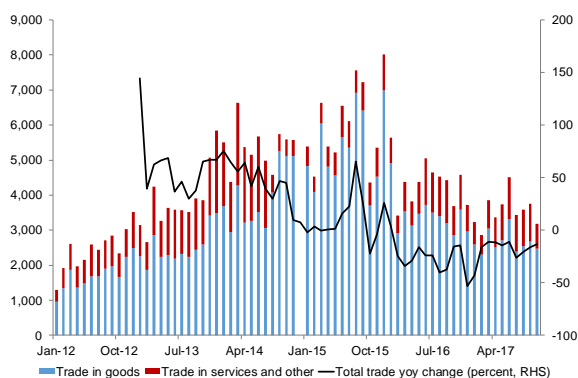
**Box Table 4. Thailand: Structure of Export and Import Receipts from ASEAN by Currency**  
(In percent of total ASEAN trade)

Currency	Exports to ASEAN Countries					Imports from ASEAN Countries				
	2000	2005	2010	2015Q1	2017Q1	2000	2005	2010	2015Q1	2017Q1
U.S. dollar	90.5	84.1	79.9	71.9	71.4	88.6	88.0	86.9	83.9	83.0
Japanese yen	1.9	1.4	2.8	2.9	2.4	3.8	1.2	2.0	1.2	1.0
Thai baht	5.3	11.6	14.7	22.4	23.7	3.7	5.6	5.7	11.8	13.2
Singapore dollar	1.0	1.5	1.2	1.0	1.1	2.9	2.0	2.3	1.8	1.6
Malaysian ringgit	0.1	0.6	0.5	0.4	0.4	0.3	2.6	0.7	0.5	0.6
Other	1.2	0.8	1.1	1.3	1.0	0.7	0.6	2.4	0.8	1.5

Source: Bank of Thailand.

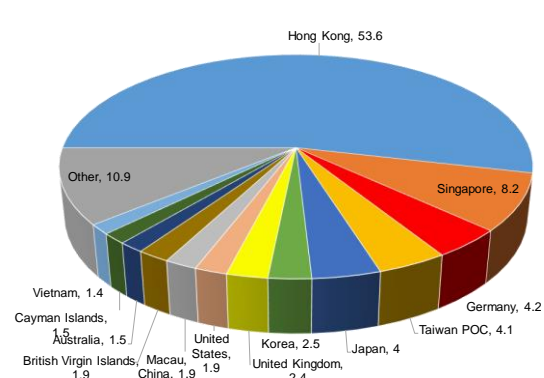


**Box Figure 9. Renminbi: Settlements under the Current Account**  
(In 100 million renminbi)



Sources: PBoC; and authors' calculations

**Box Figure 10. Renminbi: Distribution of Cross-Border Receipts and Payments, 2016**  
(In percent of total)

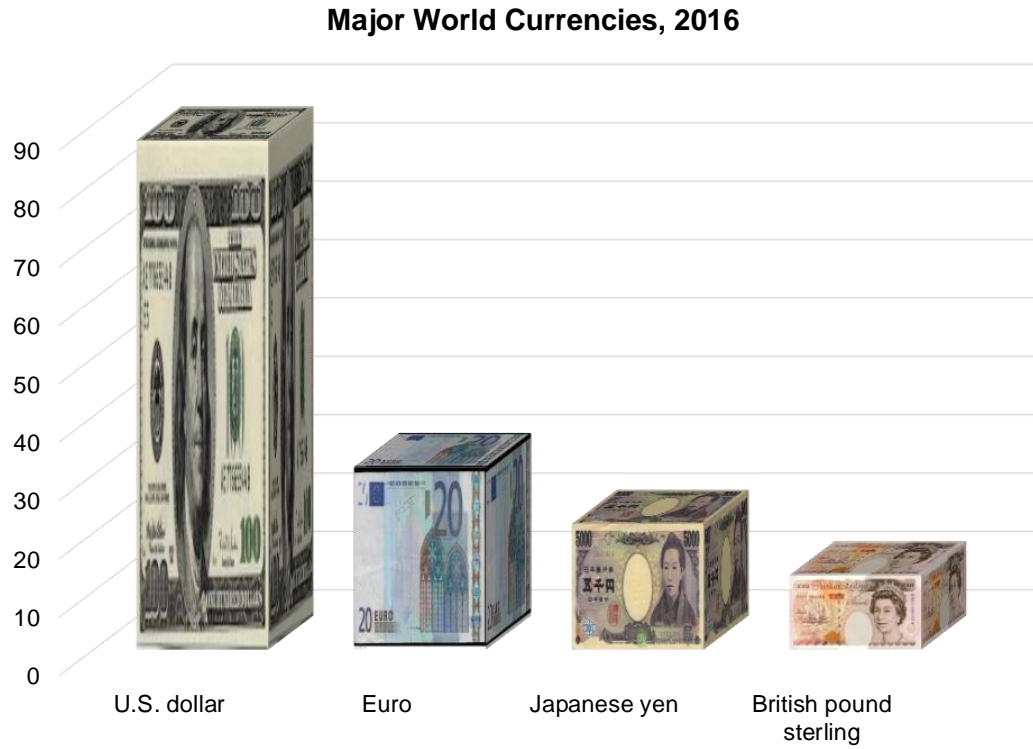


Source: PBoC.

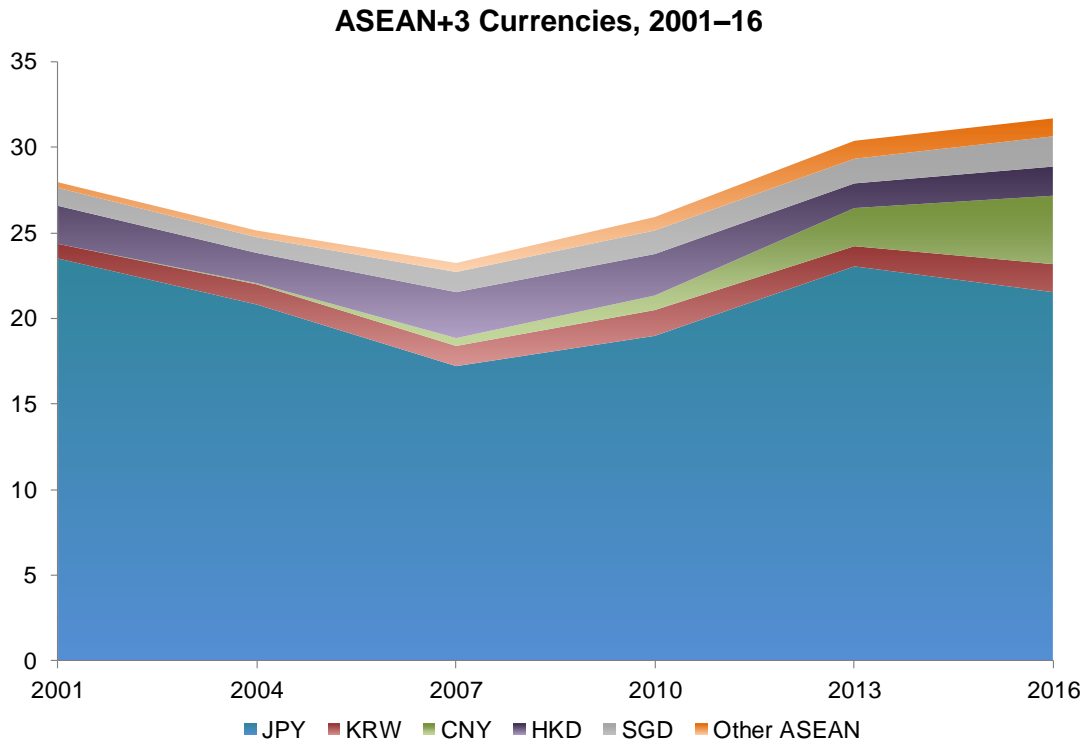
The benefits of greater local currency invoicing and settlements in the region are expected to be significant through the lowering of exchange rate risk. They would accrue to the countries whose currencies are being used for trade transactions as well as to trade partners whose currency movements are closely correlated with the former. The trade competitiveness of Asian manufacturing firms would be less affected by fluctuations via-a-vis non-regional currencies (e.g., the U.S. dollar, euro). With foreign currency invoicing, firms' unhedged revenues are exposed to sudden movements in the exchange rate, while hedging costs are still high for many currencies. If firms are able to utilize local currencies in cross-border trade transactions, trade financing would become more accessible. However, policy trade-offs need to be carefully considered. In order to make a currency tradable for non-residents, policy changes may be required, such as the easing of capital controls or exchange rate regulations which may, in turn, lead to more volatile capital flows.

There are several ways of promoting greater use of local currencies in Asia. First, the availability and reliability of data related to invoice/settlement currencies in the region need to be improved. Greater transparency would help strengthen understanding about the factors impeding local currency use. The data could then be used to assess the future role of the renminbi, yen and other Asian currencies in the context of growing regional production networks. These findings could also help shed light on desirable currency regimes as input for policy. Regional financial cooperation to promote local currency use would also be very important.

**Figure 19. OTC Foreign Exchange Turnover by Currency**  
(In percent of total)



Sources: BIS; and authors' calculations.

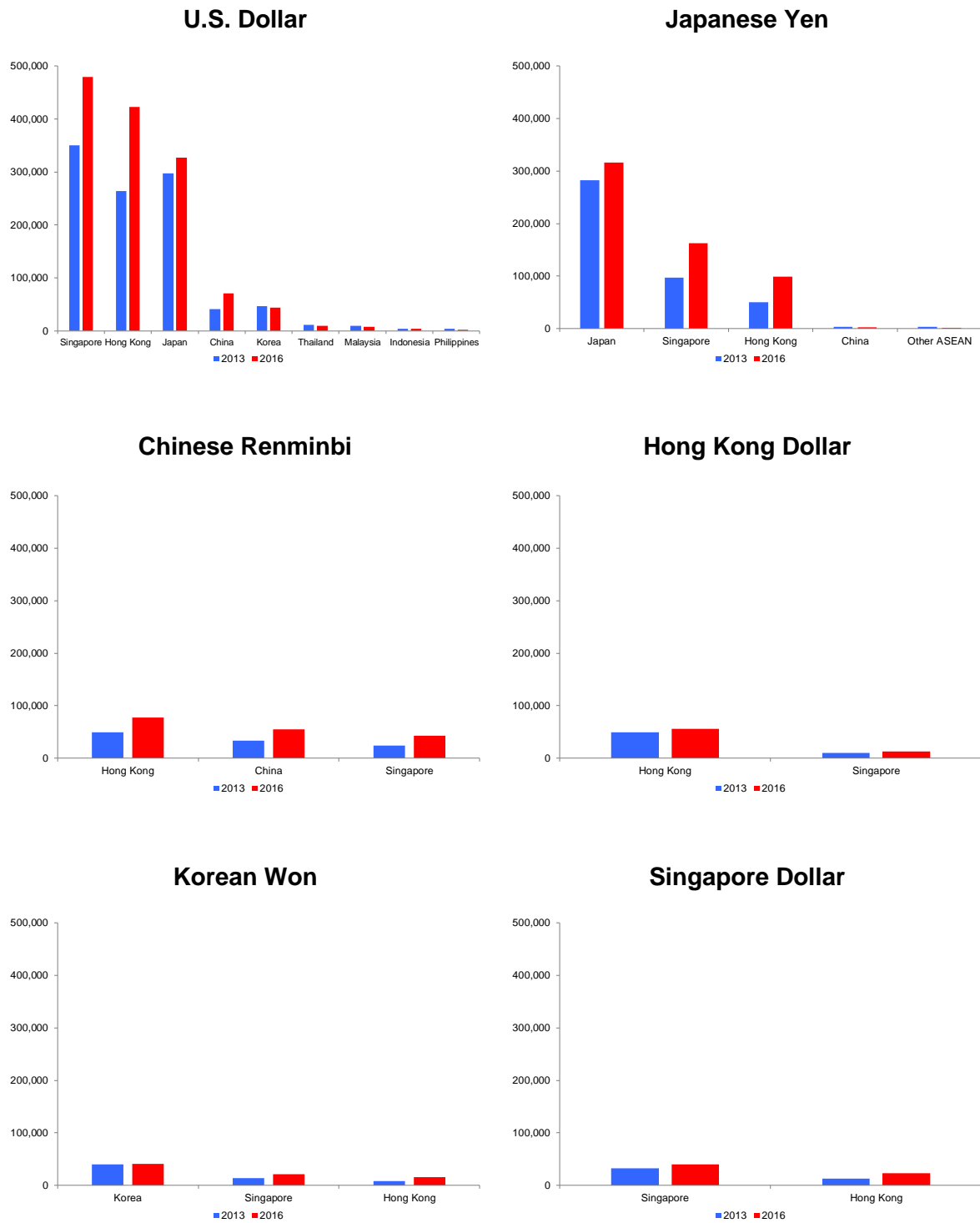


Sources: BIS; and authors' calculations.

Notes:

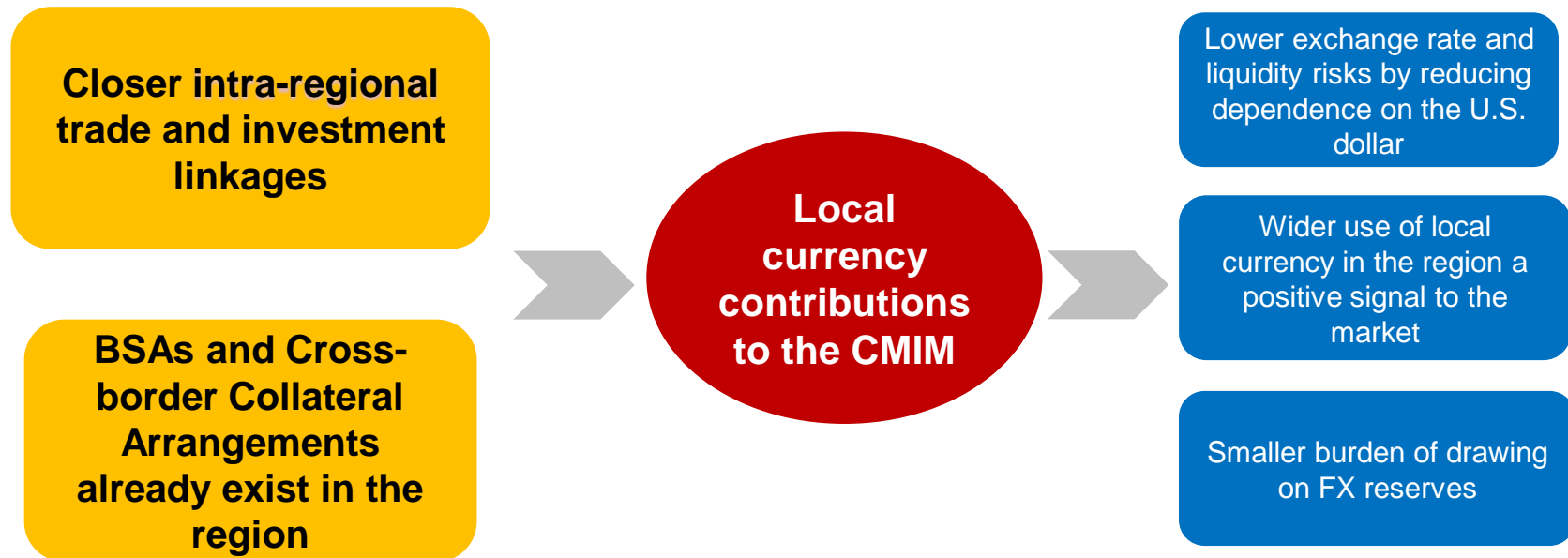
- (i) "Net-net" basis, April daily averages. Given that a foreign exchange transaction involves two currencies, each leg is recorded separately. As a result, the sum of the percentage shares of individual currencies totals 200 percent instead of 100 percent.
- (ii) "Other ASEAN" currencies comprise Indonesia, Malaysia, the Philippines and Thailand.

**Figure 20. ASEAN+3: OTC Foreign Exchange Turnover by Country**  
(In millions of U.S. dollars)



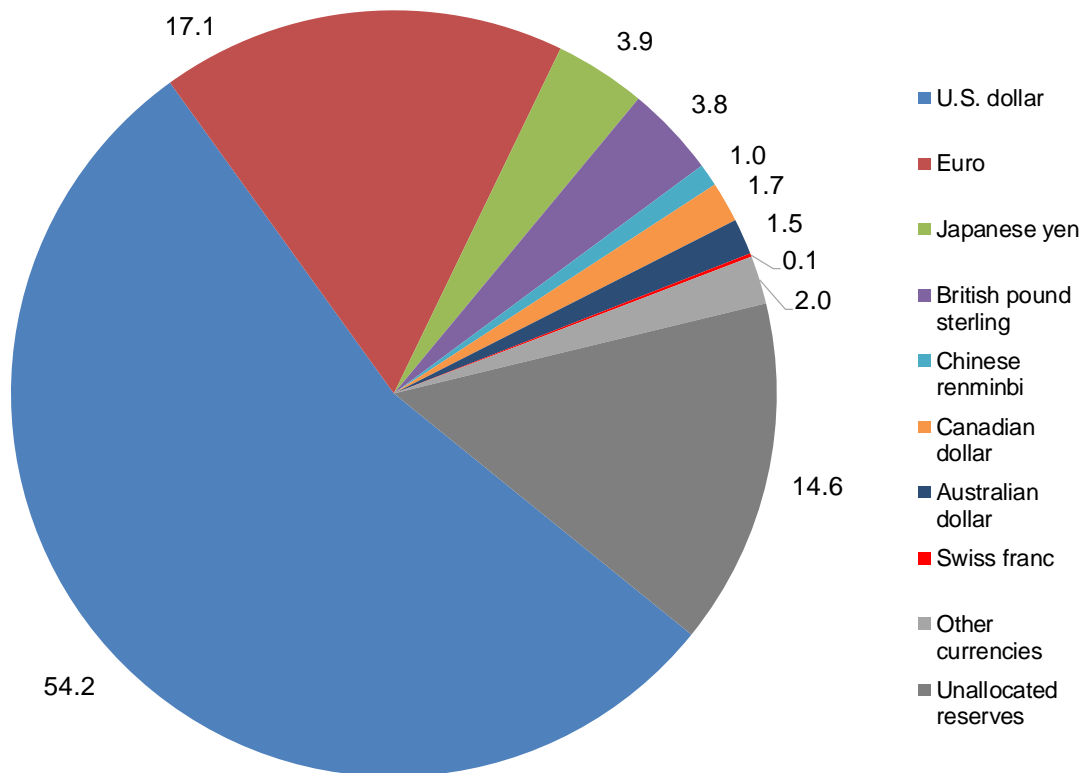
Source: BIS.

Figure 21. Local Currency Contributions to the CMIM



Source: AMRO.

**Figure 22. World FX Reserves by Currency, as of September 2017**  
(In percent of total)



Source: IMF COFER; and authors' calculations.

#### IV. Concluding Remarks

The role of the CMIM as the center of the RFSN should be strengthened. The increasing integration of the global financial system suggests that crises will continue to be a disruptive force in the IMS, with potentially high spillovers from, into and within Asia. Although reforms implemented in the wake of the AFC made the ASEAN+3 countries more resilient against the effects of the GFC, their economic and financial conditions weakened somewhat in subsequent years. More recently, improvements in global and domestic demand have underpinned economic growth in the Asian region, although risks remain.

Strengthening the RFSN is crucial for maintaining financial stability. As an example, the ESM played a larger role than the IMF during the ESDC in terms of providing financial resources. In general, the IMF does not have sufficient resources to deal with large-scale crises by itself, especially those caused by massive capital outflows. In Asia, the CMI/CMIM was in its nascent stages and not tapped during the GFC nor during the taper tantrum but further progress has since been made. Improvements include doubling the size of the facility, introducing a precautionary liquidity facility and establishing AMRO for surveillance purposes. Areas such as operational readiness, surveillance capacity and facility design remain works-in-progress.

The buffers of the ASEAN+3 are already significant at the regional level. FX reserves represent the largest buffer for many members but the size of the CMIM is also large for the majority of ASEAN economies. Indeed, their access to CMIM facilities would be comparable to or even greater than those of the IMF. Additionally, BSAs, which are largely denominated in local currencies, have also become an important instrument for several countries. For some members, BSAs exceed the maximum amount of their eligibility under the CMIM and IMF facilities by some margin.

However, CLMV remain vulnerable in terms of financial safety nets. They are vulnerable to external shocks and are highly exposed to natural disasters. Their FX reserves buffers are thin and they do not have any BSA arrangement with other regional members. Moreover, they are only able to access relatively small amounts of financing from both the CMIM and IMF.

Hence, there is significant room to augment the CMIM and this paper provides supporting analyses for further policy formulation towards this end. Several areas should be considered by policy makers. They include ways to enhance the effectiveness of the CMIM in terms of facilities for countries with different needs and the use of local currencies. The issue of mandate, that is, the types of crises for which members could receive financing, is also very important in terms of the comprehensiveness of support. Last but not least, the operational aspect of how to speed up the provision of support, when needed, during stress events is crucial if the facility is support financial stability.

## Appendix I. Projections of Growth in Credit to the Private Non-Financial Sector in AEs and EMEs

The financial systems of richer countries tend to grow more slowly and the relatively small financial systems typically converge towards the larger ones. That said, while financial systems in EMEs have deepened substantially, most are still well below the levels reached in AEs ([Sahay and others, 2015](#)). In Asia, it is estimated that the lower middle-income economies are likely to grow more rapidly in the medium-term compared to the region's richer countries, especially the AEs ([Bhattacharya, Han and Walsh, 2015](#)).

We apply a similar model to the one employed by [Bhattacharya, Han and Walsh \(2015\)](#) to project the potential size of credit in AEs and EMEs over the next two decades. We use credit to the private non-financial sector as a proxy for the size of the financial system and contemporaneous real income per capita (rather than the lagged term employed by the authors), such that:

$$(A.1) \quad LN \left( \frac{Credit_t / GDP_t}{Credit_{t-1} / GDP_{t-1}} \right) = \alpha + \beta * LN \left( \frac{Real\ GDPPC_t}{Real\ GDPPC_{t-1}} \right),$$

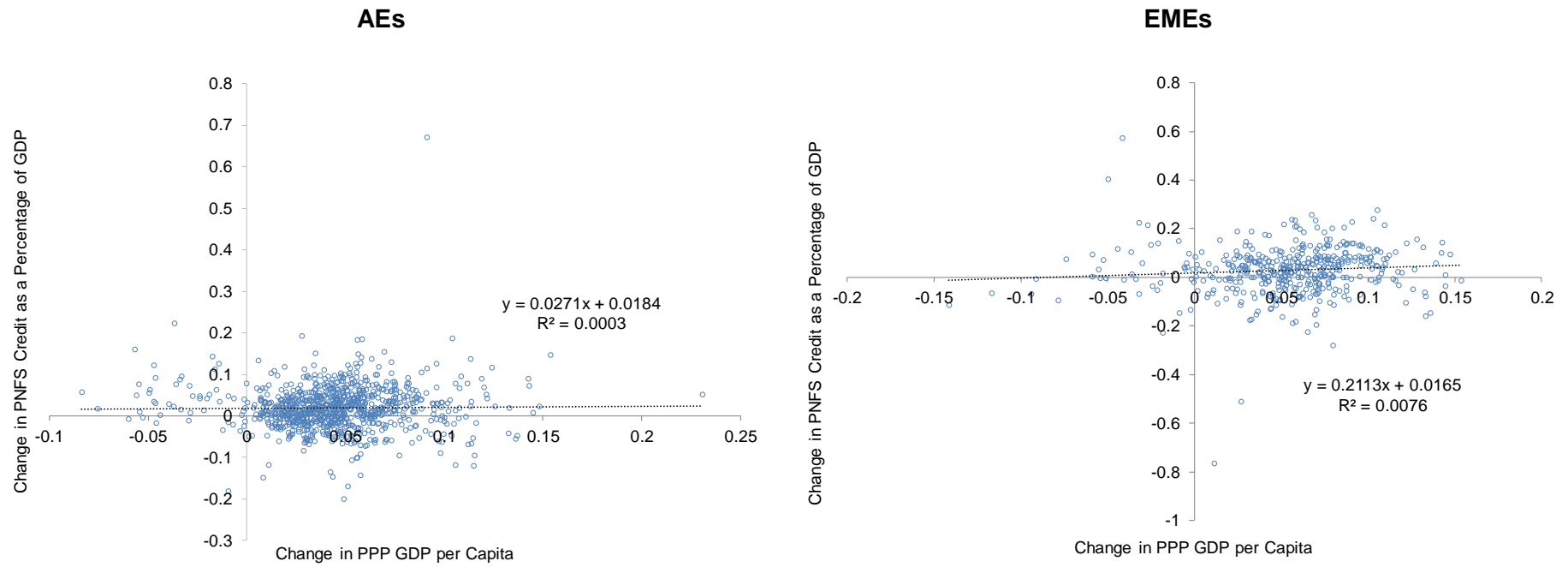
where:

$Credit_t$  represents credit from all sectors to the private non-financial sector at time  $t$ ; we use BIS data for this series.

$GDP_t$  represents nominal GDP at time  $t$ ; and  $Real\ GDPPC_t$  represents GDP per capita in purchasing power parity terms at time  $t$ . The IMF World Economic Outlook projections for  $GDP_{t+n}$  and  $Real\ GDPPC_{t+n}$  for 2017–2022 are used to forecast  $Credit_{t+n}$  for this period, and then the annual growth rate for 2021–22 is assumed constant thereafter up to 2037 in order to obtain forecasts of credit levels out to 20 years.

We run equation A.1 separately for AEs and EMs given their historically different rates of credit and GDP expansion. Our country set comprises as many of the major AEs and EMEs for which BIS credit data are available. The regression results are presented in Appendix Figure 1.

Appendix Figure 1. Regression Results: Credit and Wealth

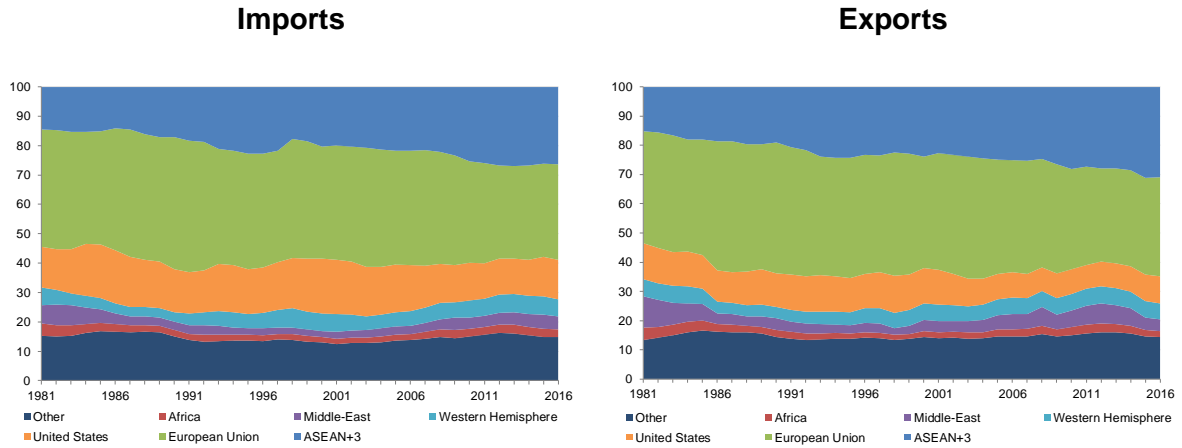


Sources: BIS; IMF WEO; and authors' estimates.



**Appendix II. Share of Global Trade and Finance**

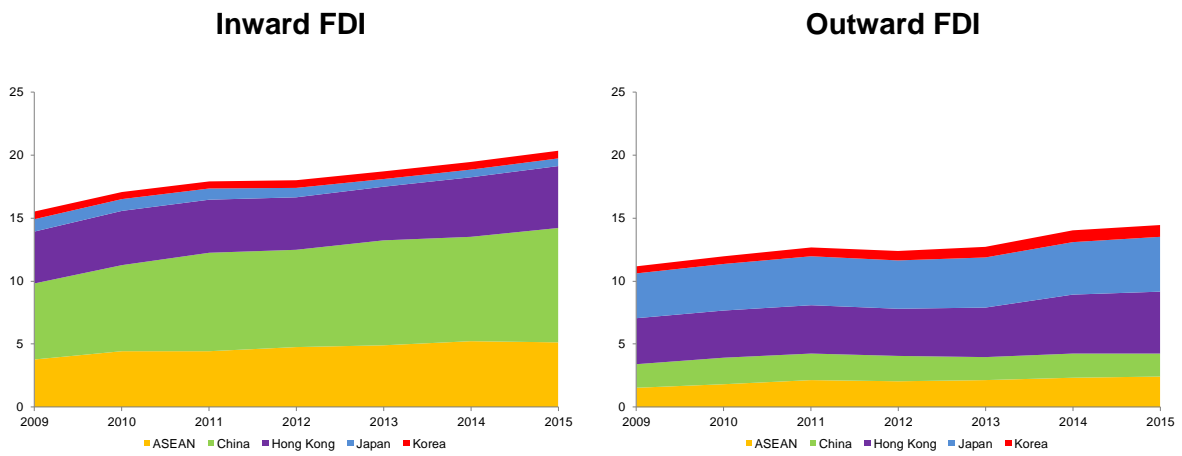
**Appendix Figure 2. Share of Global Trade by Region**  
(In percent of total)



Sources: IMF DoTS; and authors' calculations.

Sources: IMF DoTS; and authors' calculations.

**Appendix Figure 3. ASEAN+3: Share of Global Finance**  
(In percent of total)

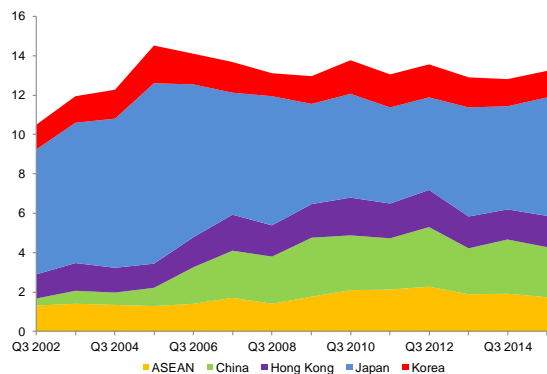


Sources: IMF CDIS; and authors' calculations.

Sources: IMF CDIS; and authors' calculations.

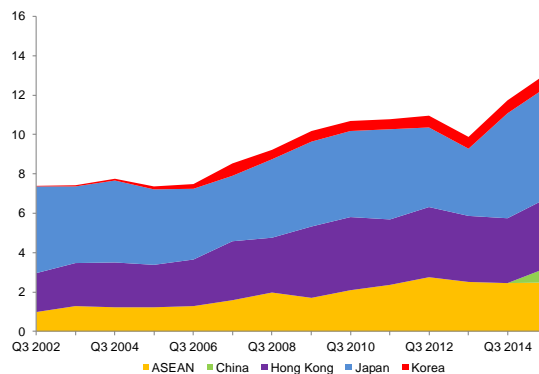
**Appendix Figure 3. ASEAN+3: Share of Global Finance**  
(In percent of total)  
(Continued)

**Inward Portfolio Investment in Equities**



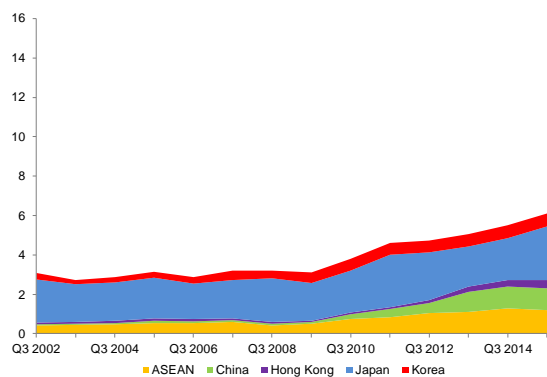
Sources: IMF CPIS; and authors' calculations.

**Outward Portfolio Investment in Equities**



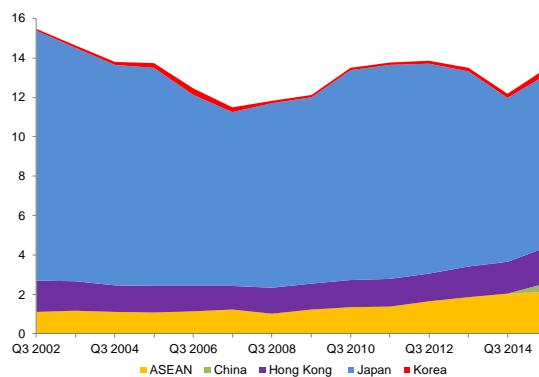
Sources: IMF CPIS; and authors' calculations.

**Inward Portfolio Investment in Debt**



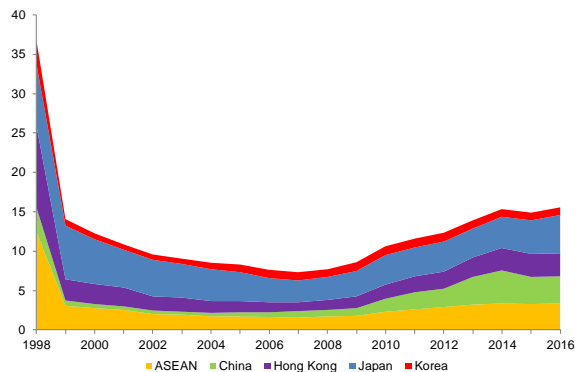
Sources: IMF CPIS; and authors' calculations.

**Outward Portfolio Investment in Debt**



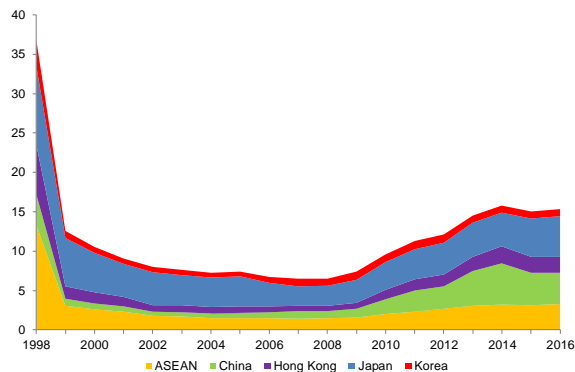
Sources: IMF CPIS; and authors' calculations.

**Foreign Banks' Total Claims**



Sources: BIS; and authors' calculations.  
Note: Immediate counterparty basis.

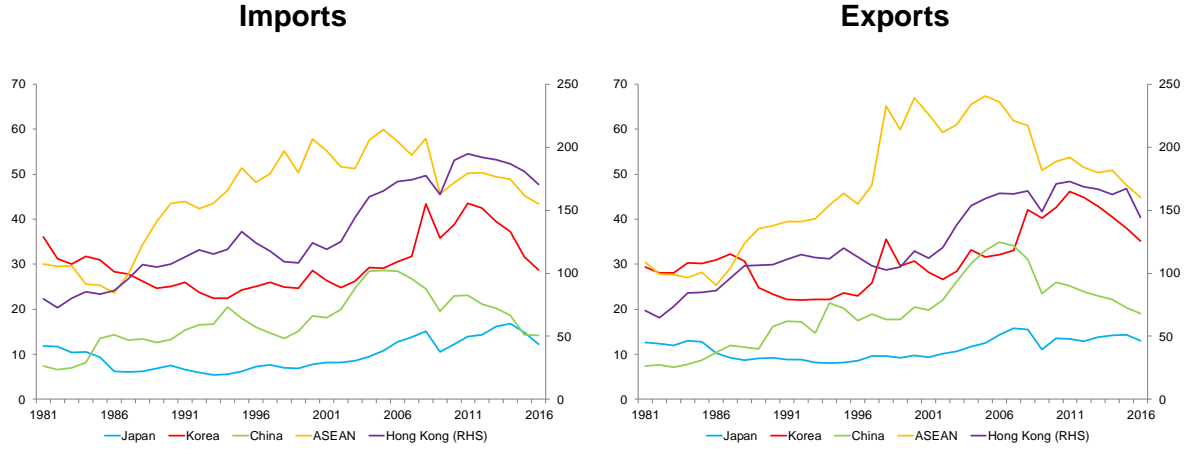
**Foreign Banks' International Claims**



Sources: BIS; and authors' calculations.  
Note: Immediate counterparty basis.

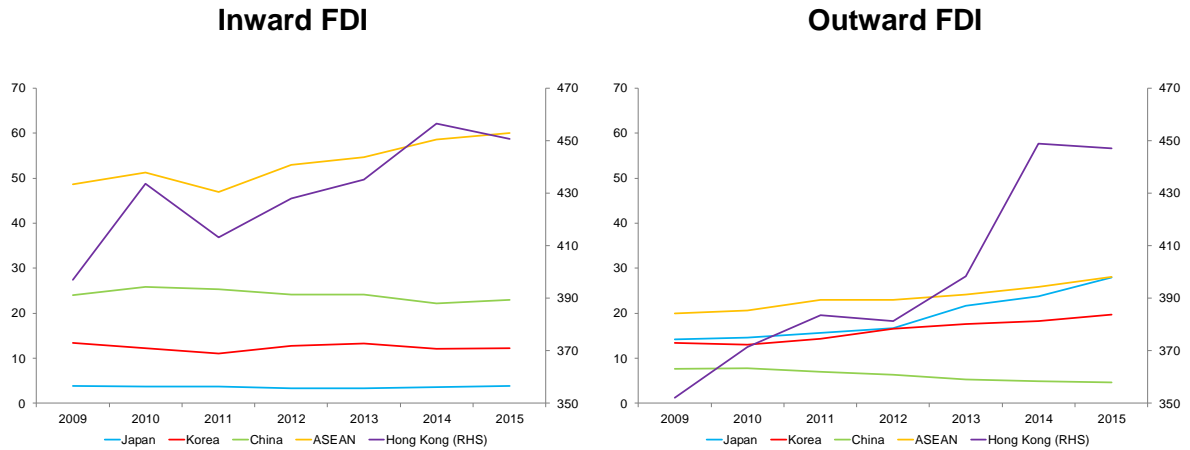
**Appendix III. Asia's Role in Global Trade and Finance**

**Appendix Figure 4. ASEAN+3: Size of Global Trade and Finance**  
(In percent of GDP)



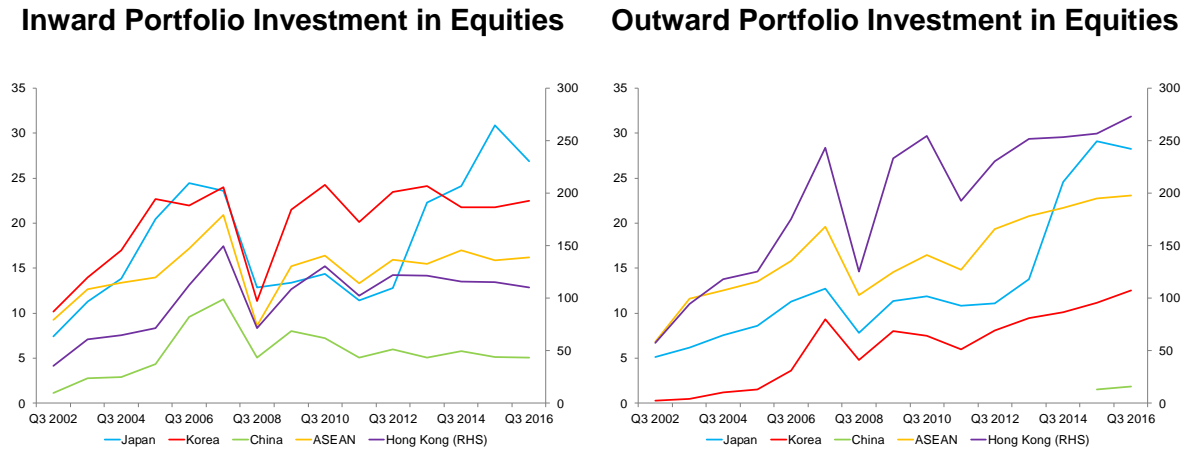
Sources: IMF DoTS, WEO; and authors' calculations.

Sources: IMF DoTS, WEO; and authors' calculations.



Sources: IMF CDIS, WEO; and authors' calculations.

Sources: IMF CDIS, WEO; and authors' calculations.

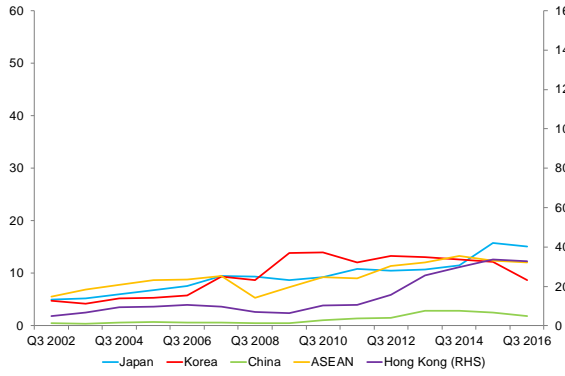


Sources: IMF CPIS, WEO; and authors' calculations.

Sources: IMF CPIS, WEO; and authors' calculations.

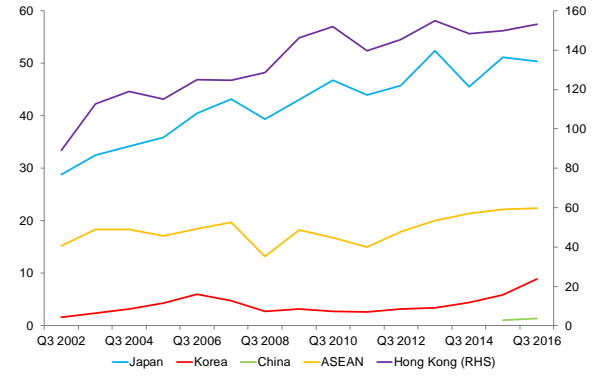
**Appendix Figure 4. ASEAN+3: Size of Global Trade and Finance**  
 (In percent of GDP)  
 (Continued)

**Inward Portfolio Investment in Debt**



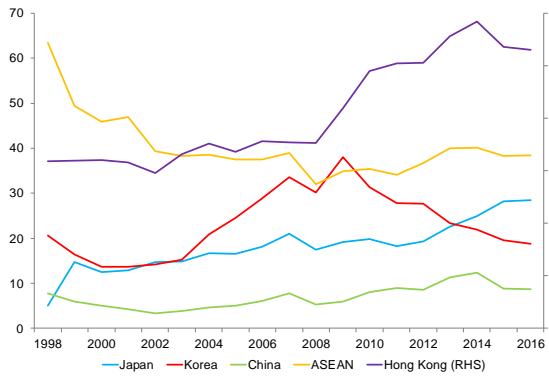
Sources: IMF CPIS, WEO; and authors' calculations.

**Outward Portfolio Investment in Debt**



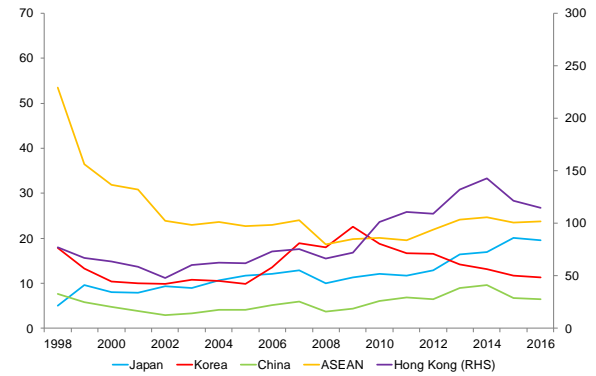
Sources: IMF CPIS, WEO; and authors' calculations.

**Foreign Banks' Total Claims**



Sources: BIS; IMF WEO; and authors' calculations.  
 Note: Immediate counterparty basis.

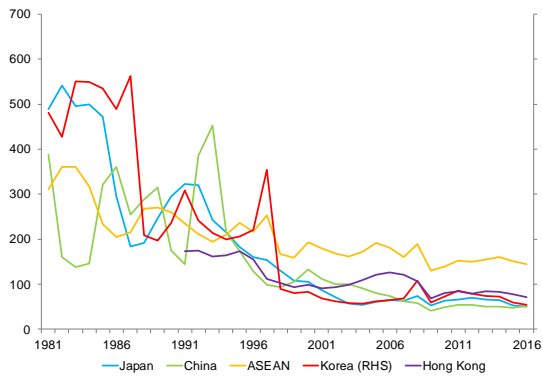
**Foreign Banks' International Claims**



Sources: BIS; IMF WEO; and authors' calculations.  
 Note: Immediate counterparty basis.

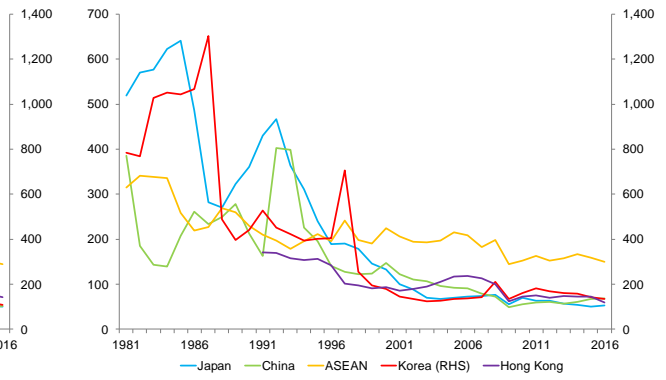
**Appendix Figure 5. ASEAN+3: Exposures to Global Trade and Finance**  
(In percent of FX reserves)

**Imports**



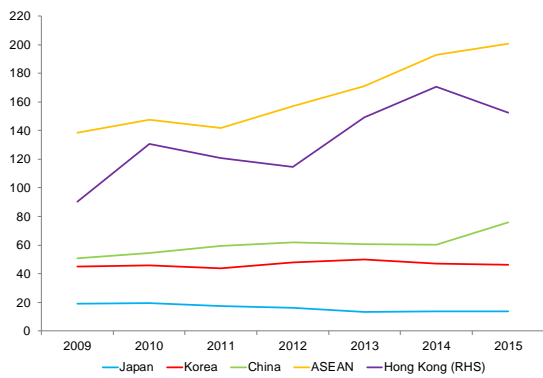
Sources: IMF DoTS, IFS; and authors' calculations.

**Exports**



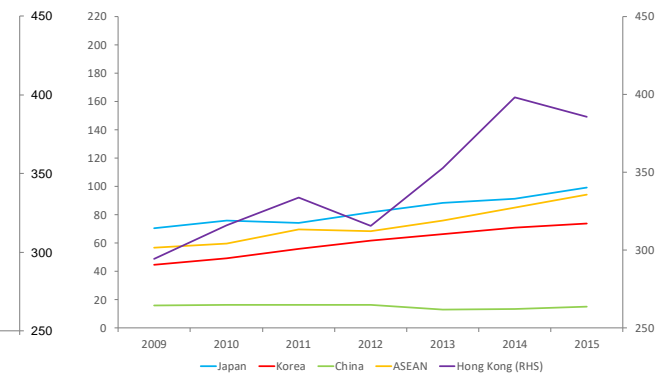
Sources: IMF DoTS, IFS; and authors' calculations.

**Inward FDI**



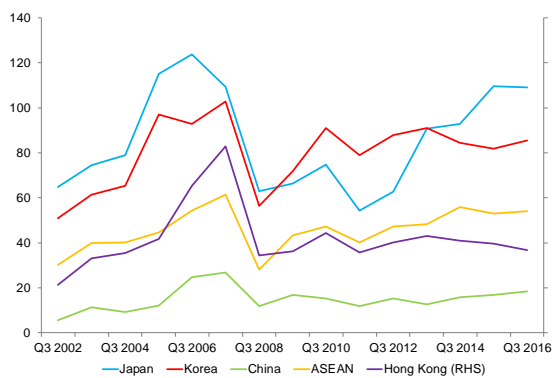
Sources: IMF CDIS, IFS; and authors' calculations.

**Outward FDI**



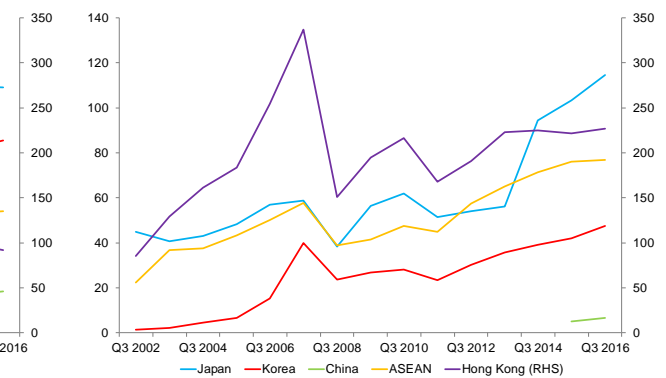
Sources: IMF CDIS, IFS; and authors' calculations.

**Inward Portfolio Investment in Equities**



Sources: IMF CPIS, IFS; and authors' calculations.

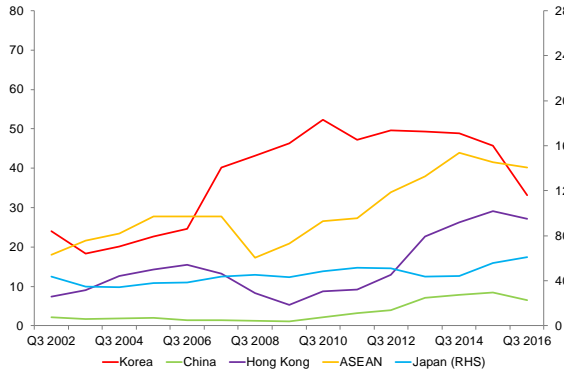
**Outward Portfolio Investment in Equities**



Sources: IMF CPIS, IFS; and authors' calculations.

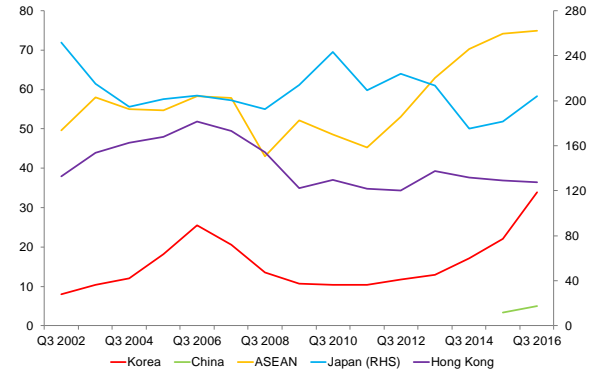
**Appendix Figure 5. Exposures to Global Trade and Finance**  
 (In percent of FX reserves)  
 (Continued)

**Inward Portfolio Investment in Debt**



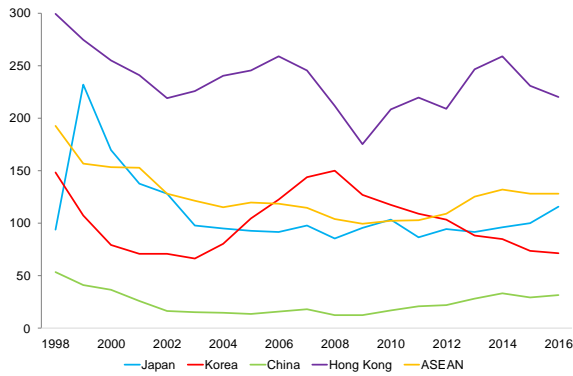
Sources: IMF CPIS, IFS; and authors' calculations.

**Outward Portfolio Investment in Debt**



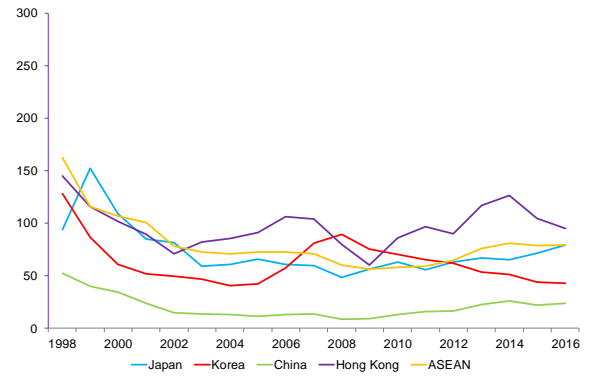
Sources: IMF CPIS, IFS; and authors' calculations.

**Foreign Banks' Total Claims**



Sources: BIS; IMF IFS; and authors' calculations.  
 Note: Immediate counterparty basis.

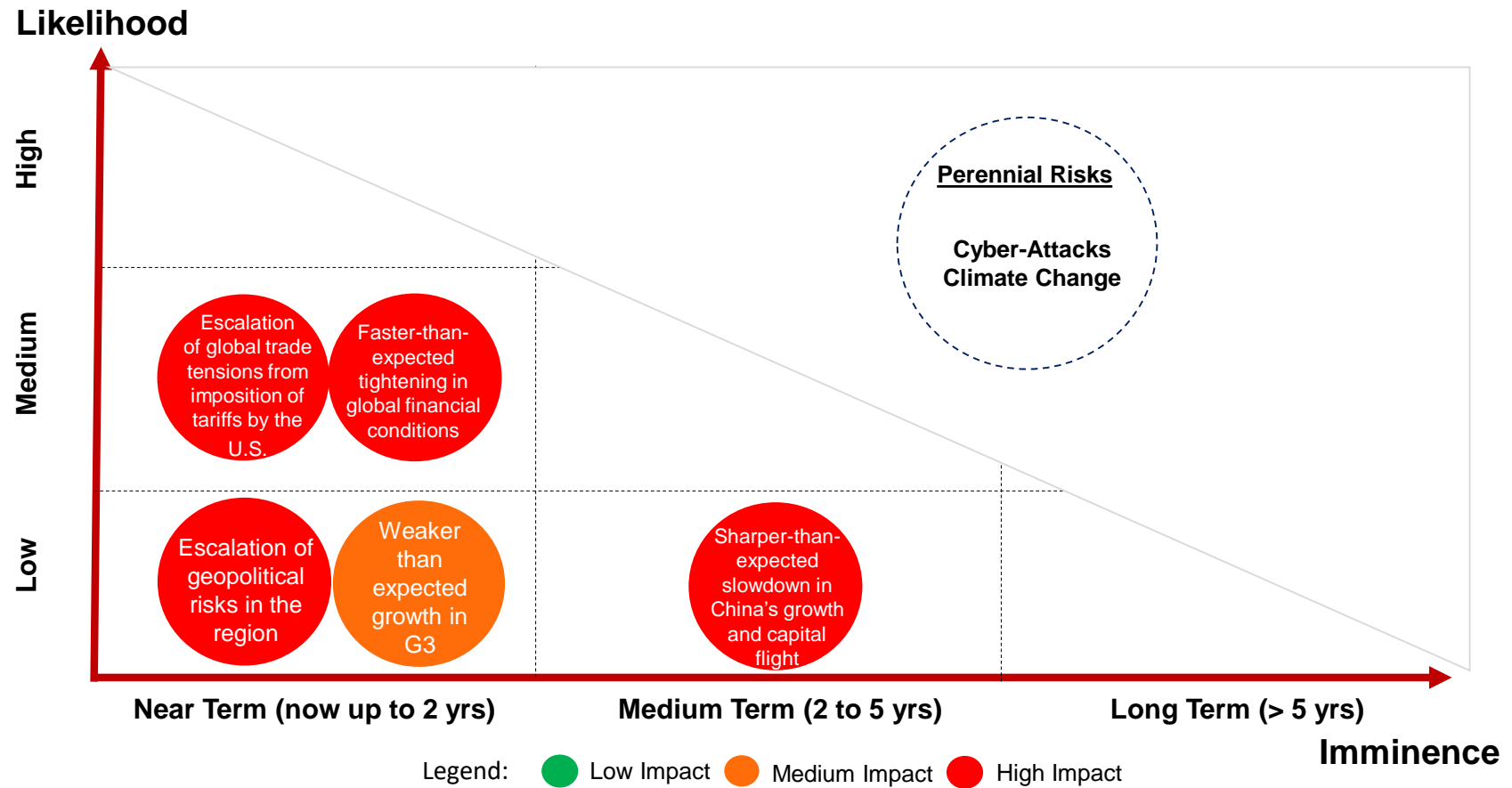
**Foreign Banks' International Claims**



Sources: BIS; IMF IFS; and authors' calculations.  
 Note: Immediate counterparty basis.

Appendix IV. Global Risks

Appendix Figure 6. AMRO: Global Risk Map for the ASEAN+3 Countries



Source: AMRO.

## References

- Aizenman, Joshua. 2009. "Alternatives to Sizeable Hoarding of International Reserves: Lessons from the Global Liquidity Crisis." VoxEU.org, November 30.  
<http://voxeu.org/article/hoarding-international-reserves-lessons-crisis>.
- Aizenman, Joshua and Yi Sun. 2009. "The Financial Crisis and Sizable International Reserves Depletion: From 'Fear of Floating' to the 'Fear of Losing International Reserves?'" NBER Working Paper No. 15308, National Bureau of Economic Research, Cambridge, Massachusetts.  
<http://www.nber.org/papers/w15308>.
- Arregui, Nicolas, Jaromír Beneš, Ivo Krznar, Srobona Mitra, and Andre Oliveira Santos. 2013. "Evaluating the Net Benefits of Macroprudential Policy: A Cookbook." IMF Working Paper 13/167, International Monetary Fund, Washington, DC.  
<https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Evaluating-the-Net-Benefits-of-Macroprudential-Policy-A-Cookbook-40790>.
- ASEAN+3. 2000. "The Joint Ministerial Statement of the ASEAN+3 Finance Ministers Meeting." Chiang Mai, 6 May.  
[http://www.mof.go.jp/english/international\\_policy/convention/asean\\_plus\\_3/20000506.htm](http://www.mof.go.jp/english/international_policy/convention/asean_plus_3/20000506.htm).
- ASEAN+3. 2017. "The Joint Statement of the 20<sup>th</sup> ASEAN+3 Finance Ministers' and Central Bank Governors' Meeting." Yokohama, 5 May.  
<http://www.amro-asia.org/the-joint-statement-of-the-20th-asean3-finance-ministers-and-central-bank-governors-meeting-may-5-2017-yokohama-japan/>.
- ASEAN+3 Macroeconomic Research Office. 2017. "Theme: ASEAN+3 Region 20 Years After the Asian Financial Crisis." *ASEAN+3 Regional Economic Outlook*. Singapore, May.  
<http://www.amro-asia.org/asean3-regional-economic-outlook-areo-2017/>.
- Asian Development Bank. 2017a. "Cross-Border Investment." Chapter 3 of the *Asian Economic Integration Report*. Manila, October.  
<https://www.adb.org/publications/asian-economic-integration-report-2017>.
- Asian Development Bank. 2017b. "Cross-Border Investment." Chapter 3 of the *Asian Economic Integration Report*. Manila, October.  
<https://www.adb.org/publications/asian-economic-integration-report-2017>.
- Bank for International Settlements. 2016. "Triennial Central Bank Survey of Foreign Exchange and OTC Markets in 2016." Basel, 11 December.  
<https://www.bis.org/publ/rpfx16.htm>.
- Bhattacharya, Rina, Fei Han and James P. Walsh. 2015. "The Future of Asia's Financial Sector." In *The Future of Asian Finance*, edited by Ratna Sahay, Jerald Schiff, Cheng Hoon Lim, Chikahisa Sumi and James P. Walsh. Washington, DC: International Monetary Fund.  
<https://www.imf.org/en/Publications/Books/Issues/2016/12/31/The-Future-of-Asian-Finance-42582>.



- Coeure, Benoit. 2015. "Policy Coordination in a Multipolar World." In *Bretton Woods: The Next 70 Years*, edited by Marc Uzan. Reinventing Bretton Woods Committee, Ankara, 4 September.  
<https://eml.berkeley.edu/~eichengr/Bretton-Woods-next-70.pdf>
- Denbee, Edd, Carsten Jung and Francesco Paternò. 2016. "Stitching Together the Global Financial Safety Net." Financial Stability Paper No. 36, Bank of England, London.  
[http://www.bankofengland.co.uk/financialstability/Pages/fpc/fspapers/fs\\_paper36.aspx](http://www.bankofengland.co.uk/financialstability/Pages/fpc/fspapers/fs_paper36.aspx).
- Eichengreen, Barry. 2016. "Global Monetary Order." *The International Financial Architecture*, ECB Annual Research Conference, Sintra, 28–29 June.  
<https://2016.ecbforum.eu/8f85517967795eeef66c225f7883bdcb&ff=YmluX3BhcGVyX3BkZg==&fd=dGI0dWxvX2Vu&tid=YXJ0aWdvcw==&pf=UEFQRVJf.pdf>.
- European Central Bank. 2012. "Has the Crisis Left a Lasting Mark on Global Trade?" *Quarterly Report on the Euro Area* 11 (2), Frankfurt, July.  
[http://ec.europa.eu/economy\\_finance/publications/qr\\_euro\\_area/2012/pdf/qrea2\\_section\\_1\\_en.pdf](http://ec.europa.eu/economy_finance/publications/qr_euro_area/2012/pdf/qrea2_section_1_en.pdf).
- Financial Stability Board. 2017. "Global Shadow Banking Monitoring Report 2016." Basel, May.  
<http://www.fsb.org/2017/05/global-shadow-banking-monitoring-report-2016/#footnote-ref-1>.
- International Monetary Fund. 2015. *The Future of Asian Finance*, edited by Ratna Sahay, Jerald Schiff, Cheng Hoon Lim, Chikahisa Sumi and James P. Walsh. Washington, DC: International Monetary Fund.  
<https://www.imf.org/en/Publications/Books/Issues/2016/12/31/The-Future-of-Asian-Finance-42582>.
- International Monetary Fund. 2016a. "The Growing Importance of Financial Spillovers from Emerging Market Economies." Chapter 2 of the *Global Financial Stability Report*. Washington, DC, April.  
<http://www.imf.org/en/Publications/GFSR/Issues/2016/12/31/Potent-Policies-for-a-Successful-Normalization>.
- International Monetary Fund. 2016b. "Spillovers from China's Transition and from Migration." Chapter 4 of the *World Economic Outlook*. Washington, DC, April.  
<http://www.imf.org/en/publications/weo/issues/2016/12/31/too-slow-for-too-long>.
- International Monetary Fund. 2016c. "Strengthening the International Monetary System—A Stocktaking." IMF Policy Paper, Washington DC, March.  
<https://www.imf.org/en/Publications/Policy-Papers/Issues/2016/12/31/Strengthening-the-International-Monetary-System-A-Stocktaking-PP5023>.
- International Monetary Fund. 2016d. "Adequacy of the Global Financial Safety Net." IMF Policy Paper, Washington, DC, March.  
<http://www.imf.org/en/publications/policy-papers/issues/2016/12/31/adequacy-of-the-global-financial-safety-net-pp5025>.

- International Monetary Fund. 2017. "Collaboration between Regional Financing Arrangements and the IMF." IMF Policy Paper, Washington, DC, July.  
<https://www.imf.org/en/Publications/Policy-Papers/Issues/2017/07/31/pp073117-collaboration-between-regional-financing-arrangements-and-the-imf>.
- Jeasakul, Phakawa, Cheng Hoon Lim and Erik Lundback. 2015. "Is Asia Still Resilient?" In *The Future of Asian Finance*, edited by Ratna Sahay, Jerald Schiff, Cheng Hoon Lim, Chikahisa Sumi and James P. Walsh. Washington, DC: International Monetary Fund.  
<https://www.imf.org/en/Publications/Books/Issues/2016/12/31/The-Future-of-Asian-Finance-42582>.
- Jha, Madhur, Samantha Amerasinghe and John Calverley. 2015. "Global Supply Chains: New Directions." *Standard Chartered Bank Special Report*, London, May.
- Jha, Madhur, Samantha Amerasinghe, Chidu Narayan, John Calverley and Achilleas Chrysostomou. 2014. "Global Trade Unbundled." *Standard Chartered Bank Special Report*, London, April.
- Laeven, Luc and Fabian Valencia. 2012. "Systemic Banking Crises Database: An Update." IMF Working Paper 12/163, International Monetary Fund, Washington, DC.  
<https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Systemic-Banking-Crises-Database-An-Update-26015>.
- Enrique Garcia, L. 2015. "Strengthening Lines of Defense to Prevent Future Financial Crises." In *Bretton Woods: The Next 70 Years*, edited by Marc Uzan. Reinventing Bretton Woods Committee, Ankara, 4 September.  
<https://eml.berkeley.edu/~eichenqr/Bretton-Woods-next-70.pdf>.
- Grimes, William W. 2011. "The Asian Monetary Fund Reborn? Implications of Chiang Mai Initiative Multilateralization." *Asia Policy* 11 (January).  
<http://www.nbr.org/publications/element.aspx?id=484>.
- Kawai, Masahiro. 2015. "From the Chiang Mai Initiative to an Asian Monetary Fund." ADB Institute Working Paper No. 527, Asian Development Bank, Manila.  
<https://www.adb.org/publications/chiang-mai-initiative-asian-monetary-fund>.
- Lamberte, Mario B. and Peter J. Morgan. 2012. "Regional and Global Monetary Cooperation." ADB Institute Working Paper No. 346, Asian Development Bank, Manila.  
<https://www.adb.org/publications/regional-and-global-monetary-cooperation>.
- Lamberte, Mario B. and Peter J. Morgan. 2014. "Regional and Global Monetary Cooperation." In *Reform of the International Monetary System: An Asian Perspective*, edited by Masahiro Kawai, Mario B. Lamberte and Peter J. Morgan. Manila: Asian Development Bank.  
<https://www.adb.org/publications/reform-international-monetary-system-asian-perspective>.
- Malpass, David R. 2017. "Statement to the Subcommittee on Monetary Policy and Trade House Financial Services Committee." U.S. Department of Treasury, Washington, DC, 8 November.  
<https://www.treasury.gov/press-center/press-releases/Pages/sm0211.aspx>.

- Moghadam, Reza. 2009. "IMF: A Big Enough Safety Net?" IMF Blog: Insights and Analysis in Economics and Finance, International Monetary Fund, Washington, DC.  
<https://blogs.imf.org/2009/09/15/imf-a-big-enough-safety-net/>.
- Muhlich, Laurissa and Barbara Fritz. 2016. "Safety for Whom? The Scattered Global Financial Safety Net and the Role of Regional Financial Arrangements." KFG Working Paper No. 75, Freie Universität, Berlin.  
[http://www.polsoz.fu-berlin.de/en/v/transformeurope/publications/working\\_paper/wp/wp75/index.html](http://www.polsoz.fu-berlin.de/en/v/transformeurope/publications/working_paper/wp/wp75/index.html).
- Nemoto, Yoichi. 2015a. "Development of Macroeconomic Surveillance in ASEAN+3 (China, Japan, Korea) Framework: Lessons the Region has Learnt from Financial Crises." Hong Siew Ching Speaker Series, Centre on Asia and Globalization, Lee Kuan Yew School of Public Policy, Singapore, 17 April.  
<http://www.amro-asia.org/speech-by-dr-yoichi-nemoto-amro-director-at-lee-kuan-yew-school-of-public-policy-centre-on-asia-and-globalisation/>.
- Nemoto, Yoichi. 2015b. "The International Monetary System and The Role and Challenges of Regional Financial Safety Nets in Asia." In *Bretton Woods: The Next 70 Years*, edited by Marc Uzan. Reinventing Bretton Woods Committee, Ankara, 4 September.  
<https://eml.berkeley.edu/~eichengr/Bretton-Woods-next-70.pdf>.
- Obstfeld, Maurice and Kenneth Rogoff. 2002. "Global Implication of Self-Oriented National Monetary Rules." *Quarterly Journal of Economics* 117 (2): 503–35.
- People's Bank of China. 2017. *2017 RMB Internationalization Report*. Beijing: China Publishing House.  
<http://www.pbc.gov.cn/huobizhengceersi/214481/214511/214695/3398597/2017101710035015721.pdf>.
- Prasad, Eswar, and Isaac Sorkin. 2009. "Sky's the Limit? National and Global Implications of China's Reserve Accumulation." Brookings Article, Washington, DC, July 21.  
<https://www.brookings.edu/articles/skys-the-limit-national-and-global-implications-of-chinas-reserve-accumulation/>.
- Rana, Pradumna B. 2011. "Asian Fund So Near Yet So Far." *China Daily*, Beijing, 24 May.  
[http://www.chinadaily.com.cn/cndy/2011-05/24/content\\_12565296.htm](http://www.chinadaily.com.cn/cndy/2011-05/24/content_12565296.htm).
- Rhee, Changyong, Lea Sumulong and Shahin Vallée. 2013. "Global and Regional Financial Safety Nets: Lessons from Europe and Asia." Bruegel Working Paper 2013/06, Bruegel, Brussels.  
[http://bruegel.org/wp-content/uploads/imported/publications/WP\\_2013\\_02.pdf](http://bruegel.org/wp-content/uploads/imported/publications/WP_2013_02.pdf).
- Sahay, Ratna, Martin Cihak, Papa M. N'Diaye, Adolfo Barajas, Diana B. Ayala Pena, Ran Bi, Yuan Gao, Annette J. Kyobe, Lam Nguyen, Christian Sabarowski, Katsiaryna Svirydzenka, Reza Yousefi. 2015. "Rethinking Financial Deepening: Stability and Growth in Emerging Markets." IMF Staff Discussion Notes 15/08, International Monetary Fund, Washington, DC.  
<https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2016/12/31/Rethinking-Financial-Deepening-Stability-and-Growth-in-Emerging-Markets-42868>.

- Sato, Kiyotaka and Junko Shimizu, forthcoming, "The International Use of the Renminbi : Evidence from Japanese Firm-Level Data." *North American Journal of Economics and Finance*. Discussion Paper available at <http://www.rieti.go.jp/jp/publications/dp/16e033.pdf>.
- Siregar, Reza and Akkharaphol Chabchitrchaidol. 2013. "Enhancing the Effectiveness of CMIM and AMRO: Selected Immediate Challenges and Tasks." ADB Institute Working Paper No. 403, Asian Development Bank, Manila. <https://www.adb.org/publications/enhancing-effectiveness-cmim-and-amro-selected-immediate-challenges-and-tasks>.
- Steiner, Andreas. 2014. "Reserve Accumulation and Financial Crises: From Individual Protection to Systemic Risk." *European Economic Review* 70 (August): 126–44.
- West, John. 2017. "Chiang Mai Initiative: An Asian IMF?" Asian Century Institute, 5 April. <http://asiancenturyinstitute.com/economy/248-chiang-mai-initiative-an-asian-imf>.

## **Annex. Survey Results: The Market's Views on a Financial Safety Net for Asia**

### **A. Introduction**

The ASEAN+3 members (hereafter “members”) of the Chiang Mai Initiative Multilateralization (CMIM) are continuously seeking to enhance and optimize its effectiveness within the Global Financial Safety Net (GFSN). A number of Regional Financing Arrangements have been introduced globally, against the backdrop of an evolving International Monetary System (IMS), to deal with the rising incidence of financial crises and liquidity events. In Asia, the Chiang Mai Initiative (CMI) was established in response to the Asian Financial Crisis (AFC) and subsequently expanded to become the CMIM in 2010 after the Global Financial Crisis (GFC).

Market participants were surveyed by AMRO staff for their views on the importance of a Regional Financial Safety Net for Asia's financial stability. Their (anonymous) input provided insights into how the CMIM could potentially be developed to help build and sustain market confidence in Asia. An online questionnaire, “Short Survey of the Market's Views on a Financial Safety Net for Asia,” was sent out to about 150 individuals in the field of economics and finance and responses were submitted by around a third of the recipients (see Survey Questionnaire below).

This paper is organized as follows. Section B presents and analyzes respondents' views on the usefulness and possible alternatives to the design of the CMIM. Section C concludes.

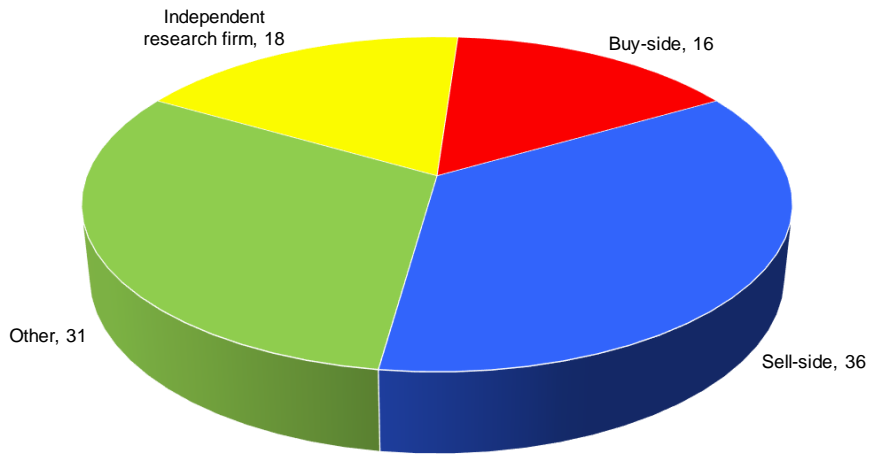
### **B. Survey Responses**

The distribution of survey respondents represents a comprehensive coverage of market sectors (Annex Figure 1). Respondents largely work in the sell-side, buy side or independent market research firms. Other respondents include risk managers, commercial bankers, academics, ratings analysts.

The countries covered by respondents include all ASEAN+3 members (Annex Figure 2). Some analysts cover the broader Asia-Pacific region including non-members, or even general global developments, while others focus on specific countries. Many work for institutions that have both regional and global offices.

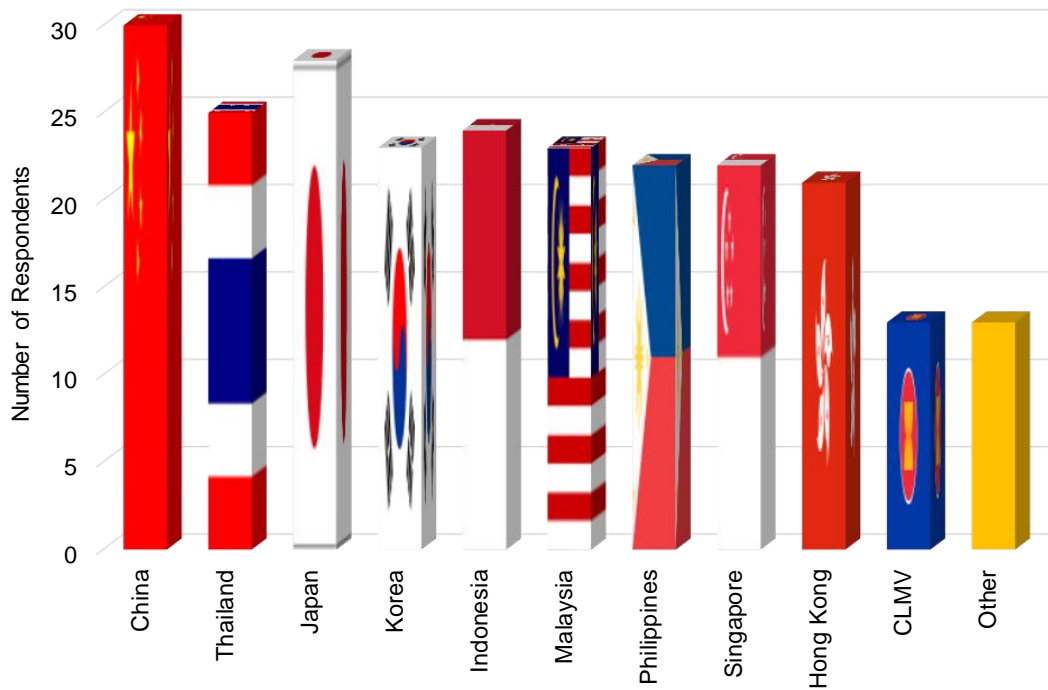
Respondents, by far, consider U.S. monetary policy developments to be the biggest risk to the capital flows of members (Annex Figure 3). This is consistent with AMRO staff's assessment that a faster than expected rise in U.S. policy rates poses a high impact risk to the region. Geopolitical tensions are rated the most important risk by the next largest group of respondents, followed by debt sustainability concerns. However, more respondents ranked the latter as the second most important risk relative to the former. Overall, the domestic macroeconomic policy settings of members are viewed as the second most important risk by the biggest number of respondents, while banking system fragilities among members are not a major concern at this stage. Other potential risks raised by respondent include trade protectionism.

**Annex Figure 1. AMRO Survey Results: Work Sector of Respondents**

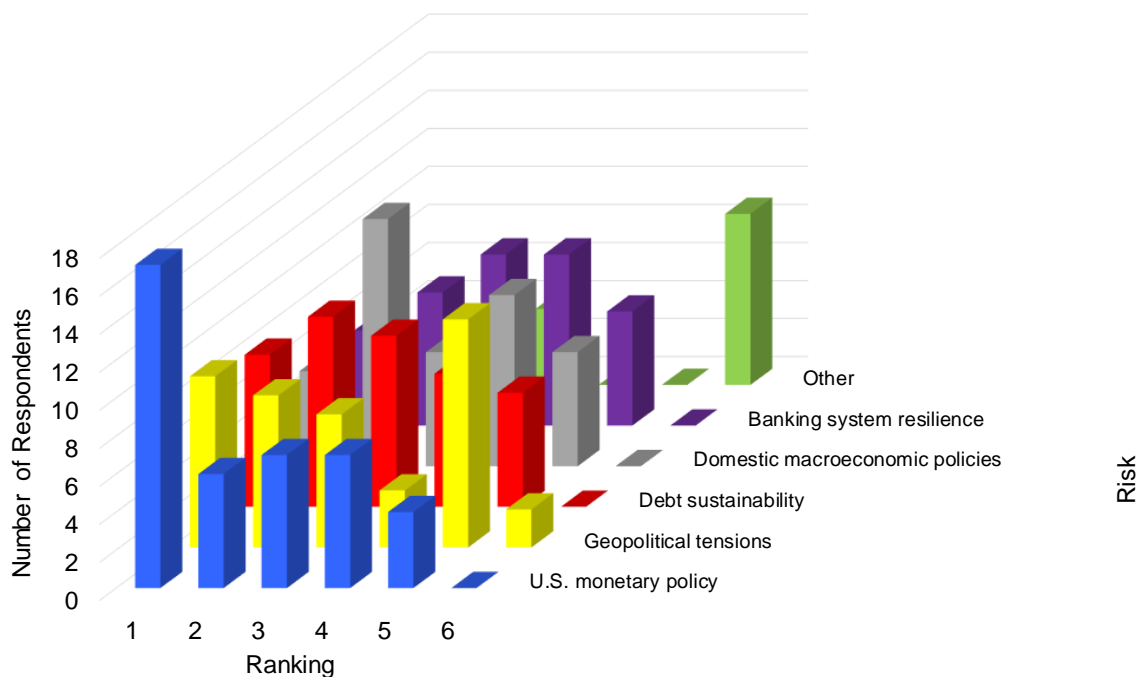


Sources: Survey respondents; and AMRO staff calculations.

**Annex Figure 2. AMRO Survey Results: Country Coverage of Respondents**



Sources: Survey respondents; and AMRO staff calculations.

**Annex Figure 3. AMRO Survey Results: Perceived Risks to Capital Flows**

Sources: Survey respondents; and AMRO staff calculations.

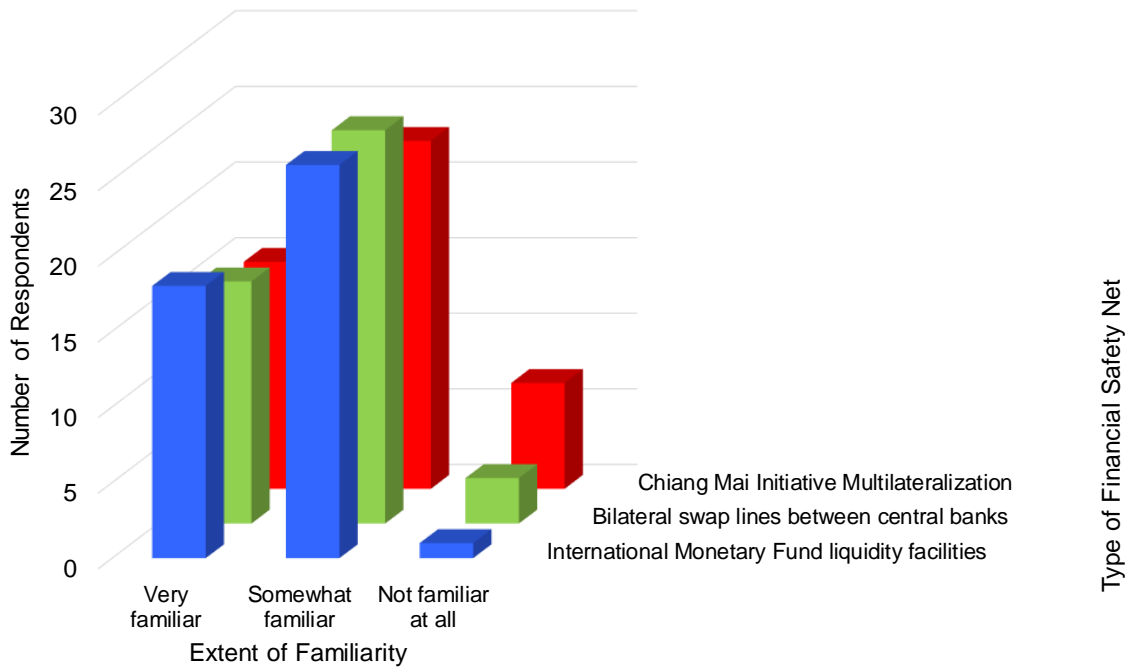
Respondents are more familiar with IMF financial safety nets. (Annex Figure 4). They are also more aware of bilateral central bank swaps. Although they are least familiar with the CMIM, they have some knowledge about the facility, more than would be expected.<sup>10</sup>

Among respondents who are familiar with the CMIM, the majority is of the view that it could play an anchor role in strengthening financial stability in Asia, notwithstanding the availability of IMF instruments (Figure 5). Fewer than 10 percent think that the CMIM does not have a key role to play while the rest are not sure about the usefulness of the CMIM. Among those who support the CMIM, three key themes emerged:

- *The greater the buffer the better.* Some respondents hold the view that multiple safety nets are essential given that a strong back-stop is needed to ensure market confidence in light of greater financial risks globally. The CMIM is seen to complement the other global financial safety nets in the same way that the European Financial Stability Fund (EFSF) / European Stability Mechanism (ESM) complemented the IMF programs during the European sovereign debt crisis.

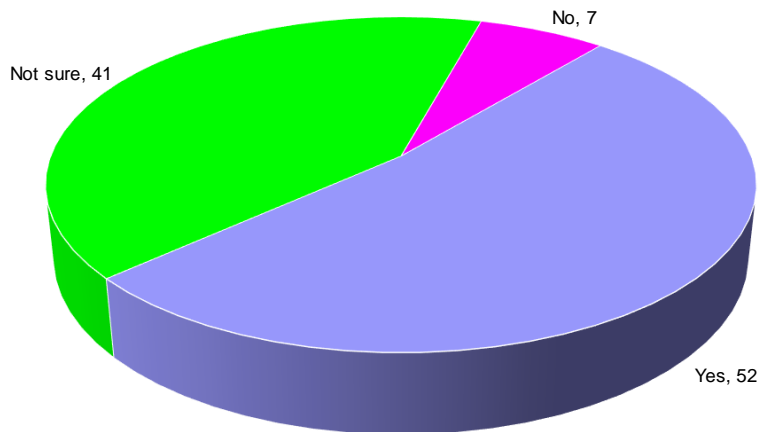
<sup>10</sup> The caveat is that the survey was sent to market contacts of AMRO staff.

**Annex Figure 4. AMRO Survey Results: Familiarity with Existing Sources of Financial Support**



Sources: Survey respondents; and AMRO staff calculations.

**Annex Figure 5. AMRO Survey Results: AMRO as an Anchor for Regional Financial Stability**



Sources: Survey respondents; and AMRO staff calculations.

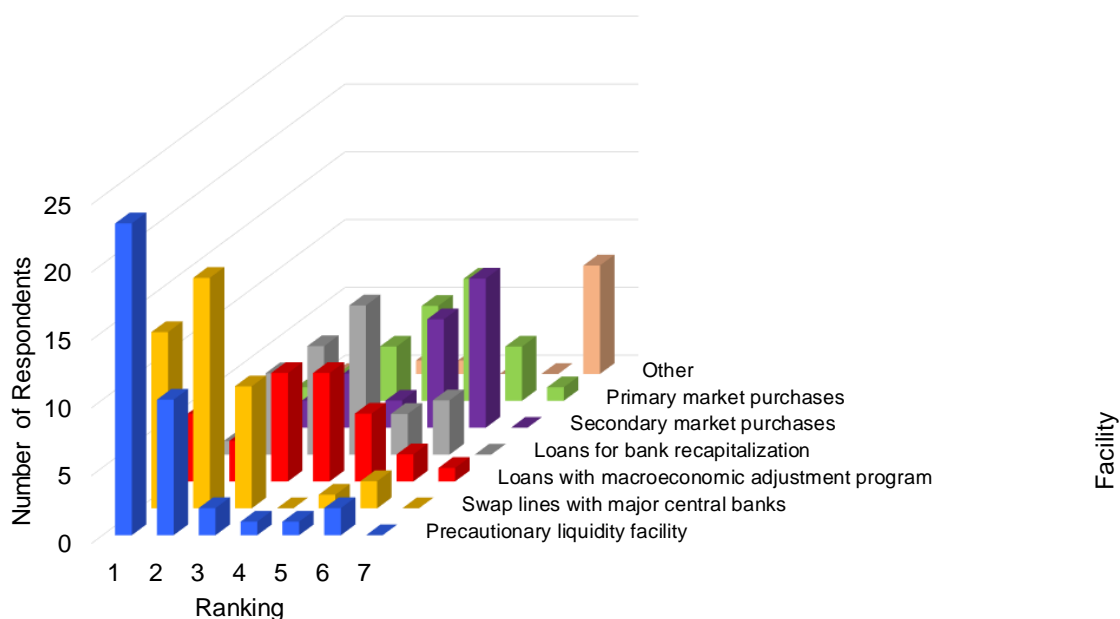


- *An Asia-focused approach to financial stability is important.* The general impression is that the CMIM would be more sensitive to local conditions and have greater understanding of political economy considerations. The CMIM's familiarity with regional dynamics and (perceived) closer cooperation across central banks would allow more timely and appropriate interventions that are better suited to individual situations. In this context, AMRO remains relatively unknown and could better promote its role among international financial institutions within the region.
- *The IMF is too inflexible and dominated by the global superpowers.* The institution is seen to be too heavy-handed—overly strict with countries that request support, with too many strings attached, and should only be considered as a last resort.

Meanwhile, several concerns were raised by those who are ambivalent about the role of the CMIM or do not see use for the facility, notably:

- *The CMIM is untested.* In contrast to the bilateral arrangements between regional central banks and IMF support, there has been no precedent with the CMIM to date.
- *The operational modalities of the CMIM are still largely contingent on agreement with IMF.* The full scope of assistance from CMIM would still require adherence to some form of IMF program.
- *The unavailability of intra-regional politics.* Some respondents are concerned that policy tensions among the likely major liquidity providers may jeopardize the effectiveness of the CMIM.
- *The need to strengthen surveillance capacity.* Some respondents are concerned about the lack of monitoring capability on behalf of the CMIM in the event that countries apply to use the facility. The regional surveillance and research function is seen to require strengthening.

Most respondents consider a regional precautionary liquidity facility to be the most or second most important financial safety net (Annex Figure 6). By far, this instrument is seen to provide much-needed reassurance to markets. Swap lines among regional central banks are ranked most or second most effective by the next largest group. Other facilities that are currently available through the IMF or the ESM in Europe are viewed as relatively less important for supporting market confidence. There is also a suggestion for coordinated interventions by central banks.

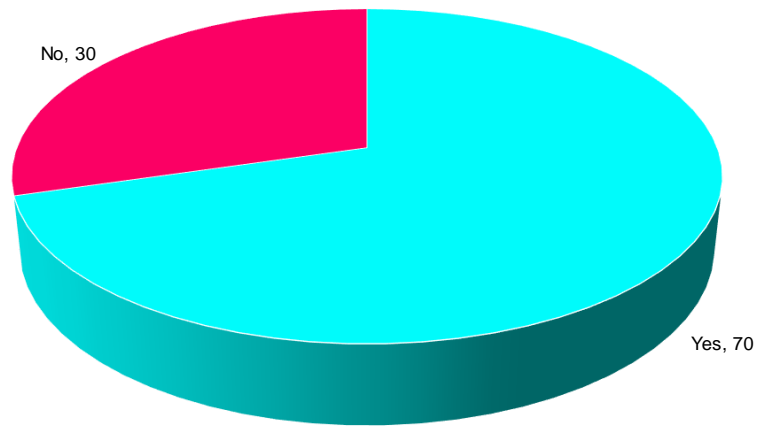
**Annex Figure 6. AMRO Survey Results: Usefulness of Financing Facilities by Type**

Sources: Survey respondents; and AMRO staff calculations.

An overwhelming majority of respondents think that the establishment of a central regional institution that formally coordinates and manages the above facilities would be desirable (Annex Figure 7). In their view, the ability to launch a coordinated response would promote market confidence and contribute to regional financial stability because a central regional institution could close any existing “gap” between the government and existing international financial institutions, provide a single point of contact and improve the speed of intervention and consistency of approach that would be critical in a crisis. However, respondents note the importance of the structure and governance of such an institution, which would need to be independent of any powerful stakeholder(s) in order to be credible and effective. Among those who are skeptical about the usefulness of such an institution, reasons proffered include politicization (per the European experience); the poor track record of policy coordination among Asian countries; the inefficiency of an added “layer” between the government, the CMIM members and the IMF.

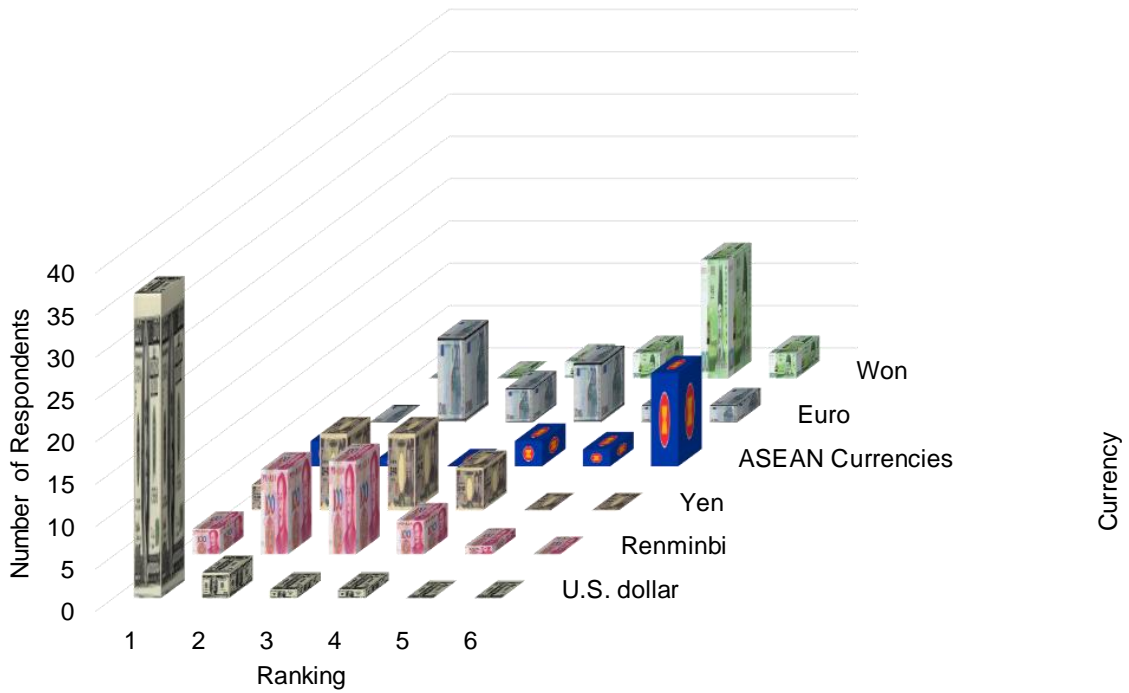
Not surprisingly, almost all respondents are of the view that the U.S. dollar should be the main currency for any regional financial safety net but they also see a strong role for local currencies (Annex Figure 8.). Only a handful think the renminbi and the yen should play dominant roles, with many ranking these currencies below the greenback. Interestingly, more respondents feel that the renminbi should be the second most important currency rather than the yen, despite the former’s relative lack of convertibility. Neither the euro nor the won is seen to have a main role. Another suggestion is that any loan should be made in the currency of the country requesting support.

**Annex Figure 7. AMRO Survey Results: Usefulness of a Central Coordinating Body**



Sources: Survey respondents; and AMRO staff calculations.

**Annex Figure 8. AMRO Survey Results: Denomination of Financial Safety Net Currencies**



Sources: Survey respondents; and AMRO staff calculations.

### **C. Summary and Conclusion**

AMRO staff sought the views of market participants on the financial stability role of the CMIM via an online survey. Respondents represent the main segment of the economics and finance industry, namely, the sell-side, the buy-side, independent research firms plus a variety of other roles. The country coverage of the respondents is comprehensive in terms of CMIM membership as well as broader expertise on global issues.

By and large, market participants do see an important financial stability role for a regional financial safety net. Specifically:

- Many think that such a facility would be more responsive to region-specific issues and hence react in a more tailored, collaborative and appropriate manner.
- The majority believe that a formal central coordinating body could better facilitate the support facility but that structure, governance and independence would be key to its success.
- Most respondents consider a precautionary liquidity facility to be most useful for boosting market confidence, followed by central bank liquidity swap lines.
- In the view of most, any such facility should be denominated in U.S. dollars as the main currency, while only a handful think that the renminbi and/or yen is more important.

**Survey Questionnaire****ASEAN+3 Macroeconomic Research Office (AMRO)  
Short Survey of the Market's Views on a Financial Safety Net for Asia**

1. In which sector do you work?

- Buy-side
- Sell-side
- Independent research firm
- Other (please specify)

2. Which country(ies) do you cover? (Please select all that apply.)

- China
- Hong Kong, China
- Indonesia
- Japan
- Korea
- Malaysia
- Philippines
- Singapore
- Thailand
- CLMV
- Other (please specify)

3. What are the potential risks to capital flows in the ASEAN+3 (China, Japan and Korea) countries? (Please rank only those that apply, with "1" representing the biggest influence.)

Debt sustainability

Banking system resilience

Domestic macroeconomic policies

U.S. monetary policy

Geopolitical tensions

Other

4. Are you familiar with the following financial safety nets?

	Not familiar at all	Somewhat familiar	Very familiar
Chiang Mai Initiative Multilateralization (CMIM)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
International Monetary Fund (IMF) liquidity facilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bilateral swap lines between central banks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. If you have some familiarity with the CMIM, do you think that it could still play an anchor role in strengthening financial stability in Asia even though member countries are able to apply to the IMF for financial support anyway?

- Yes...
- No...
- Not sure...

...because

6. What type(s) of regional financial safety net(s) would be most reassuring to Asian markets? (Please rank only those that apply, with "1" being the most effective.)

▼

Precautionary liquidity facility (to help prevent liquidity difficulties for economies with sound fundamentals and policies)

▼

Swap lines with major central banks

▼

Loans for bank recapitalization

▼

Loans with macroeconomic adjustment program (to help maintain or regain market access)

▼

Primary market purchases (to reduce the risk of a failed government bond auction)

▼

Secondary market purchases (to help support liquidity in the government debt market)

▼

Other

7. Would the establishment of a central regional institution that formally coordinates and manages any of the facility(ies) listed in Q6 promote market confidence in Asia and contribute to regional financial stability?

- Yes...
- No...

...because

8. In which currency(ies) should any regional financial safety net for Asia be denominated? (Please rank only those that apply, with "1" being the most important.)

▼

U.S. dollar

▼

Euro

▼

Japanese yen

▼

Chinese renminbi

▼

Korean won

▼

ASEAN currencies

9. Please share any additional views you may have on the topic, that are not covered by the questions above.