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The Global Monetary System and Use of Regional Currencies in ASEAN+3

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3.1 Introduction

The United States (US) dollar is unquestionably the most dominant international currency and functions as the foundation of the current international monetary system. While US shares in global GDP and trade have fallen in the last few decades, dollar shares in global foreign currency trading, foreign exchange reserves, and cross-border bank loans and international debt issues have remained stable.

The dollar's effective exchange rate appreciated when the COVID-19 pandemic triggered a global economic crisis in March 2020, and many other financial asset prices plunged.² That the Japanese yen appreciated more than the dollar at the beginning of the economic crisis reflected investors' tendency to go "risk-off" and park short-term investments in safe currencies such as the yen and the Swiss franc, and was a result of the limited spread of the coronavirus at that time. Once the infection spread globally, especially in the US, and many countries resorted to lockdowns to contain it, their economic situations worsened and financial instability loomed. These developments drew investors to safe dollar assets such as US Treasuries, contributing further to dollar appreciation.³

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² From 21 January 2020 (when COVID-19 cases emerged in Wuhan, People's Republic of China) to 19 March (when pandemic-driven financial turmoil hit the US), the US dollar strengthened by 8.6% against major trading partners. However, in the week to 20 March, the Dow Jones Industrial Average fell by 17.3%.

³ In late March 2020, the panicky situation in the US and global markets worsened to the point where dollar liquidity was preferred over other assets. This was reflected in an increase in the US 10-year government bond yields as the market panicked and investors tried to cash in government bonds for dollar bills, pushing down bond prices.

US dollar appreciation during a global crisis is not unprecedented. When Lehman Brothers collapsed in September 2008, the currency immediately rose even though the underlying subprime loan crisis in the US was the source of the global financial crisis. Dollar appreciation surprised many economists who were expecting persistent deficits in the US current account to cause dollar depreciation in the event of a crisis (Krugman 2007). Essentially, the liquidity crunch forced US financial institutions to repatriate dollar assets to strengthen their cash positions at home.

Though more than a decade apart, the pandemic and the financial crisis signify how the US dollar's part as an international currency has endured, and that the current international monetary system is built on the dollar as the dominant global currency. The flipside of its wide use globally is that other national currencies have minor or little roles to play in international transactions. This is particularly so with ASEAN+3 economies, i.e., the 10 Association of Southeast Asian Nations (ASEAN) member countries, plus the People's Republic of China (PRC), Japan, and the Republic of Korea. This suggests that investigation into how and why the dollar is dominant globally and in the ASEAN+3 region can shed light on how the use of regional currencies can be promoted.

This chapter explores the prevalence of US dollars for international trade, investment, finance, foreign exchange reserve holdings, and exchange-rate management. How ASEAN+3 economies have balanced different degrees of exchange rate stability, capital account openness, and monetary policy independence over the last 50 years is a topic ripe for discussion, especially when viewed through the lens of the "trilemma" hypothesis in international finance. How regional currencies are making headway for use in international transactions and increasingly seen as alternatives to the dollar in the settlement of trade, foreign direct investment (FDI) and financial transactions, and as official assets in national reserves also features in this chapter.

3.2 United States Dollar Dominance and Resilience in the Global Monetary System

The current global monetary system is characterized by the dominance of the US dollar, as shown by data such as its high shares across an exhaustive list: invoicing or cross-border settlement of trade and overall international transactions, global foreign exchange market turnovers, foreign exchange reserve holdings, cross-border bank liabilities, and international debt securities. While the euro is the dominant currency in Europe though not

globally, Asian currencies such as the yen and the PRC yuan are not even dominant in Asia.

The Dollar as the Dominant International Currency

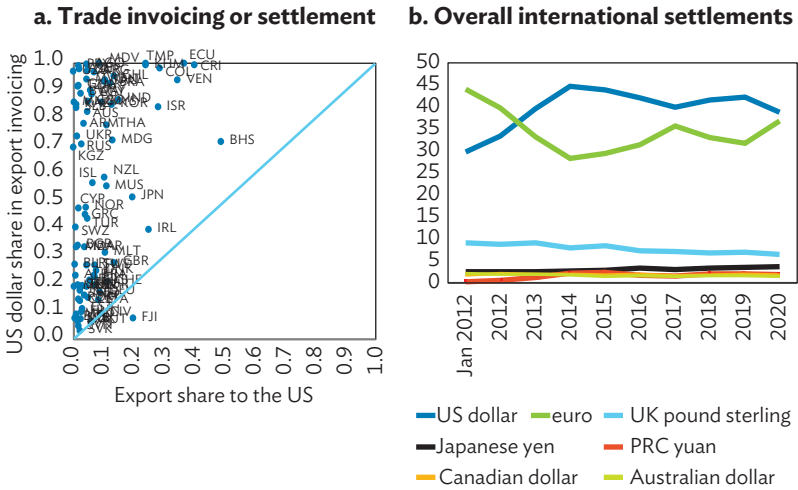
Trade invoicing or settlement

The most prominent role of the US dollar is for trade invoicing or settlement. Gopinath (2015) points out the dollar's outsized role in invoicing half or more of international trade. Figure 3.1a illustrates the shares of the dollar in export invoicing or settlement for individual countries compared to the shares of their total exports that are destined for the US. The figure demonstrates that economies rely more on the dollar for international trade than their trade relationships with the US might suggest. If the dollar did not play a dominant role, one would expect its invoicing or settlement share in export transactions of economies to be proportional to the share of the US as a destination for an economy's exports.⁴ The figure clearly indicates that economies invoice or settle their exports in the dollar much more than proportionally in line with the share of their exports to the US.

Figure 3.1b shows the currency composition of all international settlements reported by Society for Worldwide Interbank Financial Telecommunication SC (SWIFT). It is clear that the dollar has the biggest use for international settlements, followed by the euro, while other major currencies, such as the UK's pound sterling and the Japanese yen, are far less important. Although the dollar is the most important international settlement currency, it is not so dominant and was actually less important than the euro in the early 2010s. Since then, the euro has been a strong second most important international settlement currency.

⁴ A comparable figure for the euro, which presents the euro shares in export invoicing against the shares of countries' exports to the euro area, would show that many observation points are scattered around the 45-degree line. This suggests that countries tend to use the euro for export invoicing in a way proportional to their exports to the euro area (Ito and Kawai 2016).

Figure 3.1: Shares of Major Currencies in International Trade and Overall International Settlements (%)

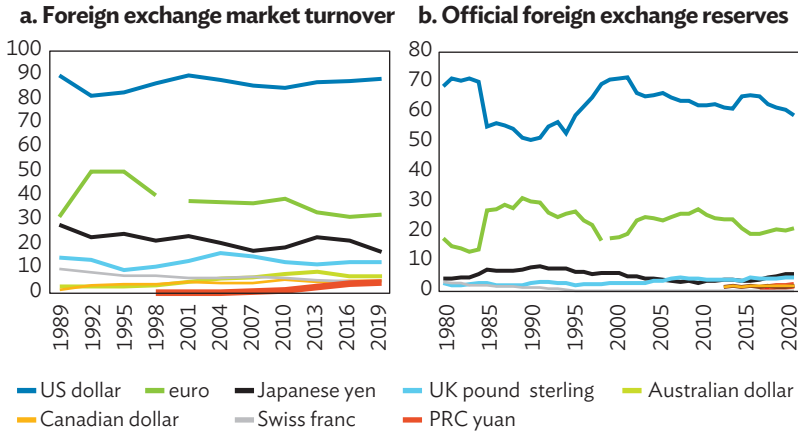


PRC = People’s Republic of China, UK = United Kingdom, US = United States.
 Note: In panel a, the horizontal axis is each economy’s average share of export to the US in total export, and the vertical axis is the economy’s average share of US dollar invoicing/settlement in total export, both in 2014–2018. Panel b reports currency shares in customer initiated and institutional payments, based on values at the end of each year except the first observation in the figure..
 Source: Authors, based on Boz et al. (2020) and from SWIFT, RMB Tracker, various issues (all accessed July 2021).

Foreign exchange trading and official foreign reserves

Figure 3.2a summarizes the currency composition of foreign exchange trading in the world’s major markets from 1989 to 2019, based on the triennial survey of the Bank for International Settlements (BIS). The figure indicates the US dollar is used in 80%–90% of foreign exchange trading over the past 30 years, recording 88% in 2019. The euro share has slipped from 38% in 2001 to 32% in 2019, perhaps due to the euro area debt and banking crisis in 2011–2015. The share of the yen also fell from 27% in 1989 to 17% in 2019, a level below the previous trough in 2007. That share is still higher than for pound sterling, which was 13% in 2019. The share of the yuan in the global currency markets has risen since the mid-2000s, and recorded 4% in 2019.

Figure 3.2: Shares of Major Currencies in Foreign Exchange Market Turnover and Reserves
(%)



PRC = People's Republic of China, UK = United Kingdom, US = United States.

Note: The sum of the percentage shares of individual currencies totals 200% instead of 100% in panel a, because two currencies are involved in a single transaction. Data for the euro before its introduction are obtained as the sum of Euro Currency Unit and legacy currencies that are now the euro.

Source: Authors, based on BIS, *Triennial Central Bank Survey: Foreign Exchange Turnover* (accessed September 2019), and IMF, *Currency Composition of Official Foreign Exchange Reserves (COFFER)* (accessed August 2021).

Figure 3.2b reports the currency composition of foreign exchange reserves held by all International Monetary Fund (IMF) reporting member countries. It shows that the share of the US dollar has been relatively high at 50%–70% as the dominant reserve currency and was 59% in 2020. The share of the euro has been in the range of 20%–30% and was 21% in 2020. The shares of other reserve currencies have been very low in comparison to those of the dollar and the euro. The share of the yen has been at the 4%–9% range and recorded 6% in 2020, but it still occupies third position. The pound sterling continues to play a role as a reserve currency, accounting for 5% in 2020. The yuan was recognized as a reserve currency from 2016 after its inclusion in the IMF's special drawing rights basket. Having accounted for 1% of global foreign exchange reserves in 2016, the yuan share rose to 2% in 2020. Therefore, it is not yet one of the most heavily held global reserve currencies, although its share is now higher than those of the Canadian dollar, Australian dollar, and Swiss franc.

Cross-border bank loans and international debt securities issued

Figure 3.3a presents the currency composition of cross-border bank liabilities based on BIS Locational Banking Statistics. It shows that the share of the US dollar was in excess of 60% in the early 1980s, and while this began to decline in the latter half of the 1980s, it has still maintained a 45%–55% share over the last 30 years, recording 49% in 2020. The euro share is the second highest and has risen over time, registering 29% in 2020. The yen's share was low in the early 1980s, began to rise in the second half of that decade, maintained moderately high use at more than 10% in the 1990s, and has declined since then, falling to 4% in 2020, which was slightly less than the pound sterling share. No data are reported for the yuan.

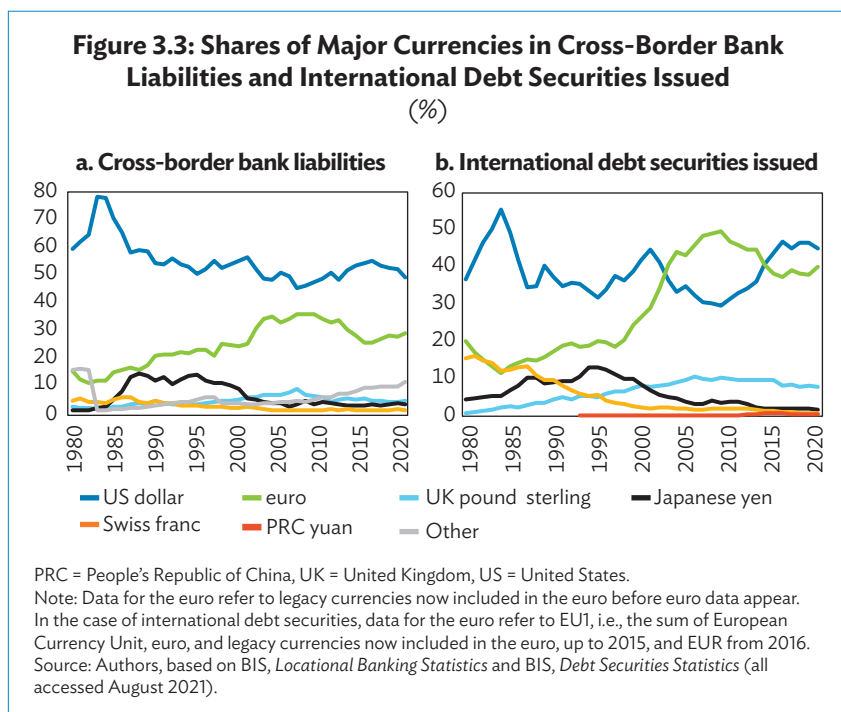


Figure 3.3b presents the currency composition of the stock of international debt securities issued. It shows that the share of debt issued in euros was higher than for dollars between the early 2000s and the early 2010s and was overtaken by the dollar in the mid-2010s. In recent years, the dollar share recorded as high, but not so dominant, at 45% while the euro share was 40% in 2020. The share of the yen was moderately high in the mid-1990s,

at close to 15%, but declined to a mere 2% in 2020. The pound sterling share has been higher than the yen share since the early 2000s, registering 8% in 2020. The yuan share has remained low at less than 1%, recording 0.4% in 2020.

Dominance of the US Dollar Zone

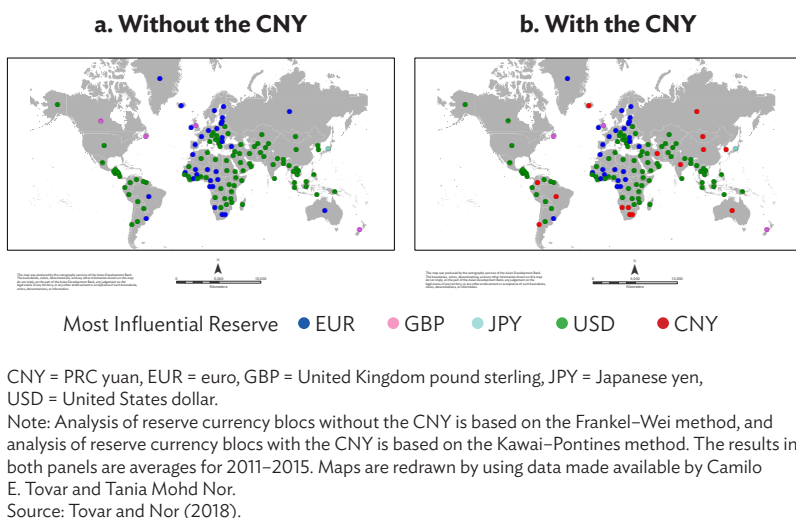
Researchers have attempted to identify the size of a currency bloc. A study by Tovar and Nor (2018) has tried this by estimating major currencies' weights for each economy's implicit currency basket in its exchange-rate management. The calculations use both the Frankel and Wei (1994) method to estimate the weights of the dollar, euro, pound sterling, and yen without considering the role played by the yuan as a major international currency and the Kawai and Pontines (2016) method to estimate the weights of major currencies, including for the yuan.

Tovar and Nor calculate the sizes of major currency zones by using estimated weights on major currencies and GDP for each economy. They find the US dollar zone (with the US as its core) dominant over the last 50 years, followed by the euro zone (with the euro area comprising 19 members in 2020 as its core), the pound sterling zone, the yen zone, and the yuan zone.

Figure 3.4, adapted from Tovar and Nor, identifies the countries of major currency blocs, with or without the yuan included in the analysis.⁵ For example, a country is classified as belonging to the dollar (or yuan) zone if the estimated weight of the dollar (or yuan) is the highest among all weights for the country. The figure demonstrates that without including the yuan, the sizes of the zones for the dollar and euro look large, but are smaller when the PRC currency is included. The yuan zone (with the PRC as its core) emerges in the analysis as a relatively large currency bloc. This suggests that in recent years, the yuan zone has expanded fast. However, as discussed in Section 3.4, the yuan's rise as an anchor currency—a major international currency with a positive weight in an economy's implicit currency basket, which influences the economy's exchange-rate management policy—has not been matched by a concomitant increase in yuan use for international transactions.

⁵ With both the yuan and US dollar included on the right-hand side of the estimating equation, the traditional Frankel–Wei method faces the problem of severe multicollinearity as the yuan is managed heavily in relation to the dollar, and thus cannot provide stable and robust estimates for these currencies. In such a case, the Kawai–Pontines method is more appropriate as it addresses the multicollinearity problem and yields estimates that are superior to, and more robust than, those obtained by the Frankel–Wei method.

Figure 3.4: Estimated Currency Blocs with or without the PRC Yuan, 2011–2015



One of the problems in Figure 3.4 is the lack of distinction between countries that stabilize or manage their exchange rates in relation to a single anchor currency (or a basket of major currencies) and those that do not manage their exchange rates under pure floats. For example, countries like Australia, Canada, and New Zealand have adopted freely flexible exchange rates, but Tovar and Nor consider them as either pound sterling, US dollar, euro, or yuan zone countries. Countries under pure floats should not be judged as part of any currency zone.⁶ Thus, a distinction is needed between two types of country: those under a pure floating regime and those under pegged or managed regimes, after which only those countries that stabilize or manage exchange rates should be classified into particular currency zones.

Implications and Issues of US Dollar Dominance

This analysis shows the US dollar has had a significant and mostly dominant role except in a few cases, such as overall international settlements and international debt securities issued. It has been remarkably stable and resilient without showing either a persistent decline or rising trend over the last 30 to 40 years.

⁶ A judgment must be made on the degree of exchange rate stability for each economy. In the case of Australia, Canada, New Zealand, and a few other countries, as the exchange rate stability of their currencies is low in recent years, they should not be judged as belonging to major currency zones.

Implications of dollar dominance

Dollar dominance has several important implications. First, the US can enjoy “exorbitant privilege” (Eichengreen 2011), including the ability to run persistent current account deficits without encountering the crisis situations that many emerging economies would face, to dismiss external pressure on macroeconomic policy disciplines, and to avoid the constraints of the “trilemma” of international finance. In the trilemma, policy makers face a trade-off in choosing two out of three policy goals: exchange rate stability, capital account openness, and monetary policy independence. Second, dollar dominance means the US Federal Reserve’s monetary policy actions have significant spillover effects on the rest of the world and often create credit cycles affecting many emerging economies. Third, the limited international role of other currencies raises the issue of how other economies can obtain international liquidity when they need it, such as during times of global financial turbulence and crisis.

The importance of the US dollar as a source of international liquidity is illustrated by the impact of the Federal Reserve’s actions during the global financial crisis and the recent COVID-19 crisis. At the start of the subprime crisis in the US, the global economy faced a dollar liquidity shortage and the Federal Reserve extended temporary dollar liquidity swap arrangements to 14 foreign central banks from 12 December 2007 to 29 October 2008.⁷ Following the outbreak of COVID-19, the Federal Reserve reopened dollar liquidity swaps with the same 14 central banks and created a new facility to allow other central banks with which it did not have swap agreements to exchange their US Treasury bills for dollar liquidity through repurchase agreements.⁸

⁷ The temporary currency swap arrangements expired on 1 February 2010. The 14 central banks included 5 major central banks (Canada, the euro area, Japan, Switzerland, and the UK) with which the Federal Reserve decided to hold standing arrangements in October 2010 and 9 others (Australia, Brazil, Denmark, the Republic of Korea, Mexico, New Zealand, Norway, Singapore, and Sweden) (Board of Governors of the Federal Reserve System n.d.).

⁸ Aizenman and Pasricha (2010) and Aizenman, Ito, and Pasricha (2021) find that those emerging economies with large financial and trade exposures to the US got the swap lines. Also, by having a repurchase agreement that involved US Treasuries, the facility was designed to favor economies that already had large amounts of dollar assets. Thus, while the US acted in a seemingly altruistic manner by providing swap lines and repo facilities to other economies, the decision was driven by national economic interest.

Factors Behind Dollar Dominance

Several factors behind US dollar dominance are apparent. First, the US is still the largest and most dynamic economic power as the global source of innovation, ideas, and technologies. The force of the real side of the economy is a strong supporting factor for dollar dominance (Eichengreen 2011, Prasad 2014, Rogoff and Tashiro 2015). Second, the dollar-based financial market is the most open, deepest, broadest, and most liquid in the world (Gopinath and Stein 2018a,b; Ito and Chinn 2015; Ito and Kawai 2016; Maggiori et al. 2019). This is an important source of resilience of its value even during the Lehman collapse in 2008 and the COVID-19 pandemic and economic crisis in 2020–2021. Third, the status of the Federal Reserve as one of the most responsible central banks in the world has contributed to the dollar being the dominant and most resilient international currency. Despite the US running persistent current account deficits and becoming the largest net liability country, confidence in the dollar remains strong. Finally, “network externalities” and incumbency “inertia” continue to support the dollar as an unparalleled international currency (Krugman 1980, Ito and Chinn 2015).⁹

However, this does not mean that the dollar will remain the dominant international currency indefinitely. The euro area, which is close to the US economy in size and has a larger population, has the potential to propel the euro into an international currency comparable to the dollar if it can form a truly integrated fiscal and banking (and possibly political) union and develop a deep, broad, and liquid financial market. For the PRC, given that its economy is expected to surpass the US in nominal GDP at market exchange rates in around 2030, the country is in a position to create an international currency capable of challenging the US dollar if it can undertake deep structural reforms and achieve a fully open capital account.

Risks and Challenges

There are several risks and challenges to the dollar’s position as the dominant international currency. First, this status creates tension between US national interests and global monetary and financial stability. As the US

⁹ Rey (2001) argues that if one particular currency is dominant in trade invoicing, the currency’s transaction cost tends to decline as market size grows. Such a “thick market externality” tends to favor currencies of countries with large trade volumes and openness for trade invoicing. Chinn and Frankel (2007, 2008) point out the inertia effect for the choice of reserve currencies and that there is a “tipping point” or threshold above which the share of a currency in official foreign reserves can rise rapidly due to externalities.

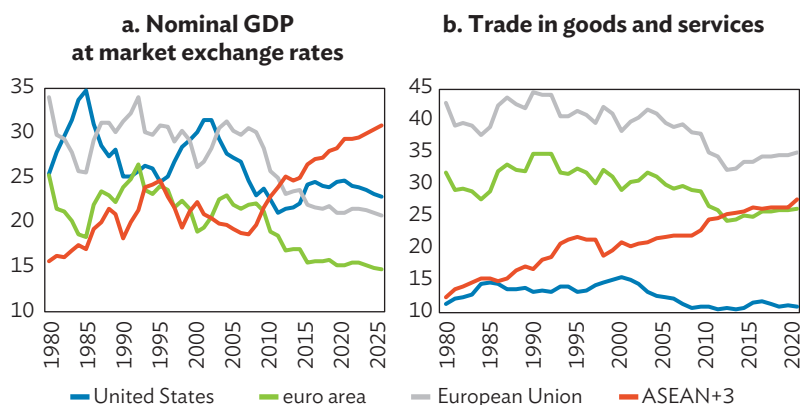
central bank, the Federal Reserve sets monetary policy to stabilize the US economy and achieve target domestic inflation, not for the entire world economy. In contrast, the world economy needs a sufficient supply of dollars as international liquidity to support global finance. If such international liquidity is not provided smoothly or in a reliable way, the world economy can be affected negatively. As long as the Federal Reserve sets monetary policy in a stable, predictable manner, negative implications for the rest of the world are limited.¹⁰ But large swings in US monetary policy can create major capital flow volatility for the rest of the world. This was observed during the global financial crisis and its aftermath in events such as quantitative easing and the taper tantrum. As long as the Federal Reserve provides adequate international liquidity to the rest of the world in a predictable manner and acts responsibly, particularly during acute liquidity shortage or financial crisis, the global economy would function relatively smoothly. But there is no guarantee that the Federal Reserve would always act predictably and responsibly in times of global financial difficulties.

The most fundamental issue is the relative decline of the US economy and the rise of emerging economies, particularly those in Asia. The fact that the world relies on the dollar—the currency of a country whose economy will continue to shrink relative to the world economy—poses significant challenges. ASEAN+3 economies have together already surpassed the size of the US economy (Figure 3.5).¹¹ The challenge for ASEAN+3 as the largest economic group globally, in terms of nominal GDP, is to develop its own regional currency for trade, investment, and financial transactions as well as for reserve holdings and exchange rate anchoring. The emergence of such a regional currency would also benefit global finance by providing a safe asset to the rest of the world.

¹⁰ If the Federal Reserve changes its monetary policy in an unpredictable way, such as during the global financial crisis and the taper tantrum, this can hurt emerging economies. Increased predictability of US monetary policy, through good communication with markets and other authorities (using, say, Group of 20 processes), is highly desirable for economies including those in ASEAN+3.

¹¹ The figure shows that the US share of global GDP has declined from 30% in the 1980s to 28% in the 2000s and 23% in the 2010s, while the share of ASEAN+3 economies as a group has risen from 18% to 20% and 26% in the same time frames. Trade takes a similar—and more notable—trend, that is, the global trade share of ASEAN+3 has risen rapidly over time from around 15% in the 1980s to more than 25% in the 2010s, far exceeding the share of the US which recorded just above 10% in the 2010s, although ASEAN+3's global trade share remains smaller than that of the European Union.

Figure 3.5: GDP and Trade Shares of ASEAN+3 Economies, United States, and Europe
(% in world total)



ASEAN+3 = Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea; GDP = gross domestic product.

Note: ASEAN+3 data include Hong Kong, China. European Union data include the United Kingdom. Data in panel a, for 2020–2025, are based on estimates and projections from the International Monetary Fund.

Source: Authors, based on IMF, *World Economic Outlook database*, April 2021 (accessed June 2021) and UNCTAD, *Data Centre* (accessed August 2021).

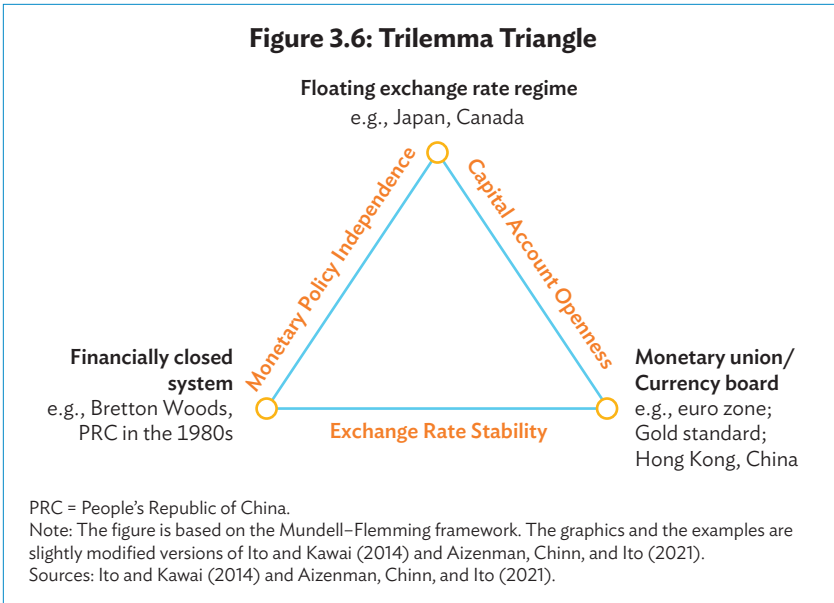
3.3 ASEAN+3 Economies from the Trilemma Perspective

The ASEAN+3 region is characterized by diverse exchange rate arrangements with most economies shifting away from fixed exchange rate arrangements toward greater exchange rate flexibility particularly since the Asian financial crisis. Given the different degrees of financial market development and the different preferences toward monetary policy independence (or autonomy), ASEAN+3 economies have chosen their preferred combinations of exchange rate stability, capital account openness, and monetary policy independence.

This section discusses how ASEAN+3 economies have balanced exchange rate stability, capital account openness, and monetary policy independence over the last 50 years from the “trilemma” perspective.

The Trilemma in International Finance

Different economies have pursued different open macroeconomic policy choices. Configuring policy choices is never easy. However, complicated policy combinations can be captured through the trilemma in international finance of trade-offs between different attributes (Figure 3.6).



Exchange rate stability is measured by how tightly monetary authorities stabilize or manage exchange rates against a single major anchor currency or a basket of major currencies. Economies under a fixed exchange rate regime can have stable currencies, while a freely flexible exchange rate regime does not provide stability. Capital account openness refers to the degree to which an economy has liberalized capital account transactions and allows capital to move across borders without restriction. Economies with capital account openness naturally hold significant external assets and liabilities, while restricted ones do not. Monetary policy independence gives monetary authorities freedom to set policy in pursuit of macroeconomic objectives without being tethered by external constraints. Economies that can freely set monetary policy instruments (such as the short-term interest rate) to pursue stable economic growth at low and stable inflation achieve a high degree of monetary policy independence, while others cannot if they fix exchange rates under free mobility of capital.

Since the US abandoned the dollar-gold link half a century ago, monetary authorities in the world have attempted to achieve different combinations of three policy choices, particularly the three corners. In other words, history is full of “corner solutions.” The Bretton Woods system sacrificed international capital mobility for exchange rate stability and monetary policy independence. Economic and Monetary Union in Europe is built on the intra-area fixed exchange rate arrangement (with extra-area exchange rate flexibility on the flipside) and free capital mobility, but essentially has abandoned monetary policy independence in the euro area’s small member countries.¹²

To comprehend the development of international monetary arrangements of individual economies, Aizenman, Chinn, and Ito (2013) and Ito and Kawai (2014) have developed the metrics of “trilemma” indexes. Here, the updated version of the index introduced by Ito and Kawai (2014) is used to cover 99 countries over 1970–2018.¹³

Observations on Trilemma Indexes

Figure 3.7 illustrates the average values of the three trilemma indexes for different income and regional groups of economies. It shows that high-income economies have achieved significant capital account openness over the last 40 years, starting from a low level in the 1970s comparable to those of the present middle- and low-income and emerging economies. These economies have likely changed policy priorities from the combination of relatively strong exchange rate stability and monetary policy independence (with limited capital account openness) during the 1970s to that of lesser exchange rate stability and lower monetary policy independence.¹⁴

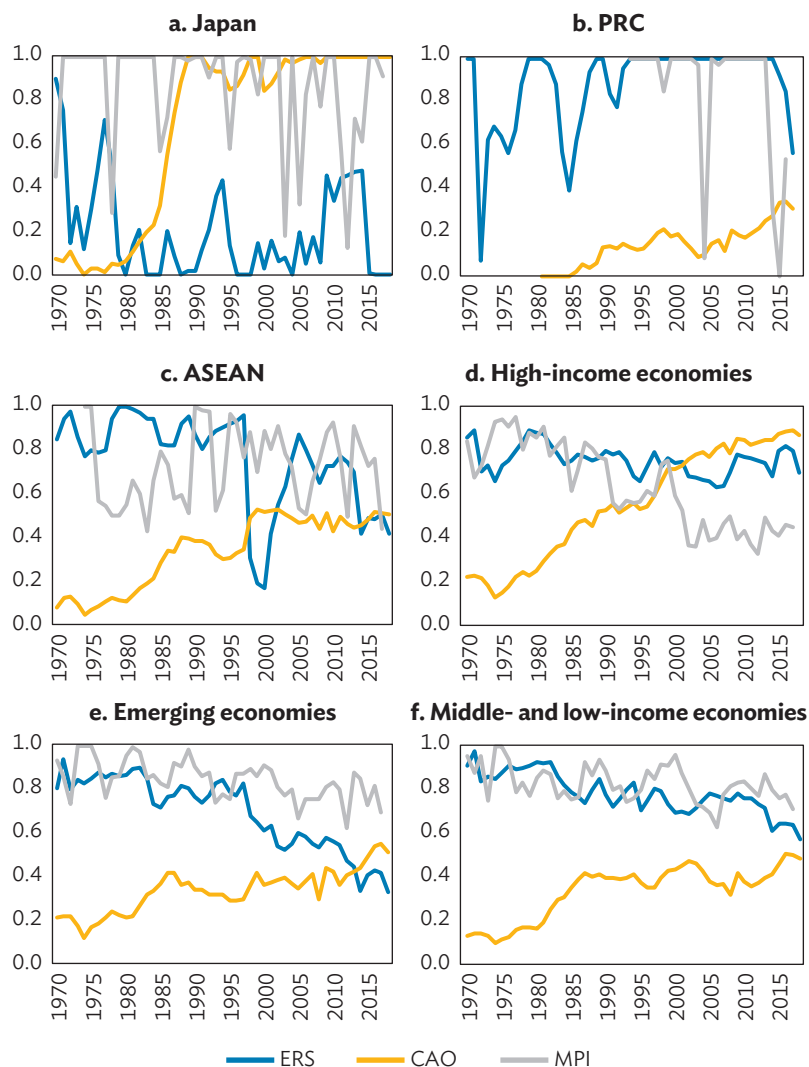
Middle- and low-income countries generally have seen capital account openness increase from a low to an intermediate level. They have also pursued exchange rate stability and monetary policy independence, with

¹² Policy makers do not always have to adopt “corner solutions.” They can, using the trilemma triangle example, implement a combination to attain one particular side without fully achieving any of the remaining two, in which case one of the choices is fully achieved and the other two are achieved only partially. Or they can implement a combination represented by a “dot” inside the trilemma triangle.

¹³ The details of how the three indexes of exchange rate stability, capital account openness, and monetary policy independence are constructed as explained in Ito and Kawai (2014), which covered 90 economies for 1970–2010.

¹⁴ High-income economies’ trend toward low monetary policy independence may seem surprising, but this is largely because euro area countries are included. Essentially, most euro area countries chose to abandon monetary policy independence in favor of maintaining exchange rate stability and capital account openness.

Figure 3.7: Trilemma Indexes for Japan, the PRC, ASEAN, and Global Economy Groups, 1970–2018



CAO = capital account openness; ERS = exchange rate stability; MPI = monetary policy independence, PRC = People's Republic of China.

Note: The groupings of “high-,” “middle-,” and “low-income” economies are based on the World Bank’s classifications. “Emerging economies” refer to Argentina; Brazil; Chile; the People’s Republic of China; Colombia; Czech Republic; Egypt; Hungary; India; Indonesia; Israel; Jordan; the Republic of Korea; Malaysia; Mexico; Morocco; Pakistan; Peru; the Philippines; Poland; the Russian Federation; South Africa; Thailand; Turkey; and Venezuela. ASEAN includes the 10 member states except the Lao People’s Democratic Republic due to lack of data. The data are created using the method of Ito and Kawai (2014).

Source: Authors.

stability declining moderately over time. Emerging economies exhibit similar patterns to middle- and low-income economies, except their capital account openness has steadily risen to an intermediate level while exchange rate stability has gone steadily down.

The three indexes for ASEAN countries show similar trends to the group of emerging economies, except that exchange rate stability plummeted during the Asian financial crisis and for a few years after. Interestingly, ASEAN countries have regained exchange rate stability, accompanied by sacrificing monetary policy independence. The level of capital account openness rose in two steps, in the mid-1980s and then in the late 1990s. ASEAN countries appear different from other developing and emerging economies in that they have been on a steady path toward greater capital account openness, even following the Asian and global financial crises. Nonetheless, capital account openness still lags high-income economies, suggesting there is room for further opening.

Not surprisingly, the two biggest Asian economies—the PRC and Japan—have cast distinctively different trajectories in their trilemma combinations. While the PRC has pursued exchange rate stability since the early 1990s, Japan adopted a flexible exchange rate regime after the breakdown of the Bretton Woods system in the early 1970s. Japan also started liberalizing its capital account in the mid-1980s and completed it in the early 1990s. The PRC, on the other hand, has ample room for further capital account liberalization. Being quite large, both economies have tended to pursue greater monetary policy independence for most of the sample period. Although not shown in Figure 3.7, the Republic of Korea used to manage exchange rates heavily to limit rate flexibility and also maintain a relatively closed capital account until the mid-2000s. Since the second half of the 2000s, it has opened up the capital account in a significant way and moved toward much greater exchange rate flexibility. Over the entire transition, the country's monetary authorities have preserved policy independence.

Trilemma Configuration for Selected ASEAN+3 Economies

The most intuitive way of illustrating combinations of the three policy choices—exchange rate stability, capital account openness, and monetary policy independence—for a particular economy is to set the combinations within the prism of the trilemma triangle, using metrics that represent the extent of actual achievement in the three policy

choices.¹⁵ To our knowledge, plotting a combination of the three policies in a trilemma triangle is the first attempt in the literature of international macroeconomics.

Figure 3.8a presents the trilemma triangles with the three indexes for 5-year ranges from 1986–1990, 2001–2005, and 2016–2017, and for different groups: high-income economies, emerging economies, and ASEAN+3 economies.

Several observations can be made. Generally speaking, while high-income economies used to have many combinations of the three policy choices, over time they have moved toward a high degree of capital account openness. By the 2000s, two types of high-income economies had emerged: one group pursuing strong exchange rate stability and capital account openness, most notably the euro area economies, and another group of economies that achieved a high degree of capital account openness and monetary policy independence with exchange rate flexibility, such as Australia and Japan. High-income economies seem to be able to attain the “corner solution” of a fully flexible exchange rate regime, full capital account openness, and full monetary policy independence. This is rarely observed among middle- or low-income economies.

While most high-income economies have steadily increased their capital account openness, this generally has not happened in emerging economies. In the second half of the 2000s, emerging economies could be classified into three groups: first, with full monetary policy independence but varying degrees of exchange rate stability and capital account openness; second, with full exchange rate stability and varying degrees of monetary policy independence and capital account openness; and third, with intermediate levels in all three choices.

Among ASEAN+3 economies, Japan has been close to the corner solution. Indonesia and the Republic of Korea have approached the corner over time. Singapore has moved from a position of exchange rate stability with a relatively open capital account toward higher levels of exchange rate flexibility and capital account openness. Other economies started from a combination of relatively stable exchange rates and independent monetary policy, and moved to positions with greater monetary policy independence while giving up exchange rate stability to some degree, partly reflecting the abandonment of fixed exchange rate regimes after the Asian financial crisis.

¹⁵ For more details, refer to Ito and Kawai (2014).

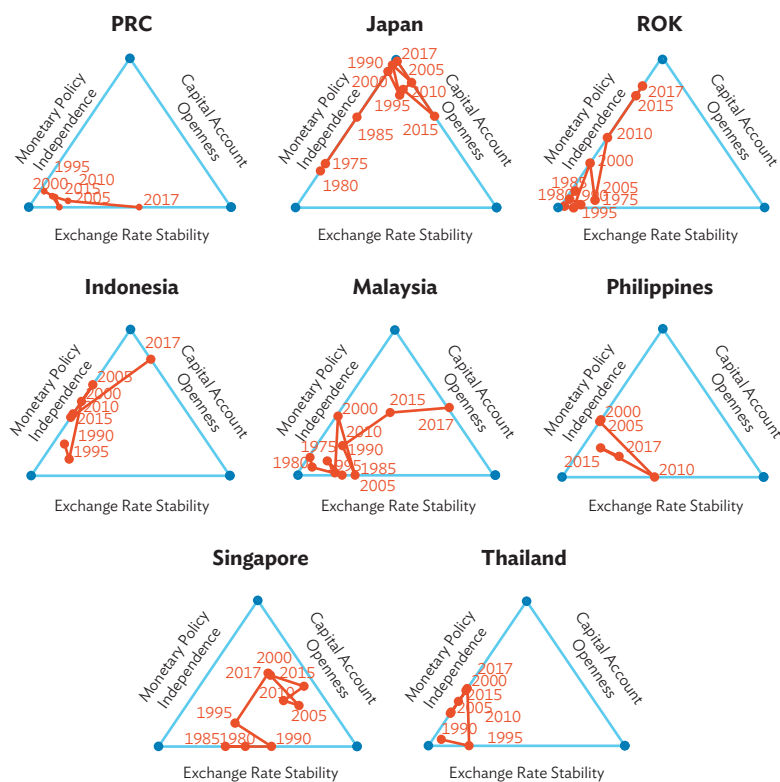
Figure 3.8a: Trilemma Triangles for ASEAN+3 Economies and Global Economy Groups, 1986–2017



Note: Abbreviations match the 3-figure country codes of the International Organization for Standardization.
 Source: Authors.

Figure 3.8b illustrates the trilemma triangles for selected ASEAN+3 economies over 1970–2017. The year in the triangle refers to the last year of each 5-year period. As widely discussed, the PRC has maintained exchange rate stability and monetary policy independence by limiting capital account openness. Despite the government announcing it would increase exchange rate flexibility in 2005, the triangle plot suggests that the country has retained a fixed exchange rate arrangement without significant openness of its capital account. Other ASEAN+3 economies, on the other hand, have weakened their exchange rate stability after the Asian financial crisis and retained monetary policy independence. ASEAN+3 emerging economies do not appear to have opened their capital account significantly. Interestingly, many ASEAN economies in recent years appear to have increased exchange rate stability but not their capital account openness.

Figure 3.8b: Trilemma Triangles for Selected ASEAN+3 Economies, 1970–2017



PRC = People's Republic of China, ROK = Republic of Korea.

Source: Authors.

Overall, most economies in the world have moved toward capital account openness, while some have moved toward exchange rate stability and others toward monetary policy independence. Only high-income economies seem able to reach a “corner solution,” and most emerging economies seem to end up being “somewhere inside the triangle,” which is also the case with ASEAN+3 emerging economies.

Although the trilemma hypothesis does not predict the use of a particular major currency or national currency for international transactions, trilemma configurations can have implications for an economy’s choice of international currencies. That is, an economy with a stable or managed exchange rate regime likely uses its anchor currency for international transactions, while the currency of an economy without an open capital account is unlikely to be used for international purposes. Once an economy opens its capital account, it must face a crucial issue of choosing the home currency, partner currency, or major international currencies for denominating and settling cross-border capital flows.

3.4 Use of Regional Currencies in ASEAN+3 Economies

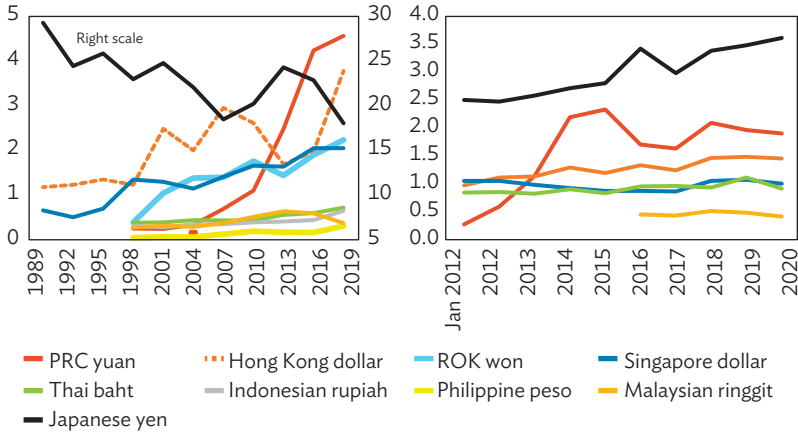
This section examines the current state and progress in using regional currencies for trade, investment, financial transactions, and exchange-rate management as nominal anchors in the ASEAN+3 region. It evaluates how far ASEAN+3 currencies have functioned as international currencies and identifies factors impeding their use for economic and policy purposes.

Foreign Exchange Markets and International Settlements

Figure 3.9 attempts to capture the extent to which ASEAN+3 currencies are traded in global foreign exchange markets and used for overall international settlements. It is essentially the ASEAN+3 version of Figures 3.2a and 3.1b in Section 3.2. Figure 3.9a shows that the Japanese yen is by far the most frequently used internationally among ASEAN+3 currencies in the foreign exchange markets, followed by the yuan, Hong Kong dollar, Republic of Korea won, and Singapore dollar. Other currencies are not much used. It is notable that the won has limited use despite its economy being the 11th largest in the world in 2020, with income at \$31,500 per person. A major reason for this is that the Republic of Korea, unlike Japan and the PRC, has not made internationalizing its currency a policy priority and has not promoted the international use of the won.

Figure 3.9: Shares of ASEAN+3 Currencies in Foreign Exchange Market Turnover and Overall International Settlements (%)

a. Foreign exchange market turnover **b. Overall international settlements**



RC = People's Republic of China, ROK = Republic of Korea.

Note: The Japanese yen share in panel a is measured by the right scale.

Source: Authors, based on BIS, *Triennial Central Bank Survey: Foreign Exchange Turnover* (accessed September 2019) and from SWIFT, *RMB Tracker*, various issues (accessed July 2021).

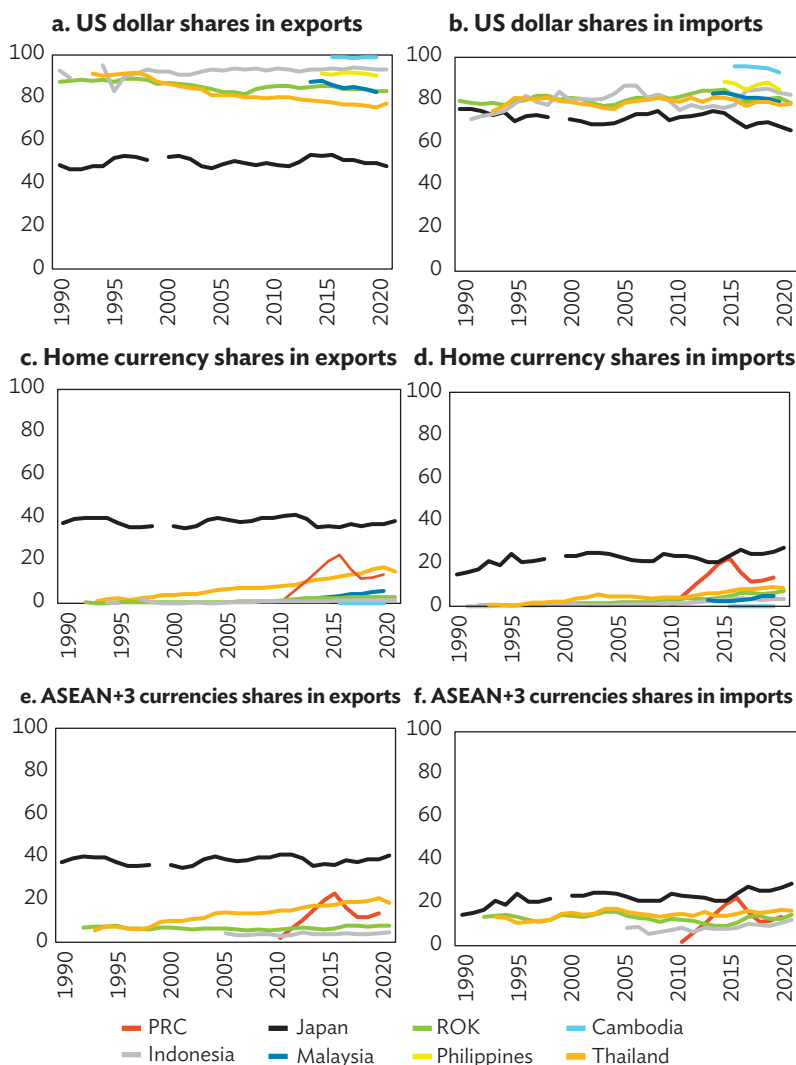
Figure 3.9b also shows that the yen, yuan, and Hong Kong dollar, Singapore dollar, and Thai baht are most frequently used for overall international settlements. Two important observations can be made: first, although the extent of yuan use rose fast between 2012 and 2014 and peaked in 2015, it has declined since; and second, the won does not play a visible role as an international settlement currency.

Trade Invoicing and Settlement

Among the ASEAN+3 economies, the PRC, Indonesia, Japan, the Republic of Korea, and Thailand publish data on trade invoicing or settlement by currency. IMF work by Boz et al. (2020) has also collected currency invoicing/settlement data for Cambodia, Malaysia, and the Philippines, among others. Combining these data, one can make important observations about the pattern of currency invoicing and/or settlement for trade (Figure 3.10).

Figure 3.10: Shares of US, Home, and ASEAN+3 Currencies in Trade for Selected ASEAN+3 Economies

(%)



PRC = People's Republic of China; ROK = Republic of Korea; US = United States.

Note: The PRC authorities provide the yuan share in total trade, not export and import separately, so in the figure the same yuan shares are plotted for PRC exports and imports.

Source: Authors, based on Boz et al. (2020) (accessed July 2012); Bank of Indonesia, Indonesia Financial Statistics (accessed July 2021); Bank of Korea, Economic Statistics System (accessed August 2021); Bank of Thailand, Statistics-International Trade; Government of Japan, Customs, Share of Currency in Trade (accessed June 2021); and People's Bank of China, *RMB Internationalization Report* (accessed August 2021).

First, as anecdotally argued, ASEAN+3 economies rely heavily on the dollar for international trade. While Japan settles about half of its exports in US dollars, Indonesia, the Republic of Korea, Thailand, and other countries settle higher proportions of exports in dollars. The use of the dollar for export invoicing has been consistently around 80%–90% for the time period available for these countries, although the trend is declining slightly, particularly for Thailand. The dollar share on the import side is higher than the export side in their trade for Japan, but with a mild declining trend. It is higher for other countries, hovering at more than 75% without any sign of slippage.

Second, the share of home currency in trade invoicing and/or settlement is the highest for Japan at about 40% for exports and close to 30% for imports. The PRC and Thailand follow. The yuan share in total PRC trade rose rapidly until 2015, to more than 20%, and began declining to about 10% in the late 2010s. The share of the baht for Thai trade settlement has been rising, particularly on the export side, reaching about 15% in 2020. In contrast, the share of the won in the Republic of Korea's trade settlement is much lower even as it has risen slowly over the years. Essentially, home currency is not the most important invoicing and/or settlement currency for ASEAN+3 economies' overall trade with the world, even for Japan.

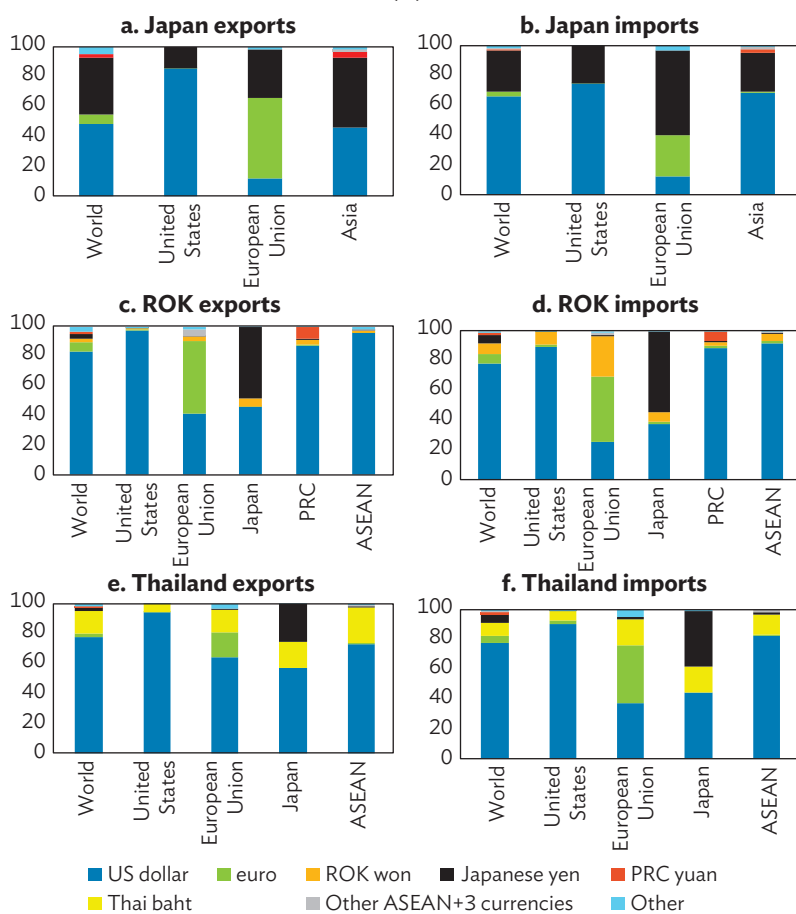
Many researchers have conducted empirical analysis to identify factors that determine trends in the use of currencies in trade invoicing and settlements.¹⁶ Ito and Chinn (2015) find that countries with higher per capita income tended to have lower shares of US dollar export invoicing and higher shares of invoicing exports in their home currencies. Ito and Kawai (2016) find that an economy with unstable macroeconomic conditions (e.g., high inflation, high exchange rate volatilities) tended to invoice its trade in the deutschemark (before the launch of the euro) or the dollar and an economy with a deeper and larger financial market or more open financial market was less likely to invoice its exports in dollars, suggesting such an economy tended to invoice its exports more in home currency than major currencies.

Japan, the Republic of Korea, and Thailand publish disaggregated data on the shares of US, home, and other currencies used for settling trade with different trading partners. While detailed time series figures for each country are shown in Appendix Figure 3.1, a snapshot for the most recent year is shown in Figure 3.11. The figure confirms that it is the dollar that

¹⁶ Refer to Boz et al. (2020), Ito and Chinn (2015), and Ito and Kawai (2016) for reviews of the literature.

plays the dominant role in these countries' overall trade, but variations in dollar and home currency use are considerable and depend on who these countries trade with. In trade with the US, countries tend to use the dollar much more heavily than the home currency, but in trade with the European Union and Japan, the Republic of Korea and Thailand favor the partner and home currencies.

Figure 3.11: Shares of the US, Home and Other Currencies in Japan, the Republic of Korea, and Thailand's Trade with Partners, 2020 (%)



PRC = People's Republic of China, ROK = Republic of Korea, US = United States.

Note: For Thailand trade, the European Union refers to 14 member countries, not the entire membership.

Source: Authors, based on Bank of Korea, Economic Statistics System (accessed August 2021); Bank of Thailand, Statistics-International Trade (June 2021); and Government of Japan, Customs, Share of Currency in Trade (accessed June 2021).

For example, Japan uses the euro and the yen predominantly for trade settlement with the European Union (with the euro preferred for Japan's exports and the yen preferred for Japan's imports) and the US dollar is used for only 10% of settlements. In Japan's trade with Asia, the yen is used as frequently as the dollar on the export side (about 45% each), while the dollar dominates the import side (accounting for 70% of settlements).

The Republic of Korea is an interesting case. In its trade with the European Union, the euro is the most important trade settlement currency (accounting for 52% in the Republic of Korea's exports and 45% in its imports). The won is not used much in the Republic of Korea's exports to the European Union but is used almost as frequently as the dollar to pay for imports from the European Union (a 24% share in won and 27% share in dollars). In the Republic of Korea's trade with Japan, the yen is the most important trade settlement currency, accounting for 47% for exports and 53% for imports, followed by the dollar. The won is used only for 5%–6% of the Republic of Korea's trade with Japan. In contrast, the dollar is far more dominant in the Republic of Korea's trade with ASEAN and the PRC, accounting for more than 90% of settlements, with the won having limited use and the yuan used to settle only 5%–7% of transactions with the PRC.

Thailand's data suggest that the baht is used more frequently as a settlement currency in Thai trade than the won is in the Republic of Korea's trade. On the other hand, in trade with the European Union and Japan, Thailand tends to settle more with the US dollar and less with the currencies of the two trading partners than does the Republic of Korea. That said, Thailand does not use the baht as much as the Republic of Korea uses the won to settle these transactions. In Thailand's trade with ASEAN, the dollar accounts for more than 70% of total settlement, but this is below its use in the Republic of Korea's trade with ASEAN.

Therefore, even as the US dollar remains the most dominant currency in the three countries' trade settlements, there are clear variations between them. In terms of home currency for trade settlement, Japan uses the most, followed by Thailand, and then the Republic of Korea. This is particularly so in trade with the European Union and other ASEAN+3 economies. Still, the dollar dominates payments in the ASEAN+3 supply chain network, suggesting that it is not an easy task to increase the use of regional currencies for trade among countries that participate in the network.

Cross-Border Financial Transactions

The extent to which ASEAN+3 economies use their home currencies for international financial transactions, i.e., in cross-border bank liabilities and international debt securities issuance, is an important part of the narrative. Many researchers have pointed out the difficulties of emerging and developing economies borrowing abroad in their home currency and their tendency to hold foreign-currency-denominated debts and liabilities, a phenomenon called the “original sin” (Calvo and Reinhart 2002; Eichengreen, Hausmann, and Panizza 2002; Hausmann and Panizza 2003, 2010; Ize and Levy-Yeyati 2003, Chang and Velasco 2006). Foreign currency borrowing can make borrowing economies vulnerable to external financial shocks due to potential currency mismatches.

Cross-border bank liabilities

Most ASEAN+3 economies find it a challenge to receive international loans in their home currency and overcome the “original sin,” as such, loans tend to be provided in major international currencies. Figure 3.12 presents the composition of three major currencies (the US dollar, euro, and yen) for cross-border bank liabilities using BIS data.¹⁷ The BIS does not provide information on cross-border bank loans and liabilities extended in emerging economy currencies, so it is not possible to identify with any clarity the extent that ASEAN+3 currencies other than the yen are used. Data suggest that in some countries, the magnitude of cross-border bank loans denominated in emerging economy currencies is non-negligible though not as significant as the dollar.

The figure shows that the four economies represented in the ASEAN+3 region, i.e., the PRC, Japan, the Republic of Korea, and ASEAN, receive cross-border bank loans mainly in US dollars. The Republic of Korea relies on dollar bank loans most heavily among the four economies followed by ASEAN, which has exhibited a rising trend since the mid-2000s. The two other economies have stable dollar shares. The use of euro-denominated bank loans by the four economies is not so high and has been relatively stable. The PRC, the Republic of Korea, and ASEAN used to have high shares of Japanese yen-denominated bank loans in the 1990s and early

¹⁷ The BIS international banking database by location reports 47 countries’ assets and liabilities relative to more than 190 economies. Data used in that collection and in the subsequent one on cross-border bank liabilities are the bank assets of the reporting countries relative to the sample countries. Information on currencies for cross-border liabilities is available only for the three major currencies, plus the pound sterling and Swiss franc.

2000s, but yen shares are on the decline. For Japan, not surprisingly, the yen share has remained high at 45% and is comparable to the US dollar share in 2020.

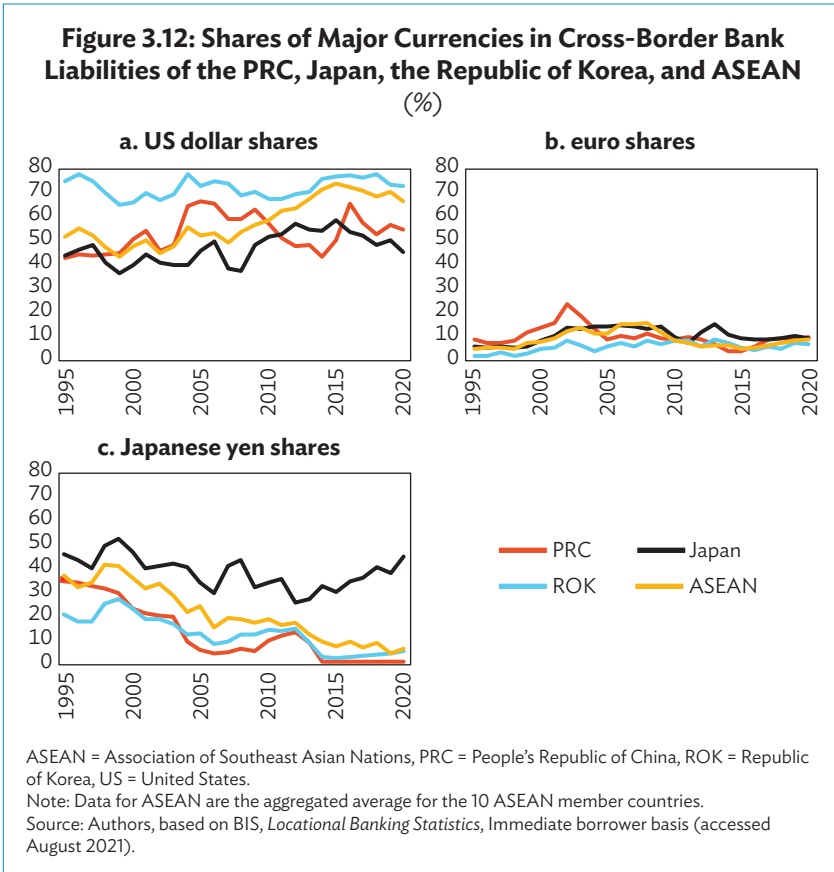
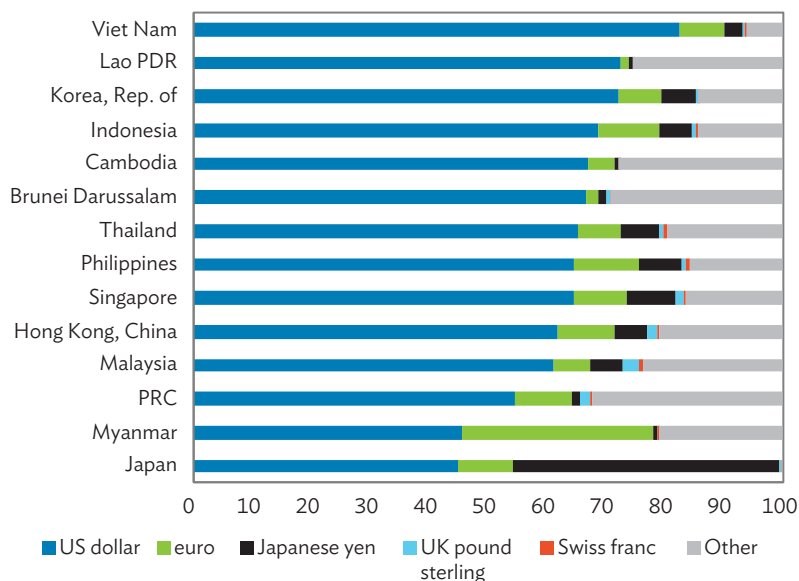


Figure 3.13 summarizes the currency compositions of cross-border bank liabilities for all ASEAN+3 economies as of end-2020. Time-series data for individual economies are plotted in Appendix Figure 3.2. Figure 3.13 clearly demonstrates the importance of the dollar, whose share ranges from 83% for Viet Nam to 45% for Japan, followed by the euro and Japanese yen. Yen-denominated cross-border bank liabilities take the largest shares in Japan (45%), followed by Singapore (8%), and the Philippines (7%). Large shares for other currencies in cross-border bank liabilities are notable for the PRC (32%), Brunei Darussalam (29%), and Cambodia (28%). Such loans may include loans from emerging ASEAN+3 economies, like the PRC, but detailed information is not yet available.

Figure 3.13: Shares of Major Currencies in Cross-Border Bank Liabilities of ASEAN+3 Economies (%)



ASEAN+3 = Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea; PRC = People's Republic of China; Lao PDR = Lao People's Democratic Republic; UK = United Kingdom; US = United States.

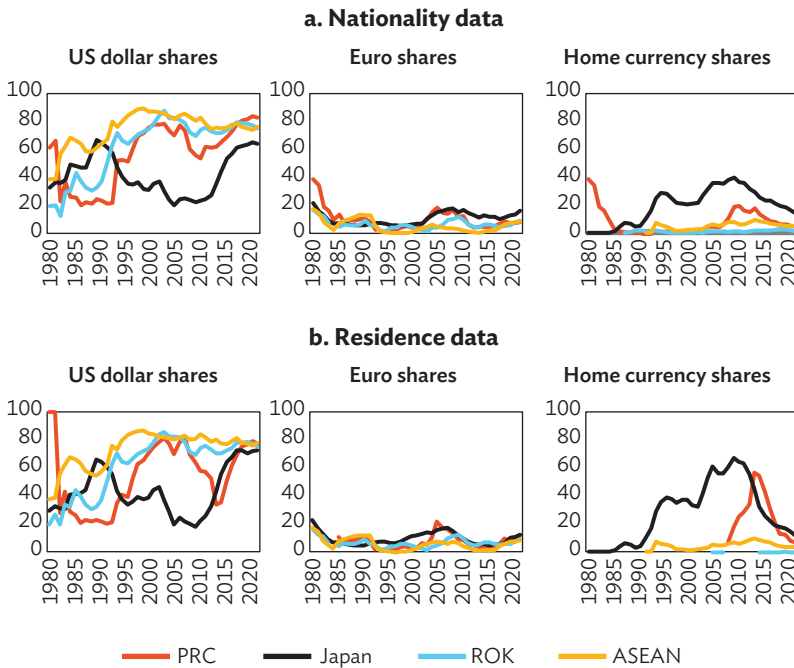
Note: Information on currency shares is available only for the US dollar, euro, Japanese yen, pound sterling, and Swiss franc for each country or economy.

Source: Authors, based on BIS, *Locational Banking Statistics*, Immediate borrower basis (accessed August 2021).

International debt securities issued

ASEAN+3 economies also borrow abroad by issuing international debt securities. Figure 3.14 presents currency compositions of such issuance by the PRC, Japan, the Republic of Korea, and the 10 ASEAN member countries, based on a BIS debt securities database. The BIS collects international debt data by nationality and on a residence basis and reports currency information only for the US dollar, euro, and home currency for each issuing economy. This is an advantage over cross-border bank loans as debt data provide information on the use of home currencies for international debt issuance.

Figure 3.14: Shares of Major and Home Currencies in International Debt Securities Issued by the PRC, Japan, the Republic of Korea, and ASEAN
(%)



ASEAN= Association of Southeast Asian Nations; PRC = People's Republic of China; ROK = Republic of Korea; US = United States.

Note: Data for international debt securities issued are measured on the basis of nationality or residence of issuers. Information on currencies is available only for the US dollar, euro, and home currency for each country or economy.

Source: Authors, based on BIS, *Debt Securities Statistics* (accessed August 2021).

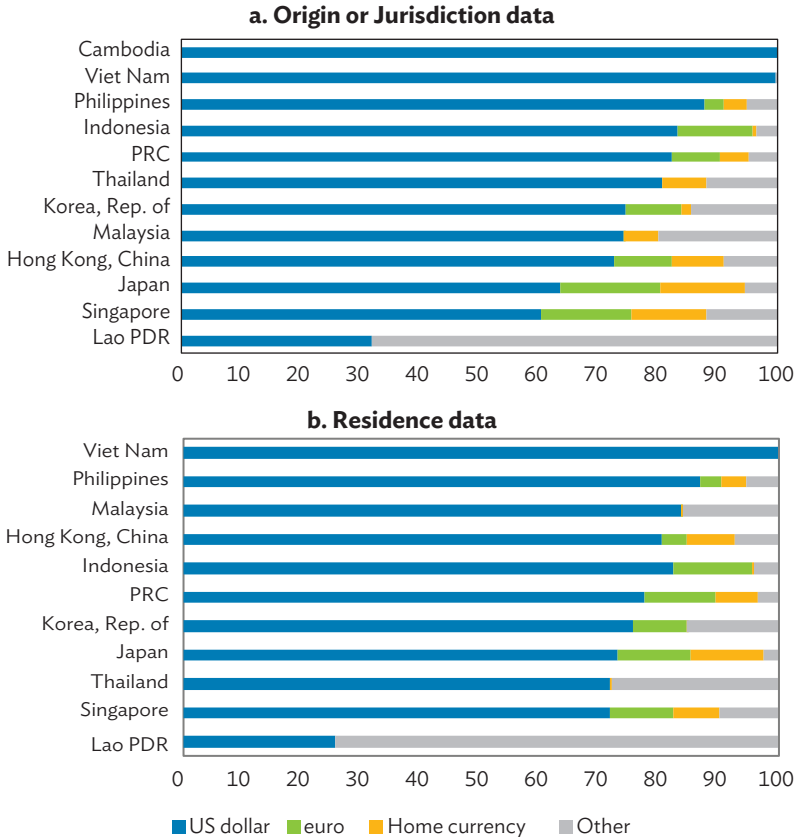
The figure illustrates changing reliance on the US dollar for international debt securities issued by the four economies. The PRC's reliance on the dollar for debt denomination was initially high in the beginning of the 1980s, declined in the early 1980s till the early 1990s, and began to rise in the mid-1990s, reaching 80% in 2020. Japan's reliance on the dollar also fluctuated, initially in directions opposite to the PRC's dollar reliance, but began to synchronize with the PRC in the 2000s and 2010s, reaching 60% in 2020. The Republic of Korea and ASEAN's reliance on the dollar moved in tandem, peaking in the late 1990s and early 2000s, and recording about 75% in 2020.

The four economies' reliance on the euro for international debt denomination is relatively limited. The PRC and Japan issued international debt securities in their own currencies in the late 2000s and early 2010s, but home currency issues shrank in the late 2010s. The yen share in Japan's international debt issued was surprisingly low in 2020 given that the yen is a major international currency. The Republic of Korea is particularly notable in not issuing much international debt in its own currency and the same applies to ASEAN issuance. This likely reflects the persistence of "original sin" for these economies.¹⁸

Figure 3.15 summarizes the currency compositions of international debt securities from selected ASEAN+3 economies for which end-2020 data are available. (Time-series data for individual economies are plotted in Appendix Figure 3.3.) Figure 3.15 clearly demonstrates the importance of the US dollar, whose share ranges from 100% for Cambodia and Viet Nam to 60%–70% for Singapore, with the Lao PDR an outlier at a 25% dollar share. The euro and home currencies are next in significance. The home currency share is high for Japan (14% on a nationality basis and 12% on a residence basis); Singapore (13% and 8%); Hong Kong, China (9% and 8%); Thailand (8% and 0%); Malaysia (6% and 0%); and the PRC (5% and 7%). Difference between shares based on nationality and residence are notable in some cases, suggesting that ASEAN+3 firms (except those from the PRC) tend to issue international debt securities in their own currencies in foreign jurisdictions while firms operating in an ASEAN+3 economy do not issue much of them in the resident jurisdiction. Also of note, the Republic of Korea rarely issues international debt securities in won, despite it being one of the richest economies in the region.

¹⁸ Ito and Rodriguez (2020) also find that the extent of fall in foreign currency reliance for international debt issuance has been quite modest.

Figure 3.15: Shares of Major and Home Currencies in International Debt Securities Issued by ASEAN+3 Economies, 2020
(%)



ASEAN+3 = Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea; PRC = People's Republic of China; Lao PDR = Lao People's Democratic Republic. Note: Data for international debt securities issued are measured by a nationality or residence basis as issuers. Information on currencies is available only for the US dollar, euro, and home currency for each country or economy.

Source: Authors, based on BIS, *Debt Securities Statistics* (accessed June 2021).

Ito and Rodriguez (2020) investigate the determinants of the extent of reliance on the dollar, euro, and home currency for denominating international debt securities. They find that countries with better economic prospects, deeper financial development, and greater investment opportunities do not tend to rely on the dollar, though they may continue to depend on major currencies (such as the euro). Also, countries with greater “fiscal space” tend to denominate international debt less in major currencies, suggesting that they can afford to issue debt more in home

currency in the international financial markets.¹⁹ Given that ASEAN economies tend to have strong economic prospects, ample investment opportunities, and relatively sound fiscal conditions, deeper financial development may enable them to issue more international debt securities in home currency.

Anchor Currencies for Exchange-Rate Management

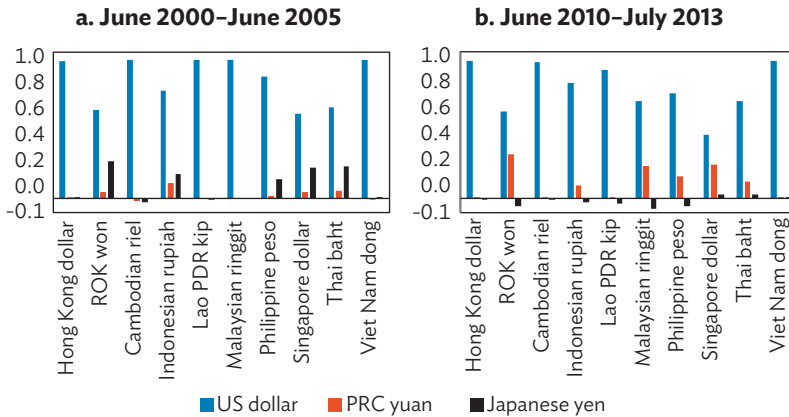
Countries often try to stabilize or manage their exchange rate movements against a certain anchor currency or a basket of anchor currencies. The main motive is to reduce exchange rate volatility and currency risk, facilitate smooth international trade, investment and financial transactions, and help achieve stable economic growth. To identify a country's anchor currency or anchor basket of currencies, this section draws on results obtained by Kawai and Pontines (2015). As explained in Section 3.2 in the discussion on the dominance of the US dollar zone, the Kawai–Pontines method yields superior and more stable and robust estimates on US dollar and yuan weights in an economy's implicit currency basket than the traditional Frankel–Wei method.

Figure 3.16 summarizes estimation results on the dollar, yuan and yen weights for selected ASEAN+3 economies in two periods. The first, from June 2000 to June 2005, was when the yuan was officially pegged to the dollar and in the second, June 2010 to July 2013, the PRC embarked on yuan internationalization and left the currency repeg that had followed the global financial crisis.

The figure demonstrates that the US dollar was the major anchor currency for ASEAN+3 economies in both periods. The yuan weights for 8 out of 13 economies increased from the first to the second period and became statistically significant and positive, although still smaller than the dollar weights. The yen weights were significantly positive in six economies in the first period but became much smaller in value and less statistically significant by the second period. Thus, the yuan has taken on importance in the implicit currency baskets of a number of ASEAN+3 economies and this appears to have occurred at the expense of the yen. One important reason for this is the rapid expansion of the PRC economy and its trade with its neighbors and the relative decline of the Japanese economy globally and regionally.

¹⁹ Having strong trade ties with the US or the euro area helps a country in choosing the dollar or euro for international debt issuance. In the case of developing countries, however, the degree of reliance on the dollar or euro for international debt issuance tends to be affected by factors other than trade relations.

Figure 3.16: Weights of the US Dollar, Yen, and Yuan as Anchor Currencies for Selected ASEAN+3 Economies



ASEAN+3 = Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea; Lao PDR = Lao People's Democratic Republic; US = United States; PRC = People's Republic of China; ROK = Republic of Korea.
 Note: The estimation follows the Kawai–Pontines method.
 Source: Authors, based on Kawai and Pontines (2015).

Even as ASEAN+3 is the largest economic grouping in the world, the region continues to rely on the dollar instead of regional currencies. Despite its rise, the yuan has not grown into a major international currency because it is not fully convertible on capital account. The yen, which is the only fully convertible currency from a large economy in the region, has its own hurdle because the global shares of Japanese GDP and trade are shrinking. The challenge for ASEAN+3 economies is to promote further integration in trade, investment, and finance; and to establish open, deep, broad, and liquid financial markets within the region. Then one can expect a rise in either the yen, the yuan, or a basket of ASEAN+3 currencies as the regional currency used for its trade, investment, and financial transactions.

3.5 ASEAN+3 Policy Initiatives

Global reliance on the US dollar poses significant challenges for emerging economies such as through volatile capital outflows in dollars and the type of currency turbulence experienced during the global financial crisis, the taper tantrum, and the COVID-19 pandemic. Several options have been proposed to solve the issue, such as transforming the Federal Reserve into a global central bank, the promotion of the IMF's special drawing rights as a

major reserve asset, and the creation of a global single currency. None are realistic, at least in the foreseeable future. One of the possible ASEAN+3 approaches would be the creation of a new monetary and financial system based on regional currencies.

An important implication of Section 3.4 is that it would be difficult to increase the use of regional currencies in the supply chain network among ASEAN+3 economies without all supply-chain participating countries collaborating to promote regional currency use. Thus, ASEAN+3 authorities need to work together to promote the use of regional currencies for intraregional trade, investment, and other international transactions. This section discusses the policies ASEAN+3 authorities have pursued to promote regional currency use in trade settlements and currency exchanges. The Local Currency Settlement Framework is one such attempt, currently made by several ASEAN countries, and it also has further potential for internationalizing ASEAN+3 currencies.

Efforts at Currency Internationalization

In the ASEAN+3 region, a few countries introduced policy initiatives to internationalize their currencies. Japan's attempt in the 1980s and 1990s and the PRC's effort in the 2010s are well-known examples. Less known is Thailand's initiative of creating a baht zone in Indochina in the early 1990s. This part of the section examines these currency internationalization efforts and experiences and evaluates their successes and failures.

Japan's yen internationalization initiative

The revision of the Foreign Exchange and Foreign Trade Control Law in 1980 liberalized all cross-border transactions and provided a legal basis for yen internationalization. Responding both to the US' demand for domestic financial market liberalization and opening for yen internationalization, the Japanese government agreed to set up the "Yen-Dollar Committee"²⁰ in November 1983 and started discussions with the US to open Japan's financial market and promote yen internationalization. Facing large current account deficits, particularly against Japan, the US objective was to see the liberalization and opening of the Japanese financial market, greater external demand for yen assets, and a stronger yen against the dollar. The committee's 1984 report proposed measures to integrate the Japanese

²⁰ The official name of the committee was the "Joint Japan-US Ad Hoc Group on Yen/Dollar Exchange Rate, Financial and Capital Market Issues."

financial market with global finance and internationalize the yen by liberalizing interest rates in the interbank and short-term government bond markets and by eliminating exchange controls. Through these measures, Japan substantially opened its capital account in the mid-1980s to support a market-driven process for internationalizing the yen.

Japanese authorities initially were not keen on promoting yen internationalization because they did not want the yen to appreciate (due to higher demand for yen assets, which the US wanted to see) or to lose control over monetary policy.²¹ But by the early 1990s, they became more active and the yen achieved about 8.5% share of global foreign exchange reserves. Use of the yen for cross-border bank liabilities and international debt issues reached about 15% of the world total in the mid-1990s. The yen also became important as a trade invoicing or settlement currency for ASEAN+3 economies.

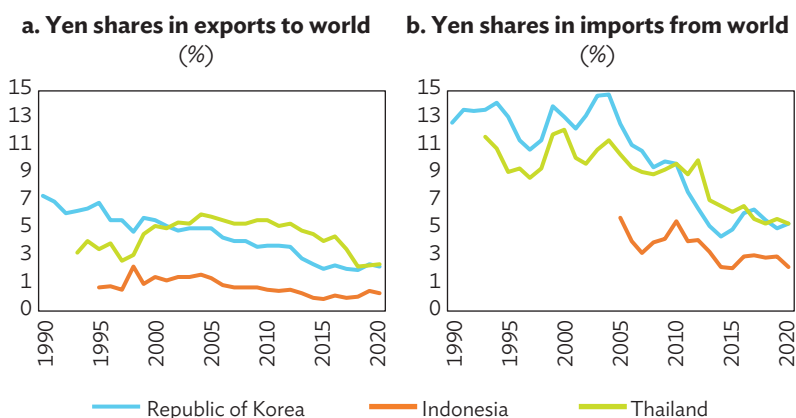
Figure 3.17 shows that the yen invoicing or settlement shares in the Republic of Korea and Thailand's trade with the world were relatively high in the 1990s, particularly on the import side, recording around 13% for the Republic of Korea and 10% for Thailand until the mid-2000s. The yen share for Indonesia was lower but still recorded 5% levels on its import side in the second half of the 2000s. However, the yen share has continued to decline since the mid-2000s. An important factor behind the decline is a relative decline of Japan as a trade partner for these ASEAN+3 countries. Even though these countries have maintained relatively high yen invoicing/settlement shares for trade with Japan (see Appendix Figure 3.1b and 3.1c for the Republic of Korea and Thailand, respectively), the declining importance of Japan for these countries' trade has led to overall diminishing shares of yen invoicing/settlement.

While Japan uses its home currency for international trade and financial transactions more than other ASEAN+3 economies do, the yen has not become a truly international currency commensurate with Japan's economic size, even if not comparable to the dollar or euro. There are several reasons for this. First, Japan achieved post-war economic growth as a US dollar-zone economy and has not fully grown out of it. Second, Japan's Asian neighbors are also US dollar-zone economies that prefer the dollar for their international transactions, including with Japan. Third, Japan imports natural resources and foodstuffs which tend to be invoiced and settled in the dollar. In addition, Japanese trading companies and

²¹ See Frankel (2011).

multinational corporations with capacity to manage currency risks do not have much interest in using yen for their international transactions (Kawai 1996). Fourth, economic stagnation after asset price bubbles burst in the 1990s reduced Japan's per capita income, its share in global trade, and the presence of Japanese banks abroad, limiting yen use for invoicing trade (Ito and Kawai 2016). The prolonged economic stagnation in the 1990s and 2000s prevented the yen from becoming a truly international currency. Finally, dollar dominance has prevented the yen from playing a significant role because of associated network externalities and inertia effects.

Figure 3.17: Japanese Yen Shares in Trade Invoicing or Settlement for Indonesia, the Republic of Korea, and Thailand



Source: Authors, based on Bank Indonesia, Indonesia Financial Statistics (accessed July 2021), Bank of Korea, Economic Statistics System (accessed August 2021), and Bank of Thailand, Statistics-International Trade (accessed June 2021).

Thailand's internationalization of the baht

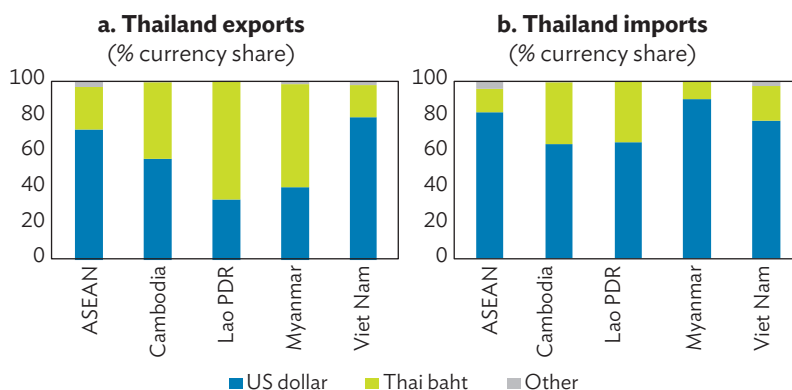
Thailand launched a “Baht Economic Zone” plan in the early 1990s. After achieving current account convertibility and becoming an IMF Article-VIII country in May 1990, Thailand began liberalization of domestic interest rates, foreign exchange regulations, and international capital flows. In March 1993, 47 domestic and foreign banks received approval under the Bangkok International Banking Facilities (BIBF) initiative to conduct offshore transactions. The idea was to transform Bangkok into the international financial center for Indochina, expecting that Thai trade and investment with Cambodia, the Lao PDR, Myanmar, and Viet Nam would grow rapidly. The BIBF was expected to channel funds from global and

Asian financial markets into Indochina neighbors through Bangkok (called “out-out” financial flows), rather than see them go through Singapore or Hong Kong, China. At the same time, Thai authorities encouraged the baht to be used for international transactions, particularly trade, thereby promoting its internationalization.

The BIBF initiative also encouraged foreign funds to flow into Thailand (“out-in”). That was a time when domestic investment demand was rising in Thailand and a large amount of foreign funds entered the economy given its favorable growth prospects and high domestic interest rates, while out-out financial transactions were limited. External funds that entered Thailand through the BIBF were used largely to speculate in real estate and the stock market, building financial vulnerabilities that led to the Thai economy into financial crisis in 1997.

Although Thai authorities never revived the Baht Economic Zone program after the financial crisis, the baht’s use in trade with some Indochina countries has risen. Figure 3.18 summarizes the shares of the US dollar, baht, and other currencies used in Thai trade with ASEAN countries, especially Cambodia, the Lao PDR, Myanmar, and Viet Nam in 2020. Baht use in trade with other ASEAN countries has risen over the last 20 years to reach 24% in Thai exports and 14% in imports. Notably, baht use in trade with the Lao PDR in 2020 reached 66% (in Thai exports) and 34% (in Thai imports), its use in trade with Myanmar was at 58% (in exports), and its use in trade with Cambodia was 43% (in exports) and 35% (in imports). Baht use in trade with Viet Nam is about the same as the ASEAN average. Although lack of currency invoicing and settlement data for the Lao PDR and Cambodia themselves makes it hard to judge if in effect these two countries are baht economic zone countries, the baht has clearly played a significant role in their trade with Thailand.

Figure 3.18: US Dollar and Baht Shares in Thai Trade with ASEAN, Cambodia, the Lao PDR, Myanmar, and Viet Nam, 2020



ASEAN = Association of Southeast Asian Nations, Lao PDR = Lao People's Democratic Republic, US = United States.

Source: Authors, based on Bank of Thailand, Statistics-International Trade (accessed June 2021).

The PRC's yuan internationalization

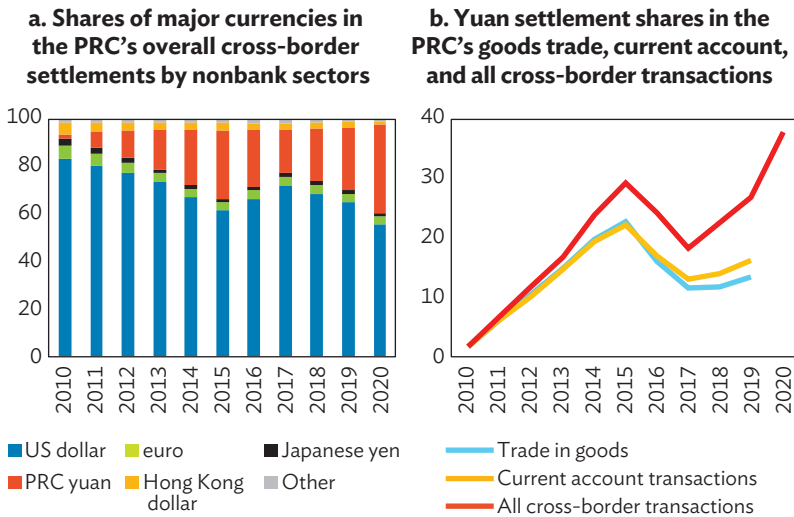
The PRC launched a yuan internationalization initiative following the Lehman Brothers shock of 2008. It started with the use of the yuan for trade settlement and expanded to outward and inward foreign direct investment (FDI) settlement and inward portfolio investment. The PRC has used Hong Kong, China as a major platform for yuan internationalization, where an offshore yuan (called the CNH) market has been developed. The yuan Cross-border Interbank Payment System (CIPS) was established in 2015 to become the main channel of cross-border yuan clearing and settlement. In addition, the PRC had concluded bilateral currency swap arrangements with 39 central banks and monetary authorities by end-2019 so they could hold and use yuan for trade and FDI settlements. As a result, rapid and substantial progress has been made in yuan use for current and capital account settlements, offshore deposits, and offshore bond issuance.²² A major milestone was the inclusion of the yuan in the IMF's special drawing rights basket in October 2016.²³

²² The market size of the yuan in the world's foreign exchange trading was the eighth largest in 2019, accounting for 4.3% of the world total. The size of yuan reserves was the fifth largest in the IMF members' total foreign exchange reserves, with a share of 2.3% in end-2020. The yuan ranked fifth as a payment settlement currency globally, with a market share of 1.9% in end-2020.

²³ The yuan was included in the special drawing rights basket on the grounds that the PRC was a large exporter and that the yuan was judged to be freely usable, i.e., freely used and traded by IMF member authorities in the PRC onshore market.

The share of yuan settlements in the PRC's overall cross-border transactions by nonbank sectors expanded rapidly from virtually zero in 2009 to 29% in 2015, then declined somewhat in 2016–2017 and started to rise again in 2018, reaching 37% in 2020 (Figure 3.19). In contrast, the US dollar share declined as a trend from 83% in 2010 to 56% in 2020. Similarly, the yuan share in total trade settlements expanded rapidly from zero in 2010 to a peak of 23% in 2015, and then declined after that to 13% in 2019.

Figure 3.19: Yuan Cross-Border Settlements for International Transactions (%)



PRC = People's Republic of China, US = United States.

Note: The yuan values of cross-border settlements for trade in goods and current account transactions are obtained from the People's Bank of China (PBOC), and the yuan values of cross-border settlements for all cross-border transactions by nonbanking sectors are obtained from the State Administration of Foreign Exchange (SAFE) of the PBOC. These values are divided by the corresponding total values by nonbanking sectors obtained from SAFE.

Source: Authors, based on PRC, *RMB Internationalization Report 2017–2020*; and State Administration of Foreign Exchange of the PBOC, *Cross-border Receipts and Payments by Non-banking Sectors* (accessed August 2021).

The available data for selected ASEAN+3 economies' use of the yuan for trade invoicing or settlement show a much lower share in their overall trade (Figure 3.20). For example, only close to 2.3% of Japan's overall exports and 1.3% of its imports were invoiced in yuan in 2020. In the Republic of Korea, the yuan shares in overall exports and imports were 2.0% and 1.5%. These

ratios are 1.0% and 3.3% for Indonesia's overall exports and imports, and 0.5% and 1.5% for Thailand's.²⁴



One of the most significant achievements of yuan internationalization is that the currency has been playing an important role as a partial nominal anchor for exchange-rate management in many Asian economies, particularly in ASEAN+3. The currency weight of the yuan in the implicit basket of exchange rate movements has risen to more than 20% for the Republic of Korea, Malaysia, and Singapore (Figure 3.16).

However, the pace of yuan internationalization has slowed and even reversed in recent years. From late 2014 to 2016, the PRC encountered massive capital outflows, yuan depreciation, and a loss of almost \$1 trillion in foreign exchange reserves between mid-2014 and early 2017. The People's Bank of China (PBOC), perhaps to put the exchange rate in line with the market fundamentals, devalued the yuan in three consecutive

²⁴ However, yuan shares in a country's bilateral trade with the PRC are higher. For example, in the case of the Republic of Korea, the only ASEAN+3 economy that publishes bilateral currency settlement data vis-à-vis the PRC, the yuan shares are 7.4% for exports and 6.4% for imports in 2020.

days in August 2015 amid market turmoil, accelerating capital outflows that had started in mid-2014 and worsening exchange market pressure. Capital outflows and large exchange rate depreciations had significant spillover effects on financial markets globally. In response, the authorities resorted to capital outflow controls and currency market interventions to stop the yuan value from plunging. This reversed trends toward capital account opening and exchange rate flexibility. As a result, yuan internationalization has slowed and prospects for the process have become uncertain.

Implications

The currency internationalization efforts in the PRC, Japan, and Thailand have not necessarily produced intended outcomes, although all achieved some success in increasing international use of the currencies. For the ROK, one reason for the low degree of internationalization of the won might be the lack of a comprehensive policy to achieve this. Even so, currency internationalization involves benefits and costs (Box 3.1). It particularly poses macroeconomic and financial stability challenges as it requires capital account convertibility, which would further require certain preconditions for success. These include sound macroeconomic management, financial market development and openness,²⁵ an effective financial regulatory and supervisory framework, and readiness to allow exchange rate flexibility. Therefore, a drive for currency internationalization makes it vital to optimize the trilemma configuration of international finance. Not all ASEAN+3 economies have reached this stage, implying that the priority is for step-by-step improvements to the macroeconomic and financial market fundamentals in laggard economies and to prepare gradually for capital account opening, if not currency internationalization.

²⁵ Ito and Kawai (2018) empirically show that financial market opening without quality development of financial markets tends to worsen macroeconomic performance.

Box 3.1: Costs and Benefits of Currency Internationalization

Several countries have pursued “currency internationalization,” promotes the use of a home currency for international transactions, such as trade, foreign direct investment, and cross-border financial transactions, and as official foreign exchange reserves and exchange rate anchors for other authorities. Currency internationalization requires both current and capital account convertibility, as otherwise residents and nonresidents cannot freely use the currency for international purposes. All high-income economies and most emerging and developing economies have achieved current account convertibility by accepting the obligations of the International Monetary Fund’s Article VIII. Most high-income economies have achieved full capital account convertibility, but many emerging and developing economies have not. To achieve capital account convertibility, a country needs to satisfy certain preconditions, which many emerging and developing economies consider too costly to fulfil. The benefits and costs of currency internationalization can be summarized as follows:

Benefits:

- Avoidance of exchange risk associated with international transactions.
- Reduced costs of currency transactions due to currency being traded frequently.
- Increased international business opportunities for banks and nonbank financial firms due to low domestic funding costs.
- “Exorbitant privilege” of not facing binding current account and fiscal disciplines or binding “trilemma” constraints for a country with a dominant international currency.

Costs:

- Increased financial instability caused by large capital inflows and outflows (due to capital account convertibility).
- Loss of monetary policy control due to nonresidents’ holding and trading of the currency.
- Intensified exchange rate volatility, overshooting and misalignment (due to the adoption of exchange rate flexibility).
- Enlarged responsibility of providing international liquidity during global liquidity shortages and financial crises for a country with a dominant international currency.

Source: Author’s compilation.

ASEAN+3 Initiatives: ASEAN Economic Community, Local Currency Settlement Framework , and Other Bilateral Cooperation

Several ASEAN+3 economies have recently taken conscious approaches to expanding cross-border use of their own currencies, particularly for trade and FDI. ASEAN's drive for regional cooperation focuses on the deepening of the ASEAN Economic Community (AEC), while the PRC is motivated by the desire to pursue economic integration of "Belt and Road Initiative" countries, particularly through yuan internationalization, and Japan is interested in promoting regional economic and financial integration and yen internationalization.

Local Currency Settlement Framework

Indonesia, Malaysia, and Thailand have been promoting their own currencies for use in bilateral transactions through the Local Currency Settlement Framework (LCSF), which the Philippines has recently joined. This is a set of bilateral agreements among central banks to use their own currencies for cross-border settlements of mutual trade and FDI through commercial banks designated as appointed cross-currency dealers (ACCDs). ACCDs conduct direct exchanges of currencies without the triangular transactions of going through the US dollar as a vehicle currency. Banks appointed as ACCDs can also provide several foreign currency services for domestic clients, such as financing and deposit services in the partner currency and currency hedging to manage exchange risks between the two currencies.

The LCSF was initiated by the Malaysian and Thai central banks, Bank Negara Malaysia (BNM) and the Bank of Thailand (BOT), in March 2016. Under this framework, eligible international transactions for local currency settlement were limited to trade in goods and services, three banks were designated as ACCDs in each country, and direct exchanges of the ringgit and baht were introduced in interbank markets. Then Bank Indonesia (BI) joined the framework in December 2017 and the BNM-BOT-BI LCSF was officially launched, effective January 2018. Eligible transactions for ringgit-rupiah and baht-rupiah settlements were limited to trade in goods and services initially, while the Malaysian and Thai central banks agreed to expand eligible transactions for ringgit-baht settlements to include FDI. The three central banks designated their commercial banks as ACCDs for each of the two pairs, i.e., BI-BNM and BI-BOT on bilateral bases, while the Malaysian and Thai central banks enlarged their lists of ACCDs.

The Philippines central bank, Bangko Sentral ng Pilipinas (BSP), signed three separate letters of intent on LCSF with BI, BNM, and BOT in April 2019, with the next step being to identify ACCDs to conduct cross-border settlements and associated currency exchanges. In the meantime, the BI–BOT LCSF was expanded in December 2020 to include FDI in eligible transactions, add more commercial banks as ACCDs in each country, and further relax foreign exchange rules and regulations, such as allowing flexible documentation requirements.

Several objectives motivate the introduction and development of the LCSF. The most important are to promote home currency use in cross-border trade and FDI settlements, reduce the risks from dependence on the dollar, and to achieve greater economic and financial stability. Reliance on the dollar for conducting international transactions would make countries vulnerable to rapid swings in US monetary policy and dollar liquidity shortages during times of global financial market stress. Thus, the use of regional currencies in trade and investment would mitigate such risks and contribute to the diversification of international settlement currencies. Another objective is to stimulate trade and investment and economic growth by reducing currency risks among LCSF participating countries. A final objective is to help deepen economic and financial integration in ASEAN. This is in line with the ASEAN Economic Community (AEC) 2025 Blueprint, which aims to stimulate intra-ASEAN trade, investment, and connections among the region's commercial banks. Finance sector integration is central to AEC building under the Blueprint.²⁶

The PRC's drive for yuan cross-border settlements and direct currency exchange

PRC authorities have taken several routes to promoting cross-border settlements of trade, FDI, and other transactions in yuan as part of the country's currency internationalization policy. First, they have set up offshore yuan-clearing banks and direct exchange markets between the yuan and partner currencies. By end-2019, the PBOC had established clearing banks in 25 countries and regions. The most successful is Hong Kong, China, where offshore yuan trading has rapidly expanded. Second,

²⁶ AEC 2025 Blueprint points out six key elements of a highly integrated and cohesive ASEAN economy and one of these is financial integration, inclusion, and stability (ASEAN Secretariat 2015). It encourages ASEAN states to liberalize financial services through the ASEAN Trade in Services Agreement and provide greater market access and operational flexibility for Qualified ASEAN Banks (QABs) through the ASEAN Banking Integration Framework (ABIF), based on each country's readiness and on a reciprocal basis.

the PBOC has created and developed the Cross-Border Interbank Payment System (CIPS) since 2015. With banks and financial institutions from 47 countries and regions participating, CIPS has played a significant role in clearing and settling cross-border transactions in yuan. Finally, the PRC has been setting up bilateral currency swap arrangements (BCSAs) with 41 central banks globally (including some not yet active) and maintaining active ones with most ASEAN+3 economies. These are intended to promote yuan settlements for trade and investment and provide yuan liquidity in the event of financial difficulties in partner countries. They have contributed to the cross-border use of the yuan for international transactions.

The PRC has been developing direct exchange markets at home and abroad between the yuan and other regional currencies as part of the internationalization efforts. For example, the PRC and Japan launched direct trading of their currency pair in Shanghai and Tokyo in June 2012 to reduce the role of the US dollar in bilateral trade. In the same manner, direct exchange with the won became available in Shanghai in June 2016, with 14 banks designated as market makers to sell and buy the two currencies. This marked the first time the won was directly traded outside the Republic of Korea. In late 2018, a Bank of China-sponsored trading association for the yuan signed an agreement with 13 Filipino banks to allow direct exchange with the peso. In September 2020, the PBOC signed a memorandum of understanding with Indonesia to establish a framework promoting trade and FDI, including the direct exchange rate quotation and interbank trading for their currency pair.

Japan's bilateral currency cooperation with several ASEAN+3 economies

Japan has been promoting yen use for international transactions and the development of direct exchange markets between the yen and other regional currencies such as the yuan, baht, Philippine peso, and rupiah. The country has also renewed several bilateral currency swap arrangements with regional central banks.

The Japanese Ministry of Finance announced in June 2017 a comprehensive plan to launch direct currency trading with other economies in the region to further promote yen internationalization. As a start, the ministry signed a memorandum of cooperation with the BOT to promote the use of regional currencies in March 2018. It signed a letter of intent with BSP, on

the establishment of a yen–peso direct trading framework in May 2019. The ministry also announced with BI in August 2020 a framework for cooperation to promote the use of their currencies for the settlement of bilateral trade and FDI.²⁷ The announcement was significant as it not only stated that “(t)he framework includes, among others, promotion of the direct quotation between the Indonesian Rupiah and the Japanese Yen as well as the relaxation of relevant rules and regulations to enhance the usage of local currencies,” but also appointed several banks in each country as ACCDs to carry out rupiah–yen transactions.

Both the Japanese Ministry of Finance and the Bank of Japan (BOJ) have renewed or added bilateral currency swap agreements to promote the yen in currency swaps. For example, agreements renewed with BSP (October 2017), the Monetary Authority of Singapore (MAS, May 2018), BOT (July 2018), BI (October 2018), and BNM (September 2020) added the yen as a swap currency for counterpart central banks except BNM. The BOJ went on to conclude a local currency–yen swap with the PBOC in October 2018, extended one with the MAS in November 2019, and signed one with the BOT in March 2020.

Implications and challenges

There are several implications of the development of the LCSF and similar initiatives undertaken by the PRC and Japan. First, the LCSF applies greater flexibility to existing foreign exchange regulations and rules regarding the use of domestic currency in partner countries for currency trading and the provision of related financial services (domestic currency financing, deposit services, and currency hedging) by partner countries’ ACCDs. This has forced some participants which prefer to retain certain foreign exchange restrictions to avoid excessive market volatilities—including Malaysia which regulates offshore trading of the ringgit—to allow flexibilities to foreign exchange regulations and administrative rules, so contributing to greater financial integration through designated commercial banks.

Second, the appointment of domestic commercial banks as ACCDs allows them to offer partner currency financing and deposit accounts and currency hedging services to domestic businesses. This arrangement complements the Qualified ASEAN Bank (QAB) initiative of the ASEAN Banking Integration Framework (ABIF) under the AEC 2025 Blueprint.

²⁷ A list of bilateral agreements is published on the website of the Japanese Ministry of Finance, https://www.mof.go.jp/english/international_policy/financial_cooperation_in_asia/bilateral_financial_cooperation/index.htm.

Agreeing on QABs has been difficult because they must be banks (i) headquartered in the ASEAN region and majority-owned by the region's citizens, and (ii) approved both by country-partner authorities and the ABIF's Taskforce.²⁸ In contrast, given that ACCDs are appointed only by country authorities, they are not subject to the same stringency. Amid slow progress in developing a QAB network across the region, this suggests the ACCD arrangement is one of the ways to expand the area of financial services that foreign banks can provide and so partially complements the QAB initiative. Closer information exchange, policy dialogue, and surveillance between central banks involved would contribute to deeper financial integration among LCSF countries and eventually in ASEAN as a whole.

Third, the PRC and Japan's efforts to promote the use of regional currencies together with LCSF central banks would in effect expand the ASEAN-led LCSF to the wider ASEAN+3 region. This would not only reduce foreign exchange risk associated with trade and investment and currency transaction costs, but also contribute to ASEAN+3 financial integration.

On the other hand, significant challenges exist in reaping the benefits of the LCSF and the PRC and Japan's supporting efforts. As Sussangkarn (2019) explains, the LCSF is intended to reduce transaction costs in exchanging local currencies to the point where direct exchanges are less costly than transactions triangulated through the US dollar, leading to a persistent increase in regional currency use for trade and FDI settlement.

Several policy recommendations can be made to stimulate regional currency use. First, participating countries are advised to pursue greater liberalization and coordination of foreign exchange regulations and rules and cross-border settlement practices. For example, the amount of local currency that nonresidents can hold can be raised. The Japanese Bankers Association is encouraged to extend its yen-clearing system, now only available at home, to Japanese banks operating in ASEAN+3 economies to speed up cross-border yen transfers. Second, eligible underlying transactions should be expanded to include wider long-term capital flows, particularly cross-border investment in local currency bonds. This would create synergies between cross-border settlements in local currencies for trade and FDI and those of intraregional local currency bond transactions. Third,

²⁸ Only two Malaysian banks have been established as QABs in Indonesia so far (which feature in the Joint Statement of the 6th ASEAN Finance Ministers and Central Bank Governors' Meeting, 2 October 2020, <https://asean.org/joint-statement-of-the-6th-asean-finance-ministers-and-central-bank-governors-meeting-afmgm/>).

LCSF countries should be expanded to other ASEAN members—and in particular include Singapore as it is among the most developed financial centers in the region. Fourth, authorities in participating countries should focus on developing deep and liquid foreign exchange markets to reduce transaction costs. This is crucial as the holding of currencies that are not very liquid involves greater exchange risks and higher fees, which discourage demand and the use of regional currencies. Finally, closer coordination of exchange rate policies among participating countries is desirable to ensure greater exchange rate stability among LCSF currencies. The reason is that if exchange rates are volatile, then regional currencies would be costly to use and the US dollar would tend to continue to dominate settlements for intraregional trade and investment.

Central Bank Digital Currencies

ASEAN+3 economies have taken various approaches to the issuance of a central bank digital currency (CBDC), which is the digital form of an economy’s legal tender. Instead of printing paper money, a central bank may issue a CBDC backed by the full faith and credit of the government. While Cambodia has already introduced the digital riel under the “Bakong” project, Brunei Darussalam, the Lao PDR, Myanmar, Malaysia, and Viet Nam have not made moves (Table 3.1). Other ASEAN+3 economies are either studying CBDCs or have initiated test runs and pilot programs. The PRC has taken the most significant action by rapidly developing its own CBDC for official issuance by 2022.

Table 3.1. State of Preparation for Central Bank Digital Currencies in ASEAN+3 Economies

Economy	Issuing body (including potential)	CBDC status	No. of users (millions)	Current situations
PRC	People’s Bank of China (PBOC)	Pilot	1,439.3	Trials of DCEP carried out in major cities in April 2020; exploring real-time cross-border settlements with HKMA, BOT, and CBUAE; plan to issue DCEP by February 2022.
Hong Kong, China	Hong Kong Monetary Authority (HKMA)	Pilot	7.5	Test of a cross-border corridor network carried out with BOT in 2019; undertaking cross-border pilot programs for CBDC with PBOC, BOT, and CBUAE.

continued on next page

Table 3.1 (continued)

Japan	Bank of Japan	Development	126.5	The first phase experiment started in April 2021 to develop a test environment, the second phase planned in 2022 to implement CBDC in the test environment, and then consider a pilot program.
Korea, Republic of	Bank of Korea	Pilot	51.3	Launch of research on legal and technical implications of a CBDC in April 2020; pilot program during August to December 2021.
Brunei Darussalam	Monetary Authority of Brunei Darussalam	Inactive	0.4	--
Cambodia	National Bank of Cambodia	Other	16.7	Bakong launched as a DLT-based interbank and retail payment system with its digital currency in October 2020.
Indonesia	Bank Indonesia	Research	273.5	Under study to launch a digital rupiah
Lao PDR	Bank of the Lao PDR	Inactive	7.3	--
Malaysia	Bank Negara Malaysia	Inactive	32.4	No plan to issue CBDC
Myanmar	Central Bank of Myanmar	Inactive	54.4	--
Philippines	Bangko Sentral ng Pilipinas	Research	109.6	Under study in accordance with the Digital Payments Transformation Roadmap.
Singapore	Monetary Authority of Singapore	Pilot	5.9	Testing of CBDC through Project Ubin; the first successful international transaction of CBDCs with Canada conducted in 2019.
Thailand	Bank of Thailand (BOT)	Pilot	69.8	Testing of a prototype decentralized CBDC for domestic interbank transfers in 2018; testing of cross-border transfers with HKMA in 2019, expanded to include PBOC and CBUAE in February 2021; plan to launch a retail CBDC pilot in the second quarter of 2022.
Viet Nam	State Bank of Viet Nam	Inactive	97.3	No development yet
United States	Federal Reserve	Research	331.0	Under study; Boston Fed is working with MIT researchers to develop and test a CBDC.
Euro area	European Central Bank	Development	340.9	Launch of the "digital euro" project in July 2021, starting with a 24-month investigation phase.

CBDC = central bank digital currency, CBUAE = Central Bank of United Arab Emirates, DCEP = Digital Currency Electronic Payment, DLT = distributed ledger technology, Lao PDR = Lao People's Democratic Republic, MIT = Massachusetts Institute of Technology, PRC = People's Republic of China.

Note: The number of users is the population of the country or economy.

Source: Authors, based on Atlantic Council, *Central Bank Digital Currency Tracker* (accessed August 2021).

A country would have several reasons to introduce a CBDC. They include: reducing the cost of issuing and managing fiat currency; improving the functions of the domestic and cross-border payments system; protecting the integrity of legal tender from cryptoassets (such as Bitcoin) and stablecoins (such as Tether, USD Coin, Amazon Pay, Apple Pay, Google Pay, Alipay, WeChat Pay, Facebook's proposed Diem, and the like) thereby maintaining monetary sovereignty; increasing interoperability between existing private digital currencies and allowing users to enjoy low-cost, low-risk, and efficient financial transactions in real time; promoting financial inclusion to enable those who are unbanked or underbanked to have easier and safer access to money on their mobile phones; tracking financial flows and limiting money laundering, terrorist financing, tax evasion, and other illicit activity; and enhancing the effectiveness of fiscal and monetary policy.

Cambodia's "Bakong" project

In October 2020, the National Bank of Cambodia (NBC) launched "Bakong," which is a real-time interbank payment system based on a distributed ledger technology (DLT) and supports its digital currency. "Bakong" uses a two-tier system where financial institutions replace money deposited by end users with electronic money and offer the latter to them. To use electronic money, end users must deposit cash at a financial institution, open "Bakong" accounts under the domain of that institution, and transfer money to the "Bakong" accounts.²⁹ Then, the NBC collects physical cash (riel and US dollar notes) from the financial institution and creates electronic money (in riel and US dollars). Finally, end users can make payments by using electronic payment accounts (or e-wallets) created at the financial institution. Thus, "Bakong" follows a prefunded model where end-users must deposit in their "Bakong" accounts before making transactions. The NBC can change the quantity of electronic money (in riel) in circulation, which is a *de facto* CBDC, for the purpose of monetary control.³⁰

²⁹ End users have two separate accounts to allow for transactions for the riel and US dollar. Alternatively, they can open "Bakong" accounts on the Bakong App under the domain of any participating institution and make a direct cash deposit through them. End users must utilize the physical services of participating banks or institutions to convert riel into dollar, or vice versa, as they cannot do that on the system.

³⁰ But the NBC cannot change the size of dollar-electronic money in circulation as its supply is limited and cannot be altered by the central bank.

The NBC has been motivated primarily by the need to modernize its payments system, which was severely underdeveloped with no Real Time Gross Settlement (RTGS) capabilities in the interbank network or between merchants and banks. DLT adoption has improved interoperability of retail payments among banks and payment service institutions, which was a challenge.³¹ In addition, the NBC has viewed “Bakong” as helping expand financial inclusion because most citizens are unbanked even though mobile phone penetration is rising. Finally, the introduction of electronic money in riel as a *de facto* CBDC is expected to help restore the effectiveness of monetary policy and eventually reduce the extent of dollarization.

Development of the digital yuan

The PBOC began efforts to issue digital currency (later named as Digital Currency Electronic Payment [DCEP]) in 2014. Having conducted research, particularly through the Digital Currency Institute established in 2017, and the basic designs and drafting of legislation, the PBOC piloted the digital yuan in four cities in April 2020. Commercial banks were allowed to run internal tests such as conversions between cash and digital currency, account-balance checks, and payments. The PBOC expanded the pilot program to many cities in August and launched full-scale demonstration tests in major cities such as Shenzhen, Suzhou, Beijing, Xi’an, and Hainan in October. The PBOC also announced it would test cross-border settlements of the digital yuan with the Hong Kong Monetary Authority (HKMA), Bank of Thailand (BOT), and Central Bank of the United Arab Emirates (CBUAE). It aimed for widespread domestic use of the digital yuan by 2022 and considered allowing foreign athletes and visitors to use it during the 2022 Winter Olympics in Beijing.

Like most other planned CBDCs, the digital yuan has a two-tier system. The technology to support it is a combination of DLT and a newly developed technology based on existing electronic payments. From monetary policy perspectives, the PBOC appears to prefer a CBDC based on a central rather than decentralized technology. However, the joint project with the HKMA, BOT, and CBUAE, is reportedly exploring DLT capabilities in developing a proof-of-concept prototype to support cross-border foreign exchange payment-versus-payment transactions in multiple jurisdictions, and operating 24/7.

³¹ DLT was selected as it was believed to allow the payments system to leapfrog the traditional way of connecting all players and become more efficient, reliable, and resilient to cyberattacks than the traditional one, especially when connecting to payment service providers (NBC 2020).

The digital yuan functions like existing mobile payments (such as Alipay and WeChat Pay) for end users but differs from them in a significant way: it is a legal tender, the user's transaction information is captured by authorities through commercial banks rather than private payment providers, and offline payments are possible. Thus, the digital yuan enables authorities to keep track of financial flows as it allows only "controlled anonymity" in comparison to fully anonymous cash transactions. In addition, the PBOC has required mobile payments service providers (such as Alibaba's Ant Financial and Tencent) to put 100% of their customer funds in central bank accounts as interest-free reserve deposits so that it can monitor nonbank payments firms and control financial risk.

In addition to usual reasons for issuing a CBDC, the PRC's push for the digital yuan appears to have another important motivation. That is, by issuing the digital yuan capable of being used for cross-border settlements, the PBOC can establish CBDC alliances with other countries and regions, set international standards on technology and regulations related to a CBDC, and enjoy first-mover advantage. If the digital yuan is increasingly used for the cross-border settlement of trade and investment particularly with the Belt and Road Initiative countries, it is possible that the yuan-based economic and currency zone is created and expanded rapidly. Even though the PRC has not achieved full capital account convertibility, the digital yuan could be used for current account and limited capital flows (such as FDI and long-term bank loans) by a large number of countries. In the eyes of the US, Europe, and Japan, this could threaten the existing international monetary system based on the dollar, euro, and yen.

Approaches taken by major advanced economies

Given that the PRC is racing ahead, major advanced economies are likely to accelerate plans to issue their own CBDCs. In addition, they are urged to respond to the spread of stablecoins—privately issued digital currencies pegged to a fiat currency like the dollar and euro (Tether, USD Coin, and bigtech e-money coins)—and potentially the digital yuan, in order to conduct effective monetary policy and achieve financial stability within the existing international monetary system. However, of the three largest advanced economies (the US, euro area, and Japan), the US is furthest behind, according to the Atlantic Council's Central Bank Digital Currency Tracker.

The US is studying the benefits and costs of a CBDC, but remains cautious. The Federal Reserve has done research to examine whether a digital dollar can complement existing systems and serve the needs of households and businesses and to identify the implications for monetary policy, financial stability, consumer protection, and legal and privacy issues. Views diverge within the central bank on the need for, and usefulness of, a CBDC. Federal Reserve Board members seem to want to make sure any CBDC is built on a solid foundation. Individual Federal Reserve banks are also working with various stakeholders on their research. Most importantly, the Federal Reserve Bank of Boston is collaborating with the Massachusetts Institute of Technology to experiment with existing and new prototypes of payments systems that could be used for a digital dollar. Once decisions are made to start a pilot phase and issue a digital dollar, many other countries are likely to follow suit.

The European Central Bank (ECB) has been pursuing its analytical work and experimentation on the feasibility of a digital euro more proactively than the US Federal Reserve. ECB priorities seem to be to retain monetary sovereignty amid expanding use of stablecoins and to avoid bank disintermediation and maintain financial stability. The ECB began joint DLT experiments for a wholesale CBDC with the BOJ in 2016 and internal preliminary experimentation in October 2020. The focus was on issues of the digital euro ledger, privacy and anti-money laundering, limits on a digital euro in circulation, and end-user access and inclusiveness. In July 2021, following the preliminary experimentation phase, the ECB launched the “digital euro project” as a 24-month investigation phase. This aims to assess the possible impact of a digital euro on the market; identify design options; create a riskless, accessible, and efficient form of a CBDC; and define a business model for supervised intermediaries in the digital euro ecosystem. This move came after preliminary experimentation found no major technical obstacles and established that architectures combining centralized and decentralized elements were feasible. Launch of a digital euro is expected within 4 years.

Following internal research on a CBDC and joint DLT experiments for a wholesale CBDC with the ECB for several years, the BOJ in April 2021 entered the proof-of-concept process to test the technical feasibility of the core functions and features required for a general-purpose CBDC in two phases (Bank of Japan 2020). In the first phase, the BOJ develops a test environment for the CBDC system and conducts experiments on core functions of a CBDC as a payment instrument. The BOJ then plans

to move to the second phase in the spring of 2022 to test the feasibility of other functions. After this, the BOJ may consider a pilot program involving banks, other private payment service providers, and end users. The BOJ takes the position that it has no plan to issue a CBDC at this point but will be ready if one is needed. The BOJ focuses on universal access, security, resilience (availability at 24/7/365 and offline use during system and network failures), instant payment capability, and interoperability. Besides banking sector soundness, its emphasis is on security and resilience, because of the heavy use of cash in retail payments, the importance of the banking system in the economy, and the 2011 earthquake and tsunami, which caused widespread disruption.

Importance of fundamental forces

As ECB (2021) notes, a CBDC can promote use of a currency for cross-border payments but is not necessarily a “game changer.” When it comes to international currency status, fundamental forces such as stable economic fundamentals; economic size in terms of trade and finance; financial market depth, breadth, liquidity and openness; and inertia in international currency use are the most important determinants. Nonetheless, the US and the euro area are accelerating the process of CBDC development partly because they do not wish to lag behind the PRC in establishing *de facto* standards on technology, regulations, and cross-border settlements involving CBDCs. If some ASEAN+3 currencies are to become truly international, the relevant economies must focus on strengthening these fundamentals, while developing their own CBDCs.

3.6 Conclusion

This chapter has used a wide variety of data and verified that the US dollar is the most dominant international currency in many aspects of cross-border use—trade, investment, finance, international reserve holding, and exchange-rate management. It is clear that the ASEAN+3 region is highly reliant on the dollar in international exchanges and finance. This suggests that the development of regional currencies for international economic transactions is a daunting challenge.

Comparison of ASEAN+3 economies with others from the “trilemma” perspective has exhibited how policy makers have balanced a trade-off in making two out of three policy choices: exchange rate stability, capital

account openness, and monetary policy independence. The result shows that ASEAN+3 economies have increased their capital account openness gradually over the last few decades. Along with that, many economies have chosen to retain monetary policy independence by giving up a degree of exchange rate stability, while a few others have decided to retain exchange rate stability and forego a degree of monetary policy independence.

The chapter has also revealed that the PRC; along with Hong Kong, China; and most ASEAN countries have persistently belonged to the US dollar zone. Consistent with that, ASEAN+3 economies have used the dollar as a settlement or invoicing currency in international trade, which also applies to large economies such as the PRC, Japan, and the Republic of Korea. Interestingly, despite the dollar being the most important settlement and vehicle currency, own and partner currencies are also increasingly used for trade among ASEAN+3 economies and with the European Union. For example, Japan's exports to Asia and the Republic of Korea's trade with Japan involve greater use of ASEAN+3 currencies (the yen, yuan, and won) than the US dollar and that Japan and the Republic of Korea's trade with—and Thailand's imports from—the European Union have shifted from reliance on the dollar to own and partner currencies. The use of the baht in Thailand's trade has been rising steadily, and the currency is now dominant in settlements for its exports to the Lao PDR and Myanmar.

In international financial transactions involving cross-border bank loans and international debt security issues, the dollar share has been persistently high for ASEAN+3 economies, while the yen share has been declining. The use of regional currencies for international debt issuance remains limited in the ASEAN+3 region.

All these findings suggest that the US dollar is dominant even as ASEAN+3 do have some increasingly notable roles in certain areas. The problem is that dollar-centric international finance, a key feature for the region, keeps the economies vulnerable to monetary and financial spillover effects from the US. As developing and emerging economies, more so than developed economies, are more exposed to global financial cycles (Rey 2018), changes in economic and financial conditions or macroeconomic policies of the US could easily have significant, adverse impact on these economies in the region through volatile capital flows.

To shield from external shocks, ASEAN+3 economies have been cooperating to increase the use of regional currencies. The Local Currency Settlement Framework (LCSF) pursued by Malaysia, Thailand, and Indonesia—and now the Philippines—has the potential to increase the use of the ringgit, baht, rupiah, and peso for trade and FDI among these economies. The PRC and Japan, which have been promoting international use of their own currencies, have also started to work with the framework participants. The challenge is to get to the point where direct exchange of regional currencies is cheaper than triangular transactions through the US dollar, and where regional currency use for trade and FDI settlement is on a persistent uptrend.

ASEAN+3 economies can further strengthen currency cooperation in a way that accelerates the use of regional currencies between them. They can strengthen the LCSF to settle more bilateral trade and FDI in regional currencies. The rising role of the baht in Thai trade settlements suggests that other economies can also increase home currency use in their trade. Measures would include: greater liberalization and coordination of foreign-exchange regulations and rules; expansion of eligible transactions to include local currency bond investment; participation of other ASEAN member countries in the settlement framework; development of deep and liquid foreign exchange markets; and greater coordination of exchange rate policy among participating countries.

ASEAN+3 economies can also encourage mutual holdings of sovereign bonds denominated in regional currencies as official reserve assets. Authorities may encourage the region's banks to extend cross-border loans in ASEAN+3 currencies. These policy initiatives will likely contribute to the deepening of markets for regional currencies. Lastly, authorities can strengthen policy dialogue and information exchange and establish a regional exchange rate surveillance process by using a regional basket of currencies, such as the ASEAN+3 currency unit (ACU), as a reference indicator. The ACU, much like the European Currency Unit created before the introduction of the euro, might also be developed for settlements of intraregional trade, FDI, and financial transactions, while strengthening the LCSF. This would also allow vulnerable economies to access ASEAN+3 liquidity when they face financial instability.

Although the introduction of a CBDC is not necessarily a game-changer for the international monetary system, ASEAN+3 economies other than the PRC will be under increasing pressure to develop sound CBDCs if they wish to promote home currency use for international transactions. The PRC needs to pursue further capital account opening and exchange rate flexibility in order to promote the digital yuan as a truly international currency. With the spread of CBDCs among ASEAN+3 economies, authorities will have to cooperate to establish settlement arrangements for efficiently conducting foreign exchange transactions involving CBDCs across different payments systems.

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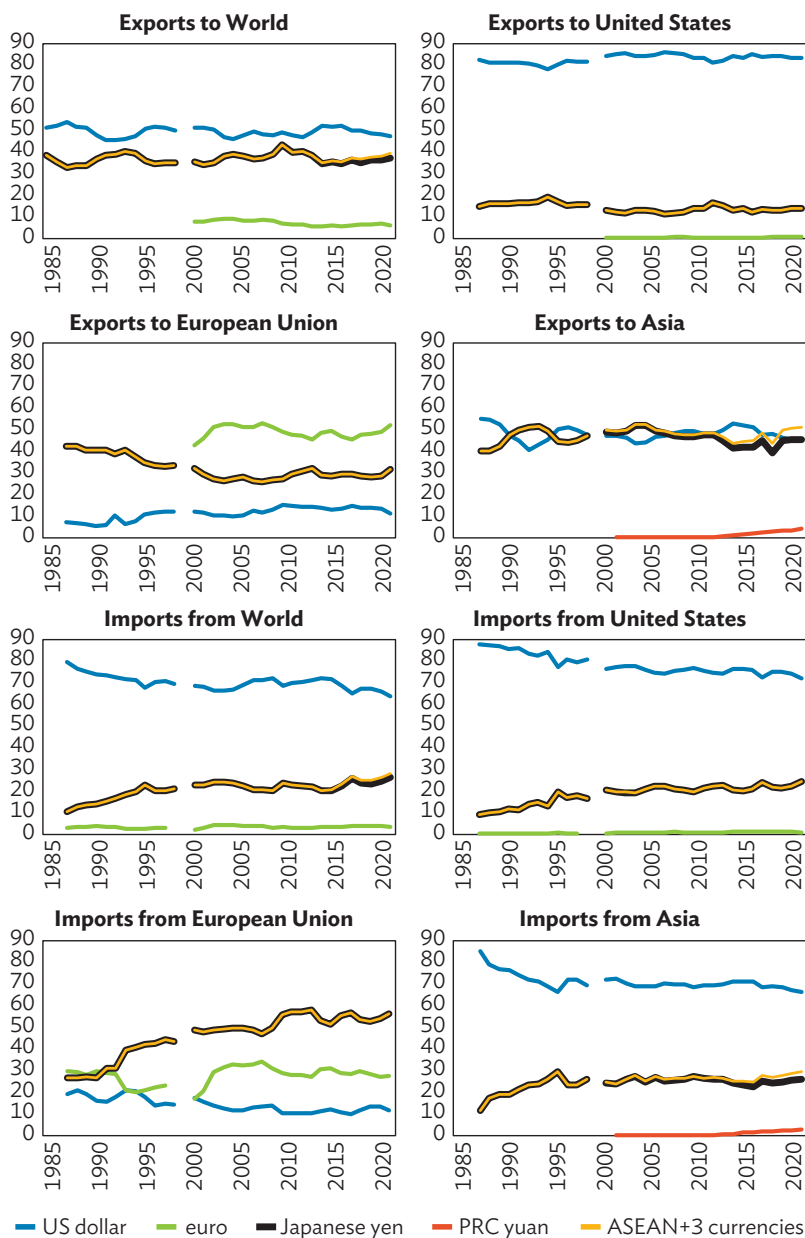
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Appendix Figure 3.1: Shares of US Dollar, Home, and Other Currencies in Trade with Partners

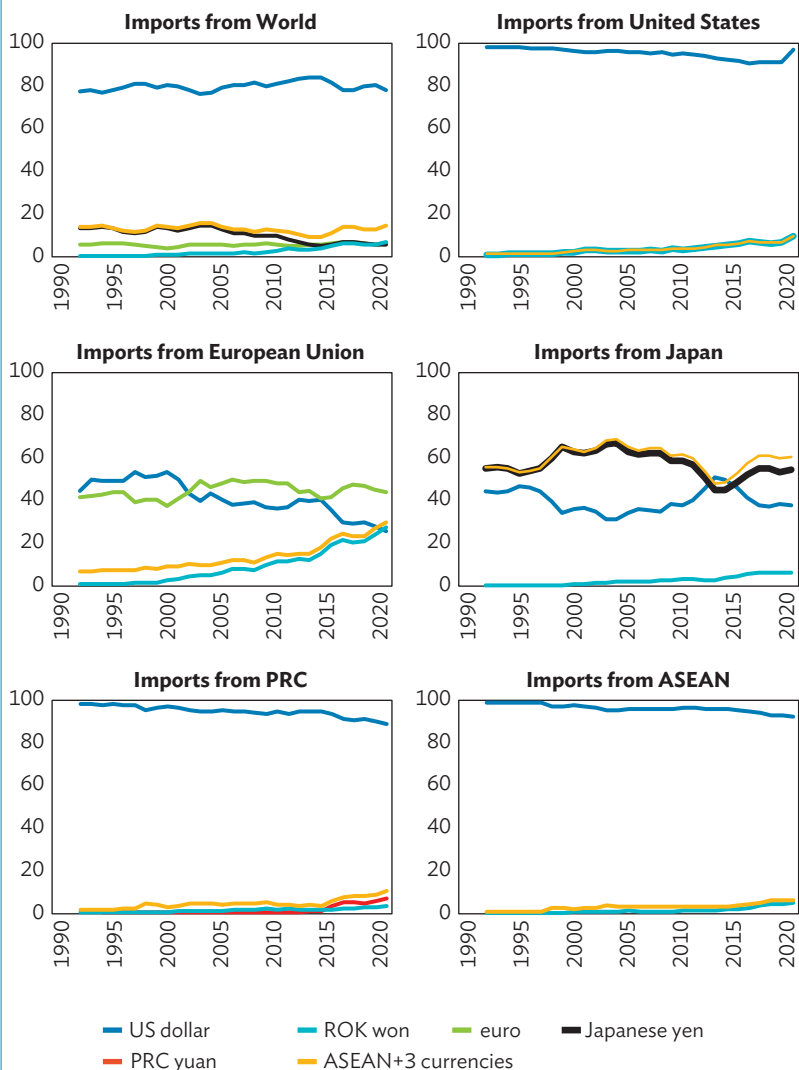
a. Japan—Currency shares in trade with different partners (%)



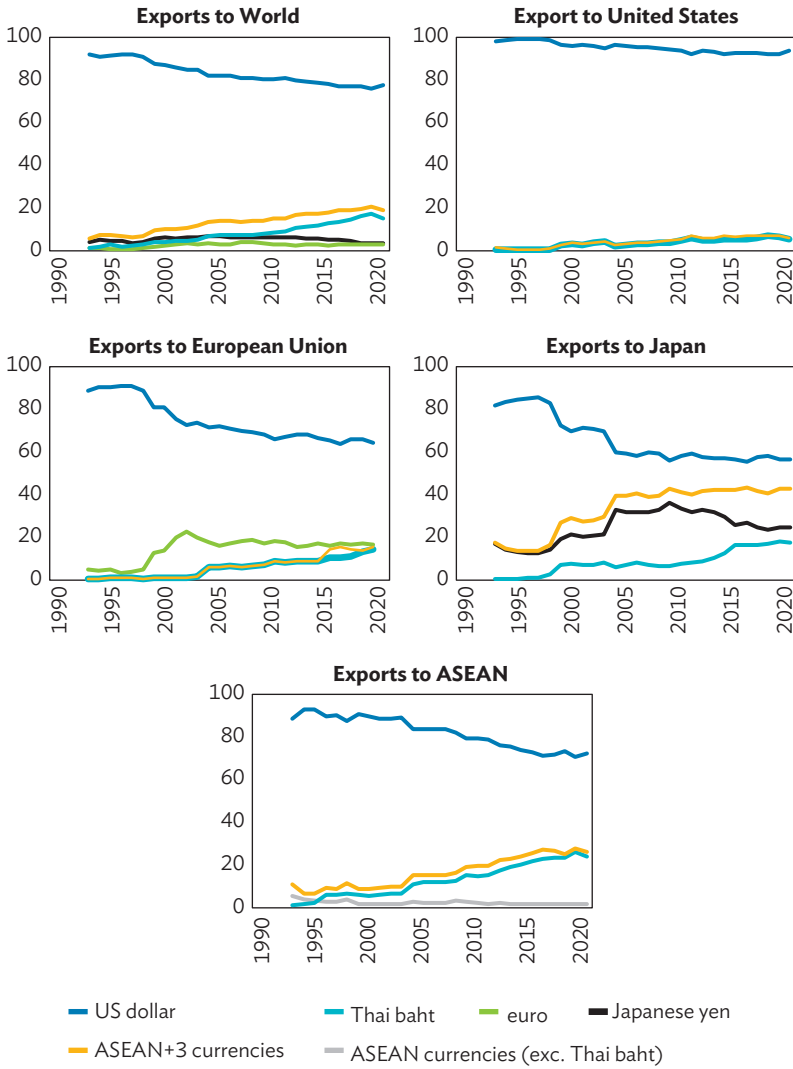
b. Republic of Korea—Currency shares in trade with different partners (%)



b. Republic of Korea—Currency shares in trade with different partners (%)

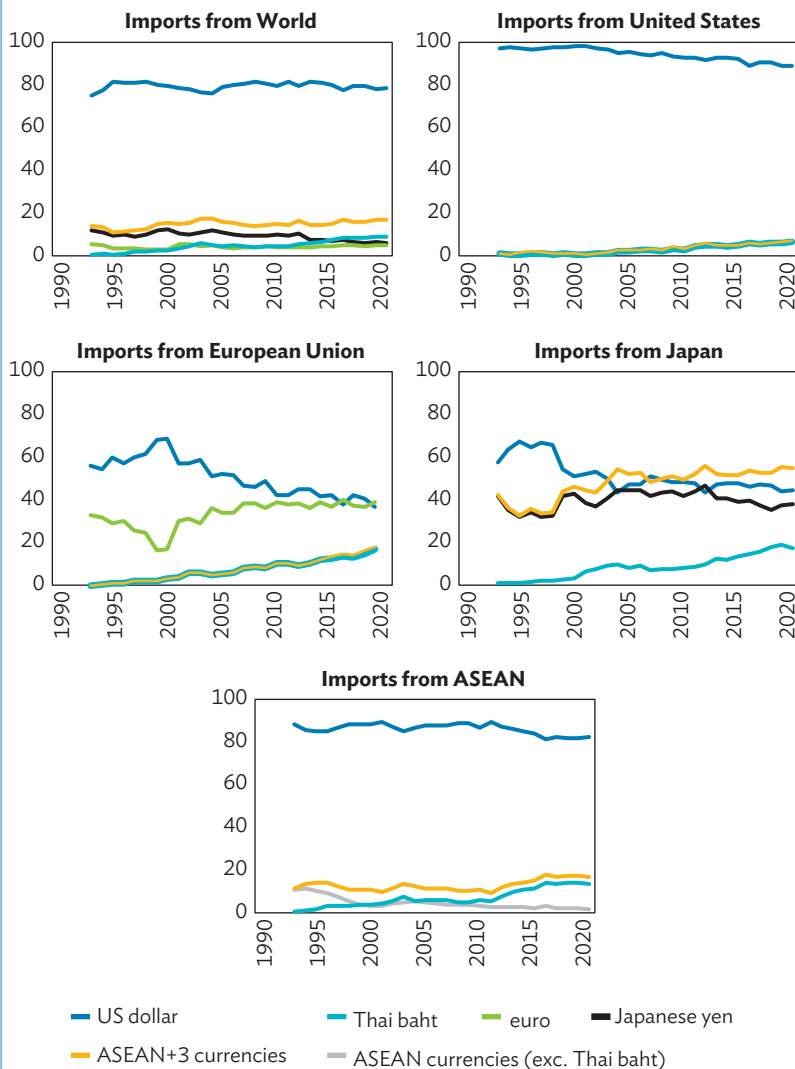


c. Thailand—Currency shares in trade with different partners
(%)



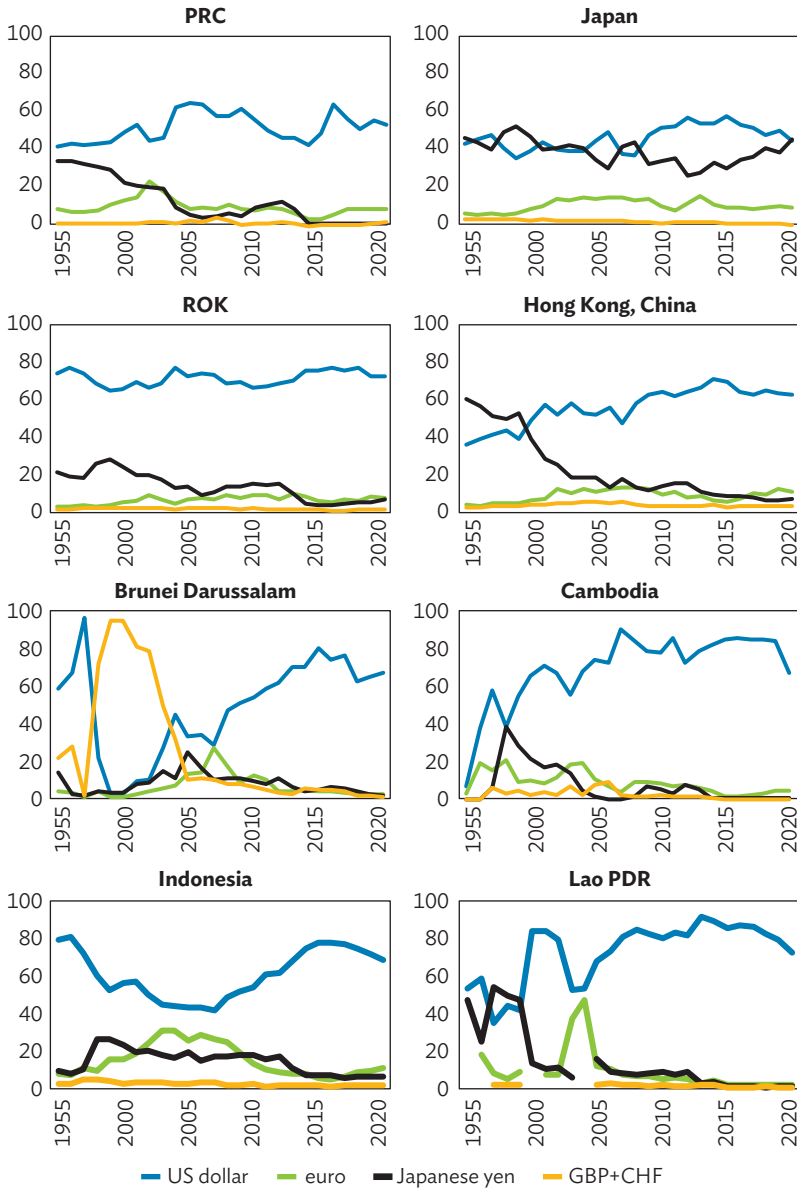
c. Thailand—Currency shares in trade with different partners

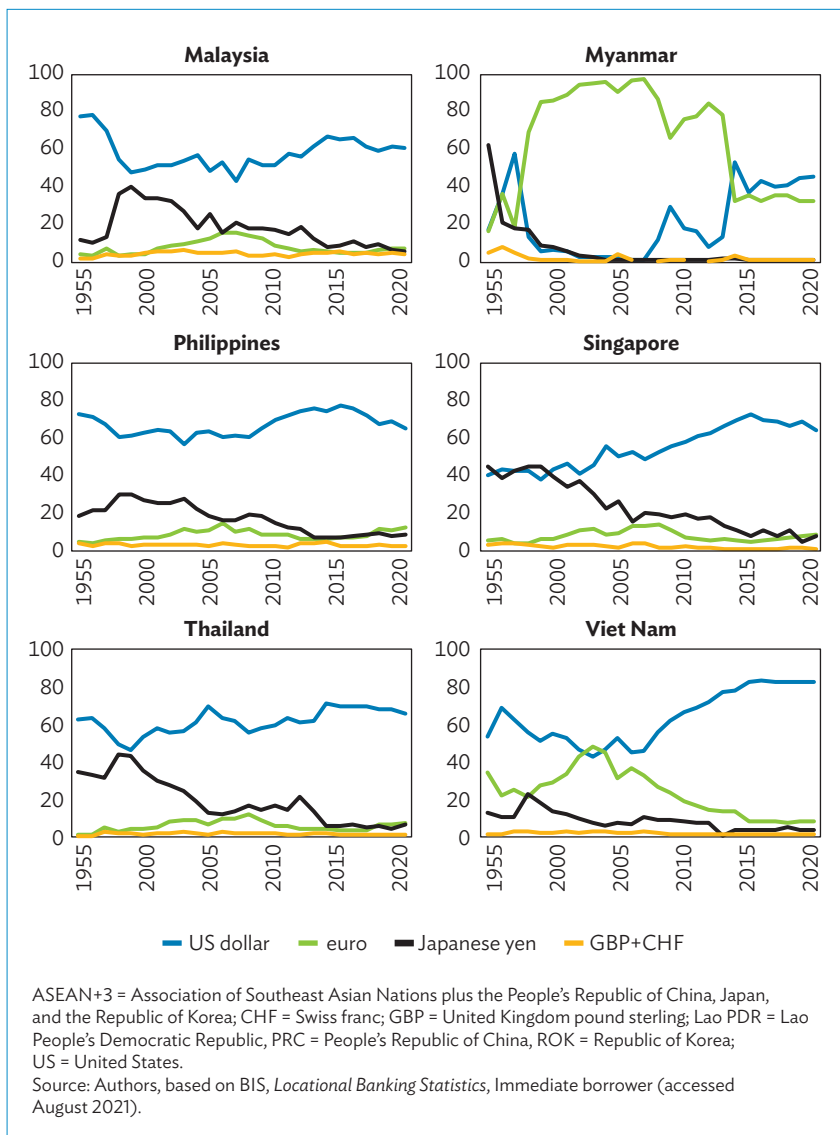
(%)



ASEAN+3 = Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea; PRC = People's Republic of China; ROK = Republic of Korea; US = United States. Source: Authors, based on Bank of Thailand, Statistics-International Trade (accessed June 2021).

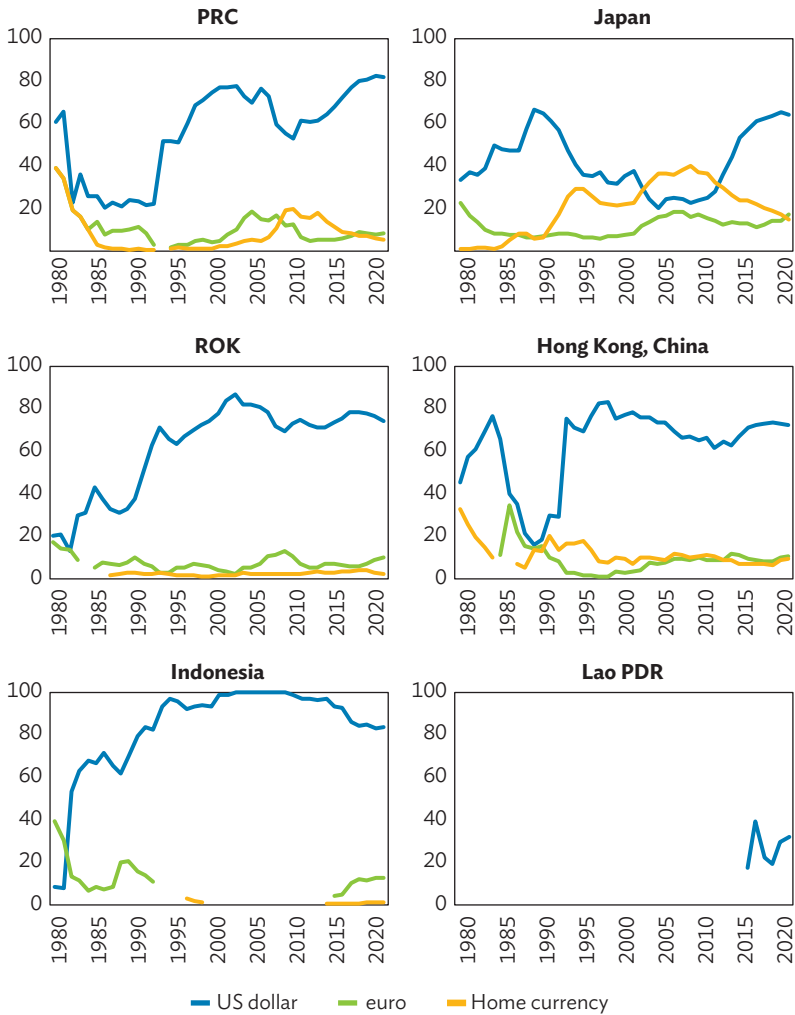
Appendix Figure 3.2: Currency Compositions of Cross-Border Bank Liabilities, ASEAN+3 Economies (%)

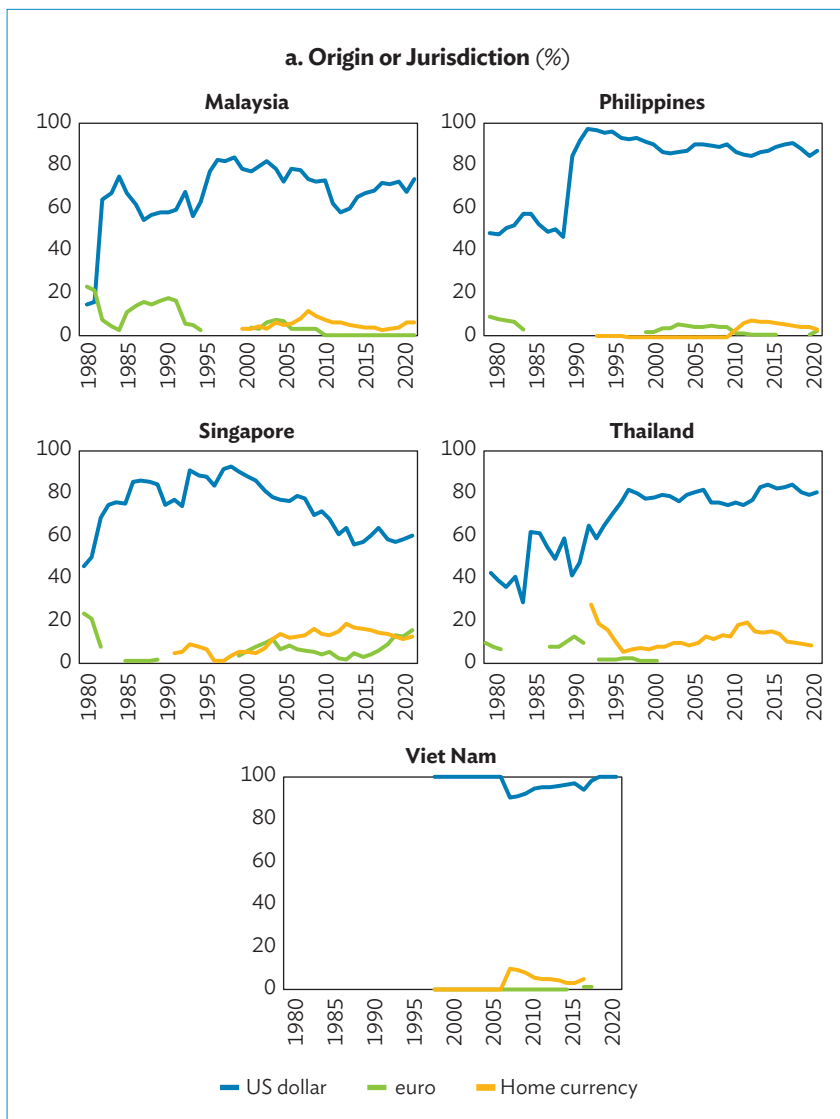




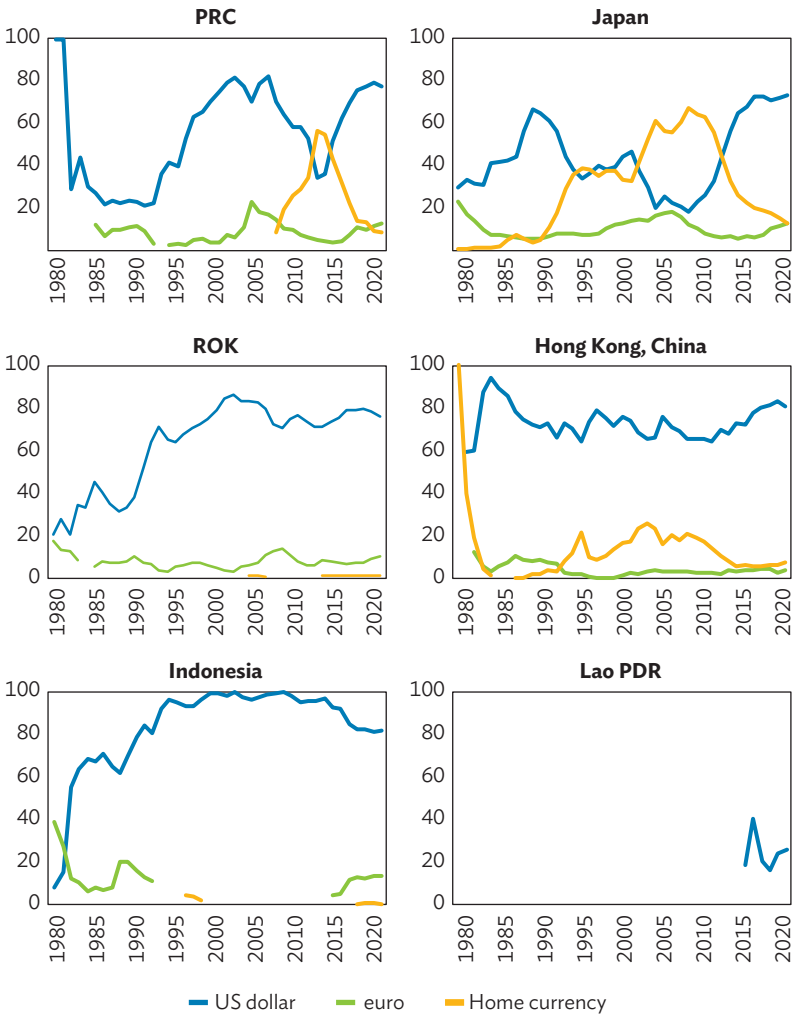
Appendix Figure 3.3: Currency Compositions of International Debt Securities Issued by ASEAN+3 Economies, 1980–2020

a. Origin or Jurisdiction (%)

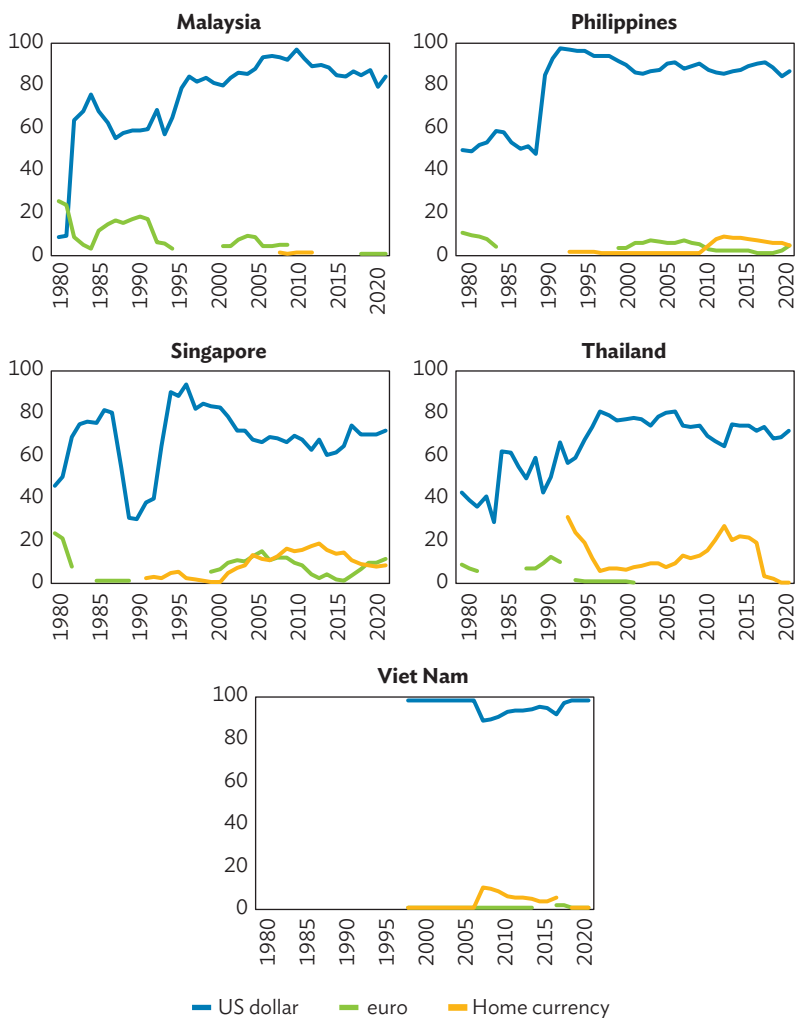




b. Residence data



b. Residence data



Lao PDR = Lao People's Democratic Republic, PRC = People's Republic of China, ROK = Republic of Korea, US = United States.

Note: The origin or jurisdiction data, before the introduction of the euro, refer to the sum of the European Currency Unit and the legacy currencies now included in the euro.

Source: Authors, based on BIS, *Debt Securities Statistics* (accessed June 2021).