

## *Chapter 2*

# **Inflation in Emerging Asia: Characteristics, implications for food security, and effects on capital flows**

Economies worldwide are facing multifaceted inflationary pressures – supply-side issues followed by a surge in demand for goods, increased freight costs stemming from the COVID-19 pandemic and global uncertainty, and disrupted food and energy markets due to Russia’s invasion of Ukraine. This inflationary episode differs from previous episodes in Emerging Asia in various ways. The effects on fertiliser and food threaten food security, with particular concern caused by the current volatility in grain markets. The capital flow volatility and pass-through effects on local currencies are constraining household budgets. The multifaceted nature of this inflationary episode has required a variety of policy responses.

## Introduction

Economies worldwide are facing multifaceted inflationary pressures: supply-side issues followed by a surge in demand for goods, increased freight costs stemming from the COVID-19 pandemic and global uncertainty, and disrupted food and energy markets due to Russia's invasion of Ukraine.

Inflationary pressures have not reached their current level since the oil market disruptions of the 1970s. It has led to a sharp increase in consumer prices, with average headline inflation for OECD countries jumping from approximately 1% at the end of 2020 to a peak above 10% in October 2022. The upswing in prices not only ended a persistent downward trend but also initiated a debate regarding a transition to a high-inflation environment where price changes across different sectors become more synchronised, pressuring central banks to tighten monetary policy further (De Fiore, Lombardi and Rees, 2022).

This inflationary episode differs from previous episodes in Emerging Asia in various ways. The effects on fertiliser and food threaten food security, with particular concern caused by the current volatility in grain markets. The capital flow volatility and pass-through effects on local currencies are constraining household budgets. The multifaceted nature of this episode has required a variety of policy responses and a delicate balancing act of taming inflation, supporting local currencies and ensuring that basic needs are met with price-control tools.

This chapter begins by reviewing the characteristics of current inflationary pressures in Emerging Asia, especially those distinct from previous inflationary episodes. It goes on to address the implications for food security and then explores the effects of these pressures on capital flows.

## The current inflationary episode in Emerging Asia

The current inflationary episode in Emerging Asia exhibits several characteristics that differ from previous episodes. These include:

- *the level*: not particularly high by global standards, though it is increasing in some countries
- *the length*: very long and persistent
- *the source of inflationary pressures*: mainly driven by supply-side pressures, in contrast to past episodes when demand-side pressures drove inflation
- *policies to control inflation*: governments are implementing various, comprehensive policies like subsidies, export restrictions, tax cuts and price controls instead of relying solely on monetary tools
- *inflation expectations*: uncertainty over the duration of this episode could lead to pessimism among households and feed wage-price spirals
- *pressures on currencies and pass-through effects*: monetary authorities in the region face the challenge of striking a balance between taming inflation and safeguarding economic recovery
- *secondary effects*: high costs of key inputs, with broad knock-on effects.

Current levels of inflation in Emerging Asia remain lower than in the rest of the world, partly because the region's economies are deploying various measures to control it: fiscal

measures, subsidies, price caps and export restrictions. This inflationary episode is being driven mainly by supply-side effects. Due to supply bottlenecks caused by exogenous factors such as the war in Ukraine and the scarring effects of the COVID-19 pandemic, this episode risks lasting far longer than others. It can be challenging to form inflation expectations in situations of high uncertainty.

### Inflation is lower in Emerging Asia than elsewhere, though it is rising

Consumer price inflation in Emerging Asia remains low relative to the rest of the world, mainly due to the broad implementation of policy measures such as price controls and tax cuts, but also because of currency depreciation being more contained. In Emerging Asian countries the annual growth of both overall consumer prices and core inflation (which excludes changes in food and energy prices) was lower than the OECD average (Table 2.1 and Box 2.1). However, consumer prices are increasing at a growing rate in some countries in the region.

Table 2.1. Consumer price inflation and core inflation in the OECD and selected Southeast Asian economies, March 2023

	Consumer price inflation (%)	Core inflation (%)
<b>OECD average</b>	9.2	7.2
<b>ASEAN-5</b>		
Indonesia	5.5	3.1
Malaysia	3.7	3.9
Philippines	8.6	7.8
Thailand	3.8	1.9
Viet Nam	4.3	4.9
<b>Brunei Darussalam and Singapore</b>		
Brunei Darussalam	1.5	-
Singapore	6.3	5.5
<b>CLM countries</b>		
Cambodia	2.9	2.6
Lao PDR	41.3	-
Myanmar	19.5	-
<b>China and India</b>		
China	1.0	0.6
India	6.4	6.1

Note: Data are the latest as of 29 March. Data for core inflation are unavailable for Brunei Darussalam. Data for core inflation unavailable for Lao PDR after December 2021. As for Myanmar, consumer price inflation data are available until July 2022 and data for core inflation are unavailable after April 2021.

Source: CEIC, OECD, and national sources.

### Policies are shifting to combat prolonged high inflation

The risk associated with the duration of the shock is another distinct feature of the present upswing in inflation. Price spirals that began in mid-2021 are being kept alive by the effects of the war in Ukraine, which began in February 2022. This situation may persist in the coming years considering lingering supply bottlenecks, the war, the diffusion of inflationary pressures across sectors and the worsening expectations of households. Policy makers should account for these aspects when implementing monetary and fiscal policy measures to combat inflationary pressures.

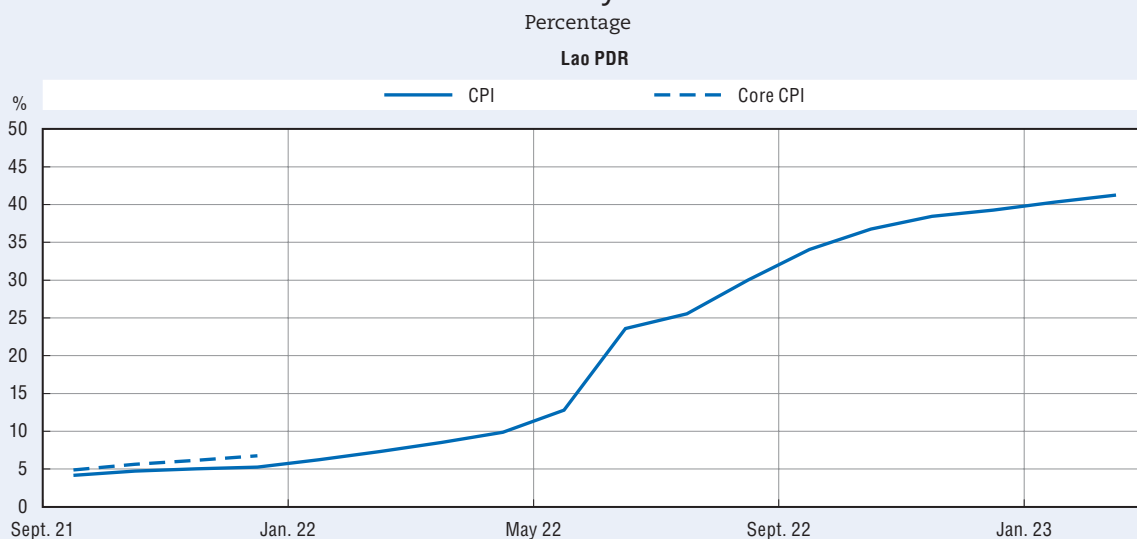
### Box 2.1. Inflationary pressures in Lao PDR

Lao PDR is grappling with soaring inflation and faces major obstacles due to structural issues. With the economy still struggling from the severe impact of the COVID-19 pandemic, inflation began to shoot up in the second quarter of 2022, triggered by rising oil prices and depreciation of the Lao kip. Inflation rates escalated from 12.8% in May to a two-decade high of 39.3% in December, with an average rate of 23% throughout 2022, the highest among ASEAN countries and a significant rise from 3.8% in 2021. In January 2023, inflation continued to increase, with a year-on-year rate of 40.3% (LSB, 2023) (Figure 2.1).

The Lao kip has fallen from around 9 300 to the US dollar in September 2021 to 17 400 to the dollar, leading to a surge in food and fuel prices, which spiked by 45.9% and 50.4% in December 2022, respectively. Inflation has also been driven by a rise in the price of communications and transport of 49.9% year-on-year, causing ripple effects throughout the economy. Costs of medical care and medicine went up by 42.2% (LSB, 2023). The Lao government aims to bring inflation under 9%, while external shocks such as the global increase in energy prices and the war in Ukraine create uncertainties. Decreasing export, tourism and remittance earnings could further devalue the kip, resulting in even higher prices. This would disproportionately affect poor households.

The country's sharp currency depreciation and high inflation have exacerbated existing macroeconomic problems, including mounting debt and a shortage of foreign reserves (Sakudo, 2023). Foreign reserve buffers remain low. To stabilise exchange rates, the Lao government has established a mechanism to channel foreign exchange earnings into formal channels, but regulations, especially the recently amended Law on Foreign Currency Management, must be better enforced to prevent market speculation from affecting the kip's value. In the long term, promoting domestic production is crucial to reducing demand for foreign exchange reserves and achieving economic self-reliance. However, the limited availability of foreign currency and high demand for imports and debt service repayments have created a demand-supply mismatch, leading to significant depreciation pressures, despite debt service deferrals (World Bank, 2022).

Figure 2.1. Consumer Price Index (CPI) and core inflation in Lao PDR, September 2021 to February 2023



Source: Data from CEIC and national sources.  
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### Box 2.1. Inflationary pressures in Lao PDR (cont.)

The structural issues also need to be addressed. These include a lack of liquidity in the state budget, a high debt-to-GDP ratio, weak government controls on goods and tax collection mechanisms, and a low sovereign credit rating due to increasing debt (Sakudo, 2023).

Subsidies and indirect tax cuts aimed at stabilising fuel and commodity costs could further limit Lao PDR's fiscal space. This could result in decreased public expenditure on vital sectors such as education and health care, along with capital investment and social security.

Given the situation, monetary authorities in most of the advanced economies have switched their response strategy from holding policy rates firm against transitory supply shocks to swift tightening of monetary policy to avert further worsening of inflation expectations, curb wage pressures and maintain as much price stability as possible. Southeast Asian countries are encountering similar inflationary pressures while coping with the repercussions of these policy actions and uncertainties regarding the war in Ukraine.

### The current inflationary pressures stem mainly from the supply side

Inflation in many Emerging Asian countries remains persistent despite a retreat in average food and industrial commodity prices from the levels seen at the onset of the war in Ukraine, along with a decline in freight costs from levels seen at the beginning of the COVID-19 pandemic.

While the contributory factors to the initial inflationary pressure of this current episode are external to Southeast Asian economies, the sharp spike in the price of imported goods has gradually spread to the cost of other goods and services, broadening the scope of inflationary pressures over the economy. Core inflation, which excludes the effects of highly volatile food and energy prices, has started to soar as the rapid uptrend in these categories passes through to other sectors (Figure 2.2).

Transportation prices, highly correlated with energy costs, have rapidly adjusted to the uptick in the oil market. Despite the introduction of various policies to support labour supply for tourism-related services in the aftermath of the pandemic, inflation remains high in hotel and restaurant prices even though restrictions have been lifted. Hence, both headline inflation and its subcategories are well above pre-pandemic levels (Figure 2.3).

A major challenge stems from the possible second-round effects of increasing inflation: rising spirals in wages and inflation expectations. Survey data from February 2023 indicate that inflation expectations in India for the 12 months ahead stood at 10.8%, which is higher than current headline inflation (Reserve Bank of India, 2023). According to the Survey of Professional Forecasters published by the Monetary Authority of Singapore in December 2022, inflation was anticipated to reach around 5% in 2023, higher than inflation expectations in 2022 (MAS, 2022). These figures point to an upward trend in inflation expectations that may pose a risk of feeding into higher inflation in the coming periods.

Figure 2.2. Consumer Price Index (CPI) and core inflation in selected Asian countries, September 2021 to January 2023



Note: Data are the latest available as of 20 March 2023.

Source: CEIC and national source.

StatLink <https://stat.link/0xouyv>

High inflation undermines the real income of households, while higher food and energy costs limit consumer budgets for other goods and services, especially for middle- and low-income families. The persistence of this round of inflation and the worsening of inflation expectations have led households to make earlier purchases, especially of durable goods, before prices surge further. For households with access to consumer credit, the fact that prevailing interest rates are lower than expected inflation can strengthen this motivation. The impact of high inflation on demand for goods and services beyond the essential needs of consumers is thus affected by opposing influences, with the effects tilted to the contractionary side for services and non-durable goods.

Figure 2.3. Consumer price inflation and its subindices in selected Asian countries, December 2019-December 2022

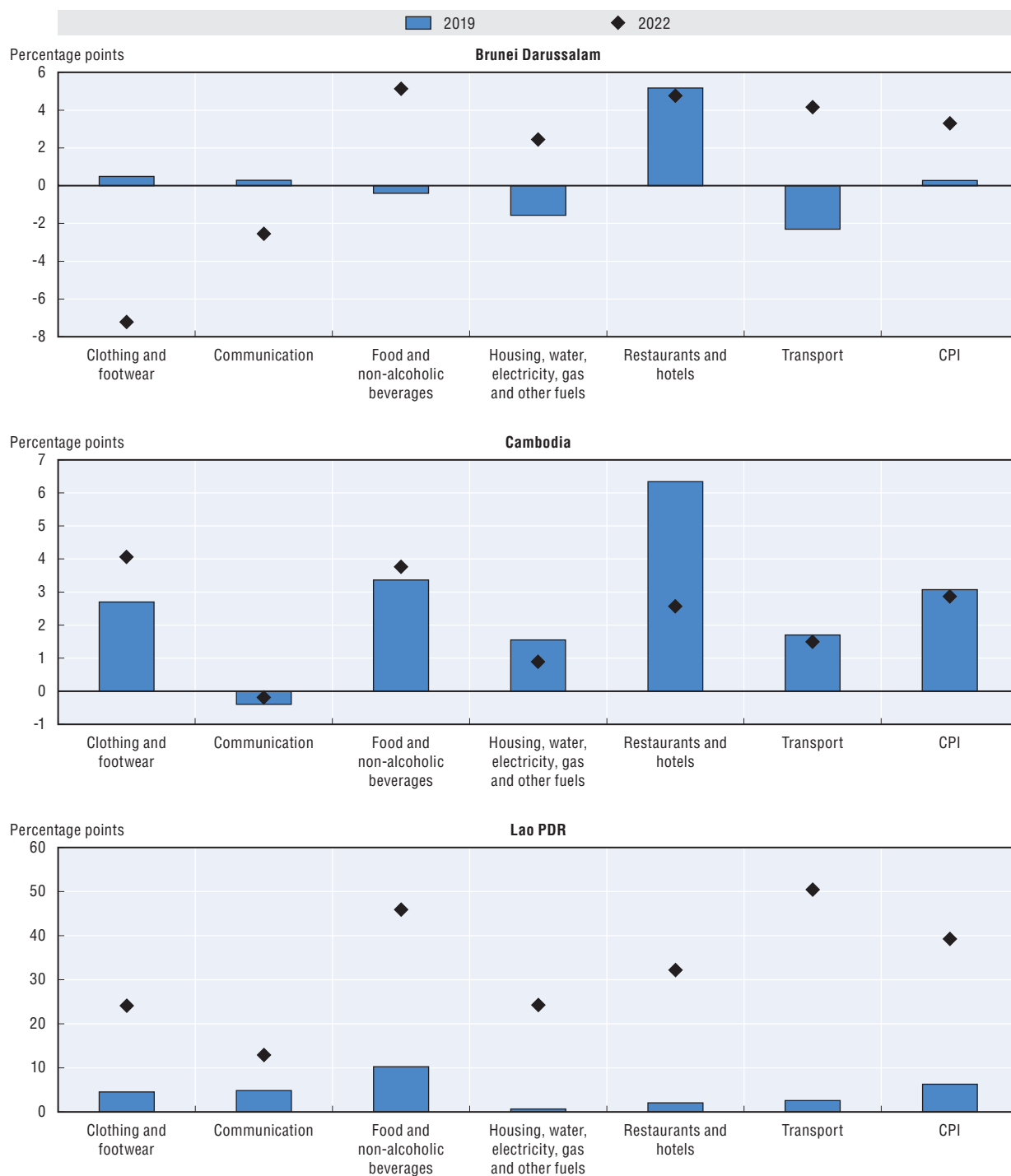
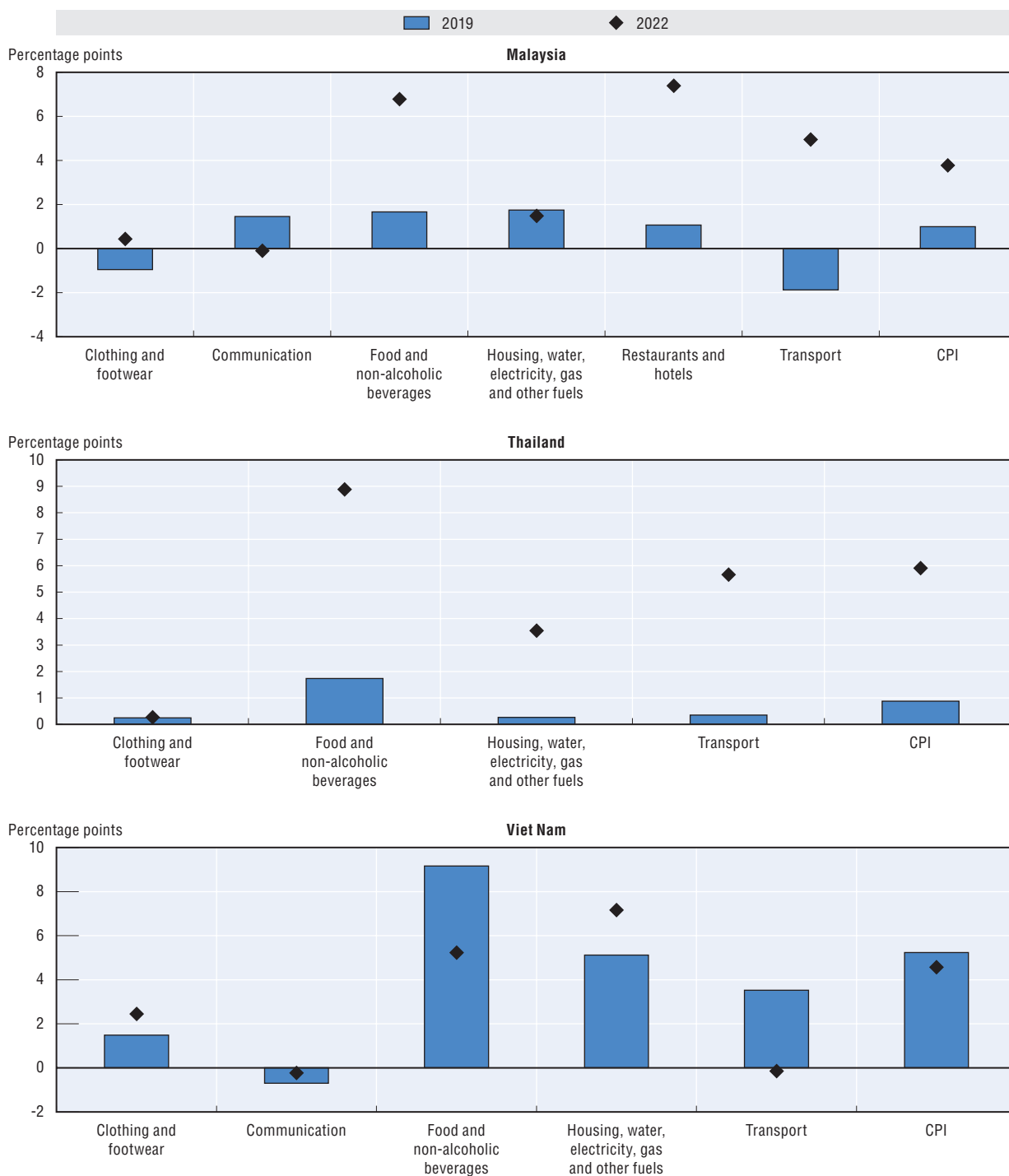


Figure 2.3. Consumer price inflation and its subindices in selected Asian countries, December 2019-December 2022 (cont.)



Source: CPI database of the IMF and national source.

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## Emerging Asia is tackling inflation with various measures like subsidies and price controls

One reason why inflation is more restrained in Emerging Asia than elsewhere is that governments in the region have implemented policies such as subsidies, export restrictions, tax cuts and price controls to cushion the initial detrimental effects of rising global food and energy prices.

In contrast, most OECD countries have relied heavily upon monetary policy to tackle inflationary pressures, along with tax cuts and subsidies to curb the rapidly rising energy costs of households in Europe. Shocks induced mainly by external factors, such as the war in Ukraine, have caused inflation to surge rapidly, peaking at double-digit levels in the euro area around October 2022. Against this backdrop, most central banks have tightened monetary conditions, causing short-term interest rates to rise substantially from levels set after the pandemic to boost economic recovery.

In an effort to curb elevated levels of inflation unseen in decades, the US Federal Reserve and the Bank of England swiftly raised their policy rates, which stood near zero in February 2022, to 4.625% and 4%, respectively, in only a year. They also started to shrink their balance sheets either by stopping reinvestments or by selling bond holdings – so-called quantitative tightening – to further restrict short-term liquidity conditions. Faced with a sharp rise of energy input costs in the euro area due to the war in Ukraine, the European Central Bank initiated a tightening cycle, raising its deposit facility rate from negative levels, which had persisted until July 2022, to 2.50% by February 2023, with further hikes projected in the months ahead. In an effort to contain inflation expectations, major central banks have been communicating additional rate hikes and the possibility that higher rates may persist longer than previously expected by the financial markets.

In Asia, as concerns regarding supply shortages and food security came to the fore with the onset of the war in Ukraine, governments started to use export controls to secure necessary supplies for households. India imposed export bans for wheat and broken rice and an export cap for sugar, while Indonesia and Malaysia implemented temporary export bans for palm oil and poultry, respectively. Such measures, while insulating domestic households from climbing prices, can provoke other countries to respond with similar measures and further push up international prices, the so-called multiplier effect (Martin and Anderson, 2012; Giordani, Rocha and Ruta, 2016). Moreover, use of temporary trade restrictions can contribute to food price volatility, thus undermining investment decisions and impairing supply in the long run. Appropriate use of these restrictive measures and international co-ordination are thus essential to obtain the desired benefits, in both the short term and the long run.

Price controls are another policy measure being used by many countries in Emerging Asia to rein in food prices and keep essential goods accessible for low- and middle-income households. Brunei Darussalam has been using price caps on a wide range of foods (rice, sugar, cooking oil and powdered milk) and energy products on a long-term basis. Indonesia, in addition to ongoing gasoline price controls for premium and pertalite grades, implemented temporary price controls on palm oil products, though they have now expired. Malaysia introduced price caps for packaged pure cooking oil, chicken and chicken eggs, while Thailand implemented price controls on a wide range of essential food products, from vegetable oil to canned food, as well as on farm inputs such as fertiliser, and will keep the controls in place until June 2023. India, meanwhile, has introduced price caps for many essential pharmaceutical products.

While curbing inflation, price caps are known to deteriorate price signals, which are essential for the necessary adjustment of supply and demand to external shocks. The price controls allow domestic households to continue consuming as usual even as international prices soar. However, local producers supply less than they would in the absence of controls, which worsens the supply-demand imbalances and inflationary pressures. These policies may also trigger quality issues, as producers may have little choice but to degrade the quality of products to stay profitable. In order to lessen the magnitude and extent of these adverse effects, it is crucial to keep the price caps temporary and only apply them to essential goods.

Most of the countries in the region have chosen to use subsidies for fuel and food products as well as cash transfers to cushion the surge in the cost of living. In Singapore, for example, the government increased the level of cash assistance for people who are unable to work and provided support for wage increases for monthly earnings below a given threshold. Taxi main hirers and private-hire car drivers received a one-off cash transfer to lessen the effect of rising oil prices. Indonesia has used cash transfers and distribution of cooking oil to support households.

Targeted use of these measures is essential to preserve their efficiency and diminish the cost of maintaining them. However, this depends on the capacity of the government and the country's infrastructure to distribute the assistance to the people who most need this support. When providing targeted support for vulnerable households is difficult, governments may deliver assistance by lessening the cost of services such as health, education and public transportation.

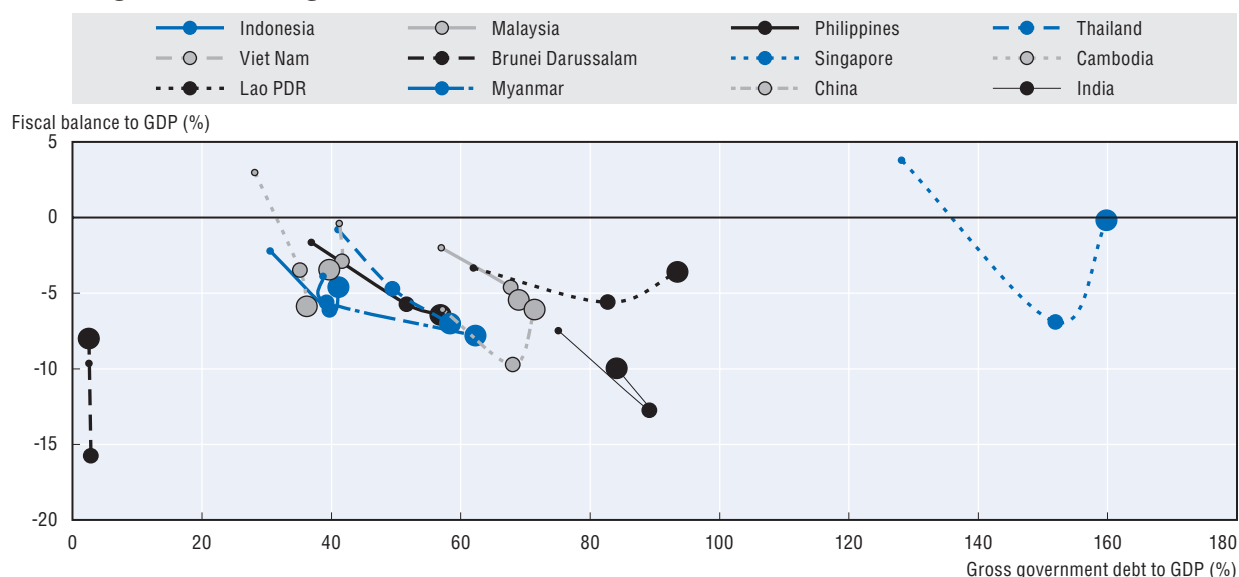
At the same time, subsidies and price controls have a long-term negative effect and should thus be targeted and temporary. Use of subsidies and transfer payments depends upon the fiscal space of each country, and the impact on fiscal sustainability should be evaluated carefully in each case.

Like most other nations, Southeast Asian economies have increased public spending and debt levels to support households against disruptions in economic activity since the onset of the pandemic in early 2020. In Figure 2.4, the U-shaped pattern for many countries indicates that, although public debt has been expanding, governments are striving to tame growing fiscal deficits post-pandemic. The gross government debt-to-GDP ratio dropped marginally for Brunei Darussalam and Viet Nam from 2019-21, whereas it soared for Lao PDR (from 62% to 93.5%), Myanmar (from 38.8% to 62.3%), Philippines (from 37% to 57%) and Singapore (from 128.2% to 159.9%).

### **Expectations that high inflation will persist can worsen wage-price spirals**

Anchoring inflation expectations while avoiding a wage-price spiral is a major challenge for central banks in all economies of the Emerging Asia region. Forming inflation expectations can be difficult in periods of high uncertainty (Box 2.2). Uncertainty can lead to pessimism about future income and major purchases (Ehrmann, Pfajfar and Santoro, 2017) and these attitudes can cause inflation expectations to worsen. Higher food prices may also contribute to pessimism about future inflation among households (Goyal and Parab, 2021). Under inflation targeting, expectations are generally more forward-looking (Levin, Natalucci and Piget, 2004). Sustaining a credible inflation-targeting framework amid elevated levels of inflation can thus play an important role in keeping inflation expectation under control.

Figure 2.4. Gross government debt-to-GDP and fiscal balance-to-GDP ratios, 2019-21



Note: Bubble size indicates the year of observation, where the largest bubble represents the latest year (2021) and the smallest represents the most distant year (2019).

Source: Fiscal Monitor database of the IMF and national sources.

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Monetary authorities in the region did not immediately react to import-driven inflationary pressures due to supply-side shocks, but pivoted to a tighter monetary policy stance after realising the persistence of the surge in the cost of key inputs. This is similar to the path taken in many advanced economies. The official views and announcements of central banks are crucial tools for anchoring the inflation expectations of households (Goyal and Parab, 2021). Thus, timely and appropriate communication regarding the path of inflation in the coming months will play an important role to keep expectations muted and wage bargaining aligned with forward-looking levels of inflation rather than the high levels of recent months.

Tight labour markets and upward wage pressures pose another risk. Higher inflation rates may lead to more wage indexation (Holland, 1995), and this could cause inflation to persist in the region. Survey results show growing wage pressures across the board (WTW, 2021 and 2022). Planned salary increases in all surveyed countries are higher than in the previous year, and they are also significantly higher than headline inflation in China, India, Indonesia and Viet Nam (Figure 2.6).

Moreover, declining real wages following high inflation, in tandem with tight labour markets, may lead employees to search for different jobs in order to offset the loss in real income, causing a jump in the quit rate. The resulting competition between employers who want to retain their current employees and prospective employers offering a higher income intensifies wage pressures (Faccini, Melosi and Miles, 2022).

Spiralling inflation expectations and wages can lead to inflation staying at elevated levels for longer than expected, even though the negative effects of supply shocks recede over time. Hence, in order to contain growing inflationary pressures, it will be pivotal to implement necessary policies in a timely manner and sustain the credibility of monetary policy, in tandem with appropriate communication with the public regarding the future path of inflation.

### Box 2.2. Formation of inflation expectations in the face of great uncertainty

Discussions of inflation expectations are mainly argued using backward- or forward-looking information (Gali and Gertler, 1999). Backward-looking inflation expectations are formed based on past inflation rates and are therefore influenced by historical trends. Forward-looking inflation expectations are based on anticipated future economic conditions and are therefore more closely tied to current economic policies and expectations of future events (Gali, 2015).

The theory of rational expectations suggests that individuals make predictions based on all available information and take into account the expected impact of current and future economic policies. Rational expectations thus incorporate backward- and forward-looking elements. However, there is no consensus on the best framework to describe how inflation expectations are determined (Mankiw and Reis, 2018).

It can be challenging to form inflation expectations in situations of high uncertainty, such as now. When there is a lack of clear information or when unexpected events occur, individuals may rely on heuristics or rules of thumb rather than fully processing all available information. This can lead to inaccurate predictions about inflation. However, the degree to which greater uncertainty affects the accuracy of rational expectations in predicting inflation rates is still being debated. While some argue that rational expectations may be less accurate under conditions of greater uncertainty, others suggest this may be the best available framework for understanding how individuals form their expectations (Kirman, 2021).

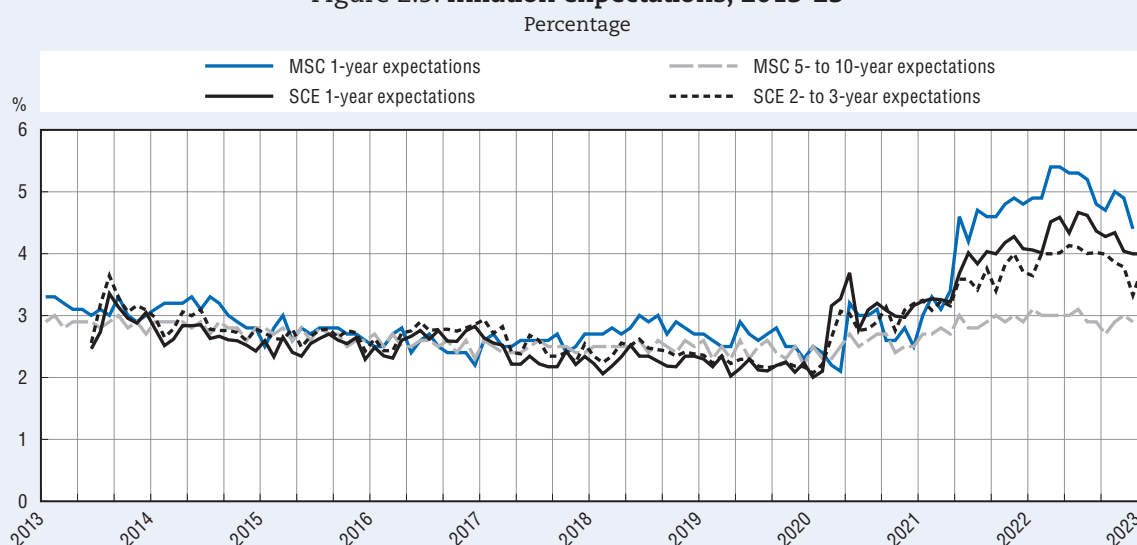
Inflation expectations have important implications for economic decisions and outcomes. To maintain price stability, it is essential to anchor inflation expectations, meaning that long-term expectations align with the monetary authority's inflation objective and are not influenced by macroeconomic surprises or short-term inflation expectations. This is especially important in preventing temporary inflation shocks from affecting wage and price formation mechanisms (Bernanke, 2007; Draghi, 2014). However, recent survey evidence indicates that there has been a possible de-anchoring of inflation expectations. Gopinath (2022) suggests that the COVID-19 pandemic and the war in Ukraine may have caused structural changes and that the current phase of exceptionally high inflation carries a considerable threat of de-anchoring inflation expectations. Adrian (2022) notes that, even if such shocks prove temporary, they are already having persistent effects on inflation and will make curbing inflation more difficult "if inflation expectations become de-anchored to the upside".

Surveys of households and businesses show that shorter-run inflation expectations have risen substantially since the start of the pandemic, while the rise in longer-run inflation expectations has been far more modest (Figure 2.5). However, the relatively small rise in longer-run expectations is not evidence that inflation expectations are firmly anchored (Binder, 2022). According to Binder, what matters is not only the level of consumers' inflation expectations but also their uncertainty about future inflation. Uncertainty is increasing even in longer-term forecasts, and stable median longer-run expectations do not necessarily mean that consumers' inflation expectations are firmly anchored.

Consumers with well-anchored expectations should report a long-run inflation forecast close to the Fed's target and have significant confidence in their forecast. For example, when consumers report an inflation forecast of 2%, but also believe that there is a high probability of inflation being much higher or much lower, it indicates that they lack confidence in a near-target outcome. In other words, their uncertainty about future inflation suggests that they do not have a strong belief that inflation will actually be at the target rate. It is important to note that high uncertainty about longer-run inflation can make it difficult for households to make sound financial decisions.

**Box 2.2. Formation of inflation expectations in the face of great uncertainty (cont.)**

Data gaps in surveys about the inflation expectations of households and firms in Emerging Asia make it difficult to assess anchoring in some countries. Malaysia collects information about expectations at longer horizons, but not many countries in the region proceed in this way. This impedes the ability of policy makers to assess inflation expectations in terms of anchoring and alignment with targets (Weber et al., 2022). Some countries administer surveys once per quarter but hold monetary policy meetings more frequently, which may affect the ability of policy makers and market participants to monitor the evolution of inflation expectations before each decision (IMF, 2022). Combined with the current global uncertainty, this will pose challenges for policy makers in the region.

**Figure 2.5. Inflation expectations, 2013-23**

Note: Data accessed 25 February 2023. MSC stands for the University of Michigan Surveys of Consumers and SCE is Federal Reserve Bank of New York Survey of Consumer Expectations. These surveys provide measures of what consumers expect about inflation in the next year and beyond.

Source: University of Michigan, Surveys of Consumers, <https://data.sca.isr.umich.edu/data-archive/mine.php> and Federal Reserve Bank of New York, Survey of Consumer Expectations.

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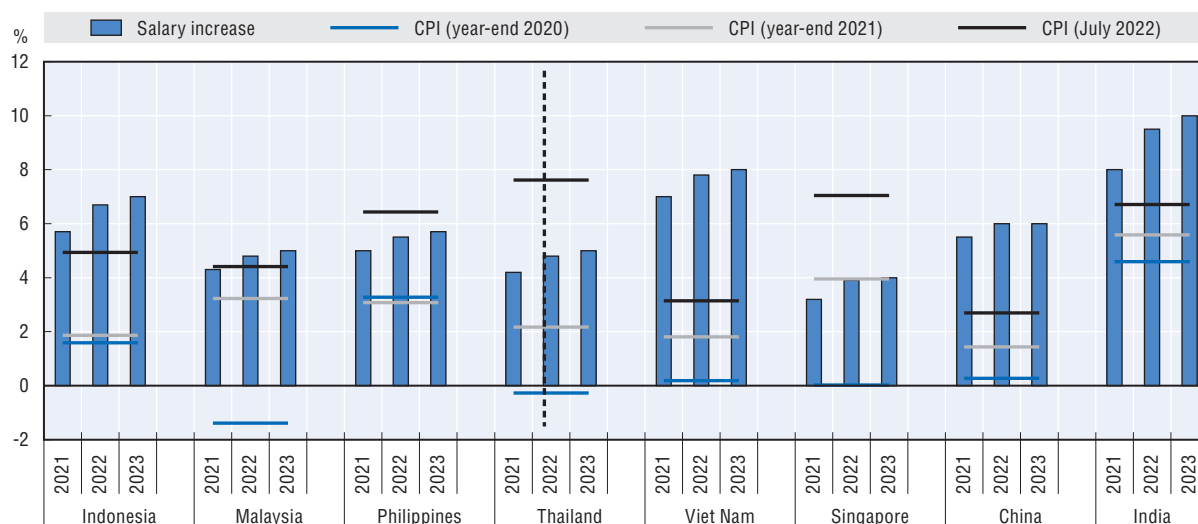
### Central banks face balancing act between containing inflation and safeguarding economic recovery

In an effort to rein in inflation, many central banks in advanced economies have been raising policy rates in recent months. Facing broadening inflationary pressures and tighter global financial conditions, central banks in Emerging Asia raised interest rates gradually. A continuation of steady interest-rate hikes is likely to be needed to forestall an upward spiral in inflation expectations and wages, as containing inflation later may require substantially higher rate hikes.

There is ongoing depreciation pressure on local currencies in the region stemming from the rate hikes in major central banks, especially the US Federal Reserve, and heightening interest-rate differentials (Figure 2.7). Depreciation of local currencies against the US dollar translates into a surge in import prices, which ultimately leads to a rise in producer and

consumer prices that could push inflation still higher in the region. The impact of local currency depreciation on commodity prices is generally more pronounced, since local currency pricing, where exporters adjust prices in favour of the importers according to exchange-rate movements, is uncommon for these goods. Thus, currency depreciation against the US dollar exacerbates the inflationary pressures from elevated food and energy imports. However, depreciation pressures that began in Q3 2022 have eased recently, though monetary authorities must continue observing their trend carefully.

Figure 2.6. Surveyed salary increases and headline inflation, 2021-23



Note: 2021 and 2022 data show surveyed salary increases; 2023 data show the budgeted overall median rise in wages.

Source: WTW (2021, 2022); national sources.

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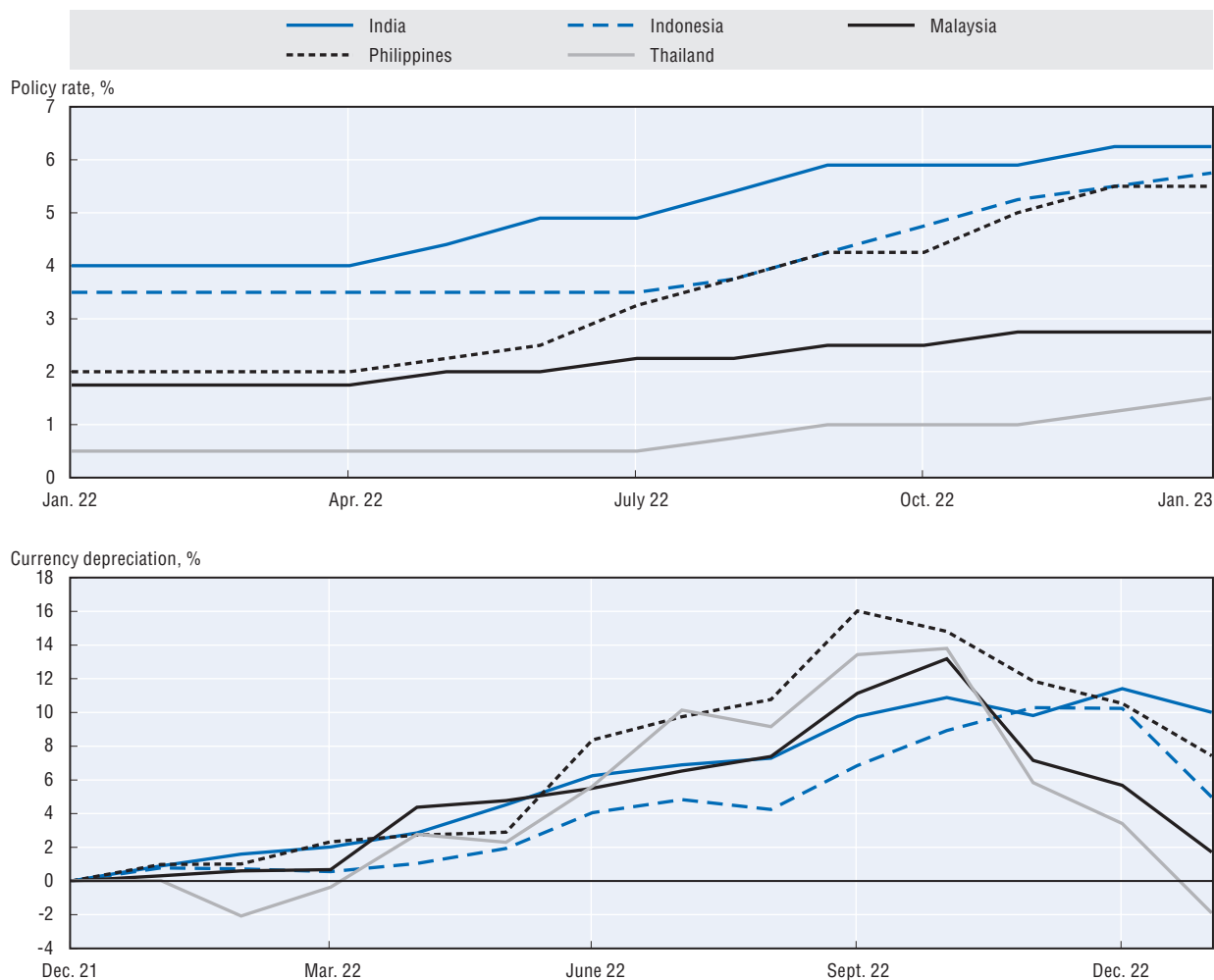
The overall level of exchange rate pass-through depends on several macroeconomic factors and may vary significantly between countries accordingly. The credibility of monetary policy, well-anchored inflation expectations and lower levels of inflation are empirically found to be important factors curbing exchange-rate pass-through to consumer prices (Carrière-Swallow et al., 2021; Choudhri and Hakura, 2006). Moreover, as exchange-rate depreciations and volatility increase, the impact of these movements on consumer prices can also worsen (Jasova, Moessner and Takáts, 2019; Kohlscheen, 2010). Rapid depreciation of the region's currencies against the US dollar, along with elevated volatility, may jeopardise the pricing behaviour of companies, with more frequent price adjustments in proportion to the upswing in input prices.

Central banks in the region need to perform a delicate balancing act between containing inflation expectations and exchange-rate depreciation pressures, on the one hand, while safeguarding the ongoing post-pandemic economic recovery, on the other. Aggressively tightening monetary policy to curb aggregate demand and tame high inflation that is essentially caused mainly by external supply shocks may harm economic growth while having worse than expected results in terms of reining in inflation.

In this regard, it is crucial to use all available policy tools, in addition to interest-rate hikes, to cope with inflation in order to minimise its adverse effects on economic growth. The optimal policy combination should be set taking account of the fiscal space and foreign

reserves of each country, as well as other macroeconomic conditions. For highly dollarised economies such as Cambodia and Lao PDR, fiscal measures like subsidies may bring more effective results than conventional monetary policy as long as the fiscal balance stays in line with a sustainable public debt structure. On the other hand, foreign exchange interventions can contribute to smoothing foreign exchange volatility and currency depreciation, helping to alleviate the pass-through to consumer prices.

Figure 2.7. Monetary policy rates and currency depreciation against US dollar in selected Asian countries, January 2022-January 2023



Source: IMF and BIS  
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Against this backdrop, some central banks in the region have already started to pursue foreign exchange interventions in addition to rate hikes. Foreign currency sales by monetary authorities can be used to lessen short-run misalignments of the real value of the local currency, when carried out persistently (Filardo, Gelos and McGregor, 2022). Nonetheless, the depth and extent of the interventions should be aligned with the central bank's current foreign exchange reserves.

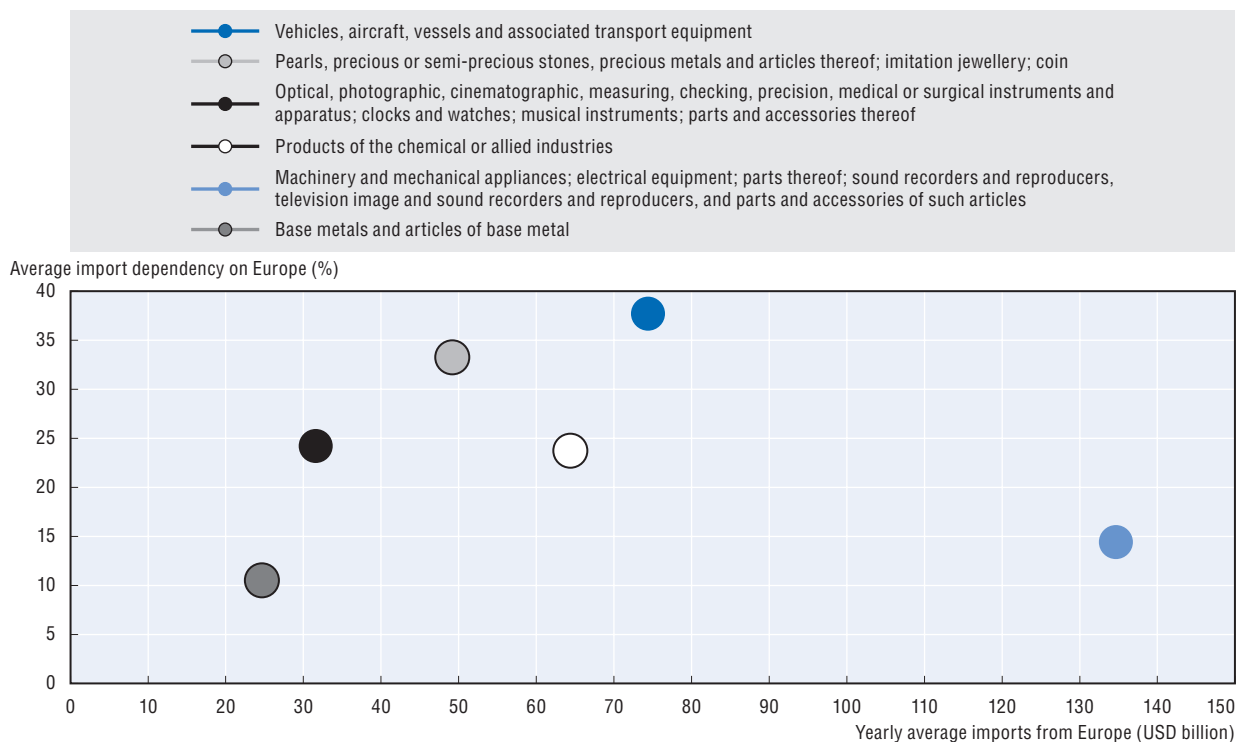
### Inflation fuelled by the war in Ukraine may generate secondary effects such as shortages

The war in Ukraine has generated a new wave of inflationary pressures, especially for the agricultural commodities for which Russia and Ukraine were major producers and for energy prices, with supply disruptions and embargoes related to the war causing shortages and creating volatility in international prices. Although food prices have moderated recently due to agreements regarding the flow of wheat exports from Ukraine, caution and a possible diversification of sources for these goods are necessary against the risk of further escalation of the war.

Apart from the direct effect of the war on food and fuel prices, potential secondary effects may lead to shortages in other categories of goods. In particular, in the event of a total disruption of gas flow from Russia to European countries, along with persistent demand for gas, the rationing of gas usage by manufacturing companies may cause temporary shortages of goods imported by other regions from Europe.

Figure 2.8 depicts the share of European imports in the region’s imports of selected categories of goods. Imports from European countries of vehicles, along with chemical products, which are generally highly dependent on natural gas as an input, have a 37.7% and 23.7% share in total imports, respectively, and can be affected by possible rationing of energy in the region. Thus, to avert the inflationary effects of potential shortages in these categories, contingency plans to diversify sources for these products will be needed.

Figure 2.8. Imports from Europe to selected Asian countries and share in total imports by category, 2017-20



Note: Figure shows only the categories with more than USD 20 billion of average yearly imports from Europe. Importing countries are Brunei Darussalam, Cambodia, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Viet Nam.

Source: Authors' calculation based on CEPII (n.d.) data.

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## Volatility of food prices and food security: Grain markets

This section will discuss the threat posed to food security by inflation, the war in Ukraine and climate change. While these shocks have global implications, developing countries face higher exposure, especially those with pre-existing food security concerns. This analysis focuses on grain markets, as diets in Emerging Asia are typically grain-heavy, especially favouring rice.

Global grain markets have been extremely volatile since the onset of the pandemic in early 2020, with various supply shocks driving the rise in prices. Prices of all major grains other than rice rose sharply until May 2021, and after a short retreat they shot upwards again with the war in Ukraine. Grains are an essential part of the diet of people globally, and the supply-side disruptions and consequent sharp price rises threaten food security in many regions. Grains are also a key ingredient in animal feeds.

According to the Food and Agriculture Organization (FAO, 2022a), an estimated 29.3% of the world population faced moderate or severe food insecurity in 2021, with almost half of these people living in Asia where the cost of a healthy diet rose 4% in US-dollar terms in 2020, and the share of population that could not afford a daily healthy meal reached 43.5% at the end of 2020. These indicators are likely deteriorate further given the continuing upswing in prices of staple foods stemming from the disruptions caused by the war in Ukraine. The negative impact of the rise in the cost of staple foods will be strongest for low- and middle-income households.

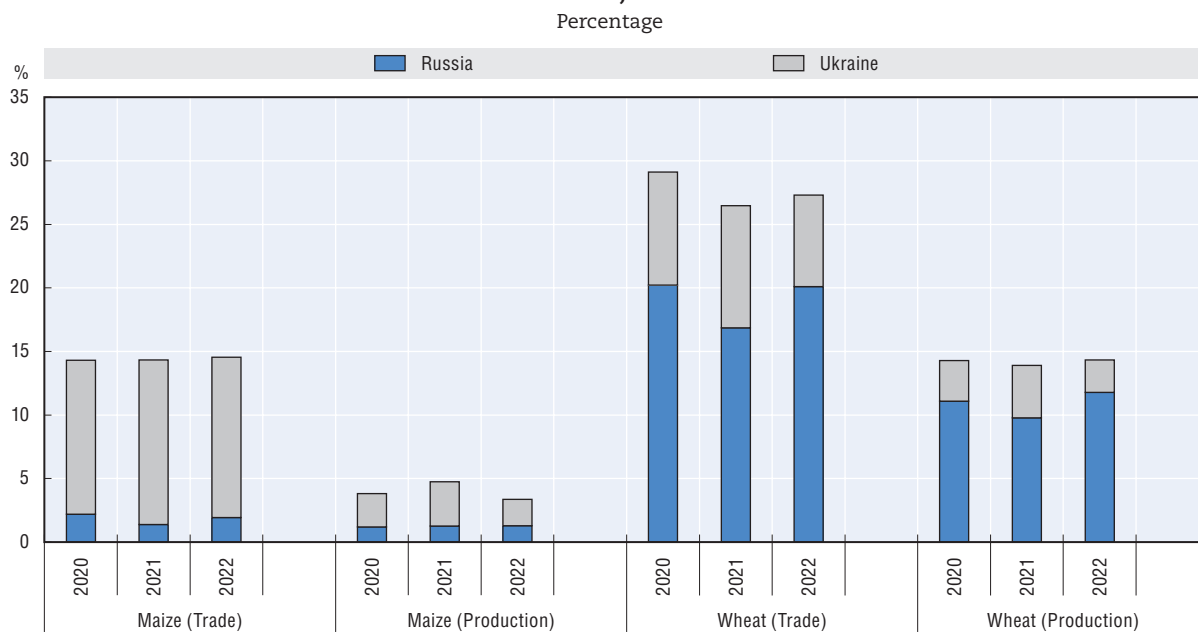
At the same time, domestic and international mobility restrictions linked to the pandemic created labour shortages in rural areas that curbed agricultural production, while the cost of transportation of food products soared due to traffic tie-ups at ports and shortages of truck drivers in many countries. These supply-side disruptions initiated the first wave of the current upswing in grain prices.

### Disruption of grain markets due to the war in Ukraine continues to threaten food security

The war in Ukraine has aggravated the already grim outlook in grain markets, creating great anxiety over supplies and triggering high volatility. Prior to the conflict, Ukraine and Russia together accounted for a significant share of global production of barley (19%), wheat (14%) and maize (4%), and their combined wheat exports accounted for about 30% of the global market (FAO, 2022b) (Figure 2.9). This trade has been seriously disrupted by the war.

Disruptions in the supply of grain and fluctuations in international prices can have important repercussions, especially for countries that are highly dependent on cereal imports, such as Malaysia, which between 2017 and 2019 imported 71.5% of its cereals, the Philippines (27.2%) and Indonesia (13.1%) on average (FAOSTAT, n.d.a). Although overall direct import dependency on Russian and Ukrainian exports is very low in the region, exposure on some items such as wheat and fertilisers is significant for some economies (Figure 2.10). In particular, as one of the largest importers of wheat globally, Indonesia's wheat import dependency on Ukraine was above 25% in 2021. Similarly, 27.9% of China's fertiliser imports were sourced from Russia.

Figure 2.9. Share of Ukraine and Russia in global trade and production of wheat and maize, 2020-22



Note: 2021 and 2022 values are estimates by FAO-AMIS. Trade shares of Ukraine and Russia represent the percentage of exports from Ukraine and Russia in global exports.

Source: FAO-AMIS (n.d.) database, accessed on 8 January 2023.

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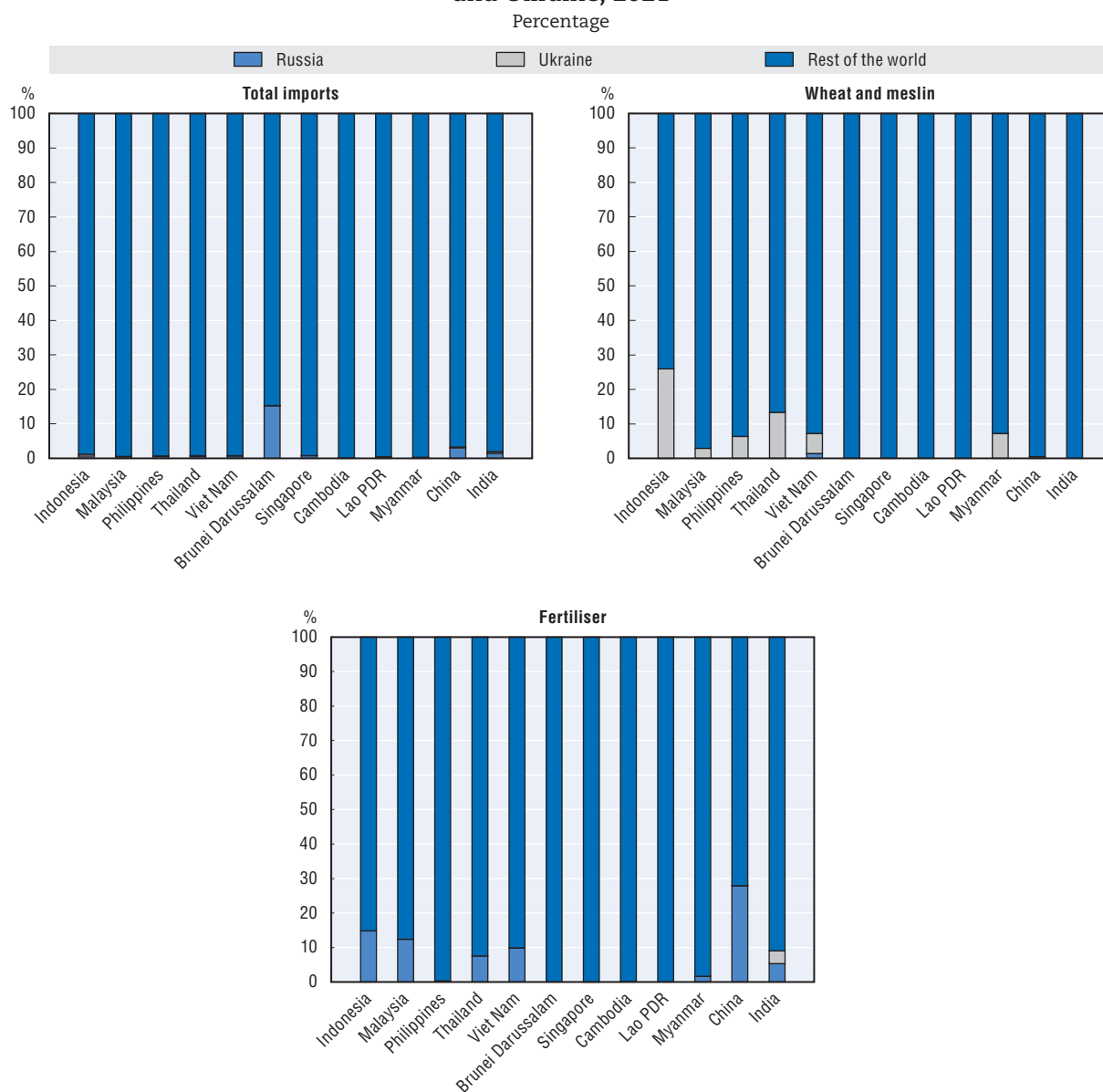
The war has impaired the farmlands of Ukraine and compelled farmers to abandon cultivated areas, preventing them from harvesting, while port closures hampered the export of agricultural products out of Ukraine. The situation eased with the July 2022 Black Sea Grain Initiative, which allowed the resumption of Ukrainian grain exports via Ukrainian ports on the Black Sea. The agreement, valid for a period of 120 days initially, was extended for another four months in November (Nichols, 2022). However, uncertainty regarding exports from these ports in the coming months will be a lingering problem for the grain markets. These uncertainties regarding the supply of grain have put pressure on governments to support grain inventories and build up stocks for enhancing food security against probable future disruptions, leading to an increase in demand. Russian exports of staple foods have also fluctuated considerably since the escalation of the war.

The impact of the war in Ukraine on food is not limited to grain exports. Agricultural input prices have also jumped significantly due to the concerns regarding Russia's oil and fertiliser exports (Figure 2.11).

Russia is the world's top exporter of nitrogen fertilisers and was the second and third largest exporter of potassium and phosphorous fertilisers, respectively, in 2021 (FAO, 2022c). These spikes in energy and fertiliser prices, which began in the later stages of the pandemic, have worsened since the start of the war in Ukraine. The spiralling cost of natural gas – the key input for ammonia, a base material for nitrogen fertiliser – increased the cost of agricultural inputs, leading to a spike in the cost of agricultural production. Sharp increases

in the price of fertilisers are passing through to food prices, straining household budgets (Box 2.3). The FAO Food Price Index (FFPI), a measure of the monthly change in international prices of a basket of food commodities, reached a record level of 140.6 as an annual average in 2022, surpassing the previous peak of 137.4 in 1974.

Figure 2.10. Import dependency of Southeast Asian economies on Russia and Ukraine, 2021

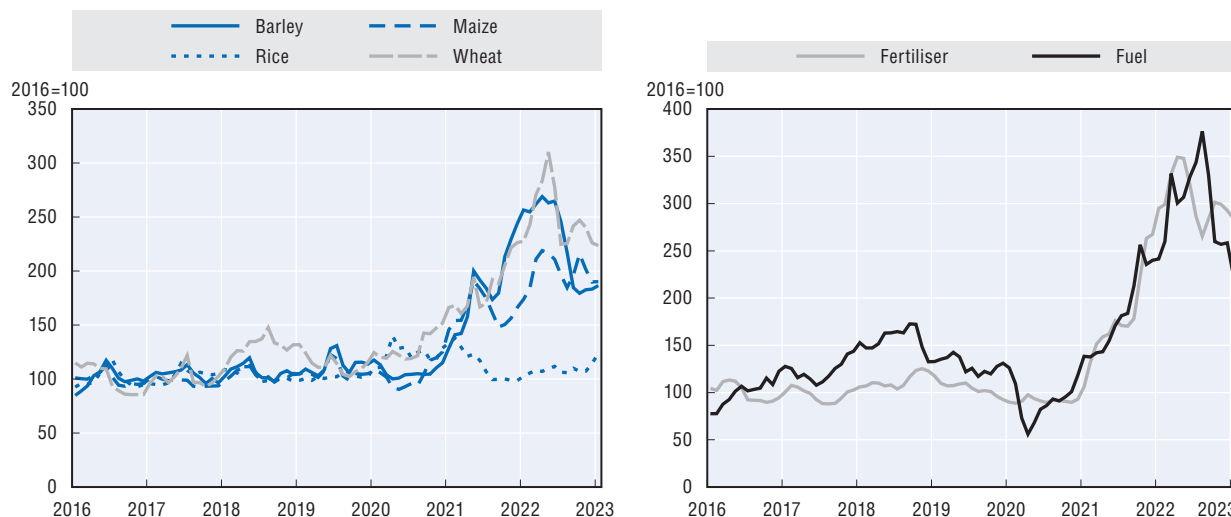


Note: Meslin consists of a mixture of wheat and rye that is sown and harvested together.

Source: Authors' calculation based on UN Comtrade Trade Data, <https://comtradeplus.un.org/TradeFlow> (accessed on 1 February 2023).  
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Figure 2.11. Price indices of selected commodities

2016 = 100



Note: Barley, maize, rice and wheat price indices represent Canadian No.1 Western Barley, US No.2 Yellow maize, 5% broken milled white rice, Thailand nominal price quote and No.1 Hard Red Winter ordinary protein Kansas City wheat US dollar prices per metric tonne, respectively. Fuel index tracks the changes in crude oil, natural gas, coal and propane prices. Fertiliser index includes DAP (diammonium phosphate), potash and urea.

Source: Primary Commodity Prices database of the IMF, <https://www.imf.org/en/Research/commodity-prices>.

StatLink  <https://stat.link/31sgwp>

### Box 2.3. High fertiliser prices spark concerns over food inflation

Fertilisers constitute a considerable part of input expenditure for farmers and are key to enhancing the quantity and quality of agricultural output. Keeping fertilisers affordable is thus vital for food security and for curbing food price inflation. However, the cost of mineral fertilisers surged during the COVID-19 pandemic, while supply-chain problems linked to Russia's invasion of Ukraine caused a fresh surge in prices. Trade barriers and sanctions have created anxiety over the flow of fertilisers from Russia, the world's largest fertiliser exporter, and have disrupted exports from Belarus, a key supplier of potassic fertilisers (FAO and WTO, 2022). Despite the recent pullback in natural gas prices and transportation costs, fertiliser prices remain elevated compared to levels seen after the global financial crisis.

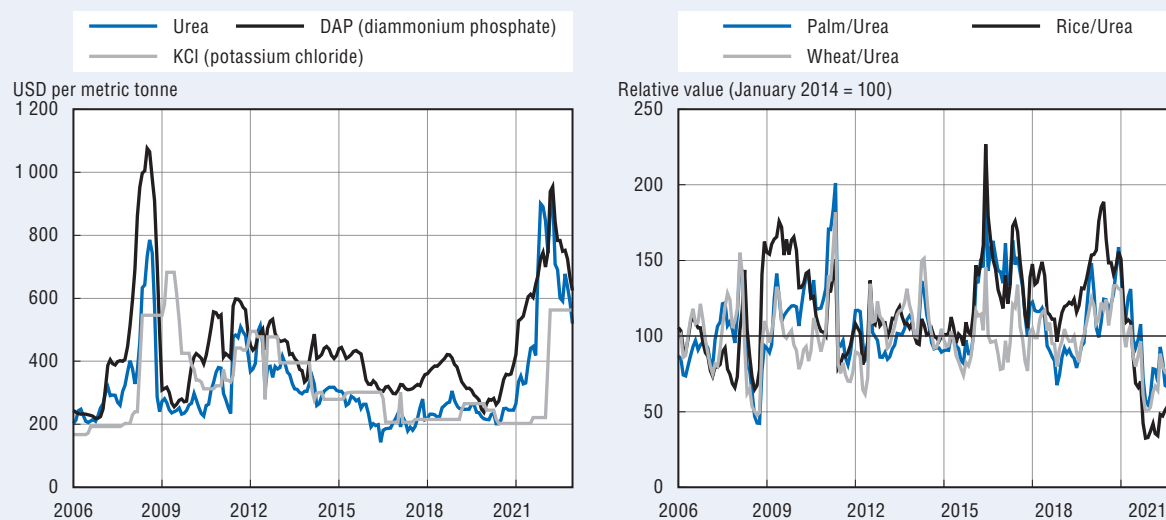
The affordability of fertilisers, measured by the ratio of crop prices to input costs, has declined sharply, bringing down the margins of producers (Figure 2.12). Increases in fertiliser prices particularly affect fertiliser-intensive crops, especially cereals. A case in point involves urea, a common source of nitrogen. The affordability of urea against rice plunged by 57.1% between 2020 and 2022, putting a heavy burden on rice farmers. While the sales price has surged for other cereals, such as wheat and maize, this is not the case for rice.

Against rising prices, farmers have begun reducing fertiliser consumption, with an estimated drop of around 5% in global consumption of fertilisers in 2022 (IFA, 2022). Meantime, trade restrictions on both fertilisers and the raw materials for fertiliser production worsen trade volumes and exacerbate inflationary pressures on food products. In this context, China – the world's largest exporter of phosphate, with about 30% of global trade, has introduced quotas for phosphate exports, which restrains the trade volumes (Chow and Patton, 2022).


Box 2.3. High fertiliser prices spark concerns over food inflation (cont.)

Figure 2.12. Fertiliser prices and affordability of urea against rice, wheat and palm oil

2006-22



Source: Index Mundi.

StatLink  <https://stat.link/zwyi9n>

Elevated fertiliser costs pose a risk of a further rise in headline inflation in the coming months. To prevent spiralling fertiliser costs, it is pivotal to keep the international trade of agricultural products flowing by avoiding new restrictive trade interventions and phasing out the existing ones. Promoting the optimal use of fertilisers by farmers in order to lower consumption without compromising the associated productivity gains can also help to curb soaring food prices.

The effects of spiralling food prices and their impact on food security are particularly detrimental for low- and middle-income countries with a high dependency on imported food products. The share of food expenditures in total household consumption is generally high in Emerging Asia and it exceeds 25% of total expenditures in Cambodia, India, Indonesia, Lao PDR, Myanmar, Philippines, Thailand and Viet Nam (Table 2.2). The real income of households in these countries has thus deteriorated. The share of people facing moderate or severe food insecurity is estimated to be higher than 25% for Cambodia, Lao PDR, Myanmar, Philippines and Thailand. The price of Emata rice, the most popular staple food in Myanmar, rose by 32% between February and December 2022.

The FAO projects that production, stocks and international trade of cereals will fall to their lowest levels since the onset of the pandemic (FAO, 2022d). The world's annual cereal production for 2022 is expected to fall by 2%, mostly due to the reduction in maize and rice yields. The global cereal stock-to-use ratio in 2023 is expected to decline to 29.3%, the lowest level in almost a decade, although this does not pose an immediate threat of a global shortage. These figures, against the backdrop of the growing global and regional population, point to a worsening outlook for food security in 2023.

Table 2.2. Selected indicators on food security in Southeast Asian economies

	Share of food expenditures in total expenditures (2017)	Share of population facing moderate or severe food insecurity (2019-21 average, %)
Brunei Darussalam	17.6	-
Cambodia	46.7	51.2*
China	18.6	-
India	28	-
Indonesia	30.9	6.1
Lao PDR	43.9	31.4*
Malaysia	22.8	15.1*
Myanmar	55.6	26*
Philippines	42.1	42.8
Singapore	6.7	5.1*
Thailand	27.5	33*
Viet Nam	31.1	7.7

Note: \*Calculated by using estimated values by the FAO.

Source: FAOSTAT and International Comparison Program (ICP) 2017 survey of the WB, <https://databank.worldbank.org/source/icp-2017>.

Although trade interventions can protect households from the external shocks in the short run, they usually trigger reciprocal actions from other countries and intensify the troubles in international trade (Martin and Anderson, 2012; Giordani, Rocha and Ruta, 2016). They also increase the volatility of food prices, hampering investment decisions and impairing supply in the long run.

The war in Ukraine continues to pose a significant threat to the grain markets and food security for Southeast Asian economies even though the surge in food and agricultural input prices subsided in the second half of 2022, with the agreement on grain exports from Ukrainian ports and the global economic slowdown following monetary tightening in major advanced economies.

In this regard, keeping the international trade of food products flowing smoothly by avoiding restrictive trade interventions is crucial to avoiding further volatility in the international markets. Focusing on ramping up agricultural production by increasing current capacity and enhancing productivity through implementation of best practices, while utilising more drought-resistant varieties, would curb the potential impact of further supply-side shocks.

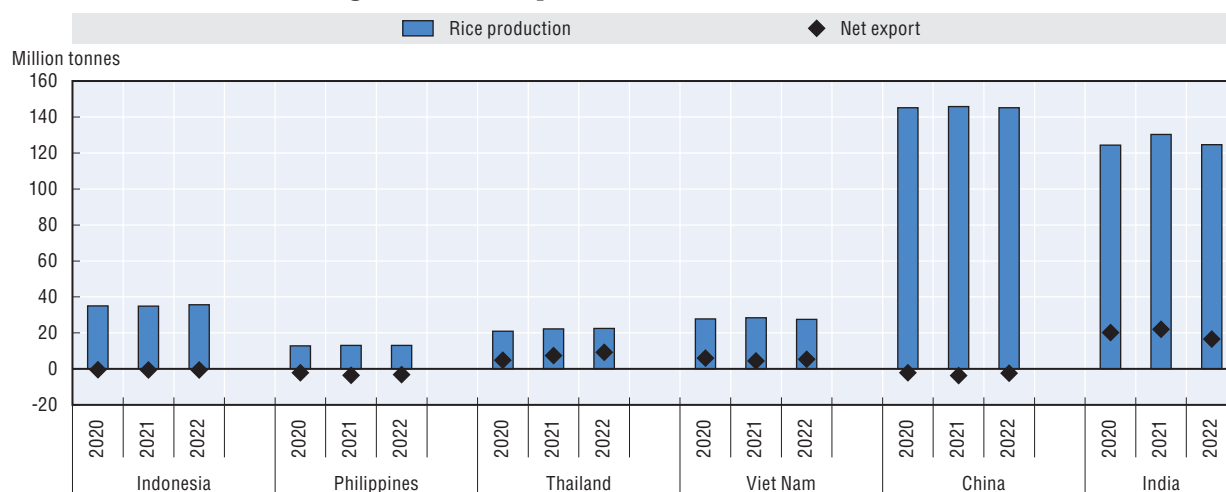
Reducing the loss and waste of food is another way to cope with the devastating effects of the disruptions in food supply. According to the FAO, about a third of all food production is either lost or wasted at some point from harvest to consumption (FAO, 2011). A systematic approach is needed to minimise the loss of food products at every stage of the food supply chain. Better packaging methods and improvements in logistics systems can contribute to mitigating food loss in the pre-consumption stages, which is where about half of all loss of food is estimated to occur (Chauhan et al., 2021).

### Rice market stability is threatened by soaring input prices and the effects of climate change

Rice, one of the most important staples in Southeast Asia, plays a vital role as the source of nutrition for the region's increasing population. China, India and Southeast Asian countries accounted for about 60% of the global production of rice in 2021, and a substantial proportion

of the yield is consumed internally (FAOSTAT, n.d.b). High production levels in Indonesia and China merely satisfy domestic demand, while only India, Thailand and Viet Nam produce enough rice to export it (Figure 2.13).

Figure 2.13. Rice production and trade, 2020-22



Note: 2021 and 2022 values are estimates by FAO-AMIS.

Source: FAO-AMIS database (accessed on 8 January 2023).

StatLink  <https://stat.link/qsawxm>

While the price of rice has remained relatively stable since the pandemic, higher fuel and fertiliser costs in conjunction with adverse weather conditions threaten to disturb long-lasting stability in the rice market. Faced with subdued market prices for their crops, rice farmers may be compelled to rise their farm-gate prices to offset increasing costs (UN, 2022).

Moreover, droughts and heatwaves as a result of climate change hamper the yield of rice fields, especially those that lack access to irrigation and depend extensively on rainfall and groundwater. In case of poor precipitation during the planting season, farmers may be forced to compete for a limited amount of groundwater, which has become less affordable due to soaring diesel costs in addition to currency depreciation.

To alleviate the domestic pressure of increasing prices, India banned the export of broken rice and imposed export duties on various grades of rice in September 2022 following below-average monsoon rainfall. India's rice exports are expected to decline which could cause its share of global trade in rice to fall from 40% (Jahhavi, 2022).

Given the crucial role of rice as both a food and an export product in Emerging Asia, boosting its production is essential on social and economic grounds. Yuan et al. (2022) estimate that Southeast Asian countries exhibit a 48% yield gap compared to the potential yield, assuming that the current harvested area remains unchanged.

The increasing number of adverse weather events and catastrophes, along with persistent increases in fertiliser and energy costs, continue to pose a significant risk for grain production in the region in 2023. Efficient use of scarce water resources and improving irrigation systems to alleviate the adverse effects of droughts will be vital to enhance food

security. Safeguarding the availability of high-quality seed and ensuring the affordability and optimal usage of fertilisers and pesticides can also boost the supply of rice and mitigate food shortages in the region.

### Capital flow volatility

This section addresses capital flows, which have become volatile in response to the current inflationary conditions – not only in Emerging Asia but also in advanced economies. It discusses ways to reduce volatility in the face of local currency depreciation, especially through effective monetary and macroprudential policies.

There have been sharp swings in capital flows in emerging economies since the onset of the COVID-19 pandemic, and volatility has rebounded since the outbreak of war in Ukraine in 2022, posing risks to economic activity and financial stability (Figure 2.14). Nevertheless, the current wave of capital flow volatility has been relatively subdued compared to the situation at the start of the pandemic. Rather than triggering severe financial problems, it has impacted inflation through exchange rates, adding to the negative effects of supply bottlenecks and the war in Ukraine.

The recent episode of capital outflows has been predominantly driven by global factors, broadly seen in many regions, with differences in magnitude depending on domestic economic and financial conditions in each country.

### Broad global shocks drive uncertainty and capital flow volatility

Global risk aversion and interest rates in advanced economies are empirically found to be the most important push factors of capital flows to emerging economies. (For a survey of the literature on drivers of capital flows, see Koepke, 2019). Uncertainties regarding the devastating effects of the pandemic on the global economy triggered a shift of investor preferences to safe and short-term assets in the first half of 2020 that receded gradually until mid-2021. Since the start of the war in Ukraine in early 2022, increasing inflationary pressures and accompanying rapid monetary policy tightening by major central banks have raised concerns regarding the future path of the global economy, thus generating a new wave of flight from risky assets. Unlike the abrupt jump in global risk aversion during the start of the pandemic, the current wave has been more gradual. The uncertainties stemming from the inflation outlook, along with the risk of further escalation of the war in Ukraine, may contribute to an additional upswing in risk aversion. This could generate more capital outflows, especially from emerging economies.

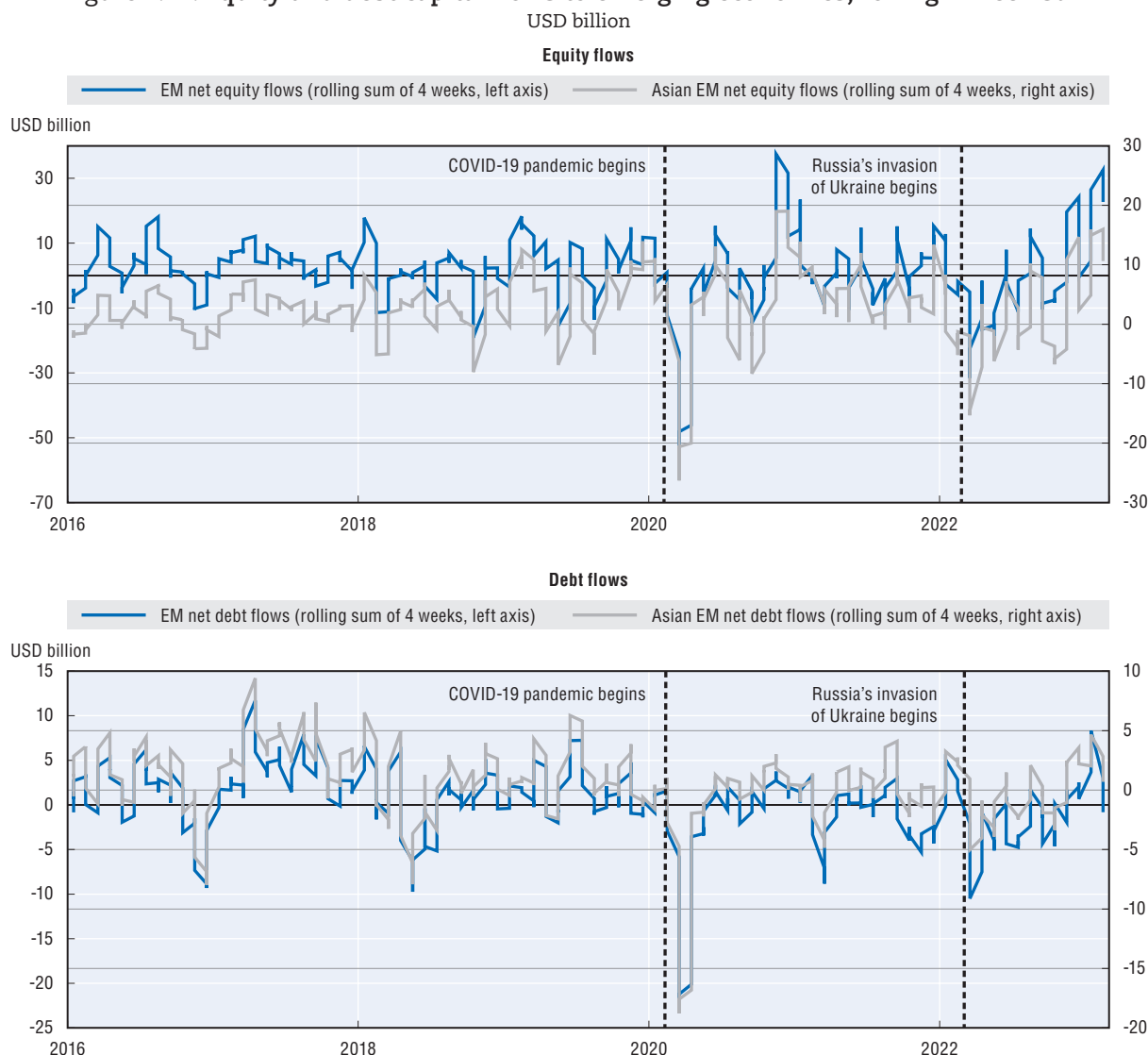
Greater risk aversion in global financial markets puts upward pressure on sovereign bond yields and leads to net portfolio and banking outflows. However, macroeconomic fundamentals matter for cushioning against the negative spillovers of global risk aversion. In this regard, a low current account deficit, along with an adequate level of foreign reserves commensurate with the short-term debt, contribute to the resilience of economies against these shocks (Caballero and Kamber, 2019).

Shifts in the monetary policy of major central banks, especially the US Federal Reserve, are another major external driver of capital flows. The recent episode of policy rate hikes among the major central banks has been implemented in an almost synchronous fashion



(Figure 2.15), which amplifies the repercussions on emerging economies. Moreover, some major central banks either started to shrink their balance sheets – quantitative tightening – or announced that they intended to do so. These policies have substantial adverse effects on capital flows (Fratzcher, Lo Duca and Straub, 2018). The monetary policy shocks amid the previous tapering episode of the US Federal Reserve Board, from May 2013 through June 2014, had a harmful effect on portfolio capital flows to emerging economies and brought down the prices of financial assets in addition to the value of local currencies against the US dollar (Chari, Dilts Stedman and Lundblad, 2021).

Figure 2.14. Equity and debt capital flows to emerging economies, rolling 4-week sum

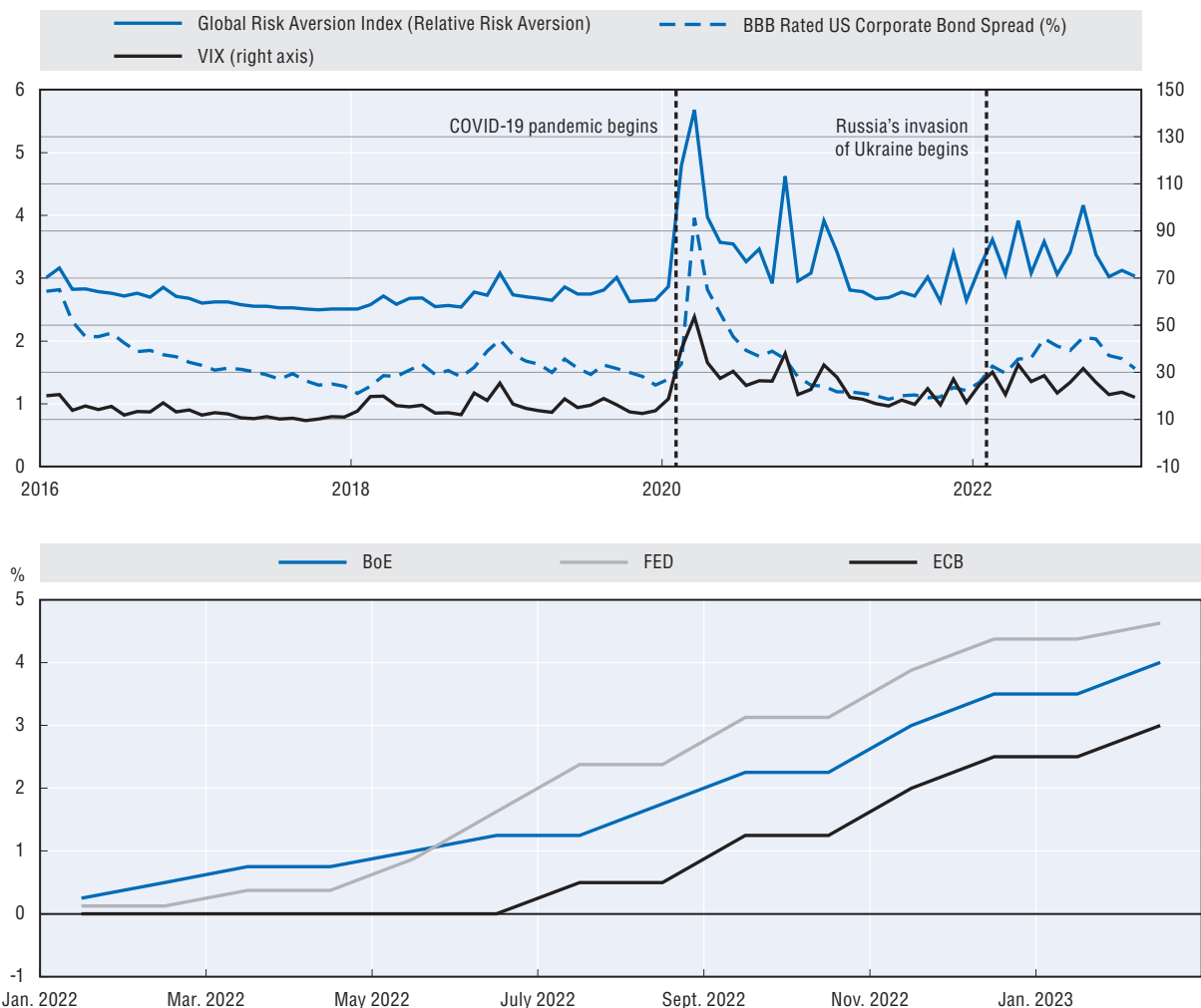


Note: Data for emerging economies exclude Türkiye and Mexico. Emerging Asia includes Indonesia, India, Thailand, Philippines, Viet Nam and China for equity flows, and Indonesia, India and Thailand for debt flows.

Source: IIF (n.d).


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Figure 2.15. Global risk aversion index, corporate bond spread, VIX and policy rates of FED, BoE and ECB



Note: VIX = Cboe volatility index; FED = US Federal Reserve; BoE = Bank of England; ECB = European Central Bank.

Source: Bekaert, Engstrom and Xu (2022); Federal Reserve Bank of St. Louis (FRED); "ICE BofA BBB US Corporate Index Option-Adjusted Spread", retrieved from FRED, BIS.

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The US Federal Reserve started its current balance-sheet reduction in June 2022 with a monthly cap of USD 47.5 billion worth of assets in its bond portfolio, and increased the cap to USD 95 billion from September. The Bank of England implemented a similar programme and started selling short- and medium-term bonds in its portfolio in November 2022 (Stubbington, 2022).

After the 2007-08 global financial crisis (GFC), and apart from some short recesses, financial markets and the banks faced exceptionally accommodative central bank policies of low interest rates and unprecedented bond purchases. Large-scale asset purchases of major central banks lead to currency appreciation, lower bond yields, higher financial asset prices and capital inflows for emerging economies (Bhattarai, Chatterjee and Park,

2021). Policy normalisation efforts were interrupted with the inception of the pandemic, which paved the way for a new wave of expansionary policies. In the current episode of monetary tightening, major central banks, determined to rein in inflationary pressures, are communicating prolonged monetary tightening until headline inflation together with inflation expectations become aligned with their objectives. In this regard, capital flows to emerging economies may continue to be volatile in the coming months, and possible outflows pose a risk of currency depreciation and a slowdown in credit growth and economic activity.

### **Smoothing capital flows against currency depreciation pressures**

The US dollar appreciated against other currencies globally in 2022 in one of the US Federal Reserve's fastest monetary tightening cycles. Throughout 2022, the currencies of the ASEAN countries mostly performed relatively better than the euro, pound sterling and yen on average (Figure 2.16). The Lao kip is an exception, having lost more than half of its value in the face of global monetary tightening and a low level of foreign exchange reserves in terms of imports. The weakening of the currency moderated following a rate hike by the central bank in October.

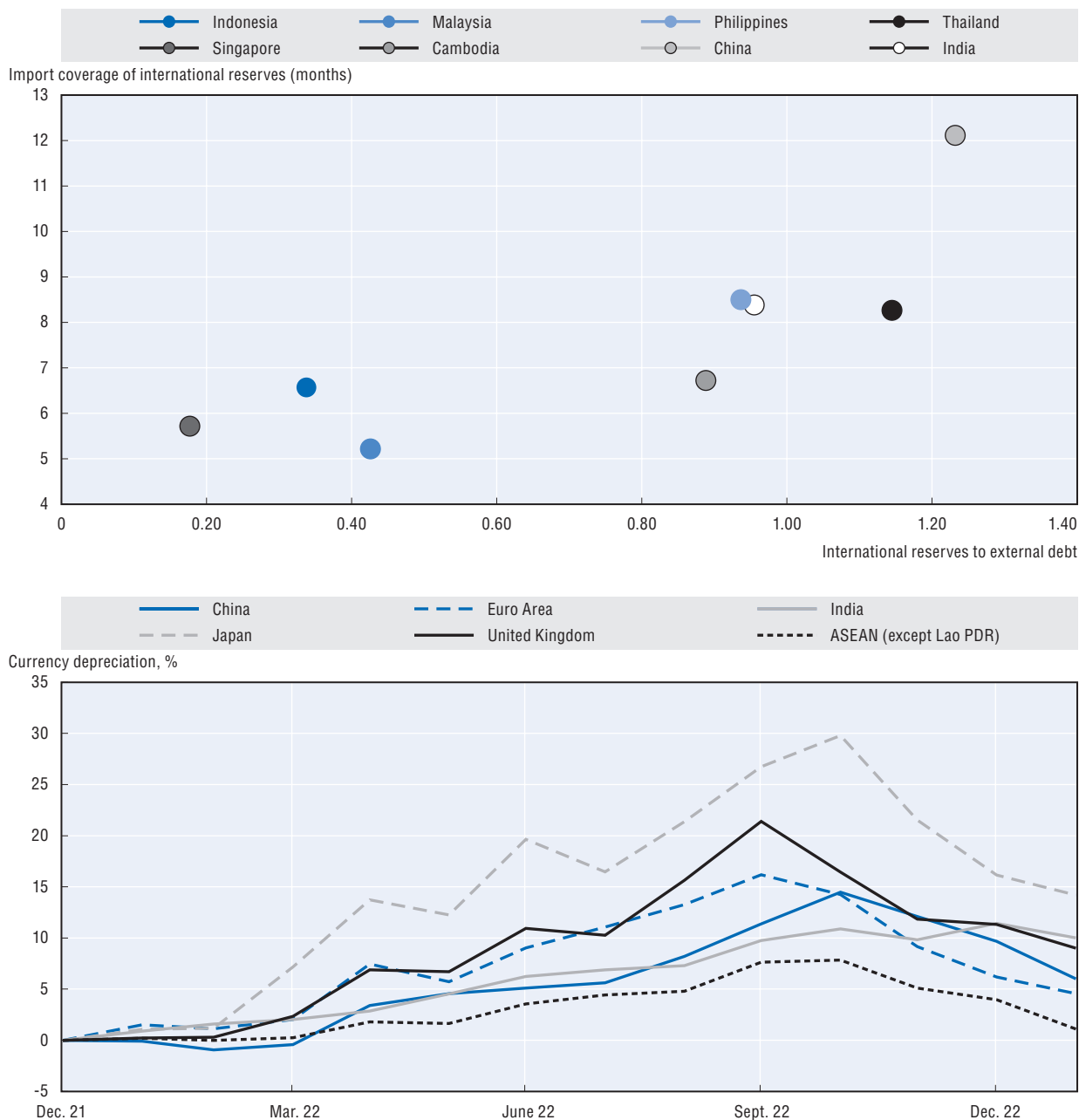
Depreciation pressures on local currencies during capital outflows exacerbate domestic inflation and could result in balance-sheet weakness in the corporate sector, which could hamper financial stability and lead to deleveraging. The foreign exchange reserves of central banks, typically accumulated during ample capital inflows, serve as a buffer against capital outflows in times of global risk aversion and monetary tightening. Central banks can lean against these exchange-rate movements to curb excessive swings in order to limit inflationary effects and preserve financial stability, depending on the level of international reserves. India, Singapore and Thailand have already been reported to be using their reserves to support their currencies (Kajimoto and Kihara, 2022).

Foreign exchange interventions, apart from their direct impact on market prices, also carry an important signalling effect in that the timing and strength of the interventions provide information to the market about the views of the central bank regarding the future path of the exchange rate and its monetary policy stance (Patel and Cavallino, 2019).

Southeast Asian countries accumulated a substantial amount of foreign currency reserves following the Asian Financial Crisis of 1997 and most have sufficient international reserves to cover at least three months of imports. China has the largest coverage, with 12.1 months of imports (Figure 2.16, above). Singapore, Malaysia and Indonesia hold relatively lower levels of reserves relative to their total external debt; however, this ratio improves significantly for Malaysia and Indonesia when only short-term external debt is considered, improving from 0.44 to 1.14 for Malaysia and from 0.34 to 2.78 for Indonesia, respectively.

Given the risk of a protracted tight monetary environment globally consequent to the persistence of inflationary pressures, limited foreign exchange reserves may not be sufficient to carry the full burden of capital outflows and exchange-rate depreciations. In this case, capital flow measures can be used to complement the more conventional tools of interest-rate hikes and foreign exchange interventions.

Figure 2.16. Reserve adequacy indicators and currency depreciation against US dollar, December 2021 – January 2023



Note: International reserves include gold reserves. External debt represents the total value of outstanding long- and short-term debt. Reserve adequacy indicators represent the level in June 2022.

Source: Authors' calculation based on IMF, CEIC and national sources.

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The empirical results of capital flow management measures are somewhat mixed in the literature, depending on the type of measures and the conditions during implementation. The effects of measures targeting inflows and outflows can be asymmetric. Gochoco-Bautista, Jongwanich and Lee (2012) find that measures against capital outflows resulted

in more capital outflow for Asian economies, unlike the rest of the world, between 1995 and 2007. Erten, Korinek and Ocampo (2021) emphasise the signalling effect of capital management measures for foreign investors. If interpreted negatively, this signalling effect can produce unexpected consequences that are at odds with the intentions of policy makers. Implementing capital management measures prudently – in combination with other policies to curb excess volatility of capital flows and exchange rates – would thus be a better option for providing a positive signal to investors.

### Preserving financial stability through macroprudential policies

Coping with cross-border capital flows is more challenging for emerging economies because of the large size of the flows relative to the absorbing capacity of their financial systems (OECD, 2021; Claessens and Ghosh, 2013). This is the case despite growing initiatives to improve the depth of financial markets. The type and extent of vulnerabilities created during the inflows depend on the composition and scale of these flows, the characteristics of each economy, such as financial market development, institutional environment and exchange-rate regime as well as the implementation of appropriate policies in response to the adoption of technological developments such as crypto assets (Box 2.4).

#### Box 2.4. Capital flow management measures and the rise of crypto assets

The development of blockchain technology and the accompanying rise of crypto assets is gradually changing the way economic transactions are conducted. This has introduced new challenges for governments to preserve the effectiveness of capital flow measures and cope with tax evasion while protecting consumers from potential fraud.

In order to curb both the volume and volatility of inflows and outflows, capital flow measures are typically targeted to restrict conversion between local and foreign currencies, to limit the cross-border transfer of funds and assets, and in some cases to curb the right to hold or trade certain assets depending on the residency of the transacting parties. Proper implementation of these measures requires collaboration among financial intermediaries such as commercial banks, brokerage houses and foreign exchange bureaus, which are responsible for collecting mandatory information regarding the identity of the transacting parties and for enforcing the rules imposed by the public authorities. However, the inherent characteristics of crypto assets limit the ability of regulators to validate the nature of the transactions and the identities of the counterparties. Moreover, intermediaries of crypto transactions are not obliged to comply with standards for implementing regular capital flow measures. In addition, some crypto assets are traded on a peer-to-peer basis in the absence of an intermediary.

Although total market capitalisation of crypto assets constitutes a small share of financial assets globally and fluctuates significantly with volatile prices, it has quintupled since 2020, reaching more than USD 1 trillion at the end of 2022. Crypto assets can be used for various purposes, including but not limited to gathering speculative income, avoiding capital flow measures, evading tax liabilities and transferring remittances. The level of crypto adoption varies considerably across countries and is particularly high in Viet Nam, the Philippines, India, Thailand and China, which were ranked among the highest ten countries for cryptocurrency use between July 2021 and June 2022 (Chainalysis, 2022). A key driver of the high adoption of crypto assets in the region might be that they offer lower costs for

**Box 2.4. Capital flow management measures and the rise of crypto assets (cont.)**

remittance payments and faster transaction times than other payment methods. Conversion of domestic fiat currencies to stablecoins – where the value of the asset is generally pegged to hard currencies or commodities – has provided another motive as households in developing and emerging economies seek to shield themselves against declines in purchasing power during times of sharp depreciation, especially when there are strict capital controls (Aramonte, Huang and Schrimpf, 2022).

Von Luckner, Reinhart and Rogoff (2021) emphasise the importance of capital control evasion as a key factor in the expansion of crypto markets. They note the simultaneous rise of Bitcoin market activity and imposition of capital controls in Argentina. Hu, Lee and Putniņš (2021) estimate that about a quarter of Bitcoin trades at Chinese exchanges between 2011 and 2018 were made to circumvent capital controls. In a similar vein, Alnasaa et al. (2022) present cross-country empirical evidence of a negative relationship between capital account openness and the adoption of crypto assets.

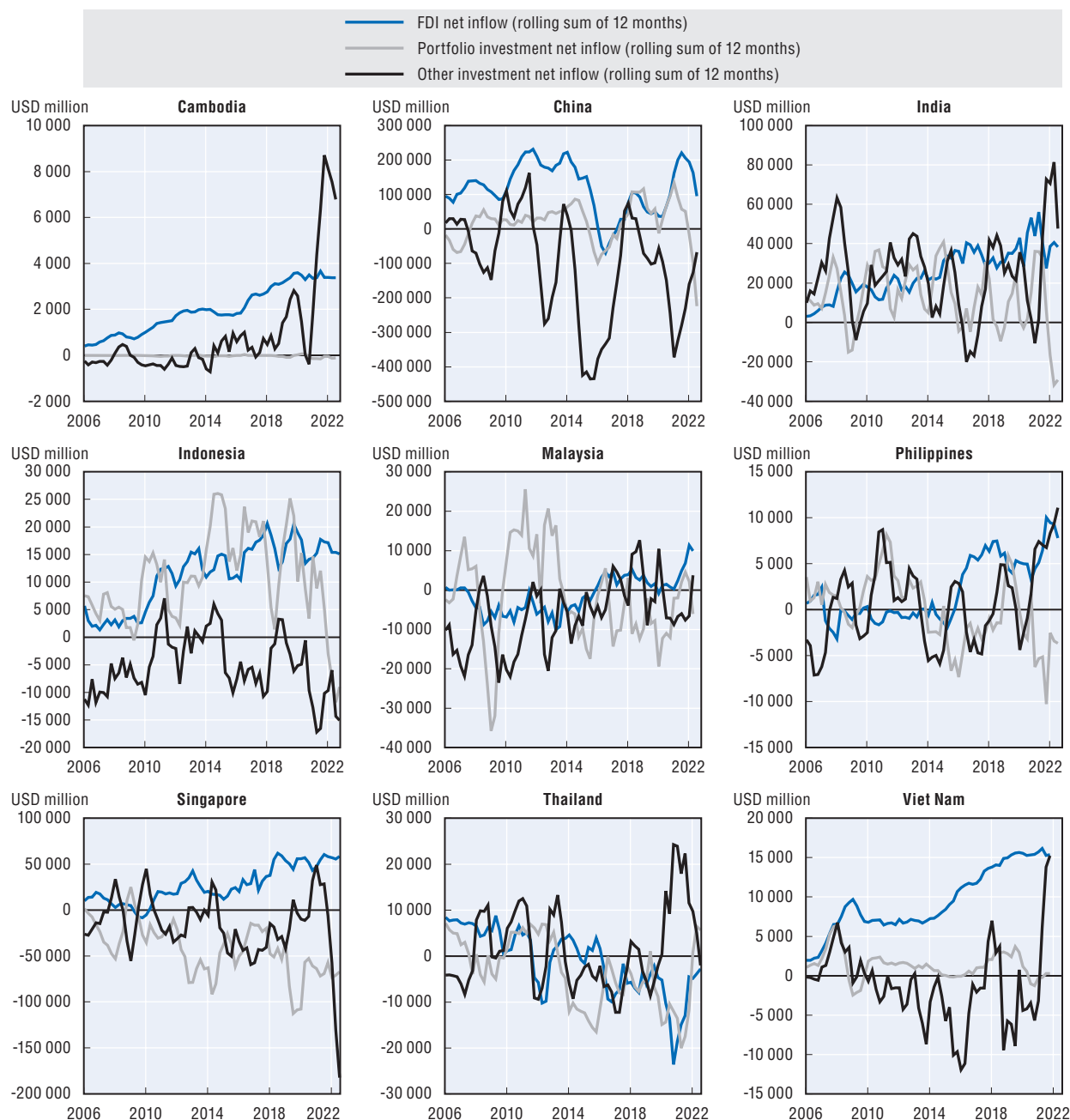
Despite some countries' efforts to curb the use of crypto assets by imposing restrictions, the effectiveness of these measures has so far been limited. Moreover, although numerous economies are currently making efforts towards the issuance of a central bank digital currency that could alleviate the negative impacts of crypto assets on the effectiveness of economic policies, the final outcome of these efforts is uncertain. Avoiding the undesirable consequences of the development of crypto assets requires clarification of the legal status of these assets and creation of a regulatory framework that enables the necessary infrastructure to enforce economic policies. In this context, enhancing international co-ordination for developing a regulatory framework for crypto assets will be pivotal to ensuring the consistency of rules across different jurisdictions and preventing potential regulatory arbitrage where crypto service providers divert their operations to countries with more favourable rules.

Inflows of net foreign direct investment (FDI), which are typically longer-term flows, have followed a relatively steady path over time (Figure 2.17). Cambodia, China, India, Indonesia and Viet Nam have received positive and progressively increasing net direct investment flows since the GFC. However, in line with empirical evidence, portfolio and banking flows are generally more volatile between 2008 and 2022.

Debt flows, i.e. portfolio debt and banking flows, are more closely associated with global liquidity conditions and external interest-rate movements than FDI and equity flows. They not only exhibit sizable swings but are also identified as short-term flows that are more susceptible to reversals.

Within this category, capital flows intermediated through the banking sector comprise a substantial portion of the cross-border flows. Such capital flows typically contribute to the building up vulnerabilities over the period of high levels of inflows by boosting credit growth along with financial asset prices. Most of the region's countries have been progressing through an uptrend of credit, although at different speeds, and have reached total credit levels higher than the nominal income (Figure 2.18).

Figure 2.17. Net FDI, portfolio and other investment inflows, rolling 12-month sum  
USD million



Note: "Other investment inflows" are mostly comprised of banking flows according to the BPM6 standards of the IMF.

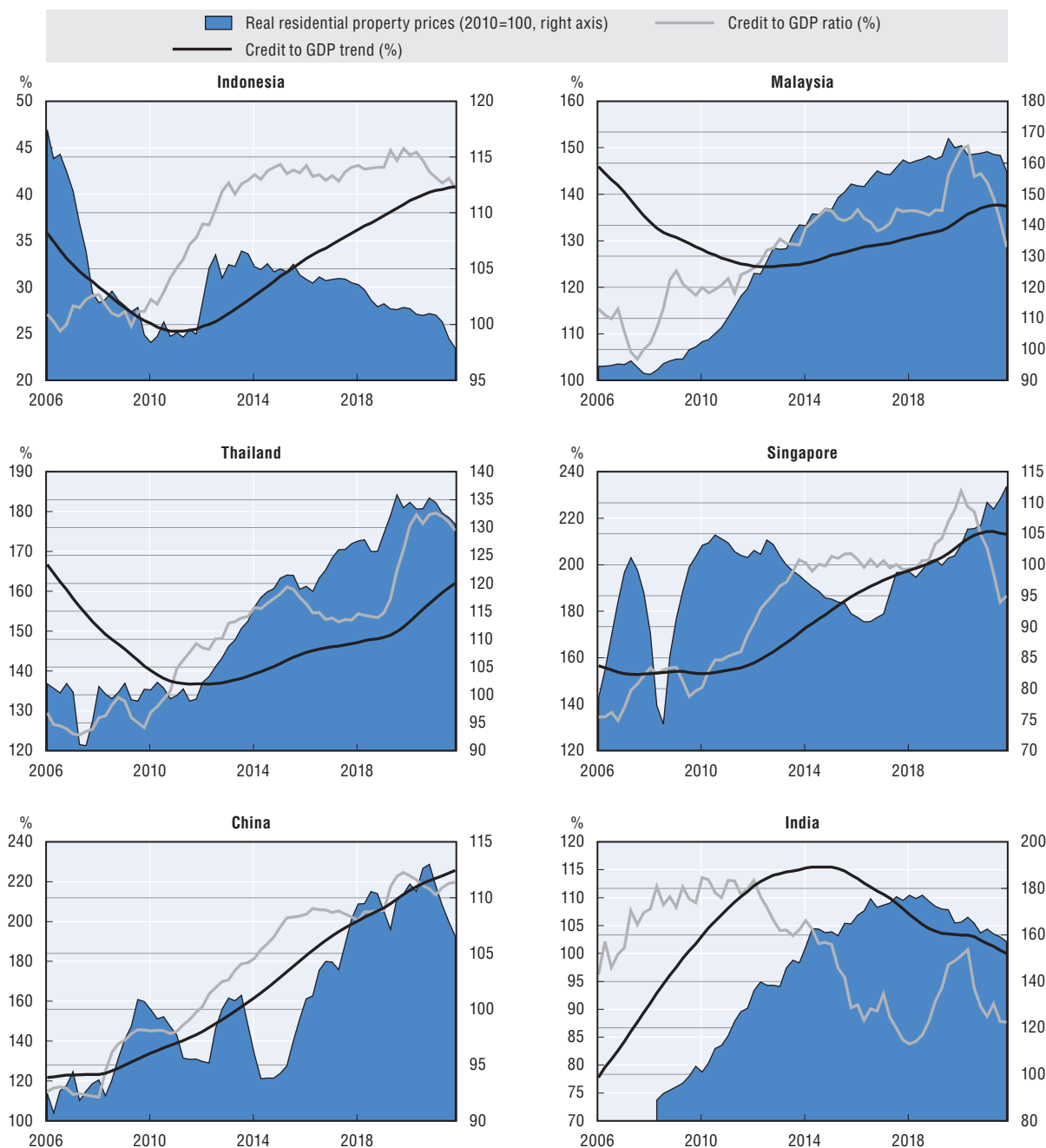
Source: Authors' calculation based on IMF data (Accessed on 27 February 2023).

StatLink <https://stat.link/jviot4>

Thailand, in particular, has gone through a considerable financial deepening since the GFC and encountered a sharp uplift in credit growth after the pandemic, concurrently with a wave of net cross-border banking inflows. Possible vulnerabilities such as currency

and maturity mismatches in the banking sector – complicated by the weakness in tourism revenues and a surge in prices of residential properties – should be monitored in case of further capital outflows and possible exchange-rate pressures.

Figure 2.18. Actual and trend credit-to-GDP ratio, real residential property prices



Source: BIS.

StatLink  <https://stat.link/59mhu1>



There has been a post-pandemic spike in credit for households and corporates in the region due to the elevated need for liquidity. In this regard, it is vital to soften the detrimental effects of volatile capital flows on credit growth if a sharp cutback in credit may disrupt the ongoing economic recovery from the pandemic. Economies have already been undergoing a process of slowdown in credit activity and a drop in credit-to-GDP gaps which is the divergence of the credit-to-GDP ratio from its long-term trend and considered as a guide for setting appropriate prudential policies (Figure 2.18).

Empirical evidence shows that prudential policies in emerging economies are effective both in mitigating the spillover effects of monetary tightening by major central banks and in smoothing out the excesses of financial cycles. Macroprudential tools targeting domestic borrowers assist in curbing excesses in credit growth during financial cycles (Fendoğlu, 2017). Moreover, reserve requirement measures are identified as supporting credit growth during global monetary tightening; this is also valid for loan-to-value (LTV) ratio restrictions on house prices (Coman and Lloyd, 2022). However, supporting slowing credit growth by easing macroprudential tools could be more challenging than avoiding excessive growth in the boom phase of a financial cycle. The existing empirical evidence provides weaker support for the effectiveness of macroprudential policies during the bust periods especially for emerging economies (Cerutti, Claessens and Laeven, 2017).

Countries in the region have implemented various prudential policies over time. Use of countercyclical capital buffers, liquidity ratios and reserve requirements on the banking sector along with LTV ratio limits are among the tools most commonly used to date, where the adoption of macroprudential policies is at a lower level in Cambodia, Lao PDR and Viet Nam (OECD, 2021).

In the event of a worsening in capital outflows, which can translate into a slump in credit growth, recalibration of macroprudential tools in a targeted fashion may be required to cushion the credit flow in the economy and mitigate the harmful effects on consumption and asset prices.

## Conclusion

The inflationary episode triggered by the COVID-19 pandemic and the war in Ukraine is one of the broadest ever. It has been among the most severe such episodes for Emerging Asia, a region where inflation is generally lower than in advanced economies. The unique magnitude, scope and duration of this episode threaten to entrench inflation expectations. In designing policies to prevent this, authorities must also work to protect food security and stabilise capital flows. These objectives may conflict occasionally, requiring policy makers to pursue a delicate balancing act with ramifications for health of Emerging Asian economies in the short, medium and long term.

A multifaceted inflationary episode demands a multifaceted response. In addition to addressing inflation directly, managing the effects is also key. Food security must be preserved through tools such as precisely targeted price controls; local currencies must be supported with judicious use of foreign reserves; capital flow volatility must be calmed with careful exchange-rate management; and explosive credit growth must be prevented using macroprudential policies that promote caution without unduly stifling investment.

## References

- Adrian, T. (2022), “Are household inflation expectations de-anchoring?”, speech, International Monetary Fund, 17 May, <https://www.imf.org/en/News/Articles/2022/05/17/sp05172022-are-household-inflation-expectations-deanchoring>.
- Alnasaa, M. et al. (2022), “Crypto-assets, corruption, and capital controls: Cross-country correlations”, *Economics Letters*, Vol. 215, <https://www.sciencedirect.com/science/article/abs/pii/S0165176522001239>.
- Aramonte, S., W. Huang and A. Schrimpf, (2022), “Tracing the footprint of cryptoisation in emerging market economies”, *BIS Quarterly Review*, Bank for International Settlements, [https://www.bis.org/publ/qtrpdf/r\\_qt2203w.htm](https://www.bis.org/publ/qtrpdf/r_qt2203w.htm).
- Bekaert, G., E.C. Engstrom and N.R. Xu (2022), “The time variation in risk appetite and uncertainty”, *Management Science*, Vol. 68/6, <https://dl.acm.org/doi/abs/10.1287/mnsc.2021.4068>, pp. 3975-4004.
- Bernanke, B.S. (2007), “Inflation expectations and inflation forecasting”, speech at the Monetary Economics Workshop of the NBER Summer Institute, Cambridge, Massachusetts, <https://www.federalreserve.gov/newsevents/speech/bernanke20070710a.htm>.
- Bhattarai, S., A. Chatterjee and W.Y. Park (2021), “Effects of US quantitative easing on emerging market economies”, *Journal of Economic Dynamics and Control*, Vol. 122/2, <https://doi.org/10.1016/j.jedc.2020.104031>.
- Binder C. (2022), “Consumer inflation uncertainty is rising”, policy brief, Mercatus Center, George Mason University, 22 August, <https://www.mercatus.org/research/policy-briefs/consumer-inflation-uncertainty-rising>.
- BIS (n.d.), “Statistics” (database), Bank for International Settlements, <https://www.bis.org/statistics/index.htm>.
- Caballero, R.J. and G. Kamber (2019), “On the global impact of risk-off shocks and policy-put frameworks”, *NBER Working Paper*, No. 26031, National Bureau of Economic Research, <https://www.nber.org/papers/w26031>.
- Carrière-Swallow, Y. et al. (2021), “Monetary policy credibility and exchange rate pass-through”, *International Journal of Central Banking*, Vol. 17/3, <https://www.ijcb.org/journal/ijcb21q3a2.htm>, pp. 61-94.
- CEIC (n.d.), *CEIC Global Database*, Census and Economic Information Center, <https://www.ceicdata.com/en>.
- CEPII (n.d.), *CEPII Data*, Centre d'Etudes Prospectives et d'Informations Internationales, [http://www.cepii.fr/CEPII/en/bdd\\_modele/bdd\\_modele.asp](http://www.cepii.fr/CEPII/en/bdd_modele/bdd_modele.asp).
- Gerutti, E., S. Claessens and L. Laeven (2017), “The use and effectiveness of macroprudential policies: New evidence”, *Journal of Financial Stability*, Vol. 28, <https://www.sciencedirect.com/science/article/abs/pii/S1572308915001035>, pp. 203-224.
- Chainalysis (2022), *The Chainalysis 2022 Geography of Cryptocurrency Report*, Chainalysis, <https://go.chainalysis.com/geography-of-crypto-2022-report.html>.
- Chari, A., K. Dilts Stedman and C. Lundblad (2021), “Taper tantrums: Quantitative easing, its aftermath, and emerging market capital flows”, *The Review of Financial Studies*, Vol. 34/3, <https://academic.oup.com/rfs/article-abstract/34/3/1445/5817323?redirectedFrom=fulltext>, pp. 1445-1508.
- Chauhan, C. et al. (2021), “Food loss and waste in food supply chains: A systematic literature review and framework development approach”, *Journal of Cleaner Production*, Vol. 295/1, [https://www.researchgate.net/publication/349479207\\_Food\\_loss\\_and\\_waste\\_in\\_food\\_supply\\_chains\\_A\\_systematic\\_literature\\_review\\_and\\_framework\\_development\\_approach](https://www.researchgate.net/publication/349479207_Food_loss_and_waste_in_food_supply_chains_A_systematic_literature_review_and_framework_development_approach).
- Choudhri, E.U. and D.S. Hakura (2006), “Exchange rate pass-through to domestic prices: Does the inflationary environment matter?”, *Journal of International Money and Finance*, Vol. 25/4, <https://ideas.repec.org/a/eee/jimfin/v25y2006i4p614-639.html>, pp. 614-639.
- Chow, E. and D. Patton (2022), “China issues phosphate quotas to rein in fertiliser exports – analysts”, *Reuters*, 15 July, <https://www.reuters.com/article/china-fertilizers-quotas-idUSKBN2OQOKY>.
- Claessens, S. and S.R. Ghosh (2013), “Capital flow volatility and systemic risk in emerging markets: The policy toolkit”, in *Dealing with the Challenges of Macro Financial Linkages in Emerging Markets*, World Bank Group, <https://doi.org/10.1596/978-1-4648-0002-3>, pp. 91-118.

- Coman, A. and S.P. Lloyd (2022), “In the face of spillovers: Prudential policies in emerging economies”, *Journal of International Money and Finance*, Vol. 122, <https://www.sciencedirect.com/science/article/abs/pii/S0261560621002059>.
- Comtrade (n.d.), *United Nations International Trade Statistics Database*, <https://comtradeplus.un.org/> (accessed on 1 February 2023).
- De Fiore, F., M.J. Lombardi and D. Rees (2022), “Inflation indicators amid high uncertainty”, *BIS Bulletin*, No. 60, Bank for International Settlements, <https://www.bis.org/publ/bisbull60.htm>.
- Draghi, M. (2014), “Monetary policy in the euro area”, speech at the Frankfurt European Banking Congress, 21 November, <https://www.ecb.europa.eu/press/key/date/2014/html/sp141121.en.html>.
- Ehrmann, M., D. Pfajfar and E. Santoro (2017), “Consumers’ attitudes and their inflation expectations”, *International Journal of Central Banking*, Vol. 13/1, <https://www.ijcb.org/journal/ijcb17q0a6.htm>.
- Erten, B., A. Korinek and J.A. Ocampo (2021), “Capital controls: Theory and evidence”, *Journal of Economic Literature*, Vol. 59/1, <https://www.aeaweb.org/articles?id=10.1257/jel.20191457>, pp. 45-89.
- Faccini, R., L. Melosi and R. Miles (2022), “The effects of the ‘Great Resignation’ on labor market slack and inflation”, *Chicago Fed Letter*, No. 465, <https://www.chicagofed.org/publications/chicago-fed-letter/2022/465>, pp. 1-7.
- FAO (2022a), *The State of Food Security and Nutrition in the World 2022: Repurposing Food and Agricultural Policies to Make Healthy Diets More Affordable*, Food and Agriculture Organization, International Fund for Agricultural Development (IFAD), UNICEF, World Food Programme (WFP), World Health Organisation (WHO), <https://www.fao.org/3/cc0639en/online/cc0639en.html>.
- FAO (2022b), “Impact of the Ukraine-Russia conflict on global food security and related matters under the mandate of the Food and Agriculture Organization of the United Nations (FAO)”, 13-17 June 2022, Food and Agriculture Organization, Rome, <https://www.fao.org/3/nj164en/nj164en.pdf>
- FAO (2022c), “The importance of Ukraine and the Russian Federation for global agricultural markets and the risks associated with the current conflict”, 25 March Update, Food and Agriculture Organization, Rome, <https://www.fao.org/3/cb9236en/cb9236en.pdf>.
- FAO (2022d), “Crop prospects and food situation #4, December 2022”, Food and Agriculture Organization, Rome, <https://www.fao.org/documents/card/en/c/cc3233en>.
- FAO (2011), *Global Food Losses and Food Waste: Extent, Causes and Prevention*, Food and Agriculture Organization, Rome, <https://www.fao.org/sustainable-food-value-chains/library/details/en/c/266053/>.
- FAO-AMIS (n.d.), *Agricultural Market Information System* (database), <https://www.amis-outlook.org/> (accessed on 8 January 2023).
- FAO and WTO (2022), “Global fertilizer markets and policies: A joint FAO/WTO mapping exercise”, Food and Agriculture Organization and World Trade Organization, <https://www.fao.org/3/cc2945en/cc2945en.pdf>.
- FAOSTAT (n.d.a), “Suite of food security indicators” (database), Food and Agriculture Organization, Rome, <https://www.fao.org/faostat/en/#data/FS> (accessed on 8 January 2023).
- FAOSTAT (n.d.b), “Production indices” (database), Food and Agriculture Organization, Rome, <https://www.fao.org/faostat/en/#data/QI> (accessed on 8 January 2023).
- Fendoğlu, S. (2017), “Credit cycles and capital flows: Effectiveness of the macroprudential policy framework in emerging market economies”, *Journal of Banking & Finance*, Vol. 79, <https://www.sciencedirect.com/science/article/abs/pii/S037842661730064X>, pp. 110-128.
- FFPI (n.d.), *FAO Food Price Index* (database), Food and Agriculture Organization, Rome, <https://www.fao.org/worldfoodsituation/foodpricesindex/en/>.
- Filardo, A., G. Gelos and T. McGregor (2022), “Exchange-rate swings and foreign currency intervention”, *IMF Working Paper*, No. 2022/158, <https://www.imf.org/en/Publications/WP/Issues/2022/07/28/Exchange-Rate-Swings-and-Foreign-Currency-Intervention-521039>.
- Fratzscher, M., M. Lo Duca and R. Straub (2018), “On the international spillovers of US quantitative easing”, *The Economic Journal*, Vol. 128/608, <https://onlinelibrary.wiley.com/doi/abs/10.1111/ecoj.12435>, pp. 330-377.

- FRED (n.d.), FRED Economic Data (database), Federal Reserve Bank of St. Louis, <https://fred.stlouisfed.org/series/BAMLC0A4CBBB#>.
- Gali, J. (2015), *Monetary Policy, Inflation, and the Business Cycle: An Introduction to the New Keynesian Framework*, Princeton University Press, <https://press.princeton.edu/books/hardcover/9780691164786/monetary-policy-inflation-and-the-business-cycle>.
- Galí, J. and M. Gertler (1999), "Inflation dynamics: A structural economic analysis", *Journal of Monetary Economics*, Vol. 44/2, <https://www.sciencedirect.com/science/article/pii/S0304393299000239>, pp. 195-222.
- Giordani, P.E., N. Rocha and M. Ruta (2016), "Food prices and the multiplier effect of trade policy", *Journal of International Economics*, Vol. 101, <https://www.sciencedirect.com/science/article/abs/pii/S0022199616300484>, pp. 102-122.
- Gochoco-Bautista, M.S., J. Jongwanich and J.W. Lee (2012), "How effective are capital controls in Asia?", *Asian Economic Papers*, Vol. 11/2, [https://www.researchgate.net/publication/298098454\\_How\\_Effective\\_Are\\_Capital\\_Controls\\_in\\_Asia\\_Comments](https://www.researchgate.net/publication/298098454_How_Effective_Are_Capital_Controls_in_Asia_Comments), pp. 122-143.
- Gopinath G. (2022), "How will the pandemic and war shape future monetary policy?", remarks prepared for the Jackson Hole Symposium, 26 August, <https://www.imf.org/en/News/Articles/2022/08/26/sp-gita-gopinath-remarks-at-the-jackson-hole-symposium>.
- Goyal, A. and P. Parab (2021), "What influences aggregate inflation expectations of households in India?", *Journal of Asian Economics*, Vol. 72, <https://www.sciencedirect.com/science/article/abs/pii/S1049007820301408>.
- Holland, A.S. (1995), "Inflation and wage indexation in the postwar United States", *The Review of Economics and Statistics*, Vol. 77/1, <https://www.jstor.org/stable/2110003>, pp. 172-176.
- Hu, M., A.D. Lee and T.J. Putniņš (2021), "Evading capital controls via cryptocurrencies: Evidence from the blockchain", Social Science Research Network, [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3956933](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3956933).
- IIF (n.d.), IIF Data (database), Institute of International Finance, <https://www.iif.com/Research/Download-Data>.
- IFA (2022), "Public summary short-term fertilizer outlook 2022-2023", International Fertilizer Association, <https://api.ifastat.org/reports/download/13806>.
- IMF (2022), "Regional economic outlook. Asia and Pacific: Sailing into headwinds", *World Economic and Financial Surveys*, October 2022, International Monetary Fund, New York, <https://www.imf.org/-/media/Files/Publications/REO/APD/2022/October/English/text.ashx>.
- Jahhavi, R. (2022), "India restricts rice exports, could fuel food inflation", *Reuters*, 9 September, <https://www.reuters.com/world/india/india-imposes-20-duty-rice-exports-various-grades-2022-09-08/>.
- Jasova, M., R. Moessner and E. Takáts (2019), "Exchange rate pass-through: What has changed since the crisis?", *International Journal of Central Banking*, Vol. 15/3, <https://www.ijcb.org/journal/ijcb19q3a2.pdf>.
- Kajimoto, T. and L. Kihara (2022), "ADB head says FX intervention among tools for emerging Asia", *Reuters*, 25 September, <https://www.reuters.com/business/finance/adb-head-says-fx-intervention-among-tools-emerging-asia-2022-09-23/>.
- Kirman, A. (2021), "Rational expectations in a changing world", *Revue d'économie politique*, Vol. 131, <https://www.cairn.info/revue-d-economie-politique-2021-3-page-485.htm>, pp. 485-509.
- Koepke, R. (2019), "What drives capital flows to emerging markets? A survey of the empirical literature", *Journal of Economic Surveys*, Vol. 33/2, <https://onlinelibrary.wiley.com/doi/10.1111/joes.12273>, pp. 516-540.
- Kohlscheen, E. (2010), "Emerging floaters: Pass-throughs and (some) new commodity currencies", *Journal of International Money and Finance*, Vol. 29/8, <https://www.sciencedirect.com/science/article/abs/pii/S0261560610000768>, pp. 1580-1595.
- LSB (2023), *Report CPI January 2023*, Lao Statistics Bureau, <https://laosis.lsb.gov.la/>.
- Levin, A.T., F.M. Natalucci and J.M. Piger (2004), "The macroeconomic effects of inflation targeting", *Federal Reserve Bank of Saint Louis Review*, Vol. 86/4, <https://files.stlouisfed.org/files/htdocs/publications/review/04/07/LevinNatalucciPiger.pdf>, pp. 51-8.

- Martin, W. and K. Anderson (2012), “Export restrictions and price insulation during commodity price booms”, *American Journal of Agricultural Economics*, Vol. 94/2, <https://onlinelibrary.wiley.com/doi/abs/10.1093/ajae/aar105>, pp. 422-427.
- MAS (2022), “Survey of Professional Forecasters”, December, <https://www.mas.gov.sg/-/media/mas/epg/spf/2022/survey-writeup-dec-2022-web.pdf>.
- Nichols, M. (2022), “Black Sea grain export deal extended, but Russia wants more on fertiliser exports”, *Reuters*, 18 November, <https://www.reuters.com/world/un-secretary-general-says-black-sea-grain-deal-extended-2022-11-17/>.
- OECD (2021), *Strengthening Macroeconomic Policies in Emerging Asia: Adapting to Green Goals and Fintech*, The Development Dimension, OECD Publishing, Paris, <https://doi.org/10.1787/19901372>.
- Patel, N. and P. Cavallino (2019). “FX intervention: Goals, strategies and tactics”, *BIS Paper*, No. 104b, Bank for International Settlements, [https://www.bis.org/publ/bppdf/bispap104b\\_rh.pdf](https://www.bis.org/publ/bppdf/bispap104b_rh.pdf).
- Phimmahasay, K., Davading S., Martins P. M. G., and Manopiniwes C. (2022), *Lao Economic Monitor April 2022*, The World Bank, <https://pubdocs.worldbank.org/en/273661652363898384/Lao-Economic-Monitor-April-2022-final>.
- Reserve Bank of India (2023), *Households’ Inflation Expectation Survey*, January, <https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/IESHJAN2023151B07FF61E04131B71E7CCBAEB75271.PDF>.
- Sakudo, M. (2023), “Are Laos’s hydropower ambitions a Chinese ‘debt trap’?”, *Asia Pacific Foundation of Canada*, 6 Marc, <https://www.asiapacific.ca/publication/are-laos-hydropower-ambitions-chinese-debt-trap>
- Strangio, S. (2023), *Inflation in Laos continues to rise, reaches 23-year high*, *The Diplomat*, 08 February 2023, <https://thediplomat.com/2023/02/inflation-in-laos-continues-to-rise-reaches-23-year-high/>.
- Stubbington, L. (2022), “Bank of England begins selling bonds as it unwinds QE programme”, *Financial Times*, 1 November, <https://www.ft.com/content/64e5dcdd-42a8-4013-a3bd-75a62cf8e6dc>.
- UN (2022), “Global impact of the war in Ukraine: Billions of people face the greatest cost-of-living crisis in a generation”, *UN Global Crisis Response Group on Food Energy and Finance*, Brief No. 2, 8 June, [https://news.un.org/pages/wp-content/uploads/2022/06/GCRG\\_2nd-Brief\\_Jun8\\_2022\\_FINAL.pdf](https://news.un.org/pages/wp-content/uploads/2022/06/GCRG_2nd-Brief_Jun8_2022_FINAL.pdf).
- Von Luckner, C.G., C.M. Reinhart and K.S. Rogoff (2021), “Decrypting new age international capital flows”, *NBER Working Papers*, No. 29337, National Bureau of Economic Research, <https://www.nber.org/papers/w29337>.
- Weber M. et al. (2022), “Reality check: How people form inflation expectations and why you should care”, *Becker Friedman Institute Working Paper*, No. 2022-40, [https://bf.uchicago.edu/wp-content/uploads/2022/03/BFI\\_WP\\_2022-40.pdf](https://bf.uchicago.edu/wp-content/uploads/2022/03/BFI_WP_2022-40.pdf).
- WTW (2021), *Asia Pacific employers planning larger pay rises for 2022 as optimism returns*, *Willis Towers Watson survey finds*, Willis Towers Watson Data Services, 30 August, <https://www.wtwco.com/en-ID/News/2021/08/asia-pacific-employers-planning-larger-pay-rises-for-2022-as-optimism-returns-willis-towers-watson>.
- WTW (2022), *Tight labour market and inflation concerns continue to drive APAC employers to boost 2023 pay raises*, *Willis Towers Watson Data Services*, 1 August, <https://www.wtwco.com/en-TH/news/2022/08/tight-labour-market-and-inflation-concerns-continue-to-drive-apac-employers-to-boost-2023-pay-raises>.
- Yuan, S. et al. (2022), “Southeast Asia must narrow down the yield gap to continue to be a major rice bowl”, *Nature Food*, Vol. 3, <https://doi.org/10.1038/s43016-022-00477-z>, pp. 217-226.



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