1 The International Economy

- The global economic recovery from the pandemic broadened in Q4 2021, with the momentum carrying forward into early 2022. Recurring COVID-19 infection waves have had a significantly weaker impact on economic activity, as rising vaccination rates have facilitated transitions to an endemic phase of the virus in many jurisdictions. The pent-up demand released has been reinforced by the flow-through of previous policy support.

- A pickup in inflation has accompanied the rebound in spending and production activity in many economies since mid-2021. Higher inflation has partly reflected inelastic short-term supply arising from production bottlenecks and frictions. However, tightening labour markets and rising core inflation in some economies suggest a broader inflationary process is taking hold.

- The outbreak of the Russia-Ukraine conflict in February added a further powerful impulse to inflation via steep increases in a range of commodity prices, including energy and grains, reflecting both countries' important roles in the world supply of these products.

- Global inflation is expected to reach 4.0% in 2022, the highest rate since 2008, but should ease to 2.2% in 2023 as supply challenges are addressed and major central banks withdraw policy accommodation. Conversely, global growth is projected to ease to 3.9% in 2022 from 5.4% in 2021 as the post-pandemic recovery matures and the price shock squeezes real incomes, although elevated savings offer some buffer to demand. Inflation in Asia ex-Japan is expected to be weaker through this cycle, as the region's persistent negative output gaps will dampen wage and price growth.

- Considerable uncertainty surrounds the outlook. A key risk is that the current upsurge in inflation could become embedded in price and wage settings, worsening the output sacrifice required to restore price stability. The pandemic and the Russia-Ukraine conflict could impose further shocks on supply chains and prices, increasing the risk of a de-anchoring of inflation expectations. Higher corporate and sovereign debt levels in many countries imply heightened financial vulnerabilities that could be tested as monetary conditions tighten.

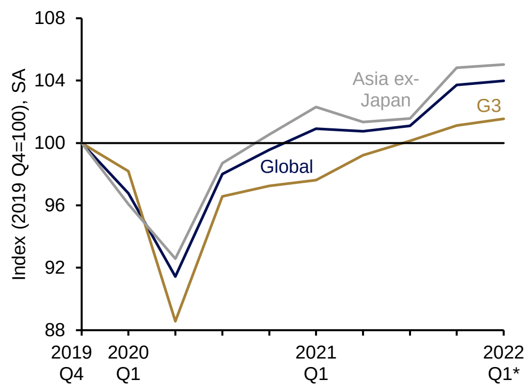
1.1 Global Economy

Strong global growth has led to a notable pickup in inflation

The global recovery strengthened markedly in Q4, with the growth momentum carrying through into early 2022 **(Chart 1.1)**. COVID-19 infections currently have a significantly weaker dampening effect on population mobility and thus on economic activity in many jurisdictions compared with previous upsurges, as most countries have expanded vaccine coverage and shifted towards treating the virus as endemic. This has released pent-up demand, reinforced by the flow-through of fiscal support disbursed in 2020 and 2021, while monetary policy settings in most major economies remain highly accommodative. Accordingly, global GDP expanded strongly by 2.6% q-o-q SA in Q4 2021, accelerating from 0.4% in Q3.[1]

Chart 1.1 Global economic activity rose decisively above its pre-pandemic level in late 2021

Quarterly GDP

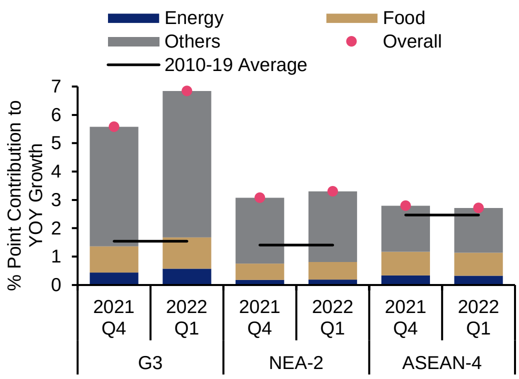


Source: Haver Analytics and EPG, MAS estimates

* Estimates

Chart 1.2 Inflation had risen sharply since mid-2021, except in ASEAN*

CPI inflation



Source: Haver Analytics and EPG, MAS estimates

* The G3 grouping consists of the Eurozone, Japan and the US, the NEA-2 refers to South Korea and Taiwan, and the ASEAN-4 comprises Indonesia, Malaysia, the Philippines and Thailand

A sharp rise in inflation has followed the firm recovery. The global headline rate reached 4.6% y-o-y in Q1 2022, the strongest pace since Q3 2008, up from 3.0% in Q3 2021. These price pressures reflect to some extent the inelasticity of supply, traceable in turn to various bottlenecks. For example, protracted local-level health measures in some Asian countries have disrupted key nodes in regional and global production chains. Labour force participation rates have also remained well below the pre-pandemic level in some economies, in particular the US.

However, it has become increasingly evident that a broader inflationary process has taken hold, as the strength of expansions has rapidly eroded spare capacity in many economies. Inflation has accelerated most sharply in the major AEs **(Chart 1.2)**, where

[1] Global and regional GDP growth aggregates are weighted by economies' shares in Singapore's NODX, unless noted otherwise.

recoveries are more mature compared to Asia ex-Japan.[2] As at end-2021, output in the G3 was only 1.3% below the level projected before the outbreak of the pandemic, while in Asia ex-Japan, it was 3.3% lower.

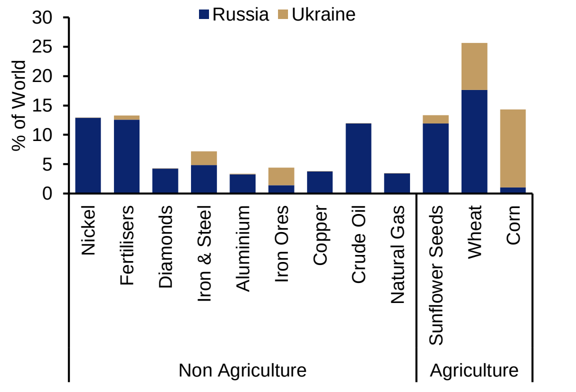
The Russia-Ukraine conflict has intensified price pressures

The realignment of demand and supply in the global economy following the pandemic was still incomplete when the outbreak of war between Russia and Ukraine on 24 February inflicted a further shock. Geopolitical developments, including the duration and intensity of the conflict, are key uncertainties confronting the economic outlook.

Thus far, the main impact on the global economy has come through a sharp rise in global commodity prices, particularly in energy, fertilisers, nickel and grains, reflecting Russia and Ukraine's significant role in the supply of those products **(Chart 1.3)**. Year-to-date, prices of Brent crude oil, natural gas and wheat are up 33%, 80% and 43% respectively, although with significant volatility (since the conflict began, the Brent crude oil price has ranged between US$97 and US$134 per barrel). Higher commodity prices have exacerbated the global inflationary impulse that had already emerged in 2021, and will further push up production costs and consumer prices. The manufacturing PMIs indicated an immediate impact from the conflict through higher input costs in March **(Chart 1.4)**, with the G3 flash PMI showing a further increase in April.

Chart 1.3 Russia and Ukraine are major exporters of some commodities

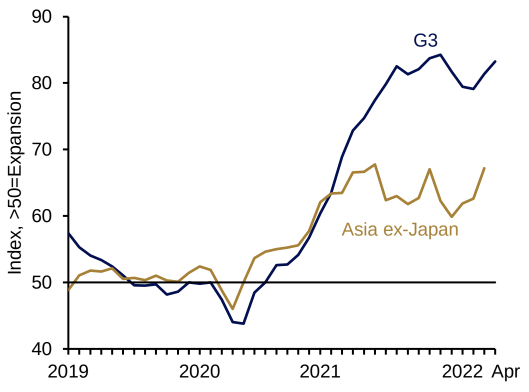
Exports



Source: International Trade Centre Trade Map and EPG, MAS estimates

Chart 1.4 Supply constraints have tightened following the outbreak of the conflict

Manufacturing PMI input prices



Source: IHS Markit and EPG, MAS estimates

Household purchasing power has been reduced by the acceleration in inflation which, coupled with higher economic uncertainty, has contributed to weaker consumer sentiment. In the US, the University of Michigan's consumer sentiment index was 65.7 in April 2022, considerably below the 2019 average of 96.0. In the Eurozone, the consumer confidence release for March showed a large 10 points decline to −18.7, just half a point smaller than the

[2] Asia ex-Japan refers to China, Hong Kong SAR, India, Indonesia, Malaysia, the Philippines, South Korea, Taiwan, Thailand and Vietnam.

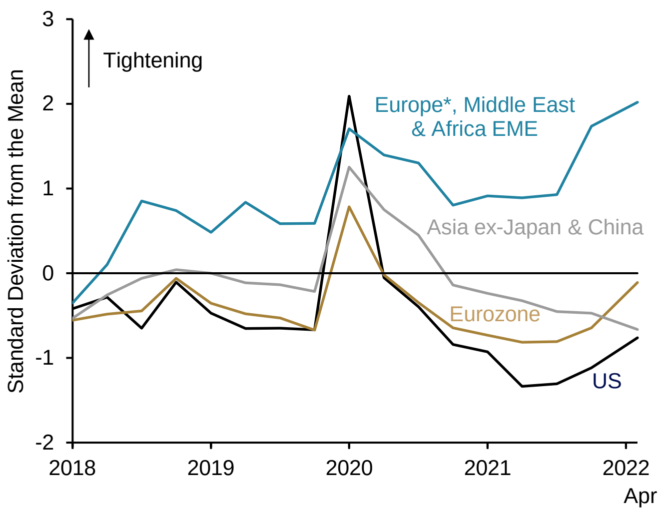
largest monthly drop ever recorded in April 2020, with the April flash estimate remaining weak at −16.9.

The potential for direct spillovers is limited by the small size of the Russian and Ukrainian economies (just 2% of global GDP in aggregate). Exports to the two countries account for just 1.2% and 0.3% respectively of the world's total exports. Cross-border financial linkages are also very limited. However, the two countries are important suppliers of some niche inputs in global supply chains. Russia accounts for 37% of global production of palladium[3], a key input in automotive manufacturing, while Ukraine is the dominant global producer of semiconductor-grade neon gas. Prolonged disruption to the supply of such inputs could exacerbate frictions that persist in automobile and electronics supply chains.

Global financial conditions have tightened since the start of 2022 against the backdrop of heightened geopolitical risk and expectations of faster monetary policy normalisation by major central banks. However, there are disparities across regions. Financial conditions remain accommodative in the US and the Eurozone, but are tightening sharply in emerging economies in Europe (excluding Russia and Ukraine), the Middle East and Africa, as a result of higher domestic policy rates and a rise in risk premia following the outbreak of the Russia-Ukraine conflict. In comparison, financial conditions in Asia ex-Japan have remained loose given the region's much weaker economic and financial linkages to Russia and Ukraine **(Chart 1.5)**.

Chart 1.5 Global financial conditions have generally tightened, except in Asia

Financial Conditions



Source: IMF

* Excluding Russia and Ukraine

Global growth is still expected to outpace trend in 2022, but uncertainty has risen

The global economy is forecast to grow at an above-trend pace of 3.9% in 2022 **(Table 1.1)**. While real income gains are likely to be dampened in most major economies by the

[3] U.S. Geological Survey (2022), "Mineral Commodity Summaries: 2022", January 31.

acceleration of price increases, households are expected to use the substantial savings accumulated during the pandemic to buffer their consumption to some extent. Resilient final demand in the AEs will in turn support manufacturing and trade in Asia ex-Japan. In addition, growth in Asia ex-Japan is expected to be underpinned by the continued recovery in domestic demand, which has so far lagged the AEs.

Table 1.1 Global GDP growth, NODX-weighted

	QOQ SA (%)			Annual (%)		
	2021 Q4	2022 Q1*	2022 Q2*	2021	2022*	2023*
G3	1.0	0.4	0.5	4.6	3.0	2.3
Asia ex-Japan	3.2	0.2	1.2	5.7	4.4	4.7
ASEAN-5	5.2	0.2	1.7	3.2	5.3	5.3
Global	**2.6**	**0.3**	**1.0**	**5.4**	**3.9**	**3.9**

Source: Haver Analytics and EPG, MAS estimates

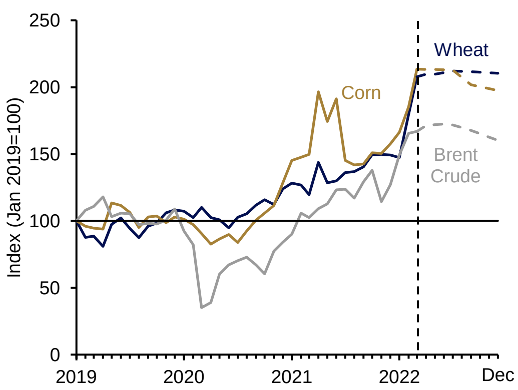
Note: The G3 grouping refers to the Eurozone, Japan and the US, while the ASEAN-5 are Indonesia, Malaysia, the Philippines, Thailand and Vietnam. Asia ex-Japan comprises China, Hong Kong SAR, India, South Korea, Taiwan and the ASEAN-5. All aggregates are weighted by country shares in Singapore's NODX.

* EPG, MAS forecasts

Global inflation is projected to rise to 4.0% in 2022, from 2.8% in 2021. Headline inflation rates will be lifted by high global commodity prices, with futures markets suggesting prices will generally remain above their 2021 averages throughout 2022 **(Chart 1.6)**. The baseline expectation is that inflationary momentum will be restrained by the withdrawal of monetary policy accommodation, assisted by some normalisation in commodity prices later in 2022, including from a progressive resolution of supply-side issues. Accordingly, global inflation is projected to fall back to 2.2% in 2023.

Chart 1.6 Commodity prices are expected to stay elevated

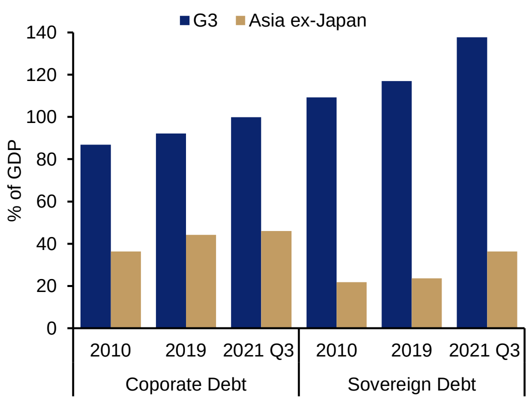
Commodity spot and futures prices



Source: Bloomberg and EPG, MAS estimates

Chart 1.7 Corporate and sovereign debt ratios have risen

Debt as a % of GDP



Source: BIS, IMF WEO and EPG, MAS estimates

Considerable uncertainty surrounds the economic outlook. A key risk stems from the duration and intensity of economic spill-overs from the Russia-Ukraine conflict, relating both to the course of the conflict itself and associated policy actions by other states, including sanctions targeted at trade or financial flows.

The pandemic also remains an important, albeit reduced source of uncertainty. New, more dangerous and vaccine-resistant variants could emerge. There is a more proximate risk to activity in countries where recurrent public health measures, even if relatively narrow in geographic application, could have a disproportionate impact on the global economy if they affect key production or logistics centres and intensify supply frictions.

High inflation is itself an important source of risk. The current cost impulse could become embedded through price and wage settings, resulting in a more pernicious inflationary impact. This could in turn necessitate tighter monetary policy and a more costly output sacrifice to restore price stability. Aforementioned risks to supply from the Russia-Ukraine conflict and the pandemic could, if realised, manifest as further price shocks that might in turn affect the stability of inflation expectations and worsen the short-term trade-off between output and inflation confronting policymakers.

Downside risks to activity may also emerge through the financial channel. The global financial system has been able to absorb the recent succession of economic shocks and shifts in financial conditions thus far without disjuncture. However, vulnerabilities have risen following growth in corporate and sovereign indebtedness during the pandemic **(Chart 1.7)**, partly as a result of debt moratoriums and fiscal stimulus programmes. Should financial conditions tighten more sharply than expected, debt distress or other forms of market dysfunction could emerge.

1.2 The G3 Economies

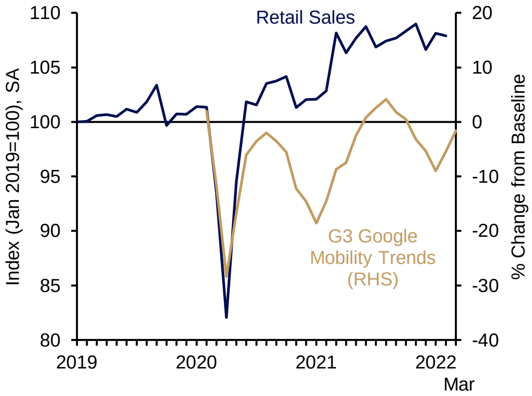
Price pressures have taken hold more firmly in the G3

Output in the G3 expanded by 1.0% q-o-q SA in Q4 2021, growing above trend for the third consecutive quarter. COVID-19 infections surged in Q1, but compared with previous waves, population mobility declined to a smaller degree, and the impact on activity was much more muted. Retail sales in the G3 remained resilient, rising by an average of 0.5% in Jan–Feb **(Chart 1.8)**. Economic activity remained robust in April, with the G3 composite flash PMI easing only marginally to 54.4, from 54.8 in March. Manufacturing has held up well in most countries despite concerns over supply disruptions due to the Russia-Ukraine conflict, while the relaxation of remaining social restrictions has continued to support services.

Inflation in the G3 has increased markedly since mid-2021, averaging 6.8% y-o-y in Q1 2022, the highest rate reached since 1982. Rising energy prices have played a role, but underlying inflationary pressures have strengthened as well, evidenced by the rise in core inflation to 4.8% in the same period (the highest in 30 years). Labour markets have tightened in the US and to a lesser extent in the Eurozone. In the US, slack has been diminished not only by the robust demand recovery but by the sluggish reversion in labour force participation to its pre-pandemic level. Labour market tightening is evident in the 0.6% point rise in the vacancy/unemployment ratio since 2019. US hourly earnings rose by a monthly average of 0.37% in Q1 2022, compared to an average of 0.24% in 2019 **(Chart 1.9)**. While wage growth has yet to pick up in the Eurozone, the unemployment rate fell to 6.9% in February 2022, below the 2019 average of 7.6%. The rise in inflation has been more measured in Japan due to greater remaining economic slack than in the US or Eurozone, reinforced by an increase in labour force participation, which was in turn supported by employment subsidies offered by the government.

Chart 1.8 Retail sales in the G3 remained resilient

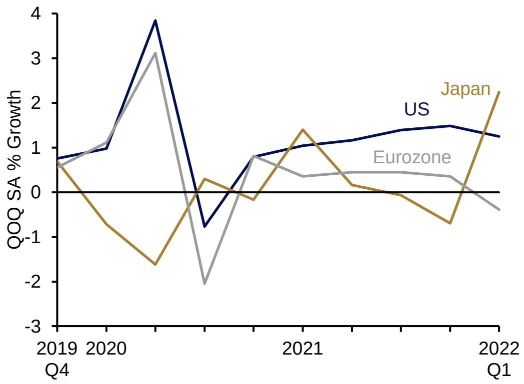
Indices of retail sales and population mobility



Source: Haver Analytics, Google Mobility Reports and EPG, MAS estimates

Chart 1.9 Labour market conditions have tightened, particularly in the US

Sequential wage growth in the G3



Source: Haver Analytics, and EPG, MAS estimates

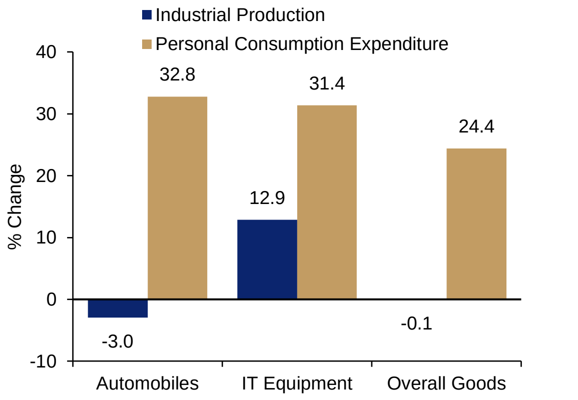
In the US, the release of pent-up demand as the economy reopened, coupled with limited supply of new vehicles due to semiconductor shortages, led to large gains in used vehicle prices, which contributed 1.4% points to the 6.5% y-o-y core inflation rate in March 2022. The rise in services prices has been more moderate, in part due to a less severe labour supply-demand imbalance compared to that observed in manufacturing. As at March 2022, employment in the services sector had recovered to 0.6% above the pre-pandemic (2019 average) level, while that in manufacturing was still 1.1% below.

Demand patterns have shifted due to the pandemic, as households reduced consumption of services in favour of goods, for example electronics products used for home entertainment and working. Low interest rates may also have contributed to higher demand for durable goods such as automobiles. On net, the result has been the emergence of large demand-supply imbalances. For example, output of the US information processing and equipment sectors expanded at less than half the rate of the increase in the domestic demand for these products in 2020–21. Likewise, US production of motor vehicles fell, while automobile demand rose by a third over the same period **(Chart 1.10)**.

These imbalances have spilled over via the US trade account. Countries that were relatively quick to restore production after the outbreak of COVID-19 in 2020, including China and Vietnam, gained significant market share in the US, despite increases in US tariffs on the former **(Chart 1.11)**. China's share in US imports of computers rose from 36% in 2019 to 53% in 2021. While US consumers have been gradually shifting demand back toward services with the removal of public health restrictions, still-firm overall demand and lingering domestic supply constraints are likely to support US goods import demand in the near term.

Chart 1.10 The recovery in production has not kept up with strong demand growth in the US

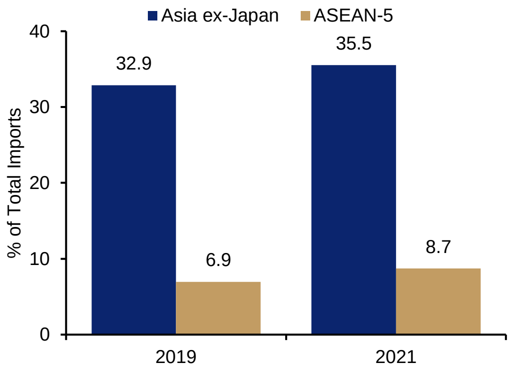
US personal consumption expenditure and industrial production growth, Q4 2021 relative to Q4 2019



Source: Federal Reserve Bank of St. Louis, Bureau of Economic Analysis and EPG, MAS estimates

Chart 1.11 Asia ex-Japan gained market share in US imports during the pandemic

Asia ex-Japan and ASEAN-5 market shares in US imports

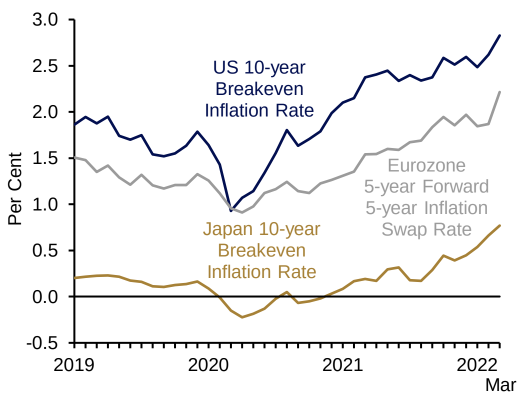


Source: US Census Bureau and EPG, MAS estimates

Inflation in the G3 is projected to stay elevated at an average rate of 5.3% in 2022, before moderating to 2.1% in 2023. Inflation expectations have risen, although they remain broadly consistent with or below central banks' inflation targets over the medium term **(Chart 1.12)**. Even if commodity prices were merely to stabilise rather than fall back in the remainder of 2022, their impact on year-on-year inflation will fade, which should help to keep expectations anchored. More fundamentally, the withdrawal of monetary accommodation in 2022–23 is expected to restrain price pressures in the medium term. However, there is substantial uncertainty surrounding the inflation outlook, given the difficulty of ascertaining the impact of the pandemic on economic slack, and the risk of further supply shocks from the pandemic and the Russia-Ukraine conflict.

Chart 1.12 Inflation expectations in the G3 have risen further

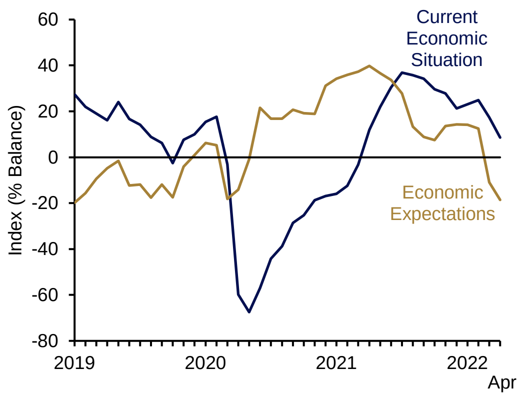
Breakeven inflation rates and forward swap rates



Source: Bloomberg

Chart 1.13 Current and future economic sentiments have weakened

NODX-weighted G3 Sentix Economic Index



Source: Haver Analytics, EPG, MAS estimates

GDP growth in the G3 is projected to remain above trend at 3.0% in 2022, and to moderate to 2.3% in 2023. However, high inflation in the US and the Eurozone will continue to weigh on real incomes, which is likely to slow consumer spending growth. Economic sentiment has also deteriorated following the outbreak of the Russia-Ukraine conflict **(Chart 1.13)**. Real income erosion will dampen final demand, although the impact could be attenuated by the potential for households in the AEs to draw on the substantial savings built up during the pandemic amounting to 23% of G3 GDP in 2021, compared with 13% at end-2019.

1.3 Asia ex-Japan

Growth is expected to moderate, while the remaining economic slack should keep inflation relatively contained

Economic growth in Asia ex-Japan picked up strongly, from 0.2% q-o-q SA in Q3 2021 to 3.2% in Q4, following the abatement of the Delta virus wave and relaxation of public health measures. The advent of the Omicron variant early this year dampened growth, but the impact on the region has been smaller than during previous waves of infections. Vaccination rates in the region have increased significantly, and more countries are transiting to an endemic phase. Consequently, retail sales[4] have been relatively resilient during the Omicron wave, rising by 0.7% in Jan–Feb 2022 from the Q4 2021 average level, and reaching 3% above pre-pandemic (end-2019) levels in February.

GDP growth in Asia ex-Japan is expected to slow from 5.7% in 2021 to a still-robust 4.4% this year. Domestic demand will be supported by further economic re-opening, while easing international travel restrictions will buoy tourism. However, goods export growth in the region is projected to moderate. Asia ex-Japan's new export orders PMI sub-index decreased below the 50-point threshold in March, with the more electronics-reliant NEA-2 registering the sharpest declines. This weakening may partly reflect some rebalancing towards services demand in the AEs. However, the sudden decline could also point to the growth slowdown and near-term supply bottlenecks observed in China, where public health measures have weighed on domestic demand and contributed to production and logistics disruptions.

China's imports slowed in H2 2021 **(Chart 1.14)**. Its property market downturn in the latter half of last year had dampened imports from commodity producers in Asia ex-Japan. China's demand for machinery and equipment also eased, as supply bottlenecks related to mobility restrictions imposed to contain the Delta wave in August 2021, as well as the severe energy shortage experienced last Sep–Oct, constrained production. China's import demand softened further in early 2022.

The regional spillovers from these developments have been significant, given China's growing importance as a trade partner since the GFC. For the ASEAN-5 economies, gross exports to China have risen from 4.4% of GDP in 2010 to 7.2% in 2021, while for the NEA-2, exports to China are around one-tenth of GDP.

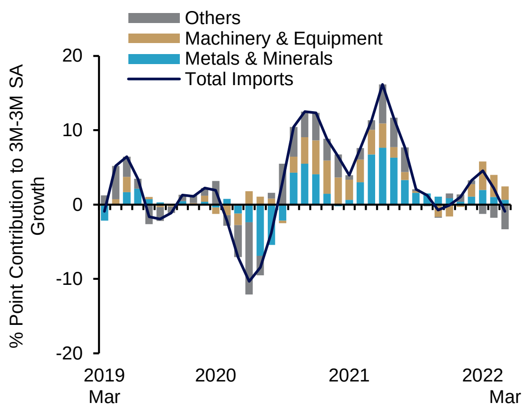
In the longer term, production linkages between China and Asia ex-Japan are expected to continue to deepen, reflecting several structural trends. First, the shift in Chinese manufacturing from labour-intensive sectors toward higher value-added activities has increased lower-cost neighbours' participation in supply chains. Reflecting this development,

[4] Based on data from Asia ex-Japan economies that publish retail sales statistics, namely, China, Hong Kong, Indonesia, South Korea, Taiwan and Vietnam.

the share of China's value added in ASEAN-5 manufacturing exports has risen steadily from 1.8% in 2000 to 9.5% in 2018. For ASEAN-5 electronics exports, China's value-added share has increased even more rapidly, from 1.9% in 2000 to 11.2% in 2018. Second, the rebalancing of growth drivers in China away from investment and exports towards consumption has contributed to a boost in regional exports to meet higher Chinese household demand. Chinese consumption accounted for 2.3% of the ASEAN-5's GDP in 2018, up from 1.5% in 2010 **(Chart 1.15)**. Third, deeper regional economic integration will be supported by multilateral initiatives such as the Regional Comprehensive Economic Partnership (RCEP) and the Belt and Road initiative (BRI). Fourth, global firms may increasingly prefer to diversify production within the region to improve the resilience of their production chains against country-specific shocks, even at some cost in production efficiency. However, it is more difficult to project the strength of this factor over time.

Chart 1.14 China's demand for commodities and machinery & equipment has slowed

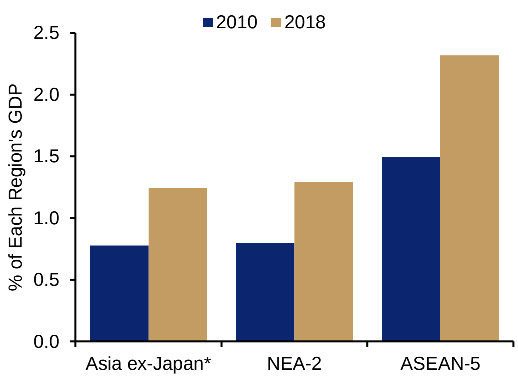
Contribution to China's import growth



Source: Haver Analytics and EPG, MAS estimates

Chart 1.15 Asia ex-Japan will gain from consumption-led growth in China

Value added embodied in China's final consumption



Source: OECD TiVA and EPG, MAS estimates

* Asia ex-Japan comprises the ASEAN-5, NEA-2 and India

Inflation in Asia ex-Japan has been more moderate compared to the G3 economies, with consumer prices rising by 2.3% y-o-y in Q1 2022, compared with 6.8% in the G3. This is partly because the region is emerging more slowly from the pandemic, thus carrying more slack. In addition, strong macroeconomic fundamentals have provided support to exchange rates, dampening imported inflation. For most of the ASEAN-5 economies, as well as the NEA-2, government tax relief, subsidies and price controls have also limited the passthrough from high global energy prices. In China, broader price pressures have been contained by some weakness in consumption growth.

Inflation in Asia ex-Japan remained mild at 2.6% y-o-y in March this year, but is expected to rise over the remainder of 2022. The reduction in slack attendant on the economic recovery will strengthen firms' pricing power. Further, there may be a lagged effect from the Russia-Ukraine conflict through the channel of higher costs for fertilisers. Lower fertiliser use could result in poorer crop yields and higher agricultural commodity prices later this year. Nonetheless, the pace of GDP growth is expected to be consistent with only a gradual narrowing of output gaps, and consequently headline inflation in Asia ex-Japan is expected to rise only moderately, from 2.1% in 2021 to 3.0% in 2022, before falling back to 2.3% in 2023.

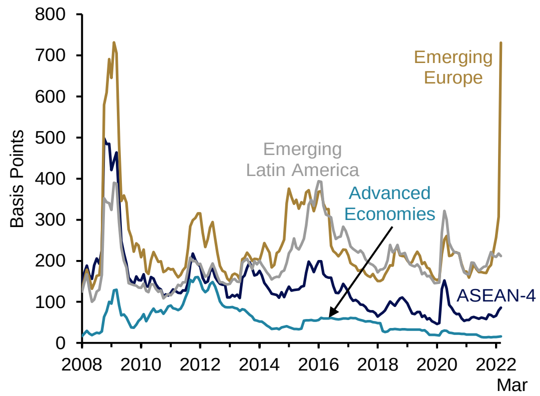
There are substantial risks to the region's economic outlook. In addition to the uncertainty associated with the war, emerging markets are also subject to the risk of disorderly capital flows, which may not stem from domestic circumstances.

Thus far, investor perceptions of ASEAN-4 sovereign risk have been relatively benign. Credit default swap spreads for 5-year government bonds, a measure of market perceptions of sovereign default risk, suggest that the COVID-19 crisis had only a transitory effect on investor perceptions of ASEAN-4. Default risk for the sub-region has been declining since mid-2020, restoring the previous long-term trend **(Chart 1.16)**.

The ASEAN-4 in general have sound economic fundamentals and adequate external buffers to cushion the economies from the negative effects of global financial market volatility. External balances have improved, compared to the period prior to the 2013 taper tantrum. Further, the ASEAN economies' foreign reserves are in excess of short-term external debt and have strengthened compared with previous stress episodes **(Chart 1.17)**.

Chart 1.16 Sovereign default risk perceptions of ASEAN-4 are relatively benign

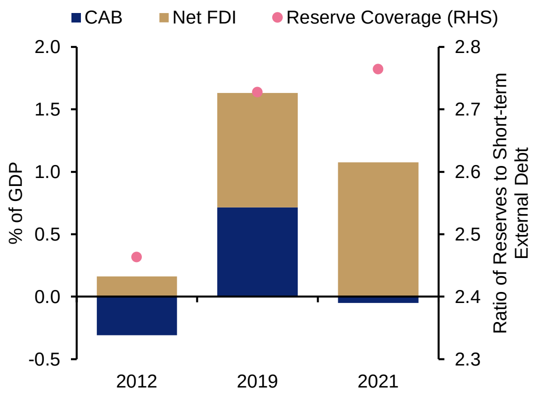
CDS 5-year spreads, nominal GDP-weighted



Source: Bloomberg and EPG, MAS estimates

Chart 1.17 ASEAN-4 countries have buffers against volatility in short-term capital flows

Current account balances, FDI flows, and Reserve Coverage, nominal GDP-weighted



Source: Haver Analytics and EPG, MAS estimates