# 2 Trade and Global Value Chains

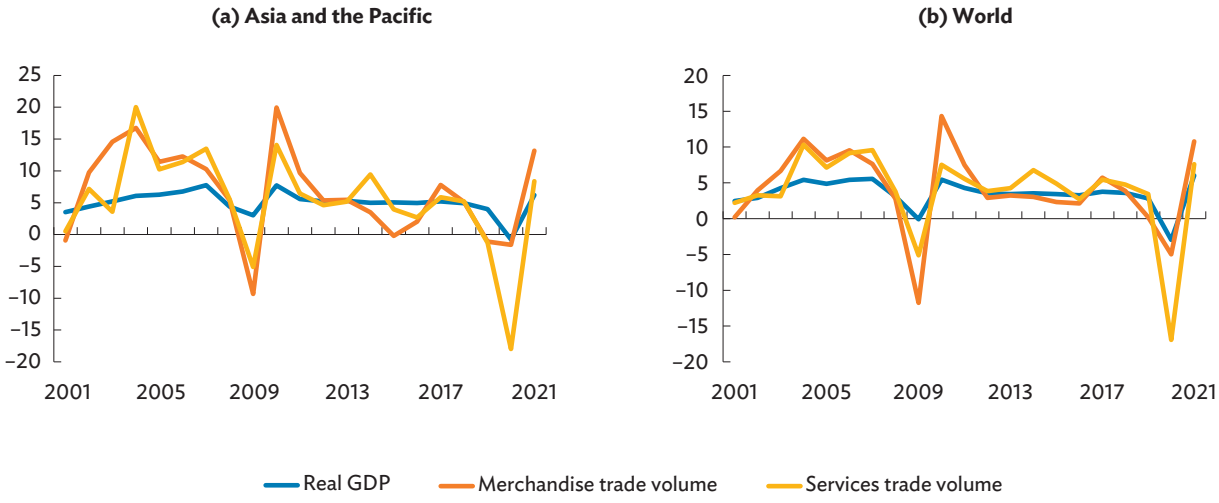
## Recent Trends in Asia's Trade

### Asia and the Pacific recovered strongly in 2021 as its merchandise and services trade grew rapidly.[14]

As the coronavirus disease (COVID-19) lockdowns eased, the Asian economies grew 6.2% in 2021, contributing 37% of the world's economic growth. The region's merchandise trade volume grew by 13.2%, faster than world merchandise trade growth at 10.8%. Services trade volume in the region grew by 8.4%, which was also faster than global services trade growth, at 7.6% (Figure 2.1).

In 2021, Asia surpassed its pre-pandemic gross domestic product (GDP) and merchandise trade levels, but its services trade has yet to fully recover. In the same year, the region's economy was 5.4% higher than its 2019 level, while trade in merchandise goods was 11.3% higher than in 2019. The region's trade in services was still 11.1% below its level of 2019. Services trade may have been hit harder than merchandise trade, as COVID-19 lockdowns

**Figure 2.1: Merchandise and Services Trade Volume and Real Output Growth— Asia and the Pacific versus World** (%, year-on-year)




GDP = gross domestic product.

Sources: ADB calculations using data from International Monetary Fund (IMF). World Economic Outlook October 2022 Database. https://www.imf.org/en/Publications/WEO/weo-database/2022/October; IMF. Direction of Trade Statistics. https://data.imf.org/dot; and WTO-OECD Balanced Trade in Services Dataset (BaTIS)—BPM6. https://www.wto.org/english/res_e/statis_e/trade_datasets_e.htm (all accessed December 2022).

[14] Asia and the Pacific, or Asia, consists of the 49 regional member economies of the Asian Development Bank (ADB). The composition of economies for Central Asia, East Asia, the Pacific and Oceania, South Asia, and Southeast Asia are outlined in ADB. Asia Regional Integration Center. Economy Groupings. https://aric.adb.org/integrationindicators/groupings.

curtailed people's movements and activities, hitting sectors such as tourism particularly hard.

Asia's economic recovery is driven particularly by the People's Republic of China (PRC), which accounted for 64.2% of total growth. The PRC also contributed 37.6% of the region's total trade growth in goods, and 44.6% of total trade growth in services (Box 2.1). The Association of Southeast Asian Nations (ASEAN), accounting for only 5.2% of Asia's economic growth, contributed 19.7% of Asia's growth in merchandise trade and 13.3% of its growth in services trade. Developed Asian economies—Australia, Japan, and New Zealand—accounted for 8% of the region's economic growth, 8.2% of trade in goods growth, and 5.3% of trade in services growth.

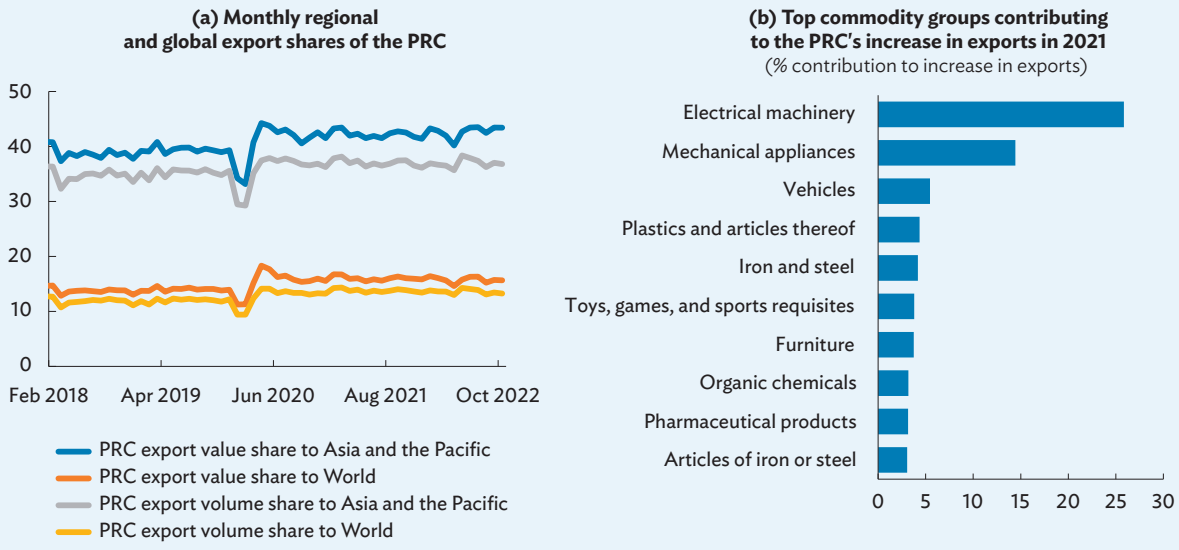
After the pandemic hit and Asia's merchandise trade shrank, it returned to positive growth in October 2020, peaking in June 2021 with double-digit growth rates. Nonetheless, Asia's trade growth slowed in the first months of 2022. The PRC seemed to lead the region with faster recovery and an earlier return to growth in July 2020, peaking in March 2021 in the double digits. However, the PRC's trade has been on the decline again since March 2022 amid renewed lockdowns to contain the COVID-19 Omicron variant and maintain its zero-COVID policy. Trade returned to growth in the PRC in July 2022 as it eased its lockdowns. Asia's trade values in particular seemed to be growing, with double-digit price increases since January 2021. The gap between trade value and volume growth is widening under persistent global inflationary pressures (Figure 2.2).

**Box 2.1: Growing Global and Regional Export Shares of the People's Republic of China**

Regional and global export value and volume shares of the People's Republic of China, in 2021, rose above their pre-pandemic levels. The economy's export value shares have been consistently higher than its trade volume shares.

In 2021, the electrical machinery and equipment commodity group contributed most to the economy's rising exports (26%) followed by mechanical appliances (14%) and vehicles (5%).

**PRC's Growing Global and Regional Export Shares**

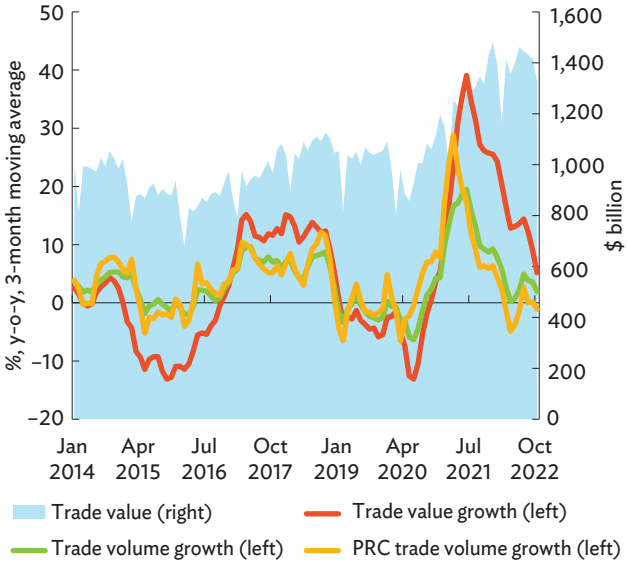



PRC = People's Republic of China.

Note: Contribution to increase in exports is computed by dividing the change in export level of a specific commodity with the change in total export level.

Sources: ADB calculations using CPB Netherlands Bureau for Economic Policy Analysis. World Trade Monitor October 2022. https://www.cpb.nl/en/world-trade-monitor-october-2022; and United Nations. Commodity Trade Database. https://comtrade.un.org (both accessed January 2023).

**Figure 2.2: Monthly Trade, by Value and Volume—Asia and the Pacific**




PRC = People's Republic of China, y-o-y = year-on-year.

Notes: Trade volume growth rates were computed using volume indexes. For each period and trade flow type (i.e., imports and exports), available data include indexes for the PRC and Japan, and aggregate indexes for selected Asia and Pacific economies: (1) advanced economies excluding Japan (Hong Kong, China; the Republic of Korea; Singapore; and Taipei,China); and (2) emerging economies excluding the PRC (India, Indonesia, Malaysia, Pakistan, the Philippines, Thailand, and Viet Nam). The aggregate index for Asia and the Pacific was computed using trade values as weights.

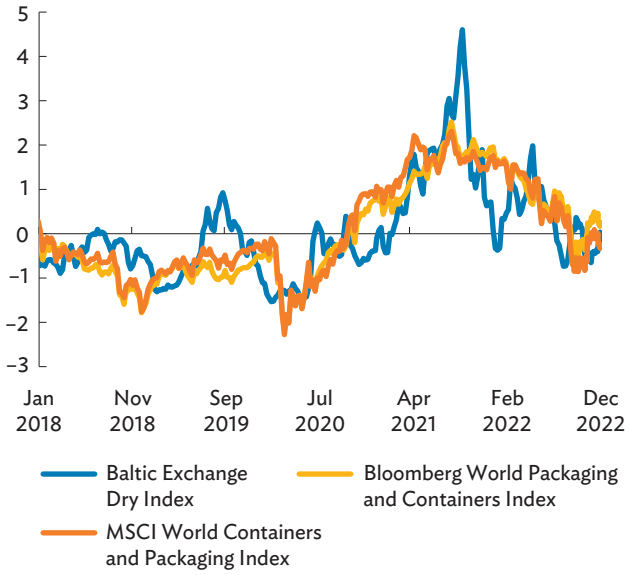
Sources: ADB calculations using data from CEIC Data Company; and CPB Netherlands Bureau for Economic Policy Analysis. World Trade Monitor. https://www.cpb.nl/en/world-trade-monitor-october-2022 (accessed January 2023).

Newly industrialized economies in Asia, and some ASEAN economies, sustained positive merchandise trade growth in 2021. Exports from Indonesia; the PRC; the Republic of Korea; Taipei,China; and Thailand managed to sustain growth in the first half of 2022, while growth rates in Hong Kong, China and Singapore declined. Imports of Hong Kong, China and the PRC declined in the first half of 2022, but increased in Indonesia; Malaysia; the Republic of Korea; Singapore; Taipei,China; and Thailand.

Rising shipping costs and freight rates could dampen global trade recovery, including Asia's. In 2021, container freight rates, as measured by Bloomberg and MSCI Containers and Packaging indexes, have been higher than in the past 3 years, before decreasing gradually by mid-June 2022. The cost of shipping goods, measured by Baltic Dry Index, peaked in the middle of 2021 then tapered off (Figure 2.3).

S&P Global Manufacturing Purchasing Managers' Index New Export Orders subindex of Asia and the world point to the deteriorating trade environment over time since 2021. This finding is corroborated by the Purchasing Managers' Index Stocks of Finished Goods subindex of the world, which indicates the possible piling up of stocks due to weaker global demand (Figure 2.4).

**Figure 2.3: Shipping Costs and Freight Rates—Weekly Indicators** (z-scores)




Notes: The indexes have been normalized using z-scores. Calculated mean and standard deviation of the indexes were for the period 5 January 2018 to 23 December 2022.

Sources: ADB calculations using data from Bloomberg; CEIC Data Company; Freightos. Freightos Baltic Index (FBX). https://fbx.freightos.com/ (accessed January 2023); and S&P Capital IQ Pro.

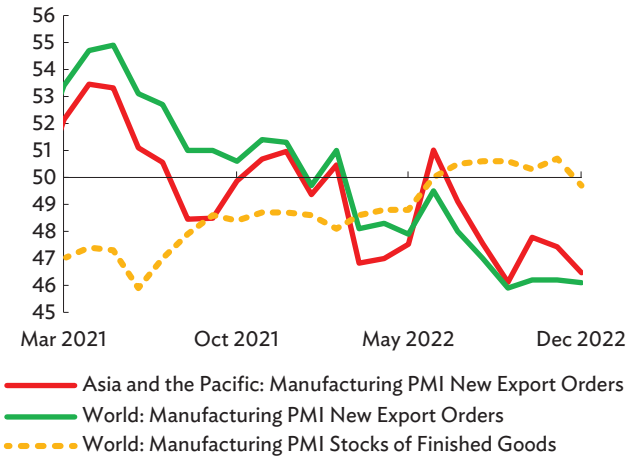
## Asia's trade is mainly driven by industrial production on both the export and import fronts.

Asia's exports are less aligned with the consumer confidence and industrial production in the United States (US) and the euro area, reflecting its diversified export destinations (Figures 2.5a and 2.5c). Between the two, the US and euro area industrial production indexes are more correlated to Asia's exports than consumer confidence, hinting at Asia's importance as intermediate

goods provider. For Asia's imports, between consumer confidence and industrial production, the latter is also more aligned with its imports, suggesting the region's greater significance as assembler (factory Asia) than as consumer (Figures 2.5b and 2.5d).[15]

For exports and imports at the commodity level, imports of consumer goods are well aligned with consumer confidence in Asia (Figure 2.6b), while exports are less so with consumer confidence in the US and the euro area (Figure 2.6a). For imports of intermediate and capital goods, Asia's industrial production is more aligned (Figures 2.6d and 2.6f), while the industrial production in the US and the euro area are modestly aligned with Asia's exports (Figures 2.6c and 2.6e).[16]

**Figure 2.4: Manufacturing Purchasing Managers' Index**




PMI = Purchasing Managers' Index.

Notes: The PMI new export orders index for Asia and the Pacific is the weighted average of economy-level indexes for Australia; Indonesia; India; Japan; Malaysia; the People's Republic of China; the Philippines; the Republic of Korea; Taipei, China; Thailand; and Viet Nam, using export values as weights. A PMI reading over 50 indicates growth or expansion of the manufacturing sector as compared with the previous month, while a reading under 50 suggests contraction.

Sources: ADB calculations using data from CEIC Data Company; and International Monetary Fund. Direction of Trade Statistics. https://data.imf.org/dot (all accessed January 2023).

## Asia's Intraregional Trade

### Asia's share of intraregional trade declined slightly in 2021 but was still higher than in the past 2 decades.

The intraregional merchandise trade linkages of Asia (including the PRC) weakened slightly to 58.2% in 2021 from 58.5% in 2020 as trade with outside the region grew faster than within the region.[17] The region's intraregional merchandise trade share remained higher than that of North America (39.9%) and lower than that of the European Union plus the United Kingdom (EU+UK) (63.6%). During the same year, the PRC maintained its role as a major trading partner of the region, as evidenced by the large gap between the intraregional trade shares of Asia with and without the PRC. This pattern is somewhat similar to the patterns of the intraregional trade in services shares from 2005 to 2019. Intraregional trade in services share of Asia (including the PRC) was also greater than that of North America and lower than that of the EU+UK (Figure 2.7). Moreover, the PRC was still a major trading partner, contributing to 22% of Asia's intraregional services trade. This is followed by Hong Kong, China (13%); Singapore (12%); Japan (11%); and the Republic of Korea (7%). The top sectors driving Asia's growth in intraregional trade in services in 2021 are wholesale trade, rental of machinery and equipment, and transport/travel services. Combined, these sectors contribute about 70% of Asia's intraregional trade in services growth.[18]

Excluding the PRC, Asia's intraregional merchandise trade share strengthened to 38.6% in 2021 from 38.2% in 2020. Asia (excluding the PRC) in 2019 enhanced trading services with itself, where intraregional trade in services share was at 34.8%, up from 34.3% in 2018 (Figure 2.7).

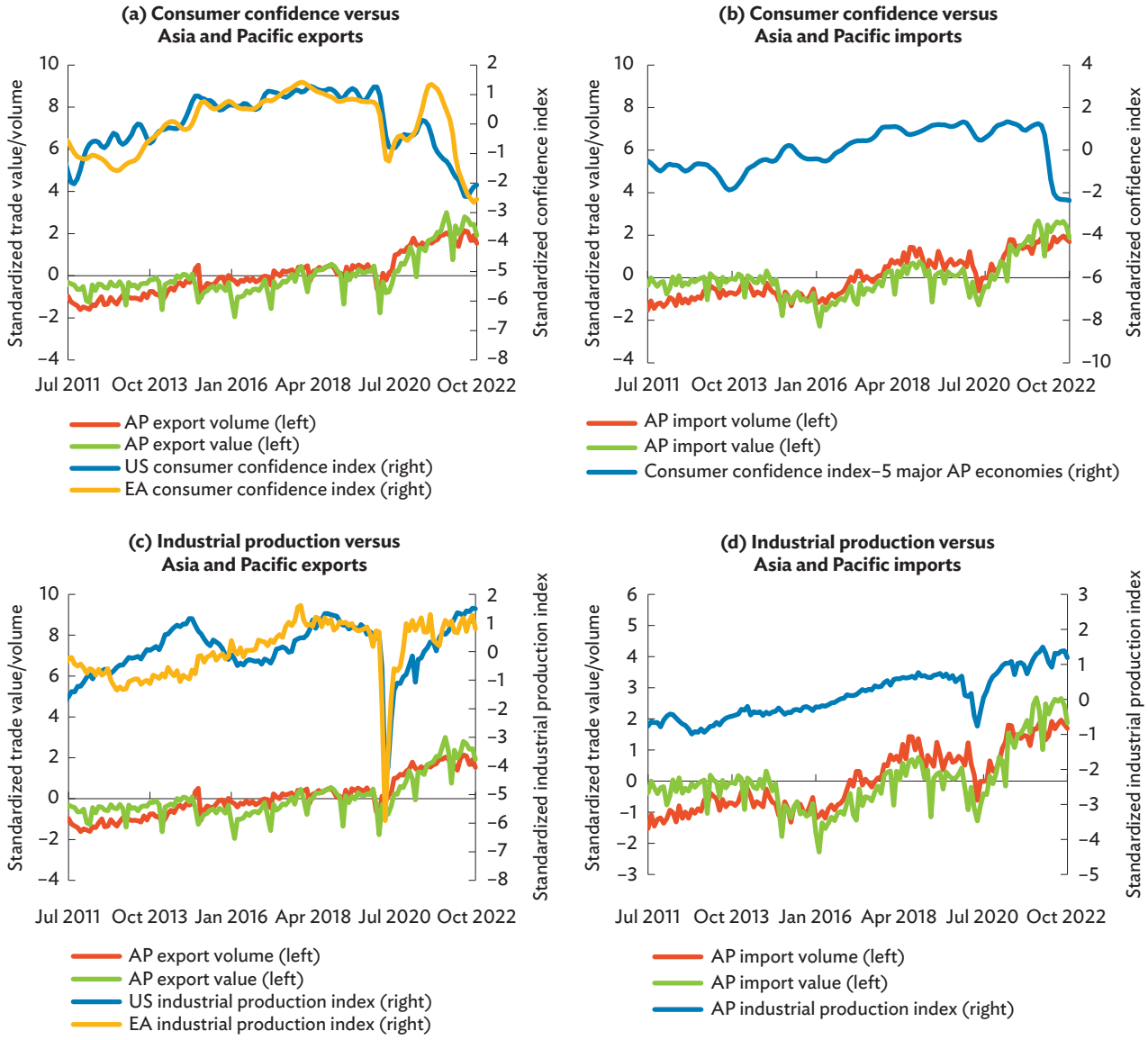
15 The correlation coefficient of Asia's export volume with US consumer confidence is −0.1, while that with the euro area is 0.2, which are both lower than that with Asia. The correlation coefficient of the region's export volume with the US industrial production index is 0.4, while that with the euro area is 0.5, which are both lower than that with Asia. The correlation coefficient of Asia's import volume with consumer confidence is 0.4, while that with the region's industrial production index is 0.9.

16 The correlation coefficient of Asia's consumption goods export volume with US consumer confidence is 0.03, while that with the euro area is 0.3, which are both lower than that with Asia. The correlation coefficient of Asia's consumption goods import volume with Asia's consumer confidence index is 0.8. The correlation coefficients of Asia's intermediate and capital goods export volumes with US industrial production index are both 0.3. The correlation coefficients of Asia's intermediate and capital goods export volumes with euro area industrial production index are both 0.5. These are all lower than that with Asia. The correlation coefficient of Asia's intermediate import volume with the region's industrial production is 0.7, while it is 0.9 with that of capital import volume.

17 See intraregional and extraregional trade values annual growth rate by region in online Annex 1a: https://aric.adb.org/pdf/aeir2023_onlineannex1.pdf.

18 ADB calculations using data from ADB. Multi-Regional Input–Output Tables.

**Figure 2.5: Confidence and Production Indexes versus Asia and Pacific Trade**



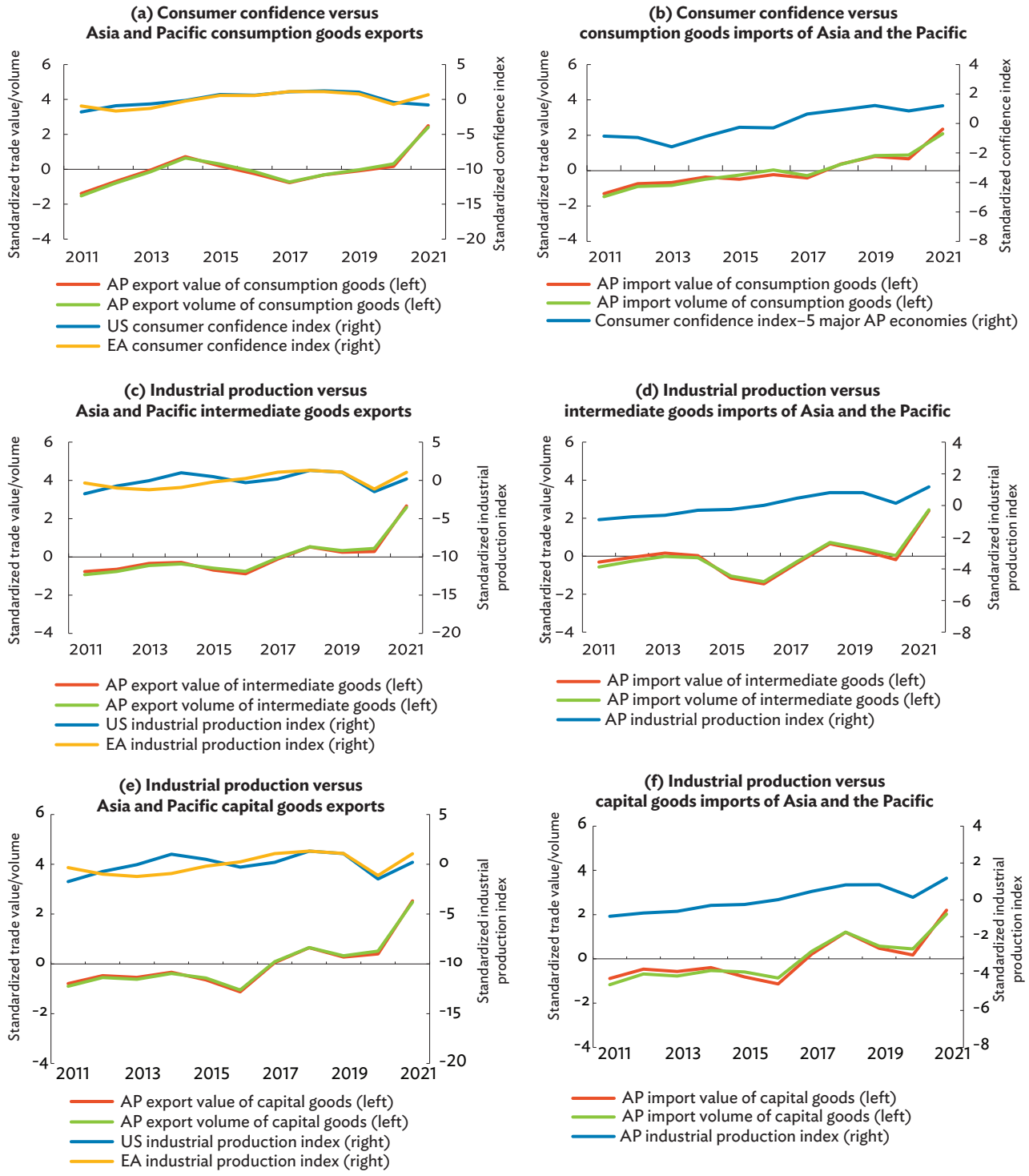

AP = Asia and the Pacific, EA = euro area, PRC = People's Republic of China, US = United States.

Notes: For export and import volume indexes, available data from CPB Netherlands Bureau for Economic Policy Analysis include indexes for Japan, the PRC, and aggregate indexes for selected Asia and Pacific economies: (1) advanced economies excluding Japan (Hong Kong, China; the Republic of Korea; Singapore; and Taipei,China); and (2) emerging economies excluding the PRC (India, Indonesia, Malaysia, Pakistan, the Philippines, Thailand, and Viet Nam). The aggregate export and import volume index for Asia and the Pacific was computed using trade values as weights and were subsequently standardized. The standardized industrial production index of Asia and the Pacific is the aggregated standardized industrial production indexes of India; Japan; the PRC; the Republic of Korea; Singapore; Taipei,China; and Thailand using gross domestic product as weights. The consumer confidence index of the 5 major Asian economies includes India, Indonesia, Japan, the PRC, and the Republic of Korea.

Sources: ADB calculations using data from CEIC Data Company; and CPB Netherlands Bureau for Economic Policy Analysis. World Trade Monitor. https://www.cpb.nl/en/world-trade-monitor-october-2022 (all accessed January 2023).

In 2021, Asia and the Pacific maintained its merchandise trade pattern observed in 2020. Asia and the Pacific (excluding the PRC) still traded merchandise mostly with itself. The PRC remains the region's most important trading partner. North America and the EU+UK followed respectively, with merchandise trade shares with these regions declining in 2021. The region's merchandise trade share with the rest of the world, on the other hand, increased in 2021. The merchandise trading pattern of the region shows how important intraregional trade is for Asia (Figure 2.8).

**Figure 2.6: Confidence and Production Indexes versus Asia and Pacific Trade by Commodity**



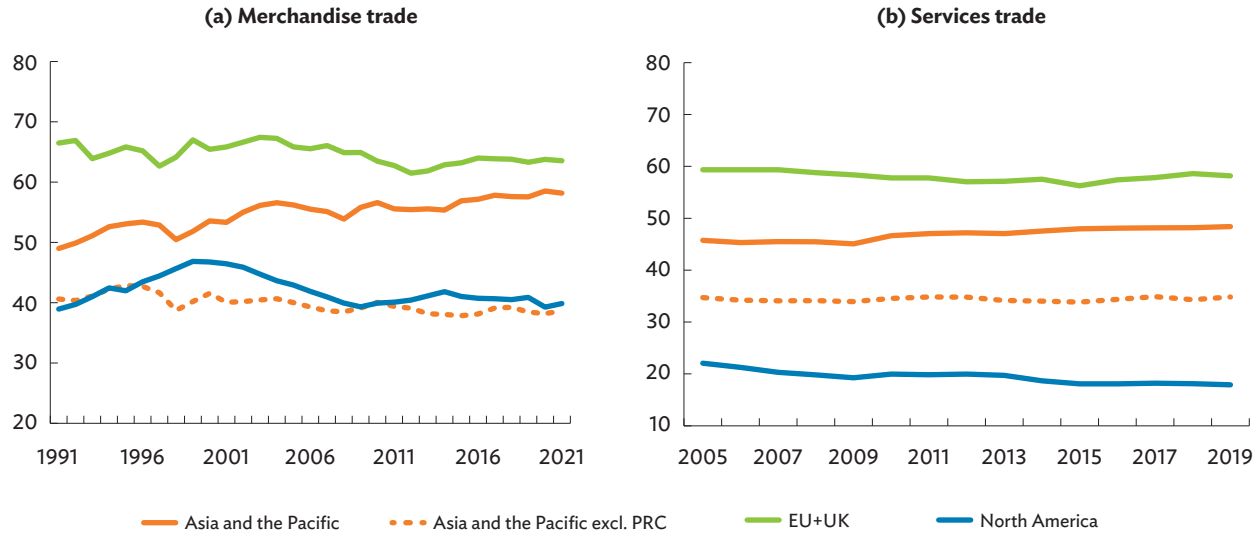

AP = Asia and the Pacific, EA = euro area, PRC = People's Republic of China, US = United States.

Notes: Export (import) volume was computed by deflating nominal export (import) values using export (import) price indexes. AP export and import volume includes Japan; Hong Kong, China; India; Indonesia; Malaysia; Pakistan; the Philippines; the PRC; the Republic of Korea; Singapore; Taipei,China; Thailand; and Viet Nam. Trade indicators were standardized after aggregation. AP standardized industrial production index is the aggregated standardized industrial production indexes of India; Japan; the PRC; the Republic of Korea; Singapore; Taipei,China; and Thailand using gross domestic product as weights. The consumer confidence index of the 5 major Asian economies includes India, Indonesia, Japan, the PRC, and the Republic of Korea.

Sources: ADB calculations using data from CEIC Data Company; and United Nations. Commodity Trade Database. https://comtrade.un.org (all accessed December 2022).

Similar to trade in merchandise goods, intraregional services trade remains vital for trade in services in Asia (excluding the PRC). In particular, the trade in services share of Asia (excluding the PRC) with the PRC grew to 10.6% in 2019 from 8.2% in 2005, while its share with the rest of the world grew to 14.3% in 2019 from 13.4% in 2005. For trade in services of Asia (excluding the PRC), the EU+UK and North America still account for a greater portion than for trade in goods (Figure 2.8).

**Figure 2.7: Intraregional Trade Share—Merchandise versus Services Trade** (%)

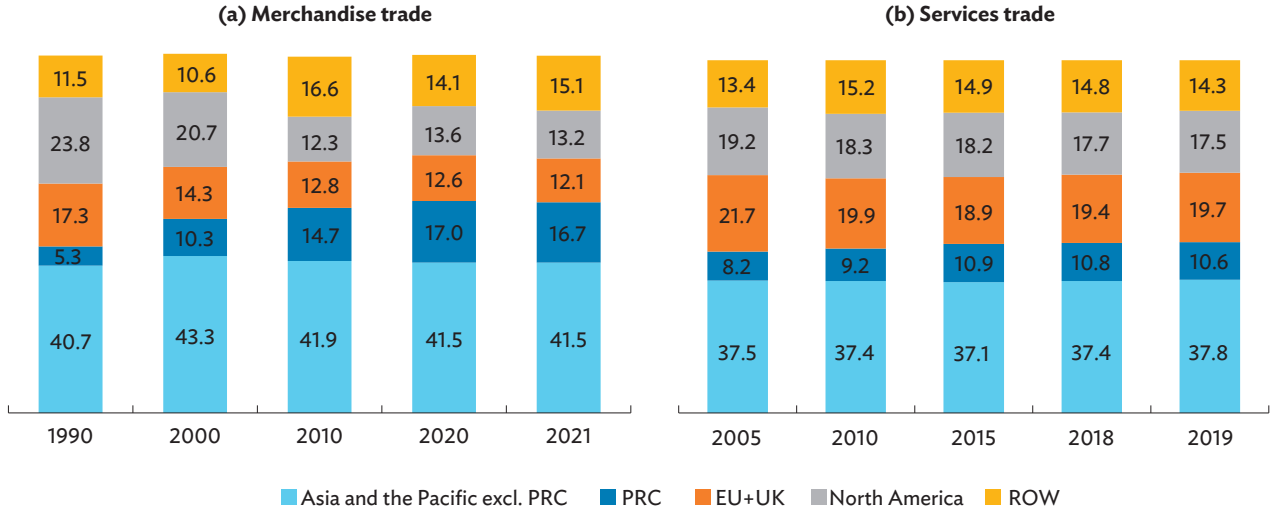



EU = European Union (27 members), PRC = People's Republic of China, UK = United Kingdom.

Notes: Values expressed as percentage of the region's total merchandise trade (sum of exports and imports). North America covers Canada, Mexico, and the United States.

Sources: ADB calculations using data from International Monetary Fund. Direction of Trade Statistics. https://data.imf.org/dot; and WTO-OECD Balanced Trade in Services Dataset (BaTIS)—BPM6. https://www.wto.org/english/res_e/statis_e/trade_datasets_e.htm (both accessed December 2022).

**Figure 2.8: Merchandise and Services Trade of Asia and the Pacific, By Partner** (% of total)




EU = European Union (27 members), PRC = People's Republic of China, ROW = rest of the world, UK = United Kingdom.

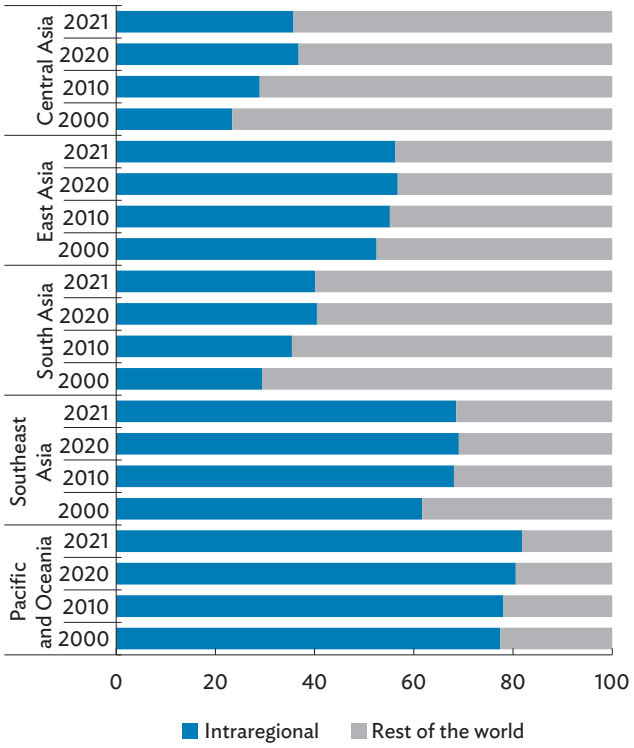
Notes: Values expressed as percentage of the region's total merchandise trade (sum of exports and imports). North America covers Canada, Mexico, and the United States.

Sources: ADB calculations using data from International Monetary Fund. Direction of Trade Statistics. https://data.imf.org/dot; and WTO-OECD Balanced Trade in Services Dataset (BaTIS)—BPM6. https://www.wto.org/english/res_e/statis_e/trade_datasets_e.htm (both accessed December 2022).

### Intraregional trade linkages strengthened in the Pacific and Oceania in 2021.

In intraregional merchandise trade shares by Asian subregion, only the Pacific and Oceania region grew in 2021. By magnitude, the Pacific and Oceania still had the highest intraregional trade share in 2021, followed by Southeast Asia and East Asia. This 2021 intraregional trade share of the Pacific and Oceania was its highest since 2000. South Asia and Central Asia, however, continued to post intraregional trade shares below 50% (Figure 2.9).

**Figure 2.9: Intraregional Trade Shares by Asian Subregion** *(%)*




Source: ADB calculations using data from International Monetary Fund. Direction of Trade Statistics. https://data.imf.org/dot (accessed December 2022).

Intraregional trade shares by the Asian subregion can be decomposed into two components, the intrasubregional and the intersubregional. East Asia still had the strongest intrasubregional trade linkages, with a trade share of 35.1% in that component, while Southeast Asia followed with an intrasubregional trade share of 21%. Intrasubregional trade linkages in Central Asia, South Asia, and the Pacific and Oceania remained relatively weaker. In intersubregional trade, the Pacific and Oceania retained the highest share, at 80.8% in 2021. Southeast Asia, South Asia, Central Asia, and East Asia followed, in that order, all with intersubregional trade shares below 50%. The high and increasing intraregional trade share of the Pacific and Oceania is mainly attributable to the growing intersubregional trade share of Australia and New Zealand. Asia's trade integration can be further decomposed using dynamic gravity model estimation (Box 2.2).

## Progress of Global and Regional Value Chains

### Asia's global value chain and regional value chain linkages strengthened in 2021.

The world and Asia's global value chain (GVC) participation rates and Asia's gross regional value chain (RVC) participation rate increased in 2021. The world GVC participation increased to 73.4 in 2021 from 71.8 in 2020, as global exports involving cross-border production grew by 28.6%, while global exports of final goods made by single economies grew only at 18.4%. Asia's GVC participation increased to 67.7 in 2021 from 66.2 in 2020. Asia's gross RVC grew to 69.0 from 67.6 as GVC production within Asia surpassed the growth of non-GVC exports by Asia. Meanwhile, Asia's net RVC declined to 51.6 from 52.2 as GVC trade within Asia involving non-Asian third economies grew by 33.2%, while GVC trade within Asia involving only Asian third economies grew by 18.8% (Figures 2.10a and 2.10b).[19]

For the past 2 decades, complex GVCs have contributed the most in Asia-to-world GVC participation, while

[19] Gross RVC is the share of exports that involves production in at least two economies using cross-border production networks to total gross exports with linkages all within the region. Net RVC is similar to gross RVC except that its denominator includes non-regional third economies.

**Box 2.2: Gravity Model Estimation of Bilateral Exports**

Gravity model estimation is employed to trace Asia's progress in regional trade integration. Economy pair specific effects such as distance, colonial relationship, common language, and contiguity among trading partners all present the expected signs with significance. After these effects along with exporter and importer time-varying fixed effects are controlled, the coefficient of dummy variable for both Asian exporter and importer suggests that intraregional exports of goods are, on average, 58% less than Asia's export to the rest of the world for 2017–2021. Among the commodity groups, intermediate goods demonstrate the least negative intraregional trade bias. Overall, these results suggest that Asia's regional trade integration can be largely explained by its geographic vicinity and cultural and historical relationship, and that much remains to be done in cultivating closer economic interrelationship.

**Gravity Model Estimation Results, 2017–2021**

Dependent Variable: Bilateral Exports

| Variables | All Goods | Capital Goods | Consumption Goods | Intermediate Goods |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Distance | −0.20*** | −0.21*** | −0.20*** | −0.20*** |
| | (.0051) | (0.0054) | (0.0053) | (0.0061) |
| Colonial relationship dummy | 0.11** | −0.073 | 0.20*** | 0.17*** |
| | (0.045) | (0.055) | (0.060) | (0.047) |
| Common language dummy | 0.31*** | 0.43*** | 0.33*** | 0.29*** |
| | (0.033) | (0.035) | (0.041) | (0.037) |
| Contiguity dummy | 0.90*** | 0.82*** | 0.98*** | 0.94*** |
| | (0.032) | (0.041) | (0.036) | (0.036) |
| Both in Asia dummy (base: Asia to ROW) | −0.86*** [−0.93***] | −1.30*** [−1.19***] | −1.20*** [−1.26] | −0.74*** [−0.81***] |
| | (0.072) | (0.083) | (0.085) | (0.075) |
| Constant | 10.45*** | 9.54*** | 8.78*** | 9.787*** |
| | (0.042) | (0.052) | (0.042) | (0.0483) |
| Observations | 222,249 | 222,249 | 222,249 | 222,249 |
| Pseudo $R^2$ | 0.934 | 0.947 | 0.918 | 0.920 |

ROW = rest of the world.

Notes: *** = significant at 1%, ** = significant at 5%, * = significant at 10%. Estimates for 2014–2018 are in brackets. Robust standard errors in parentheses. Data cover 229 economies, of which 46 are from Asia and the Pacific. Poisson pseudo-maximum likelihood estimation was used to account for zero bilateral trade. Time-varying exporter and importer fixed effects are included but not presented for brevity. Each variable's increase or decrease in percentage is computed by natural number raised by the variable's coefficient minus one. Trade data are based on Broad Economic Categories.

Sources: ADB calculations using data from Centre d'Études Prospectives et d'Informations Internationales (the French Research Center in International Economics). GeoDist Database. http://www.cepii.fr/CEPII/en/cepii/cepii.asp; and United Nations. Commodity Trade Database. https://comtrade.un.org (both accessed December 2022).

Source: ADB staff.

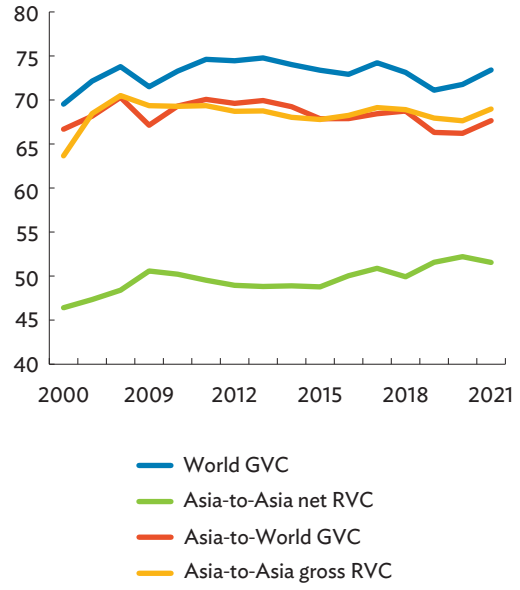
simple RVCs contributed the most in the Asia-to-Asia gross RVC participation rate.[20] In 2021, the share of complex GVCs in Asia-to-world GVC participation rates has increased, while the shares of simple GVCs and non-GVCs declined (Figure 2.11a). In the same year, the share of complex RVCs seems to be increasing the Asia-to-Asia gross RVC participation rate (Figure 2.11b).[21]

[20] "Asia-to-world" refers to linkages in which the direct exporter is within Asia, while the direct importer is any Asian or non-Asian economy. "Asia-to-Asia" refers to linkages wherein both the direct exporter and importer are Asian economies.

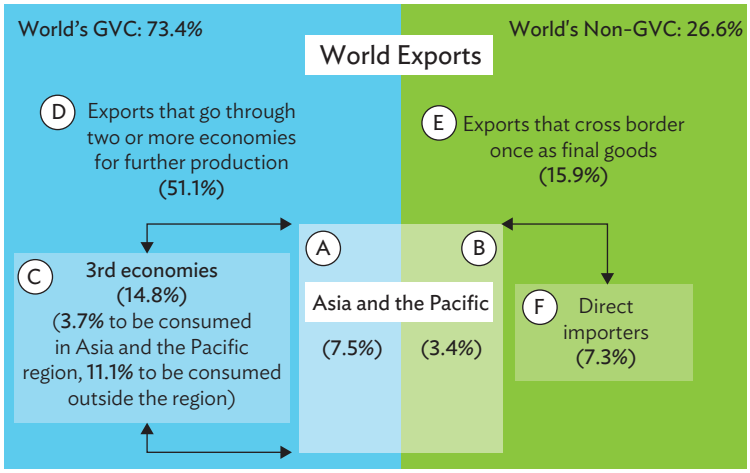
[21] Non-GVCs and non-RVCs contain final goods exports involving a single economy in their production. Simple GVCs and RVCs contain intermediate goods exports processed by the importing economy as final goods to be consumed domestically. Complex GVCs and RVCs contain final and intermediate goods exports that made at least two border crossings in their production.

**Figure 2.10: Global and Regional Value Chain Participation Rates and Shares of Their Components**

**(a) GVC and RVC participation rates** *(%)*




**(b) 2021 Share of GVC and RVC components to world's gross exports**




(1) World-to-World GVC = $\frac{A+C+D}{A+B+C+D+E+F}$

(2) Asia-to-World GVC = $\frac{A+C}{A+B+C+F}$

(3) Gross RVC = $\frac{A}{A+B}$

(4) Net RVC = $\frac{A}{A+B+C}$

GVC = global value chain, RVC = regional value chain.

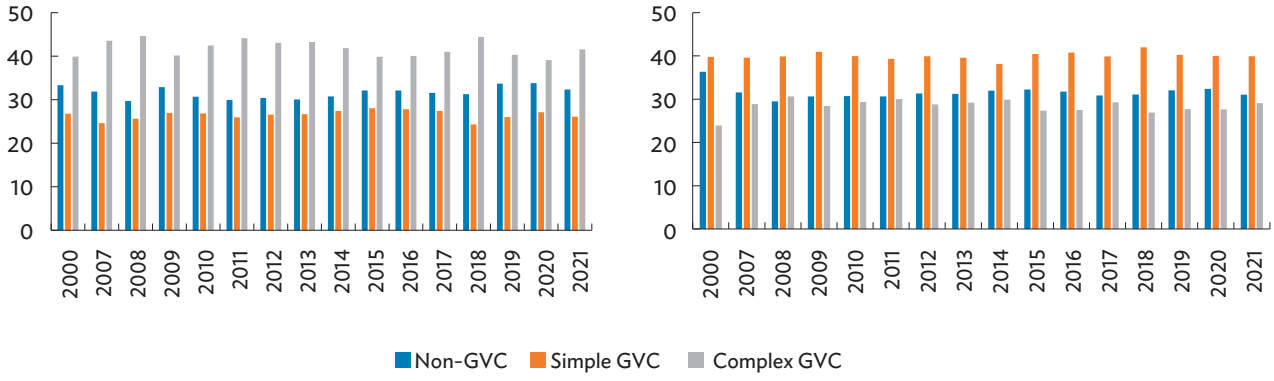
Notes: The GVC participation rate is the share of gross exports that involves production in at least two economies using cross-border production networks. The RVC participation rate is the same as that of GVC, except that it only involves economies of the same region.

Sources: ADB calculations using ADB data. Multi-Regional Input–Output Tables; and methodology by Borin and Mancini (2019).

**Figure 2.11: Global and Regional Value Chain Participation Rate—Asia and the Pacific** *(%)*

**(a) Asia-to-World GVC participation rate**

**(b) Asia-to-Asia Gross RVC participation rate**



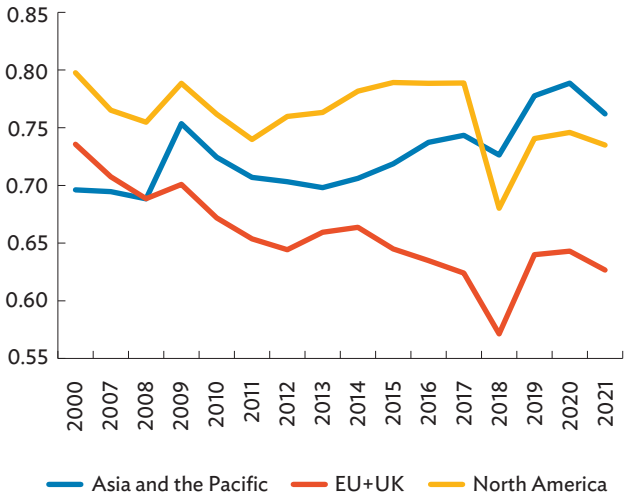

GVC = global value chain, RVC = regional value chain.

Notes: Gross RVC participation is the share of Asia's intraregional value chain exports to its intraregional gross exports but excluding all non-Asian third economies in gross exports. Non-GVC refers to final goods exports. Simple GVCs are intermediate goods exports that cross borders only once or absorbed by the direct importer economy. Complex GVCs are intermediate exports that cross borders at least twice.

Sources: ADB calculations using data from ADB. Multi-Regional Input–Output Tables; and methodology by Borin and Mancini (2019).

Asia's RVC–GVC intensity surpassed the EU+UK in 2008 and North America in 2018 and continued to rise before slightly decreasing in 2021. North America's RVC–GVC intensity declined in 2018 then recovered slightly afterward, albeit to a lower level than 2000 to 2017. The EU+UK's RVC–GVC intensity has been slowly declining for the past decade. Even though it recovered sharply after its decline in 2018, its level in 2021 is still lower than its level in 2000 to 2016 (Figure 2.12). Lower RVC–GVC intensity for Asia does not necessarily mean regional value chain linkages are loosening as it could happen when RVC increases, yet more slowly than the GVC, which was the case in 2021.

**Figure 2.12: Regional Value Chain–Global Value Chain Intensity By Region**



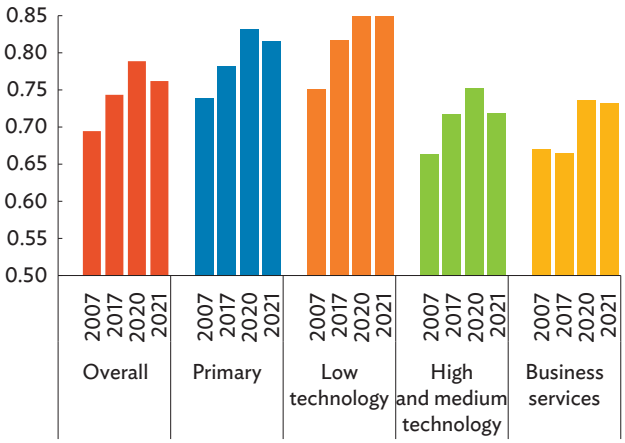

EU = European Union (27 members), GVC = global value chain, RVC = regional value chain, UK = United Kingdom.

Notes: RVC–GVC intensity is the ratio of RVC participation and GVC participation rates. North America here consists of the United States, Canada, and Mexico.

Sources: ADB calculations using data from ADB. Multi-Regional Input–Output Tables; and methodology by Borin and Mancini (2019).

Asia's RVC–GVC intensity peaked in 2020 in all four major sectors during the pandemic, as Asia's production networks outside the region declined more steeply than its intraregional production networks. In 2021, the region's GVC recovered and grew faster than the region's RVC, causing the RVC–GVC intensity values for the major sectors, especially high and medium technology, and the primary sector to decline. Nevertheless, their intensity values remained much higher than pre-global financial crisis levels (Figure 2.13).

**Figure 2.13: Regional Value Chain–Global Value Chain Intensity by Major Sector—Asia and the Pacific**




GVC = global value chain, RVC = regional value chain.

Notes: RVC–GVC intensity is the ratio of RVC and GVC participation rates. Sectoral classification is based on ADB (2015). Business services includes personal and public services.

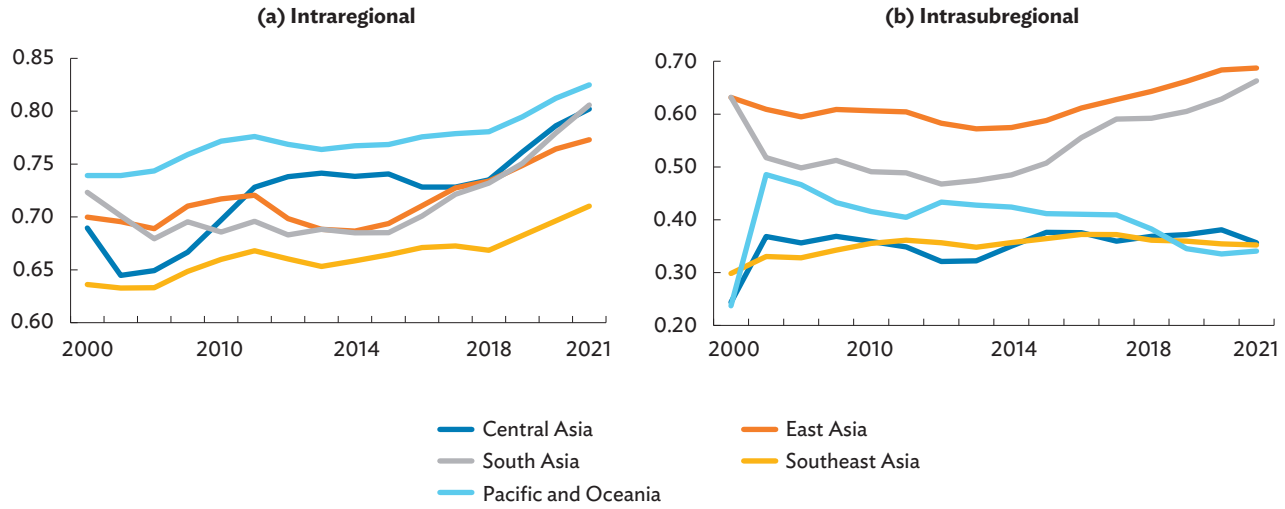
Sources: ADB calculations using data from ADB. Multi-Regional Input–Output Tables; and methodology by Borin and Mancini (2019).

All Asian subregions have seen increasing RVC–GVC intensity. However, in subregional RVC–GVC intensity, only East Asia and South Asia were increasing (Figure 2.14).

In 2021, RVC–GVC intensity values declined in most Asian economies as their production linkages outside Asia recovered and grew faster. Out of 26 Asian economies, overall GVC participation rates increased in 21, and complex GVC participation rates increased in 24. However, overall RVC participation rates increased in only 9 out of 26 economies, while complex RVC participation rates increased in 17 out of 26. Overall RVC–GVC intensity rose in only 5 economies, while complex RVC–GVC intensity rose in only 4 economies.

Among all Asian exports in 2021 that involve at least one border crossing for production, they rose rapidly in almost all Asian economies, both within and outside of Asia. Value chain growth was higher within Asia than outside Asia in Bhutan, the Kyrgyz Republic, Singapore,

**Figure 2.14: Regional Value Chain–Global Value Chain Intensity—Asian Subregions** (3-year moving average)




GVC = global value chain, RVC = regional value chain.

Note: RVC–GVC intensity is the ratio of RVC participation and GVC participation rates.

Sources: ADB calculations using data from ADB. Multi-Regional Input–Output Tables; and methodology by Borin and Mancini (2019).

and Sri Lanka, pushing up their RVC–GVC intensity. In most economies, however, growth rates outside Asia were higher than within Asia, reducing RVC-GVC intensity.[22] Fiji saw declining growth within Asia and increasing growth outside Asia. Meanwhile, Brunei Darussalam and Nepal saw declining growth within Asia and outside Asia. RVC-GVC intensity increased in Nepal as its production network outside Asia declined more rapidly than its network within Asia, while RVC–GVC intensity in Brunei Darussalam decreased as its production network within Asia declined more rapidly than outside Asia.[23]

In 2021, complex GVC network rose rapidly in almost all Asian economies, both within and outside Asia. In four economies—Kazakhstan, the Kyrgyz Republic, the Philippines, and Singapore—complex RVC–GVC intensities rose as their multi-border export production network within Asia increased more rapidly than outside Asia. Like overall GVCs, complex RVC–GVC intensities declined in most Asian economies, as their multi-border export production network outside Asia increased more rapidly than within Asia.[24] Complex RVC-GVC intensities decreased in only Brunei Darussalam, Fiji, and Nepal, due to decreasing multi-border production within Asia.[25]

## Asia's GVC and RVC Participation Excluding the Primary Sector

Asia's overall RVC participation seems to be dependent more upon primary-sector-related value chain linkages than its GVC linkages, although the degree has been declining since 2011. The decline in Asia's overall GVC participation rate hovers around 4 to 5 percentage points when the primary sector is taken out of the simple linkages, while net RVC declines by 6 to 8 percentage points, while the region's gross RVC declines the most, about 8 to 12 percentage points, under this scenario (Figure 2.15).

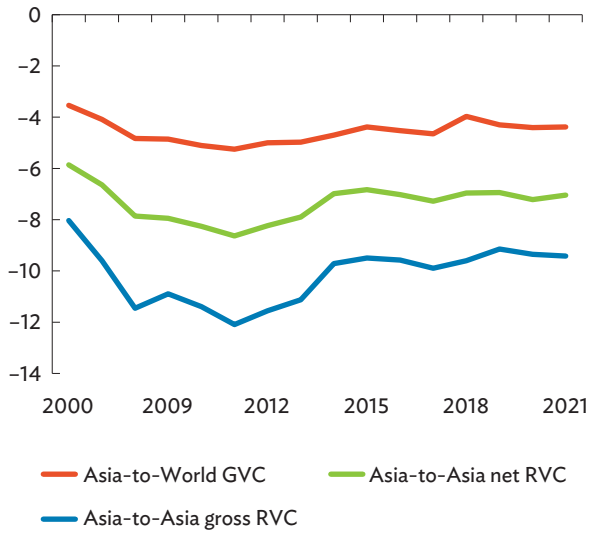
[22] These economies are Australia; Bangladesh; Cambodia; Hong Kong, China; India; Indonesia; Japan; Kazakhstan; the Lao People's Democratic Republic (Lao PDR); Malaysia; Maldives; Mongolia; Pakistan; the Philippines; the PRC; the Republic of Korea; Taipei,China; Thailand; and Viet Nam.

[23] See 2021 growth rates of RVC-GVC intensity components at economy level in online Annex 1b: https://aric.adb.org/pdf/aeir2023_onlineannex1.pdf.

[24] These economies are Australia; Bangladesh; Bhutan; Cambodia; Hong Kong, China; India; Indonesia; Japan; the Lao PDR; Malaysia; Maldives; Mongolia; Pakistan; the PRC; the Republic of Korea; Sri Lanka; Taipei,China; Thailand; and Viet Nam.

[25] See 2021 growth rates of RVC-GVC intensity components at economy level in online Annex 1b: https://aric.adb.org/pdf/aeir2023_onlineannex1.pdf.

**Figure 2.15: Decline in Global and Regional Value Chain Participation in Asia and the Pacific** (without the primary sector in simple linkages)




GVC = global value chain, RVC = regional value chain.

Note: The lines are the difference between the original participation rates and the participation rates without the primary sector in simple linkages in their numerators.

Sources: ADB calculations using data from ADB. Multi-Regional Input–Output Tables; and methodology by Borin and Mancini (2019).

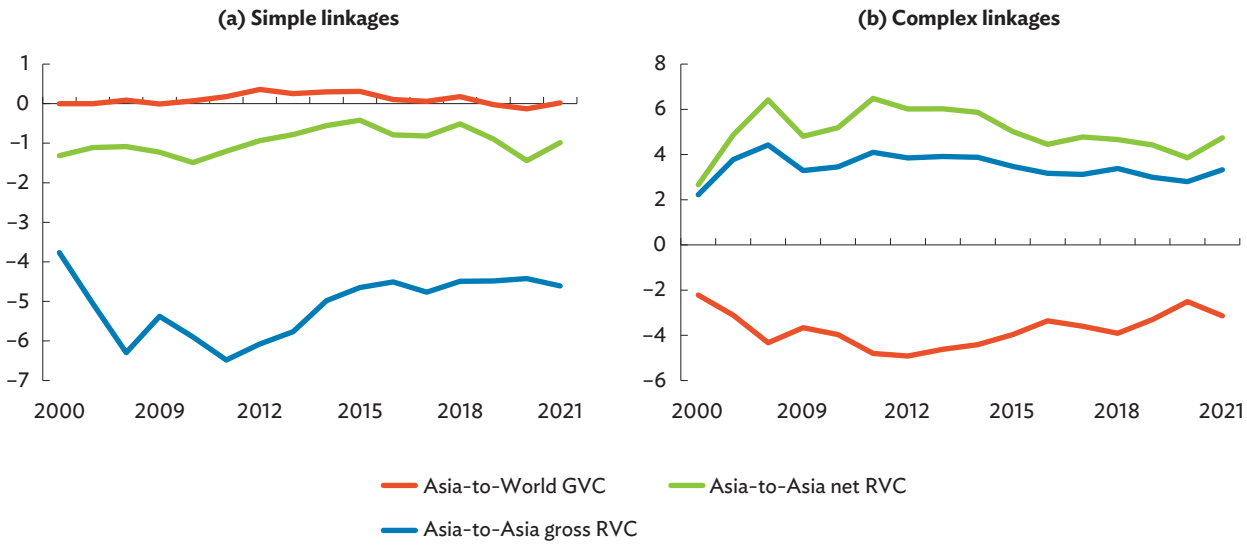
Further decomposition into simple and complex GVC and RVC linkages suggests that this phenomenon is largely due to a high dependence of simple RVC linkages in the region, while complex RVCs are much less dependent on the primary sector (Figure 2.16). East Asia is the largest contributor to Asia's primary sector linkages with simple and complex GVCs, followed by Southeast Asia and the Pacific and Oceania. The Pacific and Oceania is the largest contributor to Asia's primary sector linkages in simple and complex RVCs, followed by Southeast Asia and East Asia.

# Special Topic: Food and Energy Crisis and Asia's Trade

## Recent Global Events Challenging the Food and Energy Industries

Economic recoveries from the pandemic globally have been hampered by spiraling inflation pressures, prompted in part by the Russian invasion of Ukraine

**Figure 2.16: Changes in Asia's Simple and Complex Global and Regional Value Chain Participation Rates** (without the primary sector in all linkages)




GVC = global value chain, RVC = regional value chain.

Note: The lines are the difference between the original participation rates and the participation rates without the primary sector in all linkages, both in their numerators and denominators.

Sources: ADB calculations using ADB data. Multi-Regional Input–Output Tables; and methodology by Borin and Mancini (2019).

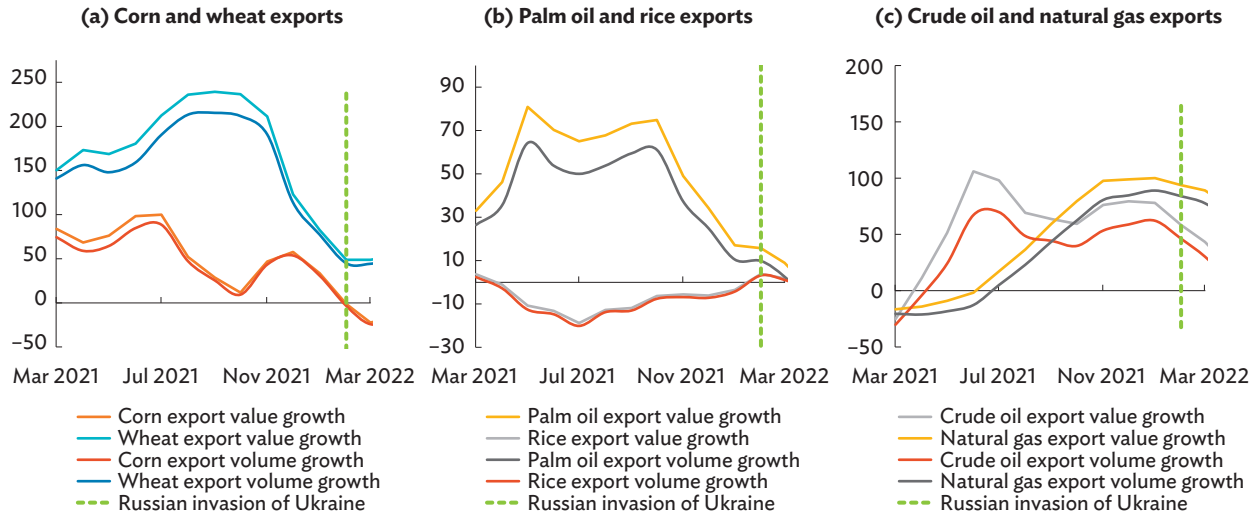
in February 2022. Ukraine is one of the top exporters of wheat, corn, and sunflower oil, and the Russian Federation is one of the top exporters of wheat, crude oil, natural gas, and fertilizer. Supply chain disruptions in these food and energy essentials are expected to add to their price pressures. Notwithstanding nascent progress in removing Ukraine's Odesa port blockade and stabilizing many food and energy commodities, the outlook for global food and energy prices remains uncertain, volatile, and precarious. Major central banks, such as the US Federal Reserve, European Central Bank, and the Bank of England, have tightened monetary policy, compounding burdens in food and energy importing developing economies as these higher rates weaken the value of their domestic currency. Trade restrictions imposed during the period, such as export bans and export licensing, pose additional challenges to the recovery of economies. This includes recent bans imposed by major exporters such as Hungary, India, the Russian Federation, Serbia, and Ukraine for corn and/or wheat, and Indonesia for palm oil.[26]

## Recent Trade and Price Trends of Food and Energy Commodities

Growth rates of food exports and imports have declined already since the second half of 2021, while those for energy commodities have increased. After the Russian invasion of Ukraine, the trade value growth of both food and energy commodities fell. The persistent gap between the growth rates of trade value and trade volume (the latter lower), presents the salient effect of prices on the trade of commodities (Figure 2.17).

For food commodities, export restrictions imposed by major food exporters in 2022 provide additional burdens to the prices of such staples (Figure 2.18). Food trade restrictions were more common for wheat and corn products, commodities that are mainly produced by non-Asian economies. Food trade restrictions imposed in 2022 peaked at around April 2022 and have been declining since (Figure 2.19).

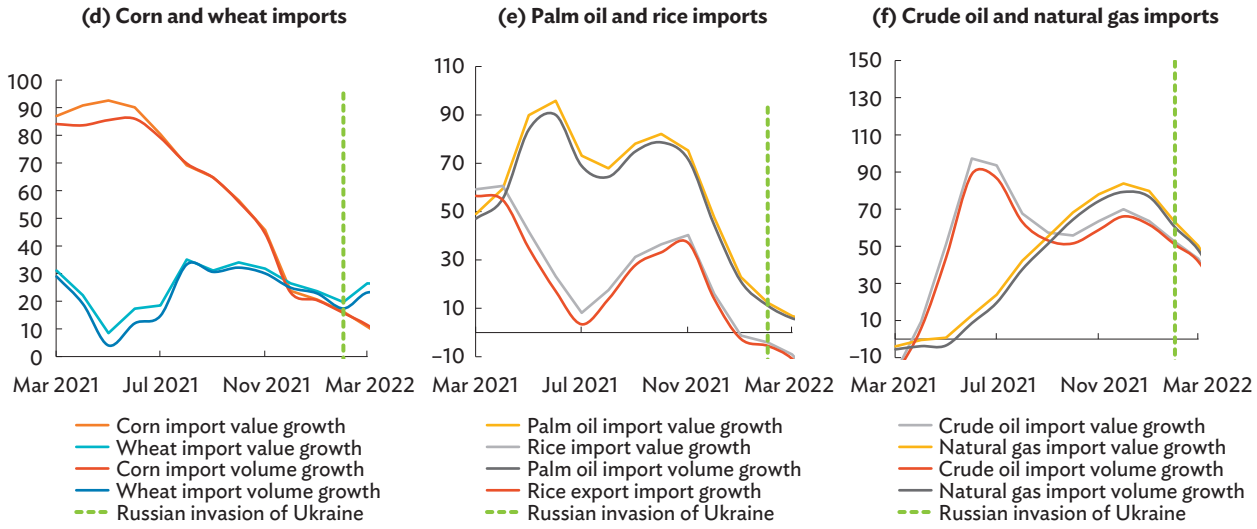
**Figure 2.17: Growth of Trade Values and Volumes in Selected Food and Energy Commodities—Asia and the Pacific**
(%, year-on-year, 3-month moving average)




*continued on next page*

[26] D. Laborde and A. Mamun. Food Export & Fertilizer Restrictions Tracker. https://public.tableau.com/app/profile/laborde6680/viz/ExportRestrictionsTracker/FoodExportRestrictionsTracker (accessed January 2023).

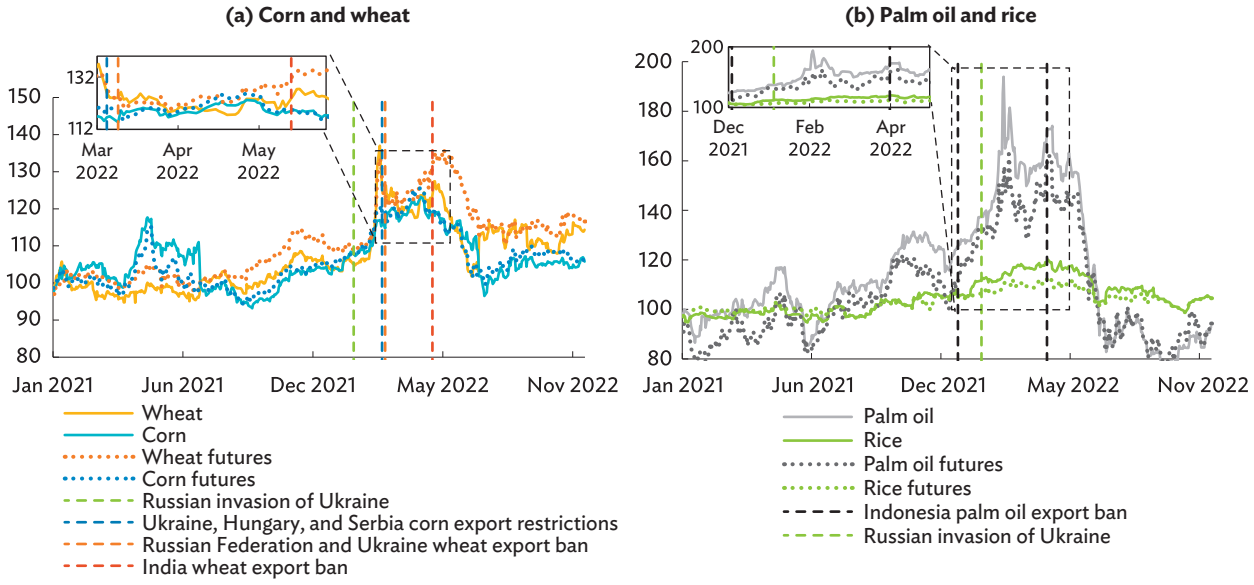
Figure 2.17 *continued*




Notes: Export and import volumes are computed by deflating export and import values using commodity-level export and import price indexes. Asia and the Pacific includes Armenia; Australia; Azerbaijan; Bangladesh; Bhutan; Brunei Darussalam; Cambodia; the People's Republic of China; Hong Kong, China; Fiji; Georgia; India; Indonesia; Japan; Kazakhstan; Kiribati; the Kyrgyz Republic; the Lao People's Democratic Republic; Malaysia; Maldives; Mongolia; Nepal; New Zealand; Pakistan; Papua New Guinea; the Philippines; the Republic of Korea; Samoa; Singapore; Solomon Islands; Sri Lanka; Tajikistan; Thailand; Timor-Leste; Tonga; Turkmenistan; Tuvalu; Vanuatu; and Viet Nam.

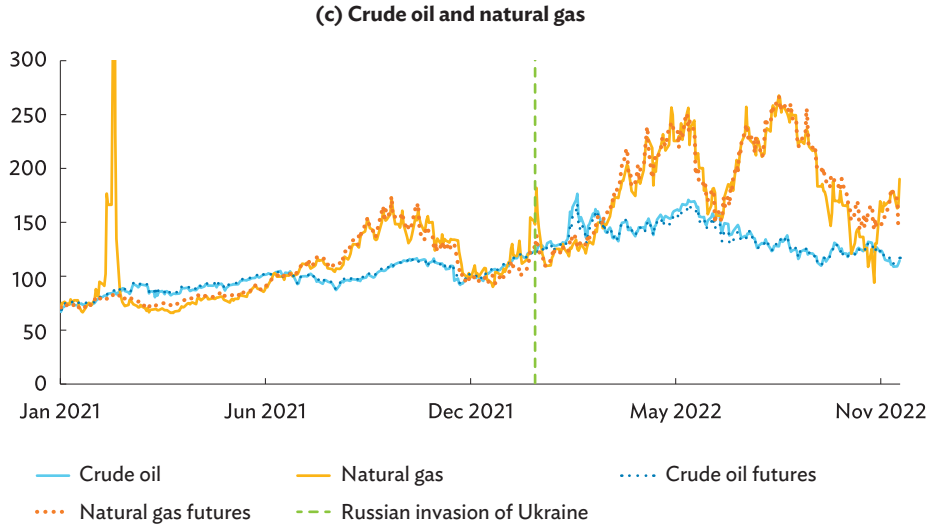
Sources: ADB calculations using data from United Nations (UN). Commodity Trade Database (COMTRADE). https://comtrade.un.org/; and International Monetary Fund (IMF). Commodity Terms of Trade Database (CTOT). https://data.imf.org/ (all accessed November 2022).

**Figure 2.18: Average Prices of Food and Energy Commodities in Selected Major Commodity Markets** (15 July 2021 = 100)




*continued on next page*

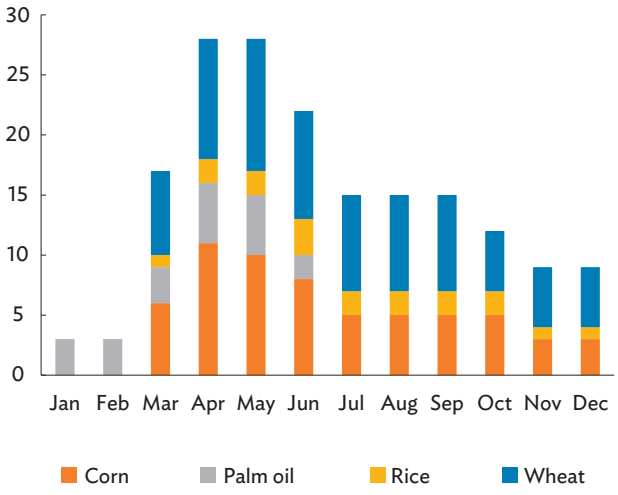
Figure 2.18 *continued*




Notes: Average crude oil price is computed by averaging the prices of Brent and West Texas Intermediate (WTI) crude oil. Natural gas price is the price at Henry Hub in the United States. Average corn price is computed by averaging the first-month futures prices of corn in the Dalian Commodity Exchange in the People's Republic of China (PRC) and the Chicago Board of Trade (CBOT) in the United States. Palm oil is at the price set by the Malaysian Palm Oil Board. Average prices of rice and wheat are the averages of the first-month futures prices of rice and wheat in CBOT and Zhengzhou Commodity Exchange in the PRC. The price index of natural gas reached 648.37 in February 2021. The average crude oil futures price is the average of the prices of WTI crude oil contract 4 and Brent crude oil contract 1. The natural gas futures price is the price of natural gas contract 4 at Henry Hub. The average corn futures price is the average of the fifth-month futures prices of corn in the Dalian Commodity Exchange and the second-month futures prices of corn in CBOT. Palm oil futures price is the fourth-month futures price of palm oil in the Kuala Lumpur Commodity Exchange. Rice futures price is the average of the fourth-month futures prices of rice in Zhengzhou Commodity Exchange and the second-month futures prices of rice in the CBOT. Wheat futures price is the average of the sixth-month futures prices of wheat in the Zhengzhou Commodity Exchange and the second-month futures prices of wheat in CBOT.

Sources: ADB calculations using data from Bloomberg and CEIC Data Company; and Laborde, D. and A. Mamun. Food Export & Fertilizer Restrictions Tracker. https://public.tableau.com/app/profile/laborde6680/viz/ExportRestrictionsTracker/FoodExportRestrictionsTracker (all accessed December 2022).

**Figure 2.19: Number of Effective Food Trade Restrictions, 2022**



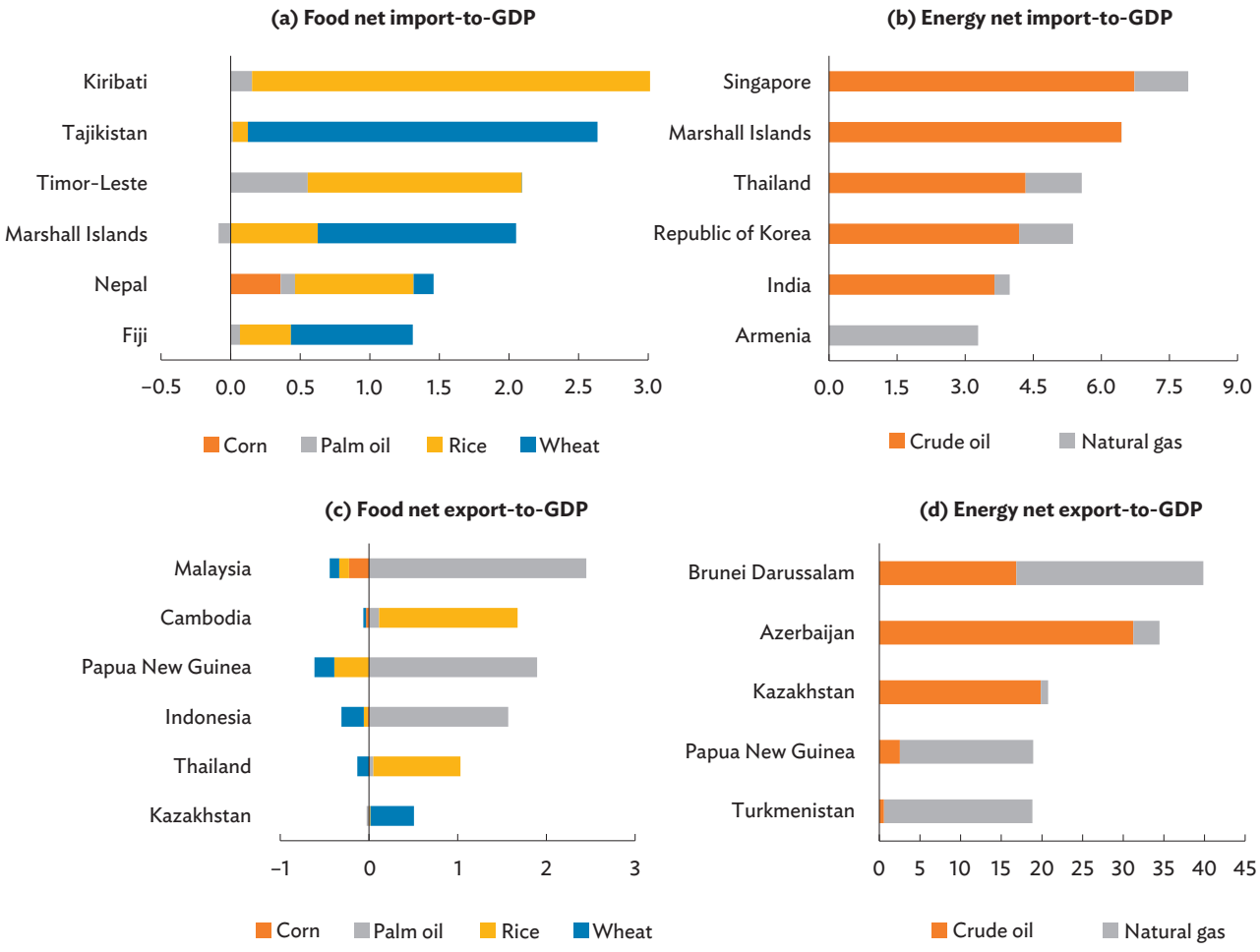

Source: ADB calculations using Laborde, D. and A. Mamun. Food Export & Fertilizer Restrictions Tracker. https://public.tableau.com/app/profile/laborde6680/viz/ExportRestrictionsTracker/FoodExportRestrictionsTracker (accessed January 2023).

International prices of food commodities by 30 November 2022 had almost declined to their January 2022 levels, amid better crop expectations, reopening of some port operations in the Black Sea, and the sluggish recovery of the global economy and demand. Energy commodities, however, remained high by 30 November 2022. The stronger and persistent rise in the price of energy commodities is, in a way, attributable to the inelastic supply of the energy products because of tight production capacity (EIA 2021, 2022; Konrad 2012). For natural gas, the drop in the Russian exports to Europe causes additional price pressures. Despite the downside resilience in food prices, upside and volatility risks remain, as vital inputs to the sector, such as fertilizers, depend on energy commodities, and the Russian Federation is an important supplier of nitrogen-based fertilizers. Risks of a prolonged situation and pursuant sanctions will also compound the substantial uncertainty already existing in the markets (Baffes and Nagle 2022, World Bank 2022). Futures prices are similarly affected by these recent global events (Figure 2.18).

## Vulnerabilities of Asian Economies to Food and Energy Price Volatilities

**Food and energy dependence**. Asian economies with significant food or energy imports-to-GDP ratios are relatively more vulnerable to changes in food and energy prices. Based on 2017–2019 average trade patterns, Singapore, the Marshall Islands, Thailand, and the Republic of Korea, in that order, are the most energy import dependent economies in Asia; Kiribati, Tajikistan, Timor-Leste, and the Marshall Islands are the most food import dependent economies. Top energy-importing economies have higher import-to-GDP ratios than top food-importing economies, suggesting that they could be more affected by future price change dynamics, let alone the ameliorating effect of food price stabilization lately. Economies with significant food or energy exports-to-GDP ratios, on the other hand, are net beneficiaries. Based on 2017–2019 trade patterns, Brunei Darussalam, Azerbaijan, and Kazakhstan are the top energy-exporting economies in terms of share of GDP, while Malaysia, Cambodia, and Papua New Guinea are the top food-exporting economies. Given much higher energy export dependence, top energy-exporting economies stand to gain more than top food exporters under rising commodity prices (Figure 2.20).

**Figure 2.20: Food and Energy Net Trade—Selected Asian Economies** (% of GDP)




GDP = gross domestic product.

Note: Net trade-to-GDP ratio is computed using the average of 2017–2019 trade and GDP data to reflect pre-pandemic patterns.

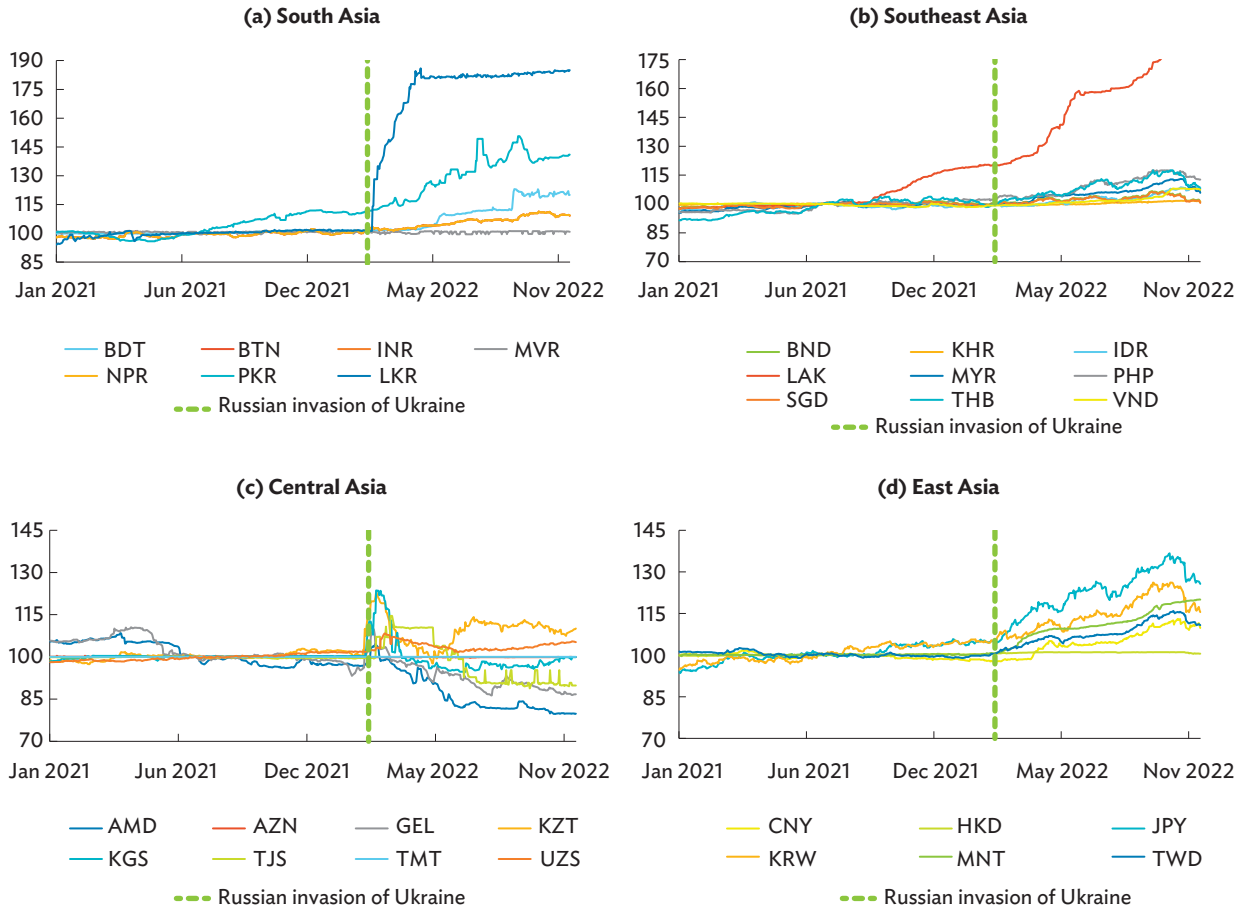
Sources: ADB calculations using data from United Nations. Commodity Trade Database. https://comtrade.un.org; and World Bank. World Development Indicators. https://databank.worldbank.org/source/world-development-indicators (all accessed December 2022).

**Foreign exchange rates volatility.** Asian currencies, in general, were relatively stable in 2021. After the Russian invasion of Ukraine and the inception of monetary policy tightening in major advanced economies, however, most Asian currencies have been exposed to higher volatility risks. The currencies of the economies of South Asia, Southeast Asia, and East Asia generally weakened, while those of Central Asia and the Pacific and Oceania strengthened. Currency depreciations were highest in Sri Lanka and the Lao People's Democratic Republic since January 2022 (Figure 2.21).

Central Asian economies are closely linked to the Russian economy (Russia Briefing 2022, Wani 2022), and their currencies weakened along with the Russian currency after the Russian invasion of Ukraine and pursuant sanctions imposed by Western economies. Their currencies have recovered along with the Russian ruble. Currencies of the Pacific and Oceania economies also strengthened. For Oceania, this is mainly due to their nature as "commodity currencies," which strengthen as international commodity prices rise (FOREX.com 2021, Rampono 2022).

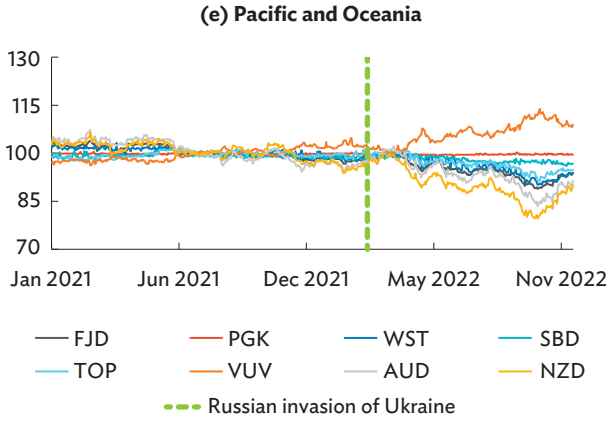
**Food and energy price changes and weakening currencies**. As international energy prices rise persistently more than food prices, energy-importing economies could be hit harder. The recent weakening of local currencies in the South Asia, Southeast Asia, and East Asia compound the pain. In addition, local currencies have depreciated in the majority of top energy-importing economies and appreciated in top food-importing economies.

**Figure 2.21: Foreign Exchange Rates of Asian Economies** (15 July 2021 = 100)




*continued on next page*

Figure 2.21 *continued*




AMD = dram, AUD = Australian dollar, AZN = Azerbaijan manat, BDT = taka, BND = Brunei dollar, BTN = ngultrum, CNY = yuan, FJD = Fiji dollar, GEL = lari, HKD = Hong Kong dollar, IDR = rupiah, INR = Indian rupee, JPY = yen, KGS = som, KHR = riel, KRW = won, KZT = tenge, LAK = kip, LKR = Sri Lanka rupee, MNT = togrog, MVR = rufiyaa, MYR = ringgit, NPR = Nepalese rupee, NZD = New Zealand dollar, PGK = kina, PHP = peso, PKR = Pakistan rupee, SBD = Solomon Islands dollar, SGD = Singapore dollar, THB = baht, TJS = somoni, TMT = Turkmen manat, TOP = pa'anga; TWD = NT dollar, UZS = sum, VND = dong, VUV = vatu, WST = tala.

Note: Exchange rates are expressed as the value of the local currencies in United States dollar (100 = 15 July 2021).

Source: ADB calculations using data from Bloomberg (accessed December 2022).

The majority of Asian economies are net importers of the food and energy commodities, suggesting that the harmful effects of commodity prices could be broad. Food and energy import prices in local currency of net importers will rise further if local currencies depreciate, as is projected for Sri Lanka and Pakistan. The appreciation of local currency, on the other hand, will somehow tame import prices in local currencies of net importers, as is projected for Armenia and New Zealand (Figure 2.22).

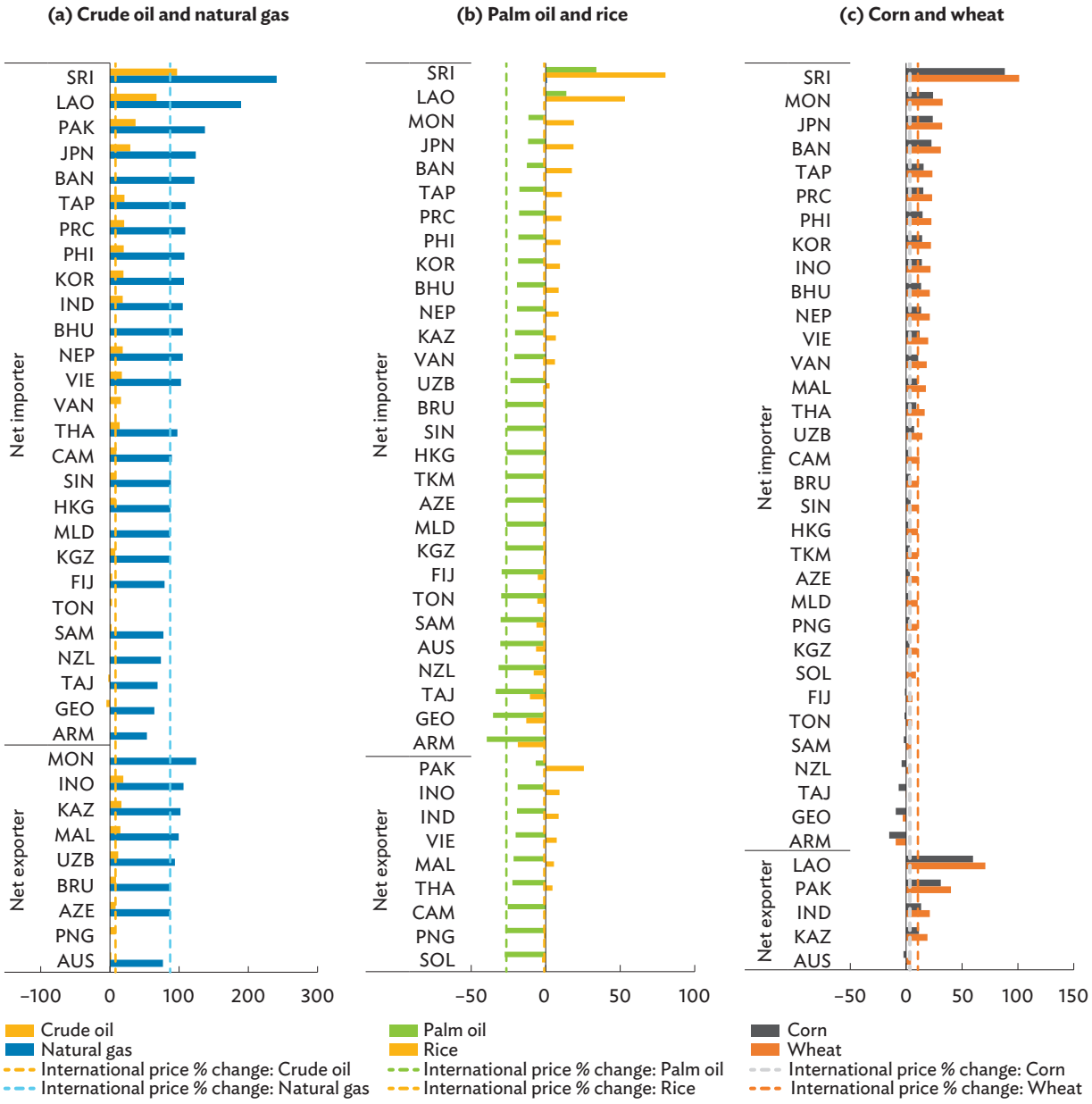
## Policy Recommendations

**Prohibiting export restrictions through international cooperation.** Export restrictions on food commodities, such as export licensing, export quotas, and export bans, have harmful effects on the prices and trade of such essential goods, threatening global food security and growth (Deb et al. 2021; Espitia, Rocha, and Ruta 2022). To prevent these events from aggravating food and energy crunches, international cooperation to prohibit such restrictions and for noncommercial and humanitarian purposes should be intensified.

**Streamlining of the supply chain through trade facilitation and exploration of alternative transportation routes**. The Russian invasion of Ukraine and the blockade of Black Sea ports have contributed to the disruption of food and energy supply chains. Whereas exploring new sources for the affected food and energy commodities is inevitable under such constraints, economies should also invest more in enhancing trade facilitation and finding alternative transportation and trading routes to smooth trade friction caused by recent global events (UNCTAD 2022).

**Promoting multilateral cooperation for public stockholding**. Public stockholding programs are implemented to ensure food security in an economy, especially for least developed economies. Given the limits imposed by the World Trade Organization (WTO) on public stockholding and trade-distorting support, developing economies could be exposed to potential noncompliance risks. The WTO adopted an interim solution to address the problem, but a permanent solution is imperative. Economies should discuss permanent solutions that address the problems involved in public stockholding to ensure global food security while reducing corresponding distortions to trade (Glauber and Sinha 2021).

**Figure 2.22: Changes in Estimated 2022 Import Prices of Food and Energy Commodities in Local Currency—Asia and the Pacific** (3 January 2022 to 30 November 2022, %)




ARM = Armenia; AUS = Australia; AZE = Azerbaijan; BAN = Bangladesh; BHU = Bhutan; BRU = Brunei Darussalam; CAM = Cambodia; FIJ= Fiji; GEO = Georgia; HKG = Hong Kong, China; IND = India; INO = Indonesia; JPN = Japan; KAZ = Kazakhstan; KGZ = Kyrgyz Republic; KOR = Republic of Korea; LAO = Lao People's Democratic Republic; MAL = Malaysia; MLD = Maldives; MON = Mongolia; NEP = Nepal; NZL = New Zealand; PAK = Pakistan; PHI = Philippines; PNG = Papua New Guinea; PRC = People's Republic of China; SAM = Samoa; SIN = Singapore; SOL = Solomon Islands; SRI = Sri Lanka; TAJ = Tajikistan; TAP = Taipei,China; THA = Thailand; TKM = Turkmenistan; TON = Tonga; UZB = Uzbekistan; VAN = Vanuatu; VIE = Viet Nam.

Notes: To obtain the estimated 3 January 2022 and 30 November 2022 import values in US dollar of the 2019 imports, 2019 import values in US dollar for food and energy commodities were increased/decreased by the change in international prices of the goods from 31 December 2019 up to 3 January 2022 or 30 November 2022. These estimated 2022 import values in US dollars were multiplied by the foreign exchange rates of the selected Asia and Pacific economies during 3 January 2022 or 30 November 2022 to obtain the estimated 2022 import values in local currency of the 2019 imports. These two estimated 2022 import values in local currency are then utilized to calculate for the 2022 local currency import price percentage changes. Economies are classified as net importers on a bundle of goods if the sum of the import values of those goods is higher than the corresponding combined export values of those goods.

Sources: ADB calculations using data from United Nations. Commodity Trade Database. https://comtrade.un.org; Bloomberg; and CEIC (all accessed December 2022).

**Providing targeted income subsidies to vulnerable groups**. Low-income households will feel the high food and energy prices heavily. Supporting these vulnerable groups while letting international prices pass through domestic prices will be the more efficient and effective way to get through the crisis, instead of an across-the-board tax cut and subsidies (Amaglobeli et al. 2022).

**Promoting and regulating commodity derivatives markets**. Derivatives markets are used to hedge against price changes and to facilitate price discovery and trade. Providing adequate information about the derivatives market will optimize its utilization and distribute its benefits in an economy. To prevent overspeculation while nurturing the hedging functions of derivative instruments, regulations should be put in place on trading, settlement and clearing, and the transparency of market functioning and transactions must be enhanced.

## Asia's Free Trade Agreement Policy

### The global trade disruption and the downturn resulting from the COVID-19 pandemic have not dampened Asia and the Pacific's momentum in forging trade partnerships within and beyond the region.

Six trade agreements entered into force in 2022 (Table 2.1), four intraregional, including the historic Regional Comprehensive Economic Partnership (RCEP) agreement led by ASEAN.[27] The RCEP is the latest addition to the region's growing participation to mega regional trade agreements, following entry into force of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) in 2018.

While the number of newly effective Asian free trade agreements decreased in 2022 (Figure 2.23, right axis), the number of Asian economies participating in trade agreements still increased as mega regionals such as RCEP accommodated more members than bilateral deals. Asian economies have also been consistent and persistent in increasing and intensifying their participation through bilateral means. Cambodia, for example, entered into separate bilateral agreements with the PRC and the Republic of Korea in 2022, in addition to their RCEP participation.

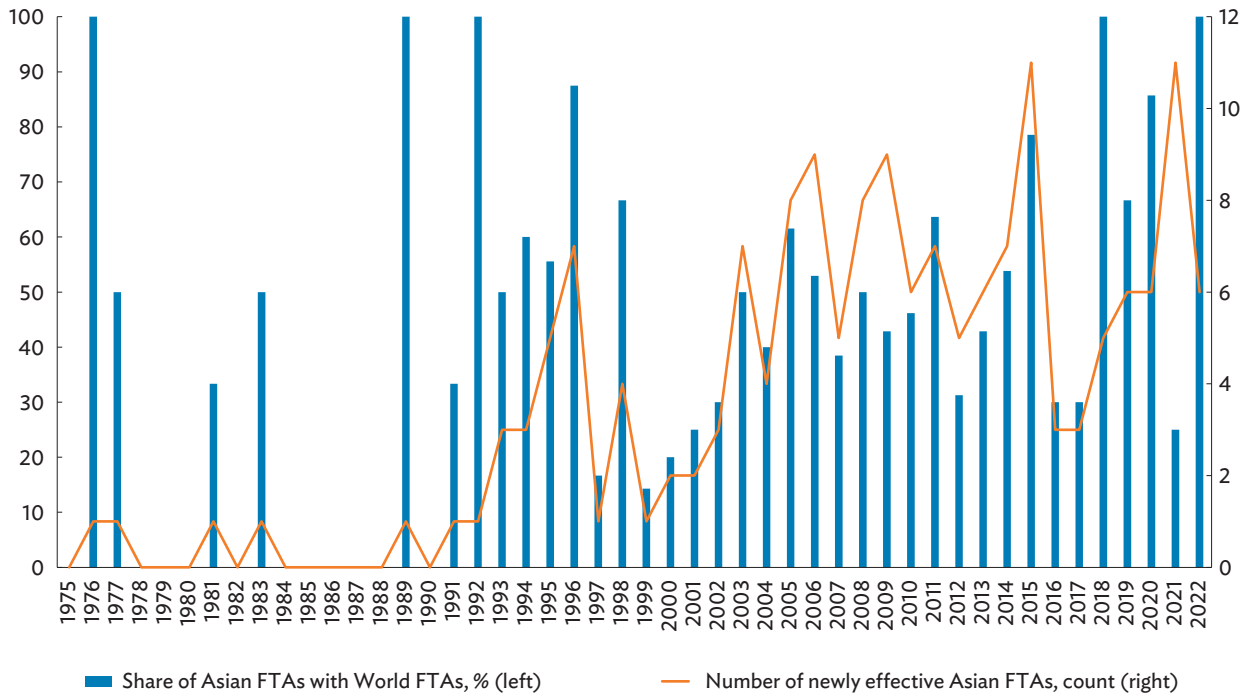
Completing the current list of trade agreements in effect this year are bilateral deals between Bangladesh–Bhutan, India–United Arab Emirates, and the Republic of Korea–Israel. Meanwhile, more bilateral and regional trade agreements involving Asian economies are underway. To cite a few, early announcements have been issued to the WTO on the following interregional trade agreements: the EU has separate negotiations with India, Indonesia, Malaysia, the Philippines, and Thailand; European Free Trade Association with India, Kazakhstan (together with Belarus and the Russian Federation), and Viet Nam. In addition, seven agreements are being negotiated and four have been proposed or are under study.[28]

Existing trade agreements, meanwhile, are being upgraded and expanded by incorporating disciplines that go beyond market access and national treatment (Table 2.2). The evolution of these agreements comes with provisions on beyond-the-border disciplines such as trade facilitation, intellectual property rights, government procurement, competition policies, among others, while broadening and deepening the scope of goods, services, and investment liberalization commitments. Bilateral and regional trade agreements serve as more accessible platforms for economies to negotiate mutually beneficial agreements, including in areas not yet offered in mega regionals, duly

[27] In May 2022, ADB released a preliminary analysis of the legal text in RCEP, comparing it with that of the CPTPP, relevant agreements of the WTO, and ASEAN+1 free trade agreements, taking into account related literature and articulating potential economic impacts (ADB 2022c).

[28] Negotiations are also underway for (i) India–United Kingdom Free Trade Agreement (FTA) (December 2022—sixth round of negotiations); (ii) Republic of Korea–Pacific Alliance FTA (June 2022); (iii) Bangladesh–Sri Lanka FTA (June 2021); (iv) ASEAN–Canada FTA (September 2022—first round of negotiations); (v) India–Taipei,China FTA (December 2021); (vi) Canada–Indonesia Comprehensive Economic Partnership Agreement (November 2022—third round of negotiations); and (vii) Republic of Korea–Uzbekistan FTA (January 2021). FTAs that have been proposed or are under study include Bangladesh–Malaysia FTA, Georgia–Republic of Korea FTA, and Japan–Ukraine FTA.

**Figure 2.23: Newly Effective Free Trade Agreements—Asia and the Pacific**




FTA = free trade agreement.

Notes: Trends for 1975–2021 derived using the the World Trade Organization's RTA Information System. The number of FTAs in 2022 derived using the Asia Regional Integration Center FTA Database.

Sources: ADB calculations using ADB data. Asia Regional Integration Center FTA Database. https://aric.adb.org/database/fta; and World Trade Organization. Regional Trade Agreement Information System. http://rtais.wto.org (both accessed December 2022).

**Table 2.1: New Regional Trade Agreements in Asia and the Pacific, December 2021–December 2022**

| Name | Coverage | Type | Status (Date) |
|---|---|---|---|
| **Intraregional** | | | |
| RCEP | Goods and services | FTA | In force (1 January 2022) |
| Cambodia–PRC | Goods and services | FTA | In force (1 January 2022) |
| Bangladesh–Bhutan | Goods | PTA | In force (1 July 2022) |
| Cambodia–Republic of Korea | Goods and services | FTA | In force (1 December 2022) |
| **Interregional** | | | |
| India–UAE | Goods and services | CEPA | In force (1 May 2022) |
| Republic of Korea–Israel | Goods and services | FTA | In force (1 December 2022) |
| Australia–UK | Goods and services | FTA | Signed (17 December 2021) |
| New Zealand–UK | Goods and services | FTA | Signed (28 February 2022) |
| Singapore–MERCOSUR | Goods and services | FTA | Concluded (20 July 2022) |

CEPA = Comprehensive Economic Partnership Agreement, FTA = free trade agreement, MERCOSUR = Mercado Común del Sur (Southern Common Market), PRC = People's Republic of China, PTA = preferential trade agreement, RCEP = Regional Comprehensive Economic Partnership, UAE = United Arab Emirates, UK = United Kingdom.

Note: Recently signed regional trade agreements in Asia and the Pacific cover December 2021 to December 2022.

Source: ADB compilation based on information available as of 25 January 2023.

considering their respective needs and state of readiness. Mega regionals could also complement these smaller agreements and the greater multilateral trading system by progressively enhancing market access and reducing trade barriers at a wider scale of participation. To this end, a noteworthy development observed recently—and to some extent attributable to the accelerated expansion of e-commerce during the pandemic—is the inclusion of e-commerce, digital trade, and data governance provisions in trade agreements, as well as the participation of Asian economies in digital economy agreements. The next section further discusses the nature of these agreements.

## Digital Economy Agreements and Policy Interventions

### Growing interest in digital economy agreements is a welcome reinforcement for a more secure and inclusive digital environment.

Unprecedented COVID-19 disruptions have raised the urgency for shifting to digital operations and to leverage e-commerce to keep businesses agile, boost output, and

**Table 2.2: Recently Upgraded/Expanded Trade Agreements—Asia and the Pacific**

| Trade Agreement | Entry into Force | Recent Update | Remarks |
|---|---|---|---|
| New Zealand–People's Republic of China FTA | 1 October 2008 | 7 April 2022 | Implemented further tariff reduction or elimination; addressed compliance requirements, especially on nontariff measures; established new areas of cooperation in competition policy, e-commerce, government procurement, and environment and trade.[a] |
| Singapore–United Kingdom FTA | 11 February 2021 | 14 June 2022 | Entry into force of the UK–Singapore Digital Economy Agreement, which includes binding disciplines on data flows, and cooperative elements in emerging and innovative areas such as Artificial Intelligence, FinTech and RegTech, digital identities, and legal technology.[b] |
| Australia–Singapore FTA | 28 July 2003 | 8 December 2020 | Entry into force of the Australia–Singapore Digital Economy Agreement, which upgrades the digital trade arrangements between Australia and Singapore under the Comprehensive and Progressive Agreement on the Trans-Pacific Partnership and the Singapore–Australia Free Trade Agreement.[c] |
| Asia–Pacific Trade Agreement | 17 June 1976 | 30 September 2020 | Accession of Mongolia as seventh member of the APTA (UNESCAP 2020). |
| ASEAN–Japan Comprehensive Economic Partnership | 1 December 2008 | 1 August 2020 | Entry into force of the First Protocol to Amend the Agreement. The protocol added provisions concerning trade in services, movement of natural persons, and investment (ASEAN 2021). |

ASEAN = Association of Southeast Asian Nations, FTA = free trade agreement.

Note: Recent updates report agreements with entry into force from July 2020.

[a] Government of New Zealand, Ministry of Foreign Affairs and Trade. NZ–China Free Trade Agreement. https://www.mfat.govt.nz/en/trade/free-trade-agreements/free-trade-agreements-in-force/nz-china-free-trade-agreement/.
[b] Government of Singapore, Ministry of Trade and Industry. UK–Singapore Digital Economy Agreement. https://www.mti.gov.sg/Trade/Digital-Economy-Agreements/UKSDEA.
[c] Government of Australia, Department of Foreign Affairs and Trade. Australia–Singapore Digital Economy Agreement. https://www.dfat.gov.au/trade/servicesand-digital-trade/australia-and-singapore-digitaleconomy-agreement.

Source: ADB compilation based on information available as of September 2022, including announcements from parties to the agreements.

generate employment.[29] Digital economy agreements are at the forefront of efforts to establish digital trade rules for the free flow of data across borders and contingent issues on data security, protection, and privacy, among others.

A precursor to facilitating a rules-based approach in the use of electronic means to engage in commercial activities, the United Nations Commission on International Trade Law (UNCITRAL) has enacted the Model Law of Electronic Commerce in 1996 to encourage harmonization of domestic laws and regulations on e-commerce transactions, including provisions for functional equivalence between electronic communications and paper documents.[30] Eighteen ADB economies are signatories to the UNCITRAL-Model Law of Electronic Commerce.

More recently, new generation trade agreements such as the CPTPP and the US–Mexico–Canada Agreement became templates for the design of more liberalized rules on data flows, electronic transactions, and digital trade facilitation through digital economy agreements. Table 2.3 compares digital economy agreements in Asia and the Pacific.

In 2020, a digital economy agreement between Australia and Singapore entered into force, an amendment to an existing bilateral free trade agreement and supported by memorandums of understanding to facilitate practical cooperation initiatives on data innovation, artificial intelligence, e-invoicing, e-certification for agricultural exports and imports, trade facilitation, personal data protection, and digital identity.[31]

The ASEAN Agreement on Electronic Commerce entered into force in 2021, providing a set of policies, principles, and rules to govern cross-border e-commerce in ASEAN (ASEAN 2019). The agreement is expected to facilitate aspects of e-commerce such as paperless trading, electronic authentication and electronic signatures, online consumer protection, online personal information protection, and location of computing facilities, among other things. The Singapore–New Zealand–Chile Digital Economy Partnership Agreement, signed in 2020 with the aim to harness the potential of the digital economy targeted at smaller economies, entered into force in Chile in November 2021.

The entry into force of the RCEP in 2022 included provisions on electronic commerce, which aim to promote electronic commerce among member economies, build an ecosystem of trust in the use of e-commerce, and enhance cooperation among stakeholders for its development.[32] This broadly includes transmissions of data, information, and digital products over the internet or over private electronic networks (RCEP Secretariat 2020).

The UK–Singapore Digital Economy Agreement, dubbed by the UK as the "world's most innovative trade agreement, covering the digitized trade in services and goods across the whole economy" entered into force in June 2022, building on their existing free trade agreement. The digital economy agreement's core trade areas cover open and inclusive digital markets, data flows, consumer and business safeguards, digital trading systems, financial services, and tech partnerships, among others (Government of the United Kingdom 2022).

In November 2022, the Republic of Korea and the EU launched a new digital partnership to advance cooperation on a wide array of digital issues. Initial work will be implemented on collaborative research, semiconductors, quantum technologies and high-performance computing, next generation mobile networks, artificial intelligence, online and digital platform cooperation, cybersecurity, digital identity and trust services, data-related laws and systems, digital inclusion, and digital trade principles building on the Republic of Korea–EU free trade agreement (European Commission 2022).

[29] Previous editions of the Asian Economic Integration Report (AEIR) extensively discussed the growing importance of the digital economy in the Asia and Pacific region. The AEIR 2021 theme chapter was on digital platforms and how they can accelerate digital transformation across the region (ADB 2021). AEIR 2022 explores the acceleration of digital services during the pandemic and the promise of regional cooperation to boost participation in digital services trade and spread its benefits evenly in developing Asia (ADB 2022b).

[30] United Nations Commission on International Trade Law (UNCITRAL). *UNCITRAL Model Law on Electronic Commerce (1996) with Additional Article 5 bis as adopted in 1998*. https://uncitral.un.org/en/texts/ecommerce/modellaw/electronic_commerce.

[31] Government of Australia, Department of Foreign Affairs and Trade. Australia–Singapore Digital Economy Agreement. https://www.dfat.gov.au/trade/services-and-digital-trade/australia-and-singapore-digital-economy-agreement.

[32] For further information on the Investment Chapter in the RCEP, refer to Box 3.2: Investment Provisions in the Regional Comprehensive Economic Partnership in Chapter 3.

**Table 2.3: Selected Digital Trade Agreements in Asia and the Pacific**

| | Legal Framework: e-Transactions | Legal Framework: e-Transferrable Records | Electronic Authentication | Electronic Invoicing | Paperless Trading | Personal Information Protection | Cross-Border Transfer of Information | Open Government Information | Data Innovation | Cryptography Policy | Cybersecurity | Digital Inclusion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Singapore–United Kingdom Digital Economy Agreement**, entered into force on 14 June 2022 | Article 8.60, consistent with the United Nations Commission on International Trade Law (UNCITRAL) Model Law on Electronic Commerce 1996 or the United Nations Convention on the Use of Electronic Communications in International Contracts | Article 8.60, referenced in Article 10 of the UNCITRAL Model Law on Electronic Transferable Records of 2017 | Article 8.61, covering electronic signature, electronic seals, electronic time stamps, and electronic registered delivery services | Article 8.61-A, focusing on interoperability | Article 8.61-B | Article 8.61-E | Article 8.61-F, including personal information if for the conduct of the business of a covered person | Article 8.61-H | Article 8.61-I (e.g., consumer data portability, data trusts) | Article 8.61-J | Article 8.61-L | Article 8.61-P |
| **Regional Comprehensive Economic Partnership,** entered into force on 1 January 2022 | Article 12.10, consistent with the UNCITRAL Model Law on Electronic Commerce 1996 or the United Nations Convention on the Use of Electronic Communications in International Contracts | . . . | Article 12.6, including electronic signature | . . . | Article 12.5 | Article 12.8 | Article 12.15 | . . . | . . . | . . . | Article 12.13 | . . . |

*continued on next page*

Table 2.3 *continued*

| | Legal Framework: e-Transactions | Legal Framework: e-Transferrable Records | Electronic Authentication | Electronic Invoicing | Paperless Trading | Personal Information Protection | Cross-Border Transfer of Information | Open Government Information | Data Innovation | Cryptography Policy | Cybersecurity | Digital Inclusion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Republic of Korea–Singapore Digital Partnership Agreement**,[a] concluded on 15 December 2021 | Article 14.7, consistent with the UNCITRAL Model Law on Electronic Commerce 1996 or the United Nations Convention on the Use of Electronic Communications in International Contracts | Article 14.7, referenced in Article 10 of the UNCITRAL Model Law on Electronic Transferable Records of 2017 | Article 14.8, including electronic signature | Article 14.10, focusing on interoperability | Article 14.12 | Article 14.17 | Article 14.14, including personal information if for the conduct of the business of a covered person | Article 14.26 | Article 14.25 | Article 14.18 | Article 14.22 | . . . |
| **ASEAN Agreement on Electronic Commerce**, entered into force on 9 September 2021 | . . . | . . . | Article 7.2b, including electronic signature | . . . | Article 7.1 | Article 7.5 | Article 7.4 | . . . | . . . | . . . | Article 8 | . . . |
| **Singapore–Australia Digital Economy Agreement**, entered into force on 8 December 2020 | Article 8, consistent with the UNCITRAL Model Law on Electronic Commerce 1996 or the United Nations Convention on the Use of Electronic Communications in International Contracts | Article 8, referenced in Article 10 of the UNCITRAL Model Law on Electronic Transferable Records of 2017 | Article 9, including electronic signature | Article 10, focusing on interoperability | Article 12 | Article 17 | Article 23, including personal information if for the conduct of the business of a covered person | Article 27 | Article 26 | Article 7 | Article 34 | . . . |

*continued on next page*

Table 2.3 *continued*

| | Legal Framework: e-Transactions | Legal Framework: e-Transferrable Records | Electronic Authentication | Electronic Invoicing | Paperless Trading | Personal Information Protection | Cross-Border Transfer of Information | Open Government Information | Data Innovation | Cryptography Policy | Cybersecurity | Digital Inclusion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Singapore–New Zealand–Chile Digital Economy Partnership Agreement**, signed on 12 June 2020 ** The Republic of Korea signed on 5 October 2021 the documents to formally request to join the Digital Economy Partnership Agreement (DEPA); and Canada had exploratory discussions with DEPA members since December 2020. DEPA entered into force in Chile on 23 November 2021.* | Article 2.3, consistent with the UNCITRAL Model Law on Electronic Commerce 1996 or the United Nations Convention on the Use of Electronic Communications in International Contracts | Article 2.3, referenced in Article 10 of the UNCITRAL Model Law on Electronic Transferable Records of 2017 | Article 6.9, specific to electronic signature | Article 2.5, focusing on interoperability | Article 2.2 | Article 4.2 | Article 4.3, including personal information if for the conduct of the business of a covered person | Article 9.5 | Article 9.4 | Article 3.4 | Article 5.1 | Article 11.1 |
| **Comprehensive and Progressive Agreement for Trans-Pacific Partnership,** entered into force on 30 December 2018 | Article 14.5, consistent with the UNCITRAL Model Law on Electronic Commerce 1996 or the United Nations Convention on the Use of Electronic Communications in International Contracts | . . . | Article 14.6, including electronic signature | . . . | Article 14.9 | Article 14.8 | Article 14.11, including personal information if for the conduct of the business of a covered person | . . . | . . . | . . . | Article 14.16 | . . . |

*continued on next page*

Table 2.3 *continued*

| | Legal Framework: e-Transactions | Legal Framework: e-Transferrable Records | Electronic Authentication | Electronic Invoicing | Paperless Trading | Personal Information Protection | Cross-Border Transfer of Information | Open Government Information | Data Innovation | Cryptography Policy | Cybersecurity | Digital Inclusion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ASEAN–Australia–New Zealand Free Trade Area**, entered into force in 2010 | Article 4. Each Party shall maintain, or adopt as soon as practicable, domestic laws and regulations governing electronic transactions taking into account the UNCITRAL Model Law on Electronic Commerce 1996. | . . . | Article 5 | . . . | Article 8 | Article 7.1 | . . . | . . . | . . . | . . . | . . . | . . . |

. . . = not available, DEPA = Digital Economy Partnership Agreement.

[a] Based on the draft Republic of Korea–Singapore Digital Partnership Agreement uploaded by the Republic of Korea, Ministry of Trade, Industry and Energy.

Source: ADB compilation based on the legal text of the agreements and information available as of 25 July 2022.

Designing and implementing targeted policies for a digital-ready future is a complex, cross-cutting challenge. In parallel with the development of new generation agreements, digital policy interventions are proliferating—these interventions are policies and regulations imposed on the digital domain and associated technologies that can be classified into policy areas, including but not limited to data governance, content moderation, international trade, FDI, competition, registration and licensing, taxation, and other operating conditions.[33] Figure 2.24a shows a general increase in the number of digital policy interventions in seven selected Asian economies. Over 3 years, until 2022, economies had implemented 118 measures; rising above 10 interventions are the PRC (57 measures), Australia (15), and Japan (11).

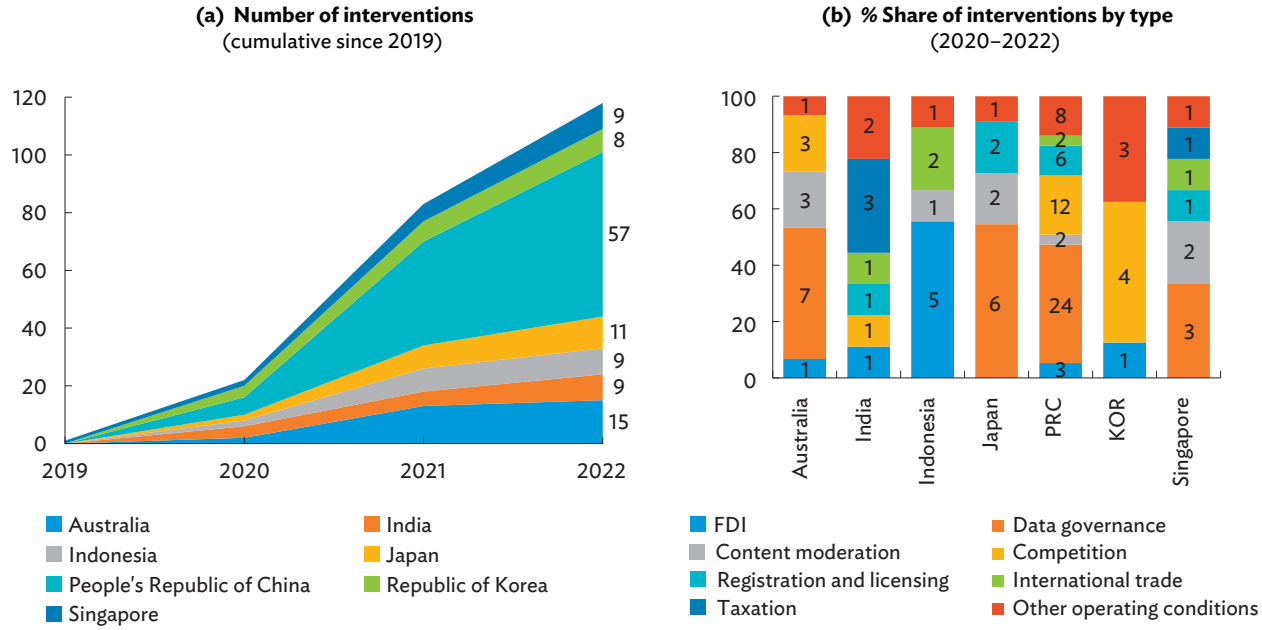
Despite the disparities in numbers between the economies, there are also similarities in digital policy focus (Figure 2.24b). Australia, Japan, the PRC, and Singapore have the largest share of interventions on data governance; India, Indonesia, and the Republic of Korea have no interventions on data governance, focusing instead on taxation, foreign direct investments, and competition, respectively.[34]

## Trade-Related Measures and Temporary Restrictions

**Amid cascading global crises in health, food, and energy, nontariff measures imposed on the region in the form of sanitary and phytosanitary measures and technical barriers continue to peak.**

Governments across the world use trade policy instruments to respond to the various economic and geopolitical challenges and pressures, both to facilitate

**Figure 2.24: Digital Policy Interventions—Selected Asian Economies**




FDI = foreign direct investment, KOR = Republic of Korea, PRC = People's Republic of China.

Source: ADB calculations using data from Digital Policy Alert: https://digitalpolicyalert.org/activity-tracker (accessed August 2022).

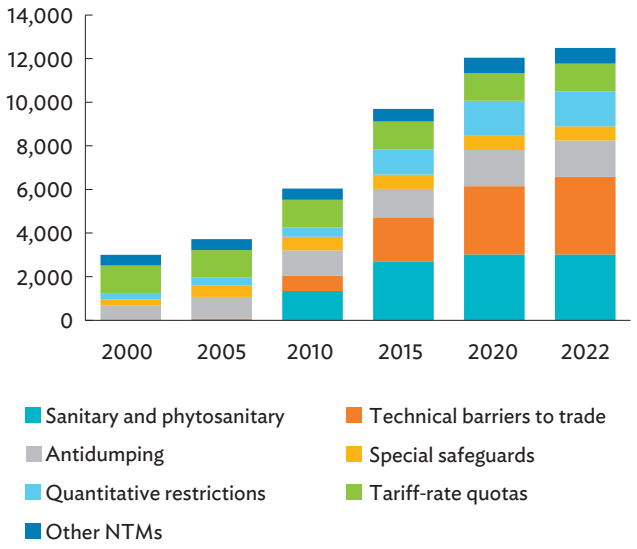
[33] See Digital Policy Alert at https://digitalpolicyalert.org/ for more information.

[34] Additional information on digital policy interventions implemented by the economies analyzed is available in online Annex 1C: https://aric.adb.org/pdf/aeir2023_onlineannex1.pdf.

and to restrict international trade. While some of these measures have legitimate objectives,[35] such as ensuring product safety, environmental protection, or national security, it inevitably restricts trade, with negative implications for growth and sustainable development.

From less than 1% in 2000, nontariff measures in the form of sanitary and phytosanitary measures and technical barriers to trade now collectively comprise more than half of trade-related measures imposed on Asia (Figure 2.25). About 24% of nontariff measures are sanitary and phytosanitary measures, while about 29% are technical barriers to trade. Nontariff measures such as countervailing measures, safeguards, and export subsidies have been relatively constant—ranging from 500 to 700 per year.

**Figure 2.25: Trade-Related Measures—Asia and the Pacific**




NTM = nontariff measure.

Notes: Based on cumulative number of measures in force as of the end of each year. Other nontariff measures include countervailing measures, safeguards, and export subsidies.

Source: ADB calculations using data from the World Trade Organization. Integrated Trade Intelligence Portal. https://i-tip.wto.org/goods/default.aspx (accessed July 2022).

**With trade restrictions implemented during the COVID-19 pandemic still in effect, and confronted with new restrictions in response to the Russian invasion of Ukraine, the risk of maintaining defensive trade regimes remains palpable. Asia should remain steadfast in its resolve to keep markets open and to ensure stable, equitable access to necessities.**

The global experience at the onset of the pandemic, in which economic uncertainties prodded some exporting economies to convert their shipments into stockpiles to secure domestic supplies, demonstrate how export restrictions can have undesirable outcomes such as greater scarcity among importing regions, and an upward drift in global commodity prices. Most recently, the escalating Russian invasion of Ukraine has severely disrupted global trade, impeding the world's post-pandemic food and energy security prospects (Box 2.3).

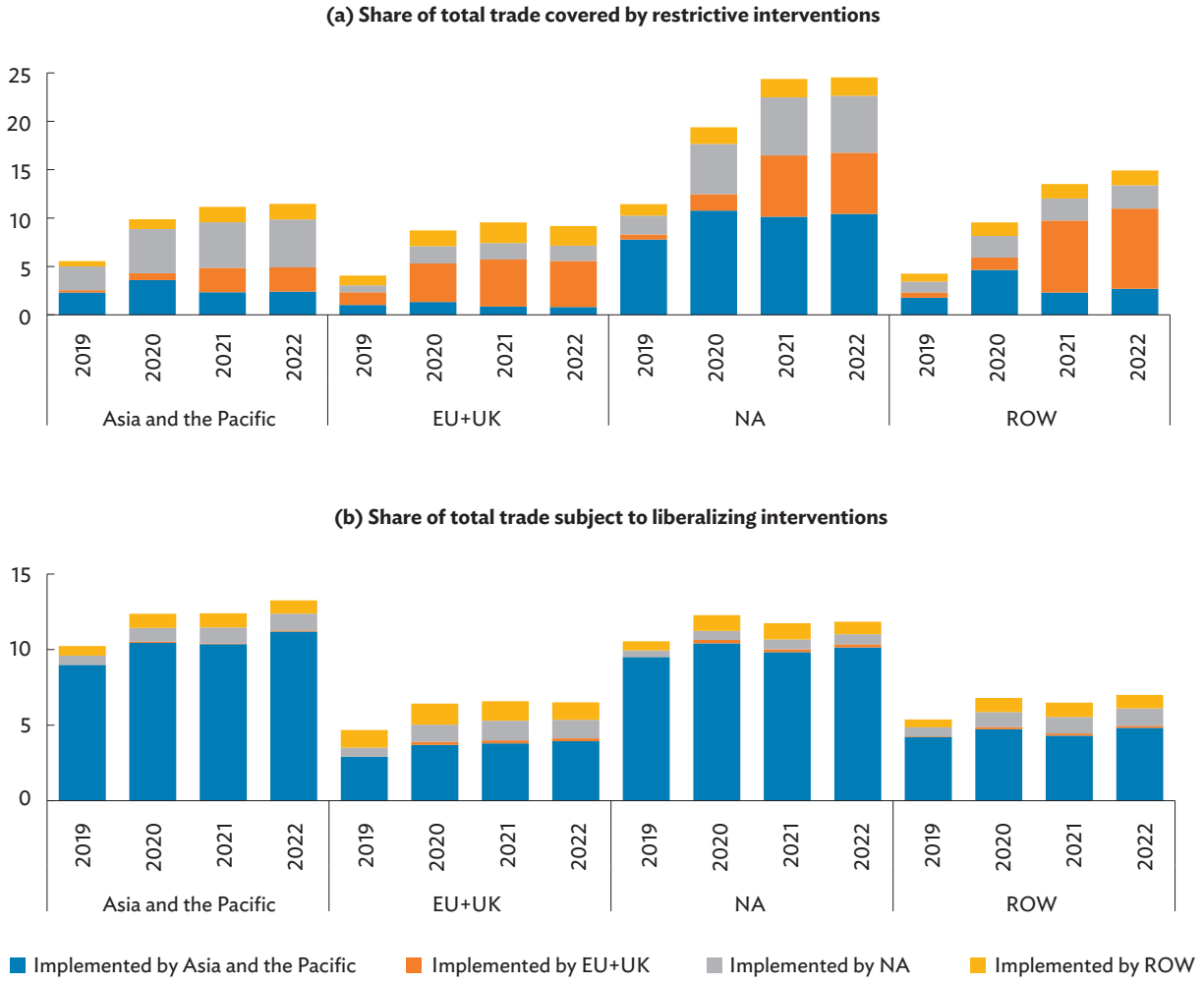
Analysis of trade interventions shows that 756 measures implemented from January 2020 to December 2021 were still in effect as of August 2022, and about 73% of these are considered restrictive.[36] More than 11% of Asia's 2020–2021 average total trade has been subject to restrictive interventions in 2022 (Figure 2.26a) implemented from Canada and the US (5%), Europe and the UK (2.5%), Asian economies (2.4%), and the rest of the world (1.6%).

Alongside export restrictions, several economies have also implemented import liberalization measures as in the case of necessities such as food and medical products. Liberalizing interventions implemented by Asia are shown to cover a significant portion of trade across all regions (Figure 2.26b).

[35] For example, technical barriers to trade establish the technical standards and regulations (e.g., packaging requirements) to ensure the quality of exports and the protection of human, animal, and/or plant health or life (WTO 1995). Sanitary and phytosanitary measures cover food safety, and animal and plant health standards to guarantee that foods are safe for human consumption and prevent the spread of diseases among plants and animals (WTO 1998).

[36] Trade interventions still in place are calculated as the total number of implemented trade interventions in 2020 and 2021 (i.e., the COVID-19 pandemic years) minus the total number of removed trade interventions implemented from 2020 to 2021.

**Figure 2.26: Share of Total Trade Covered by Restrictive and Liberalizing Interventions by Region—World** (%)




EU = European Union (27 members), NA = North America (United States and Canada), ROW = rest of the world, UK = United Kingdom.

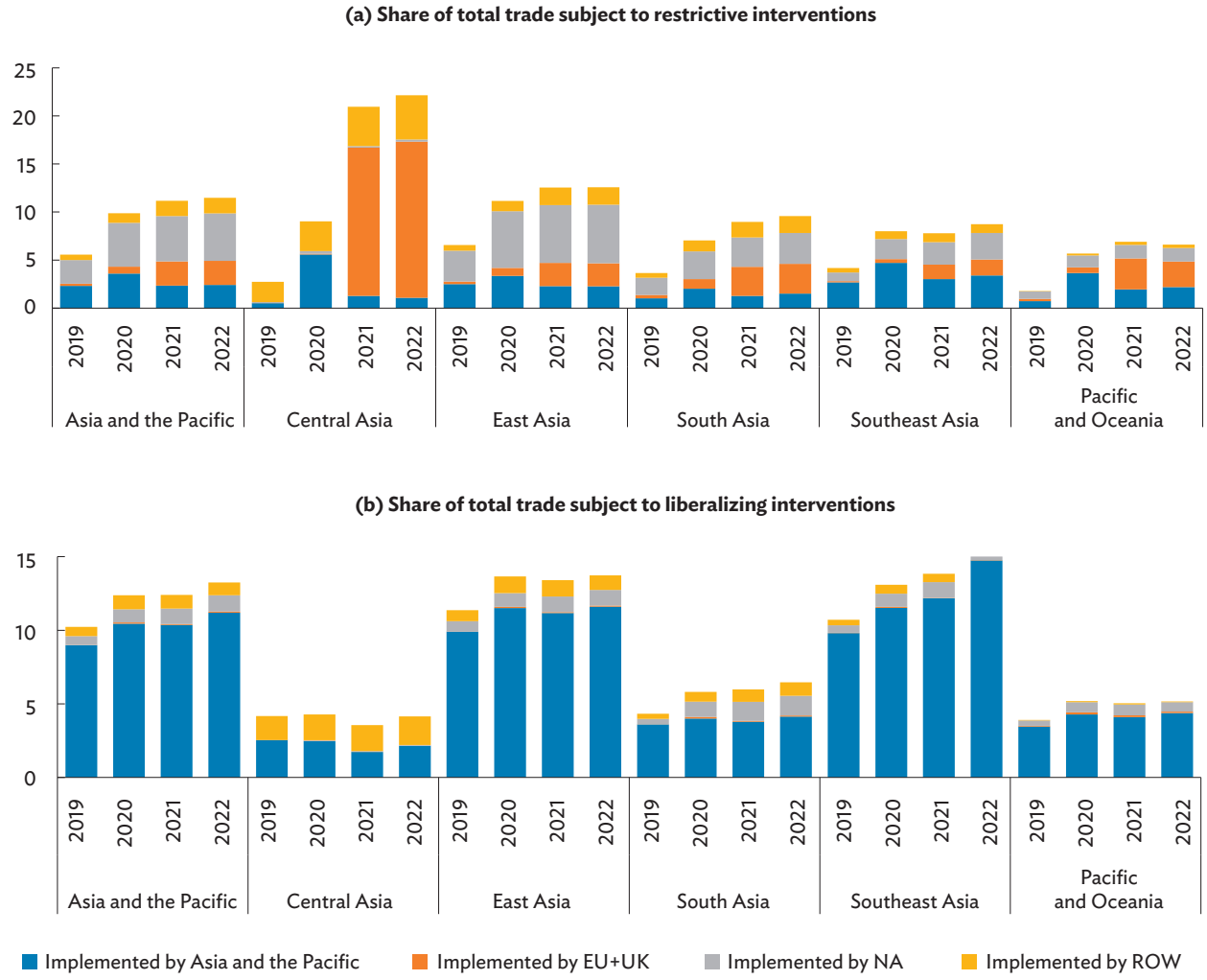
Notes: (i) Figures for 2020 until 2022 were computed using trade interventions in effect since 2019; (ii) the Global Trade Alert (GTA) database for 2022 is yet to include measures announced in this year; (iii) GTA classifies trade measures as either restrictive or liberalizing; and (iv) the share of trade covered by trade interventions is computed using the average of total trade, i.e., the sum of exports and imports in the past 2 years.

Sources: ADB calculations using data from Global Trade Alert. https://www.globaltradealert.org/ (accessed August 2022); and UN Commodity Trade Database. https://comtrade.un.org/ (accessed August 2022).

Among subregions in Asia, Central Asia has the greatest share of total trade subject to restrictive interventions, followed by East Asia and South Asia (Figure 2.27). Restrictive measures or interventions by Europe and the UK account for the largest share of total Central Asian trade in 2021 and 2022 at 16%, while measures by the rest of the world are a distant second at about 5%. On the other hand, East Asia's total trade is largely covered by restrictive measures imposed by Canada and the US with 6%. Similarly, restrictive interventions on Asia's total trade come from Canada and the US, with about 5%, followed by the EU and the UK, at about 2.5%, and then from within Asia, at 2.4%.

Southeast Asia has the highest share of total trade covered by liberalizing measures, with about 15%, followed by East Asia and South Asia. Central Asia has the lowest share of trade benefiting from these measures, with about 4%. Across all subregions, most liberalizing measures were implemented from within the region.

**Figure 2.27: Share of Total Trade Covered by Restrictive and Liberalizing Interventions by Asian Subregion** *(%)*




EU = European Union (27 members), NA = North America (United States and Canada), ROW = rest of the world, UK = United Kingdom.

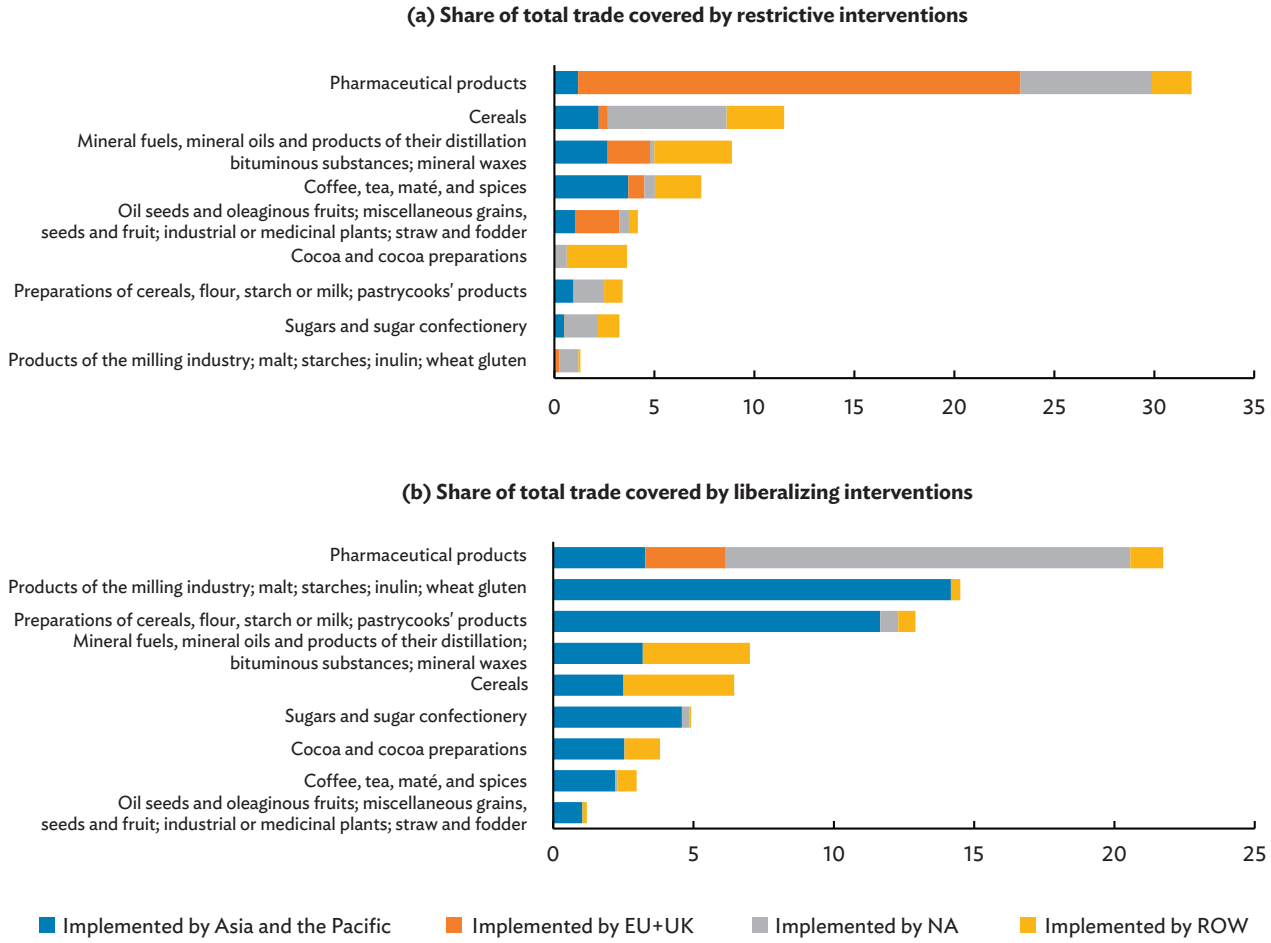
Notes: (i) Figures for 2020 until 2022 were computed using trade interventions that were in effect since 2019; (ii) The Global Trade Alert (GTA) database for 2022 is yet to include measures announced in this year; (iii) GTA provides the classification of trade measures as either restrictive or liberalizing; and (iv) the share of trade covered by trade interventions are computed using the average of total trade, i.e., the sum of exports and imports, in the past 2 years.

Sources: ADB calculations using data from Global Trade Alert. https://www.globaltradealert.org/; and UN Commodity Trade Database. https://comtrade.un.org/ (both accessed August 2022).

Looking at the critical and essential sectors during the pandemic, more than 30% of trade in pharmaceutical products was subject to restrictive measures, most of which were attributed to EU and UK measures (Figure 2.28). More than 20% of trade in this sector was subject to liberalizing measures, a large share imposed by Canada and the US (14% of pharmaceutical trade). In contrast, restrictions on pharmaceutical products within Asia represented only 1.2% of total trade in pharmaceutical products. Keeping international markets open for trade is an essential part of economic recovery. To this end, in November 2020, the ASEAN economic ministers signed a memorandum of understanding on the implementation of nontariff measures on essential goods, calling on ASEAN member states to refrain from introducing or maintaining trade-restrictive measures on essential goods (ASEAN 2020).

In contrast, trade in of grain products (i.e., products of the milling industry, malt, and starches) has been relatively spared from restrictive measures (less than 2% of total trade) but is a significant contention of liberalizing measures mostly implemented by Asia. Similarly, measures imposed by Asia dominate the liberalizing interventions on flour (i.e., preparations of cereals, flour, starch, or milk), covering close to 12% of total trade. Asia pushed through its liberalizing trade interventions on grain and flour, despite COVID-19 mobility restrictions; imminent shortages of farm labor; locust infestations in Africa, the Middle East, and South Asia; and dry weather in Europe and South America that disrupted yields on agricultural products (Falkendal et al. 2021).

**Figure 2.28: Share of Total Trade Subject to Trade Interventions from 2019 to 2022, by Selected Commodity Group—Asia and the Pacific** (%)




EU = European Union (27 members), NA = North America (United States and Canada), ROW = rest of the world, UK = United Kingdom.

Notes: (i) Figures for 2020 until 2022 were computed using trade interventions in effect since 2019; (ii) the Global Trade Alert (GTA) database for 2022 is yet to include measures announced in this year; (iii) GTA classifies trade measures as either restrictive or liberalizing; and (iv) the share of trade covered by trade interventions are computed using the average of total trade, i.e., the sum of exports and imports, in the past 2 years.

Sources: ADB calculations using data from Global Trade Alert. https://www.globaltradealert.org/; and UN Commodity Trade Database. https://comtrade.un.org/ (both accessed August 2022).

**Against challenging global economic and geopolitical environment, the outcomes of the 12th Ministerial Conference of the World Trade Organization (MC12) reflect the WTO's efforts to tackle global emergencies. Subsequently, Aid for Trade is significant in reinforcing MC12 reforms and furthering the capacity of developing economies to overcome trade-related constraints and to achieve more inclusive development.**

In June 2022, MC12 gathered ministers in Geneva after almost 5 years had passed since the last meeting in Nairobi. To help governments respond to today's compounded global challenges, the conference agreed on major outcomes in response to critical issues, including landmark agreements and decisions on fisheries subsidies, WTO reform, pandemic preparedness, food security, and e-commerce (WTO 2022c):

(i) A multilateral agreement on fisheries subsidies was adopted with new and binding provisions on members by prohibiting (a) subsidies contributing to illegal, unreported, and unregulated fishing; (b) subsidies regarding overfished stocks; and (c) subsidies for fishing in under-regulated high seas.

(ii) Ministers launched a concrete WTO reform process, acknowledging the importance and urgency of reforming the WTO Dispute Settlement System. Discussions will be conducted about a full and well-functioning dispute settlement system accessible to all members by 2024.

(iii) A declaration was agreed on the WTO response to the pandemic and preparedness for future pandemics. WTO members agreed to implement a 5-year intellectual property waiver for COVID-19 vaccines, including its ingredients and processes, and will examine extension to therapeutics in 6 months under the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights Agreement.

(iv) The Declaration on the Emergency Response to Food Insecurity was adopted, which reaffirms the importance of not imposing WTO-inconsistent export prohibitions or restrictions on food. Members further agreed to exempt the World Food Programme from trade-distorting measures, and to enhance the productivity, availability, affordability, and resilience of agricultural markets.

(v) A Ministerial Decision on the Work Programme on Electronic Commerce was adopted, which extends the moratorium on customs duties on electronic transmissions until MC13.

Developing and least developed economies are poised to benefit from the MC12 outcomes through agreed agricultural reforms that are aligned with the objectives of the Doha Development Agenda, and through reinvigorated cooperation on important development issues such as food insecurity, e-commerce, and intellectual property related to the pandemic response, among others. Targeted technical assistance and capacity building programs will also be provided to advance work on enhancing the disciplines of the Agreement on Fisheries Subsidies through the WTO's new Fish Funding Mechanism to be established in cooperation with relevant international organizations such as the Food and Agriculture Organization of the United Nations and the International Fund for Agricultural Development.

MC12 developments present timely and valuable opportunities to promote more inclusive and sustained economic growth. However, complementary international assistance and cooperation beyond MC12 remain much needed by developing economies—especially the least developed and geographically challenged—to weather current trade tensions and economic uncertainties and to catch up with rapidly advancing global trends in digital trade and connectivity.

For example, the E-Commerce Capacity Building Framework launched earlier in 2022 by co-convenors of the Joint Statement Initiative on E-Commerce aims to provide a wide range of training and assistance to strengthen digital inclusion and maximize opportunities in digital trade for developing and least developed members (WTO 2022b). Similarly, the Aid for Trade initiative, which has long supported developing

**Box 2.3: Trade-Restricting Measures Arising from the Russian Invasion of Ukraine**

The Russian invasion of Ukraine has severely disrupted global trade and investment, impeding the world's post-pandemic food and energy security prospects. This has unleashed a new wave of protectionism as governments adopt trade-related barriers and restrictions in a bid to secure domestic stocks of food and other commodities amid shortages and rising prices.

World Trade Organization (WTO) rules allow members to impose export restrictions as a temporary measure under certain circumstances. The exception permits a WTO member to measures it considers "necessary for the protection of its essential security interests," including "in time of war or other emergency in international relations" (Article XXI, WTO General Agreement on Tariffs and Trade [GATT]). The Government of Ukraine, in its decision to impose an economic embargo with the Russian Federation and to rescind the application of WTO agreements in its relations with the Russian Federation, invoked its national security rights under, among other things, Article XXI of GATT 1994, Article XIV bis of the General Agreement on Trade in Services, and Article 73 of the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights Agreement. Ukraine urged WTO members to suspend the Russian Federation's participation in the WTO (Ukraine's Mission to UNOG 2022). In response, Canada revoked the most-favored nation status of the Russian Federation and Belarus on the basis of GATT Article XXI (Government of Canada 2022). A joint statement by 14 WTO members including the European Union, Japan, and the United States, indicated that they would take action "necessary to protect our essential security interests" (US Mission 2022).

The Russian Federation argued that the unilateral withdrawal of most-favored-nation treatment for Russian goods and services "severely defies the fundamental WTO principle of non-discrimination" (WTO 2022a).

Export and other trade-related restrictions limit consumer choices as imported quantities decline. It may also trigger a ripple effect toward the imposition of further restrictions to include substitute goods. The number of economies that have imposed export restrictions on food supplies increased as the the Russian invasion of Ukraine ensued, according to WTO notifications. Ukraine has banned exports of agricultural commodities including barley and sugar, and has introduced export licenses for its key export goods such as wheat, corn, and sunflower oil. The Russian Federation imposed export restrictions for raw sugar, wheat, barley, and corn, among others. Argentina, Hungary, Indonesia, the Republic of Moldova, Serbia, and Türkiye announced export restrictions on products such as wheat, maize, sunflower oil, margarine, flour, and soybean oil to all trade partners, and Egypt has implemented a production license scheme for wheat producers (WTO 2022d).

The WTO's midyear report on trade-related developments covering mid-October 2021 to mid-May 2022 recorded 55 prohibitive or restrictive export measures on food, feed, fuels, and fertilizers imposed by WTO members and observers since the escalation of the invasion in late February. Of these, 15 measures have since been phased out, while 40 measures from 25 members and observers are still in place (WTO 2022e).

Source: ADB staff.

economies in building trade-related infrastructure and capacities, may also leverage digital trade by more actively addressing information and communication technology infrastructure issues and narrowing the global digital divide.[37] Through concerted efforts, governments, multilateral institutions, and other relevant stakeholders must continue cooperating toward mitigating the negative effects of ongoing crises, while keeping pace with rapid digital trends in a still-fragile post-pandemic recovery.

[37] In July 2022, ADB released a report examining the catalytic role of Aid for Trade in helping least developed, lower-middle-income, and small island developing economies narrow the digital divide and navigate the emerging trade rules in digital agreements, making trade more inclusive, resilient, and sustainable (ADB 2022a).

## References


Amaglobeli, D., E. Hanedar, G. H. Hong, and C. Thévenot. 2022. Response to High Food, Energy Prices Should Focus on Most Vulnerable. International Monetary Fund Blog. 7 June. https://blogs.imf.org/2022/06/07/response-to-high-food-energy-prices-should-focus-on-most-vulnerable/.

Association of Southeast Asian Nations (ASEAN). 2019. *ASEAN Agreement on Electronic Commerce*. https://asean.org/wp-content/uploads/2021/09/ASEAN-Agreement-on-Electronic-Commerce-2019.pdf.

———. 2020. *Memorandum of Understanding on the Implementation of NonTariff Measures (NTM) on Essential Goods under the Ha Noi Plan of Action on Strengthening ASEAN Economic Cooperation and Supply Chain Connectivity in Response to the COVID-19 Pandemic*. https://asean.org/wp-content/uploads/2021/09/5.-MOU-on-NTMs-on-Essential-Goods-for-upload.pdf.

———. 2021. Certifying Statement. First Protocol to Amend the Agreement on Comprehensive Economic Partnership among Member States of the Association of Southeast Asian Nations and Japan. https://asean.org/wp-content/uploads/2021/08/AJCEP-Prtcl-CTC.pdf.

Asian Development Bank (ADB). 2015. *Key Indicators for Asia and the Pacific 2015 46th Edition*. Manila.

———. 2021. *Asian Economic Integration Report 2021: Making Digital Platforms Work for Asia and the Pacific.* Manila.

———. 2022a. *Aid for Trade in Asia and the Pacific: Leveraging Trade and Digital Agreements for Sustainable Development.* Manila. https://www.adb.org/sites/default/files/publication/811756/aid-trade-asia-pacific-trade-digital-agreements.pdf.

———. 2022b. *Asian Economic Integration Report 2022: Advancing Digital Services Trade in Asia and the Pacific.* Manila.

———. 2022c. *The Regional Comprehensive Economic Partnership Agreement: A new paradigm in Asian regional cooperation?* Manila. https://www.adb.org/sites/default/files/publication/792516/rcep-agreement-new-paradigm-asian-cooperation.pdf.

———. Asia Regional Integration Center. Economy Groupings. https://aric.adb.org/integrationindicators/groupings.

———. Asia Regional Integration Center. Free Trade Agreements. https://aric.adb.org/fta (accessed July 2022, December 2022).

Baffes, J. and P. Nagle. 2022. Commodity Prices Surge Due to the War in Ukraine. World Bank Blogs. 5 May. https://blogs.worldbank.org/developmenttalk/commodity-prices-surge-due-war-ukraine.

Borin, A. and M. Mancini. 2019. Measuring What Matters in Global Value Chains and Value-Added Trade. *Policy Research Working Paper* No. 8804. https://openknowledge.worldbank.org/handle/10986/31533.

Centre d'Études Prospectives et d'Informations Internationales (the French Research Center in International Economics). GeoDist Database. http://www.cepii.fr/CEPII/en/cepii/cepii.asp (accessed December 2022).

CPB Netherlands Bureau for Economic Policy Analysis. World Trade Monitor. https://www.cpb.nl/en/world-trade-monitor-october-2022 (accessed January 2023).

Deb, P., J. Estafania-Flores, S. Kothari, and N. Tawk. 2021. How Trade Can Help Speed Asia's Economic Recovery. International Monetary Fund Blog. 19 November. https://blogs.imf.org/2021/11/19/how-trade-can-help-speed-asias-economic-recovery/.

Digital Policy Alert: https://digitalpolicyalert.org/activity-tracker (accessed August 2022).

Energy Information Administration (EIA). 2021. Natural Gas Explained. 2 December. https://www.eia.gov/energyexplained/natural-gas/.

———. 2022. Oil and Petroleum Products Explained - Oil Prices and Outlook. 25 February. https://www.eia.gov/energyexplained/oil-and-petroleum-products/prices-and-outlook.php.

Espitia, A., N. Rocha, and M. Ruta. 2022. How Export Restrictions Are Impacting Global Food Prices. World Bank Blogs. 6 July. https://blogs.worldbank.org/psd/how-export-restrictions-are-impacting-global-food-prices.

European Commission. 2022. Republic of Korea–European Union Digital Partnership. 28 November. https://digital-strategy.ec.europa.eu/en/library/republic-korea-european-union-digital-partnership.

Falkendal, T., C. Otto, J. Schewe, J. Jägermeyr, M. Konar, M. Kummu, B. Watkins, and M. Puma. 2021. Grain Export Restrictions During COVID-19 Risk Food Insecurity in Many Low- and Middle-Income Countries. *Nature Food*. 2. pp. 11–14.

*FOREX.com*. 2021. Commodity Currencies Explained. 5 May. https://www.forex.com/en/market-analysis/latest-research/commodity-currencies-explained/.

Freightos. Freightos Baltic Index (FBX): Global Container Freight Index. https://fbx.freightos.com/ (accessed January 2023).

Glauber, J. and T. Sinha. 2021. *Procuring Food Stocks Under World Trade Organization Farm Subsidy Rules: Finding a Permanent Solution*. Winnipeg: International Institute for Sustainable Development. https://www.iisd.org/system/files/2021-08/food-stocks-wto-farm-subsidy-rules.pdf.

Global Trade Alert. https://www.globaltradealert.org/ (accessed August 2022).

Government of Australia, Department of Foreign Affairs and Trade. Australia–Singapore Digital Economy Agreement. https://www.dfat.gov.au/trade/services-and-digital-trade/australia-and-singapore-digital-economy-agreement.

Government of Canada. 2022. Canada Cuts Russia and Belarus from Most-Favoured-Nation Tariff Treatment. News Release. 3 March. https://www.canada.ca/en/department-finance/news/2022/03/canada-cuts-russia-and-belarus-from-most-favoured-nation-tariff-treatment.html.

Government of New Zealand, Ministry of Foreign Affairs and Trade. NZ–China Free Trade Agreement. https://www.mfat.govt.nz/en/trade/free-trade-agreements/free-trade-agreements-in-force/nz-china-free-trade-agreement/.

Government of Singapore, Ministry of Trade and Industry. UK–Singapore Digital Economy Agreement. https://www.mti.gov.sg/Trade/Digital-Economy-Agreements/UKSDEA.

Government of the United Kingdom. 2022. *UK–Singapore Digital Economy Agreement: Final Agreement Explainer*. https://www.gov.uk/government/publications/uk-singapore-digital-economy-agreement-explainer/uk-singapore-digital-economy-agreement-final-agreement-explainer.

International Monetary Fund (IMF). Commodity Terms of Trade. https://data.imf.org/ (accessed November 2022).

———. Direction of Trade Statistics. https://data.imf.org/dot (accessed December 2022 and January 2023).

———. World Economic Outlook October 2022 Database. https://www.imf.org/en/Publications/WEO/weo-database/2022/October (accessed December 2022).

Konrad, T. 2012. The End of Elastic Oil. *Forbes*. 26 January. https://www.forbes.com/sites/tomkonrad/2012/01/26/the-end-of-elastic-oil/?sh=596997c036d6.

Laborde, D. and A. Mamun. Food Export & Fertilizer Restrictions Tracker. https://public.tableau.com/app/profile/laborde6680/viz/ExportRestrictionsTracker/FoodExportRestrictionsTracker (accessed December 2022 and January 2023).

Rampono, J. 2022. What's Driving the Australian Dollar Higher in 2022. *S Money.* 9 March. https://www.smoney.com.au/blog/whats-driving-the-australian-dollar-higher-in-2022/.

RCEP Secretariat. 2020. RCEP Agreement Chapter 12 - Electronic Commerce. https://rcepsec.org/wp-content/uploads/2020/11/Chapter-12.pdf.

*Russia Briefing.* 2022. European Development Bank: Economic Fallout Likely for Central Asia. 31 March. https://www.russia-briefing.com/news/european-development-bank-economic-fallout-likely-for-central-asia.html/.

Ukraine's Mission to United Nations Office at Geneva (UNOG). 2022.https://twitter.com/ukrinunog/status/1499334312755437569.

United Nations. Commodity Trade Database. https://comtrade.un.org (accessed August, November, and December 2022, and January 2023).

United Nations Conference on Trade and Development (UNCTAD). 2022. *Maritime Trade Disrupted: The War in Ukraine and Its Effects on Maritime Trade Logistics*. https://unctad.org/system/files/official-document/osginf2022d2_en.pdf.

United Nations Commission on International Trade Law (UNCITRAL). *UNCITRAL Model Law on Electronic Commerce (1996) with Additional Article 5 bis as adopted in 1998.* https://uncitral.un.org/en/texts/ecommerce/modellaw/electronic_commerce.

United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). 2020. *Mongolia Accedes to the Asia-Pacific Trade Agreement as Its Seventh Member*. https://www.unescap.org/news/mongolia-accedes-asia-pacific-trade-agreement-its-seventh-member.

US Mission. 2022. Joint Statement on Aggression by the Russian Federation Against Ukraine with the Support of Belarus: Communication from Albania; Australia; Canada; European Union; Iceland; Japan; the Republic of Korea; the Republic of Moldova; Montenegro; New Zealand; North Macedonia; Norway; the United Kingdom; and the United States. https://geneva.usmission.gov/2022/03/15/wto-members-joint-statement-on-ukraine/.

Wani, A. 2022. The Ukraine War Weighs Down on the Central Asian Republics. *Observer Research Foundation*. 13 May. https://www.orfonline.org/expert-speak/the-ukraine-war-weighs-down-on-the-central-asian-republics/.

World Bank. World Development Indicators. https://databank.worldbank.org/source/world-development-indicators (accessed December 2022).

———. 2022. Food and Energy Price Shocks from Ukraine War Could Last for Years. Press release. 26 April. https://www.worldbank.org/en/news/press-release/2022/04/26/food-and-energy-price-shocks-from-ukraine-war.

World Trade Organization (WTO). 1995. *Agreement on Technical Barriers to Trade.* https://www.wto.org/english/docs_e/legal_e/17-tbt.pdf.

———. 1998. *Understanding the WTO Agreement on Sanitary and Phytosanitary Measures*. Geneva. https://www.wto.org/english/tratop_e/sps_e/spsund_e.htm.

———. 2022a. Communication from the Russian Federation. https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/GC/245.pdf&Open=Tru.

———. 2022b. E-Commerce JSI co-convenors announce capacity building support. https://www.wto.org/english/tratop_e/ecom_e/jiecomcapbuild_e.htm.

———. 2022c. MC12 Outcome Document, WTO 222, adopted on 17 June 2022. https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/MIN22/24.pdf&Open=True.

———. 2022d. The Crisis in Ukraine: Implications of the War for Global Trade and Development. https://www.wto.org/english/res_e/booksp_e/imparctukraine422_e.pdf.

———. 2022e. WTO Members Show Restraint in Trade-Restrictive Measures Despite Economic Uncertainty. https://www.wto.org/english/news_e/news22_e/trdev_27jul22_e.htm.

———. General Agreement on Tariffs and Trade (GATT). https://www.wto.org/english/res_e/booksp_e/gatt_ai_e/art21_e.pdf.

———. Integrated Trade Intelligence Portal. https://i-tip.wto.org/goods/default.aspx (accessed July 2022).

———. Organisation for Economic Co-operation and Development (OECD). Balanced Trade in Services Dataset (BaTIS)—BPM6. https://www.wto.org/english/res_e/statis_e/trade_datasets_e.htm (accessed December 2022).

———. Regional Trade Agreement Information System. http://rtais.wto.org (accessed December 2022).