# Introduction

This report examines the economy and trade of Kazakhstan in the context of global value chains (GVCs), a form of fragmented production that has affected everything from automobiles to vaccines. It combines innovative analytical tools with the latest available data to produce indicators that describe Kazakhstan’s rate of GVC participation, the lengths of its GVC production, its patterns of specialization, and the price competitiveness of its exports—among many others. This report’s key data source is the Asian Development Bank’s (ADB) Multiregional Input–Output (MRIO) Database, the only time series of intercountry input–output tables to-date that includes Kazakhstan. provides more information on this dataset. It is hoped that the insights this report presents will prove useful for policymakers and the general public alike.

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| Box : The Asian Development Bank Multiregional Input–Output Database  The Asian Development Bank (ADB) Multiregional Input–Output (MRIO) Database is a time series of intercountry input–output tables maintained by a dedicated team in ADB. It is freely available at https://mrio.adbx.online. Information on cross-sectoral linkages are provided for 62 countries and economies. A residual “Rest of the world” entity is also included, allowing the table to capture the entirety of global flows.  The ADB MRIO Database is an extended version of the World Input–Output Database, 2013 release. Each country or economy is divided into 35 sectors, based on Table A2 of Timmer, et al. (2015). There are five final demand categories: household final consumption expenditure (FCE), non-profit institutions serving households FCE, government FCE, gross fixed capital formation, and changes in inventories.  Officially published national supply–use tables (SUTs) and/or input–output tables (IOTs) serve as benchmarks in the construction of the ADB MRIO. In each national SUT or IOT, sectoral and product classifications were harmonized to follow the 35 sectors, and whenever necessary, SUTs were transformed into IOTs following the industry technology transformation assumption discussed in European Commission (2008).  Benchmark IOTs also serve as the base structure for producing time-series of the ADB MRIO tables using published estimates on gross output, gross value added, taxes less subsidies on products, imports, and exports sourced from national statistical agencies and central bank databases as control totals. The structure of imports and exports are based on bilateral trade data extracted from the United Nations COMTRADE Database and government trade and balance of payments statistics. Once the national IOTs are integrated into the MRIO, accounts for the sectors of “rest of the world” are manually and systematically adjusted to ensure consistency with economy–sector totals in the MRIO.  The basic structure of each of MRIO table is given below. It is composed of **Z**, a matrix of intermediates use; **Y**, a matrix of final demand; **va**, a vector of country-sector value added; and **x**, a vector of output. Read vertically, the table shows the purchases of each country-sector, distinguished between intermediate inputs and primary inputs, the latter also called value added. Read horizontally, it shows the sales of each country-sector, distinguished between intermediate sales and final sales. The market-clearing condition stipulates that total purchases and total sales for each country-sector must equal. This amount is total output.  **A Schematic Representation of the ADB MRIO**   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  | **Country A** |  | **Rest of the world** | **Country A** |  | **Rest of the world** | **Total output** | |  |  | c1 c35 |  | c1 c35 | f1 f5 |  | f1 f5 | | **Country A** | c1  c35 | **Z** | | | **Y** | | | **x** | |  |  | | **Rest of the world** | c1  c35 | | **Value added** | | **va** | | |  |  |  |  | | **Total output** | | **x** | | |  |  |  |  |   Source: Asian Development Bank. Multiregional Input–Output Database.  **References**  European Commission. 2008. *Eurostat Manual of Supply, Use and Input-Output Tables*. Luxembourg: European Commission. Retrieved from https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/KS-RA-07-013.  M. P. Timmer, E. Dietzenbacher, B. Los, R. Stehrer, and G. J. de Vries. 2015. An Illustrated User Guide to the World Input-Output Database: The Case of Global Automotive Production. *Review of International Economics*. 23(3). pp. 575–605. |

Kazakhstan is a vast, land-locked country that sits at the heart of the Eurasian landmass. Migrants, traders, armies, and pastoral nomads have crossed its steppes for centuries. Historians date the emergence of a distinct Kazakh identity in the 16th century, when tribes sharing a common culture formed a loose federation known as the Kazakh Khanate. It fell under increasing Russian influence in the 18th century, culminating in its incorporation into the Union of Soviet Socialist Republics in the 20th century. Upon the dissolution of that body in 1991, the modern state of Kazakhstan was born (Pavlović 2003).

Following independence, the exploitation of Kazakhstan's sizable oil reserves led to rapid growth, particularly during the 2000s boom in oil prices. It transitioned from lower-middle to upper-middle income status by 2006 according to the World Bank.[[1]](#footnote-2) [Statistics on literacy, education, HDI, etc]. However, overdependence on its extractive resource sector naturally poses systemic risks, making diversification crucial to Kazakhstan's long-term economic health (Azretbergenova and Syzdykova 2020). [Russian trade]

The next chapter examines Kazakhstan's economy and trade in more detail. Chapter 3 introduces an array of indicators obtained from the literature that characterizes Pakistan’s place in international production sharing. Chapter 4 draws further insights into its specialization and competitiveness by refining two classic trade indicators to account for GVCs. A number of special topics are discussed in chapter 5, including its membership in the South Asian Association for Regional Cooperation, its patterns of domestic agglomeration, and its economic performance under the coronavirus pandemic of 2020. Chapter 6 concludes with recommendations for maximizing the benefits of GVCs and minimizing their risks.

# Overview of Economy and Trade

Summary

Throughout the 1990s, Kazakhstan, along with the other states of the former Soviet Union, faced severe economic dislocation as they transitioned into independent, market-based economies. Hyperinflation struck the region after price controls were lifted in January 1992. Though Kazakhstan replaced the Russian ruble with its own currency, the tenge, in 1993, it was not until 1996 when monthly inflation fell below 50%. Some 1 million people, mostly ethnic Russians, would go on to emigrate (Pomfret 2019). Coal production, once a major industry, fell from 138 million tons in 1989 to 58 million tons in 1999.[[2]](#footnote-3) In real terms, the economy in 1999 was just 63% of its size in 1990.[[3]](#footnote-4)

Figure .: Real Gross Domestic Product Growth Rate and Brent Crude Prices, 1990–2028

Notes: Forecasts are by the International Monetary Fund as of April 2023.

Sources: International Monetary Fund. World Economic Outlook Database (April 2023). https://www.imf.org/en/Publications/WEO/weo-database/2023/April (accessed 19 June 2023); U.S. Energy Information Administration. https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=RBRTE&f=M (accessed 19 June 2023).

Fortunately, Kazakhstan's economy began to stabilize and then thrive by 1999. This was due mainly to a prolonged period of rising oil prices, which enticed foreign capital to invest in the exploitation of Kazakhstan's vast oil reserves. For instance, the offshore Kashagan oil field, discovered in 2000, was developed by a consortium of European, American, Chinese, and Japanese firms. New modes of transport were also constructed to complement the Russian state-owned Transneft pipeline. A 1500-kilometer pipeline from Tengiz through southern Russia that terminated at the Black Sea coast came online in 2003. Oil could also be shipped across the Caspian Sea to Baku, Azerbaijan, where a pipeline leading to Ceyhan, Turkey was completed in 2005. That same year, an eastward route from Atasu in central Kazakhstan to the PRC border began operations (Pomfret 2019).

Consequently, oil production rose steadily from 558,000 barrels per day in 1998 to a peak of 1.7 million barrels per day by 2013.[[4]](#footnote-5) GDP growth averaged 10% per annum during the height of the boom years in 2000–2007 (see Figure ‎2.1).

Oil prices would retreat in 2014 following the U.S. shale ? (), Prices would remain relatively subdued until the spike triggered by the 2022 Russian invasion of Ukraine. Kazakhstan's GDP growth has moderated accordingly, averaging 3.1% in 2013–2019. It weathered the COVID-19 pandemic fairly well, suffering a 2.6% contraction before bouncing back in 2021 with a 4.1% growth rate. The International Monetary Fund forecasts its growth to average at 3.3% until 2028.

World Bank (2020a) notes that private consumption, fueled by population growth and remittances, accounts for about 90% of growth. As demand outstrips domestic productive capacities, imports have persistently exceeded exports and have resulted in an unsustainable current account deficit. World Bank (2020a) estimates that the low rate of private investment in both physical and human capital constrains Pakistan’s growth potential to just 2.5–3.0% per year. Because the pace of structural transformation is sluggish, many workers remain employed in low-productivity jobs in the agricultural and informal services sectors.

Slower growth rates translate to slower improvements in the standard of living. Between 1980 and 2000, average real incomes as measured by constant-price GDP per capita increased by 64%, while between 2000 and 2020, the increase was just 45%. The average Pakistani was about 1.4 times better off in 2020 than in 1980. Adjusting for differences in price levels, Pakistan has about the same living standards as Bangladesh and Cambodia, but is behind other developing countries in Asia and the Pacific like the Philippines and Viet Nam. Nevertheless, it is to Pakistan’s credit that it had managed to cut poverty from 64% in 2001 to 24% in 2015 under national poverty lines (World Bank 2020a). Sustained growth will carry such momentum forward.

One viable strategy that Pakistan can adopt to boost its growth is to further open its economy to trade. Many studies, including the classic paper by Jeffrey A. Frankel and David Romer (1999), have affirmed that countries who trade more tend to grow faster. The four Asian Tigers—Hong Kong, China; the Republic of Korea; Singapore; and Taipei,China—had famously used an export-oriented development strategy to become advanced economies by the 1990s (Stiglitz 1996), an approach that is now being followed by Viet Nam and Cambodia, among others. Benefits to economic openness include opportunities for specialization, access to wider markets, and the inflow of investments, technology, and know-how. There is also evidence that trade promotes the reallocation of labor from the informal to the formal sector (McCaig and Pavcnik 2018). And whereas it was once thought that industrialization was the primary objective of openness, the experiences of India and the Philippines point to the possibility of services trade being a catalyst for growth as well (Chatterjee and Subramanian 2020; Thomas 2019).

In this regard, shows that Pakistan has a lot of room for improvement. Using statistics from 2019 since 2020 was an unusual year, the scatterplot provides a snapshot of economic openness across various levels of GDP for 166 countries and economies with available data. At just 30%, Pakistan exhibits one of the lowest trade-to-GDP ratios in the world, measured as the sum of exports and imports divided by GDP. It is less open than neighbors India (39%) and Bangladesh (37%). Among the sample, it is only more open than Ethiopia, Brazil, and Sudan. While its present ratio is higher than the 15–20% it registered in the 1960s–1970s, it is down from the peaks it saw in the 1990s when it reached 38%.

Figure .: Trade Openness at Various Levels of Economic Development, 2021

GDP = gross domestic product, PPP = purchasing power parity, PRC = People’s Republic of China.

Notes: Horizontal axis is gross domestic product in current international dollars at purchasing power parity. Vertical axis is the sum of exports and imports of goods and services as a share of gross domestic product.

Source: World Bank. World Development Indicators. https://data.worldbank.org/indicator (accessed 19 June 2023).

The scatterplot does highlight an inverse relationship between economic size and openness, with bigger countries tending to have smaller trade-to-GDP ratios. This is unsurprising since with size comes more opportunities to buy from and sell to domestic markets. Sitting at the 13th percentile of the sample by size, Pakistan is a relatively large country. However, even with this taken into account, its openness remains remarkably low. The GDP of the Philippines, the Netherlands, and Viet Nam are comparable to that of Pakistan, but their ratios are much higher at 69%, 156%, and 210%, respectively. India’s GDP is almost ten times larger than Pakistan’s yet trade plays a greater role in its economy.

visualizes international trading networks as of 2019 and Pakistan’s place in them. As it utilizes the United Nations COMTRADE Database (as processed by CEPII’s BACI International Trade Database), only merchandise trade is included. Each node is a country or economy, positioned so as to group together those with significant mutual trade. For visual clarity, the figure only draws a trading link if the importing country is among the three largest importers of the exporting country. Node sizes are proportional to the number of such links a country is connected to. Thus, the fact that the largest nodes are the United States and the People’s Republic of China (PRC) means they appear among the top three importers of other countries the most. The thickness of a link, meanwhile, is proportional to the value of trade it is representing. Again, the thickest link is that between the United States and the PRC, indicating that it is the most significant bilateral relationship in the world.

Figure .: Network Diagram of Global Merchandise Trade, 2021

ARE = United Arab Emirates, BEL = Belgium, FRA = France, GER = Germany, IND = India, ITA = Italy, JPN = Japan, KOR = Republic of Korea, NET = Netherlands, POL = Poland, PRC = People’s Republic of China, RUS = Russia, SAU = Saudi Arabia, SIN = Singapore, SPA = Spain, SWI = Switzerland, THA = Thailand, UKG = United Kingdom, USA = United States, ZAF = South Africa.

Notes: Each node represents a country or economy. Nodes appear only if they meet a threshold of connectedness, defined as being among the three largest importers of some country. Node sizes reflect the number of such links connected to the node, while edge thickness reflect the dollar value of the trade flow. Nodes are arranged using the Davidson and Harel (1996) layout algorithm. Regional groupings are from the World Bank. Taipei,China is proxied by “Other Asia, not elsewhere specified”.

Source: CEPII. BACI International Trade Database (January 2023). http://www.cepii.fr/cepii/en/bdd\_modele/presentation.asp?id=37 (accessed 19 June 2023).

Color-coding by geographic region reveals a gravity-type clustering of nodes, in that countries that are physically near each other on the map tend to trade more with each other. This, however, is belied by Pakistan, whose top trading partners are outside South Asia. The network draws four links connecting to it: outward to its top three importers the United States, Germany, and the PRC, and inward from Afghanistan, for which it is the second-largest importer.

The advantage of COMTRADE/BACI data is its granularity, reporting exports of products at the 6-digit level of the Harmonized System (HS). It is possible to establish, therefore, that in 2019, Pakistan’s top goods export was “Trousers, bib and brace overalls, breeches and shorts: men's or boys', of cotton (not knitted or crocheted)” (HS code 6203.42), valued at $1.7 billion. Product categories may be aggregated into broader categories if needed. The “chapter” of 6203.42, for example, is 62, “Articles of apparel and clothing accessories, not knitted or crocheted”.

 examines the product make-up of Pakistan’s merchandise exports over 2002–2019 by aggregating HS codes into nine broad groupings. Exports are overwhelmingly dominated by textiles and footwear, which in 2019 accounted for 56% of export value or $15.5 billion. While down from its almost three-fourths share in 2002, it is still far larger than any other grouping. Within textiles and footwear, a few sub-groups dominate. “Cotton trousers”—shorthand for all trousers, bib-and-brace overalls, breeches, and shorts made of cotton, whether hand- or machine-sewn—accounted for 11.6% of 2019 export value, almost double its 6.0% share in 2012. This is largely oriented towards the European and North American markets, which took in 90% of such exports in 2019. Other major subgroups include all types of bed linen (8.9% in 2019) and all types of kitchen and toilet linen (3.8% in 2019).

Figure .: Merchandise Exports by Broad Product Groupings, 2002–2021

Notes: Broad product groupings are based on the chapters of the Harmonized System, 2002 edition. “Food” covers 01–24. “Minerals” covers 25–27, of which "crude oil" (2709.00), "natural gas" (2711.11, 2711.21), and "ores" (2601.11–2617.90) are separately identified. “Chemicals” covers 28–38. "Metals" covers 72–83, of which "ferroalloys" (7202.11–7202.99) and "copper" (7401.10–7419.99) are separately identified. The remaining chapters are collected under "Others".

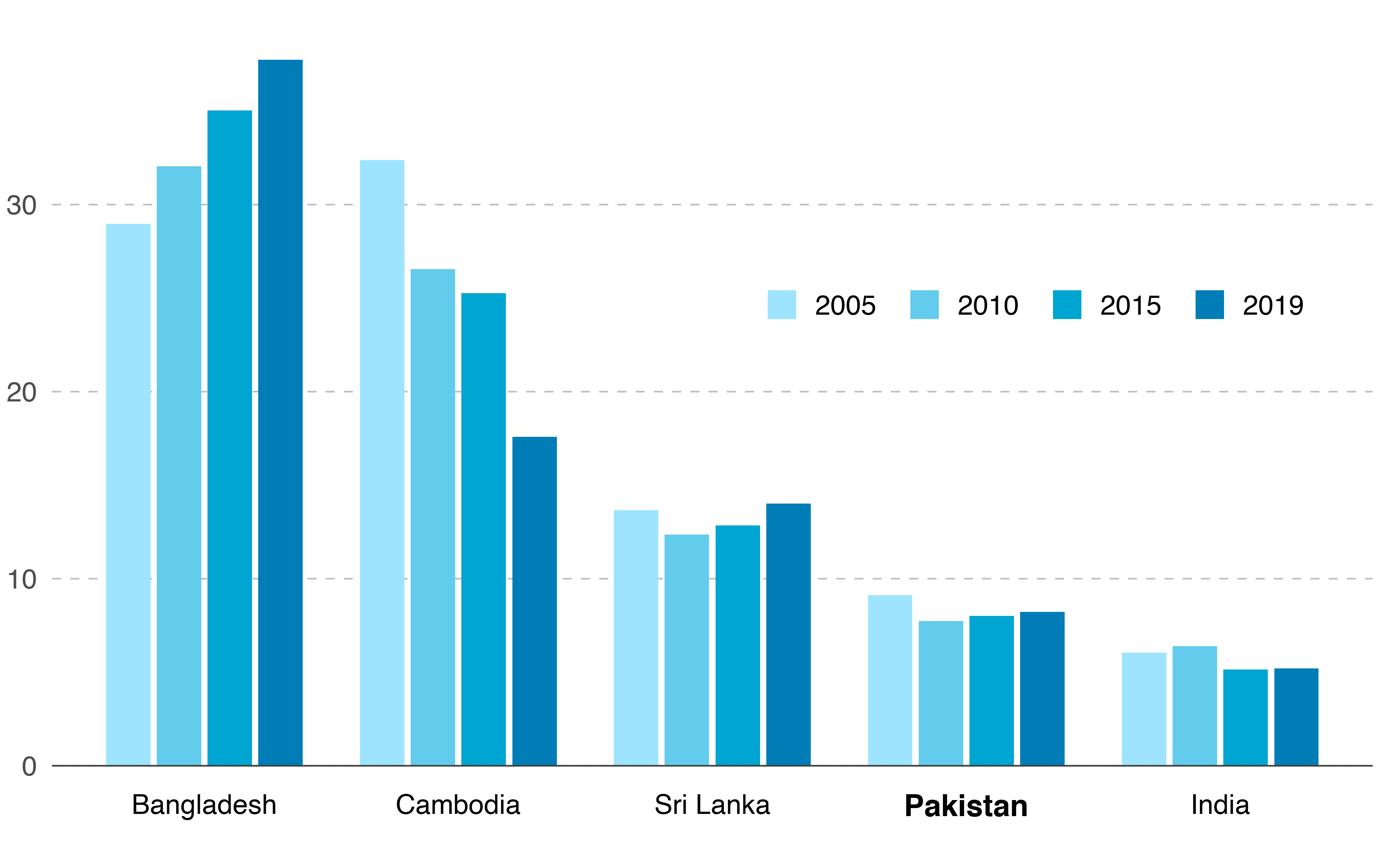
Source: CEPII. BACI International Trade Database (January 2023). http://www.cepii.fr/cepii/en/bdd\_modele/presentation.asp?id=37 (accessed 19 June 2023).

Testifying to the persistence of agriculture in Pakistan’s economy is the significance of “vegetables” in its exports, whose share of 12.5% was the second-largest in 2019. Dominant here is milled rice, sent mostly to the PRC and the Middle East. Other major exports include those under machinery, weapons, and art, particularly medical, surgical or dental instruments and appliances, most of which goes to the United States and Mexico.

The dominance of textile products in Pakistan’s exports raises the issue of diversification—or potentially the lack of it. Concentrating too much on only a few sectors or products poses risks to an economy since shocks to the dominant sector can more easily cause an economy-wide recession. However, while textile exports are indeed very significant for Pakistan, it does appear to export several different types of textile products, from apparel to bed sheets to kitchen towels. To properly quantify the overall diversification of Pakistan’s exports, the Herfindahl–Hirschman index (HHI) is computed on the 2-digit level of its HS product categories. See Box 2 for more details on this methodology.

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| Box : Measuring Export Diversification  Export diversification refers to the diversity in products exported by an economy. To quantify this, this report uses a widely accepted measure of concentration, the Herfindahl–Hirschman index (HHI), computed by summing the squared share of each entity in the population in question (Shughart 2008). Formally,  where is the share of entity and is the number of entities in the population. The HHI ranges from to 100, with higher numbers indicating greater concentration, or conversely, lower diversification. While originally devised to measure market concentration, it is applicable to a wide range of distribution-related contexts.  The HHI is sensitive to , with the index tending to be lower as gets bigger. For this report, the 2-digit level of the Hamonized System is used, which separately identifies 97 products. This is chosen since lower levels of disaggregation allow for the possibility of exporting many types of the same products, giving a somewhat artificial sense of diversification. For example, an economy exporting sardines, tuna, mackerel, salmon, and halibut would be treated in the present approach as simply concentrating in fish.  **Reference**  W. F. Shughart. 2008. Industrial Concentration. In D. R. Henderson (Ed.), *Concise Encyclopedia of Economics*, 2nd ed. Indianapolis, IN: Library of Economics and Liberty. |

plots the exports HHI of Pakistan along with, for comparison, its neighbors Bangladesh, India, and Sri Lanka. As a textiles-oriented trader in Asia and the Pacific, Cambodia is included as well. The measures suggest that Pakistan’s exports remain relatively diverse, its HHI going down slightly from 9.1 points to 8.2 points between 2005 and 2019. This is in contrast to two of the most prolific textiles exporters in the world, Bangladesh and Cambodia, though it must be noted that trends for each are going in opposite directions. Bangladesh has by far the most concentrated exports basket, its HHI leaping from 29.0 points in 2005 to 37.7 points in 2019. While Cambodia began as the most concentrated in the sample, it has since diversified somewhat, achieving an HHI of 17.6 points in 2019, within reach of Sri Lanka’s 14.0 points. Pakistan’s exports, however, remain less diverse than India’s, whose continental size likely helps sustain a wider variety of exports. In 2019, its HHI was only 5.2 points, down from 6.0 points in 2005.

Figure .: Merchandise Export Diversification, Selected Countries, 2005, 2010, 2015, 2019

Notes: Diversification is measured by the Herfindahl–Hirschman index. Products are disaggregated at the 2-digit level of the Harmonized System, 2002 edition.

Sources: CEPII. BACI International Trade Database (January 2023). http://www.cepii.fr/cepii/en/bdd\_modele/presentation.asp?id=37 (accessed 19 June 2023); Asian Development Bank estimates.

In summary, this chapter has shown that Pakistan has historically experienced uneven growth and remains among the least open economies in the world, even after taking its relatively large size into account. What it does export is dominated by textile products and rice, though a formal measure of concentration suggests that its exports basket is on the whole quite diversified, especially compared with other major textile exporters Bangladesh and Cambodia. Its top trading partners are the United States, Europe, and the People’s Republic of China, though it also sells much of its rice to the Middle East. The only economy for which it is a major market is its northern neighbor Afghanistan.

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