CAREC AIR CARGO REPORT

FEBRUARY 2024

CAREC
Central Asia Regional Economic Cooperation Program

CAREC AIR CARGO REPORT

FEBRUARY 2024

CAREC
Central Asia Regional Economic Cooperation Program

Note:
In this publication, "$" refers to United States dollars.

ADB recognizes "China" as the "People's Republic of China," and "Korea" as the "Republic of Korea."

ADB placed on hold its assistance to Afghanistan effective 15 August 2021 (ADB. 2021. ADB Statement on Afghanistan. News release. 10 November).

Cover design: Jasper Lauzon
Photo credit: Adrian Sammons

CONTENTS

Tables and Figures vii

Abbreviations x

Executive Summary xi

1 Introduction 1

2 Regional Economic and Population Overview 3

3 CAREC Freight Market Overview 6

Cost of Rail Transport 8
Cost of Sea Transport 8
Sea Transit Time and Frequency 8

4 Air Cargo Industry Characteristics 9

Mode Combinations 9
Air Cargo Value Chain 11
Air Cargo Industry Revenue and Profitability 11

5 CAREC Air Freight Market Overview 15

Air Cargo Traffic and Demand 15
Air Cargo Capacity 17
Air Cargo Connectivity 19
Air Cargo Rates 20
Freighter Technical Landings 21

6 Constraints and Opportunities 23

Governance 23
Infrastructure 24
Systems and Processes 25
External Factors 25

7 Country Profiles and Findings 26

Azerbaijan 26
People's Republic of China – Xinjiang Uygur Autonomous Region 30
People's Republic of China–Inner Mongolia Autonomous Region 33
Georgia 35
Kazakhstan 40
Kyrgyz Republic 45
Mongolia 50
Pakistan 54
Tajikistan 58
Turkmenistan 63
Uzbekistan 66

Appendixes 71

1 Airport Profiles 71
2 Research and Stakeholder Consultation 81

TABLES AND FIGURES

Tables

1	Gross Domestic Product Growth, Central Asian Countries (Annual Percentage)	3
2	CAREC Population Overview and Forecast 2022–2027	4
3	CAREC GDP Per Capita 2019, 2022 and 2027	5
4	CAREC Air Cargo Market Summary	17
5	Capacity Utilization of CAREC Air Cargo Facilities	24
6	Azerbaijan Pre-COVID-19 Air Cargo Yields ($/kg)	29
7	Georgia Pre-COVID-19 Air Cargo Yields ($/kg)	39
8	Kazakhstan Pre-COVID-19 Air Cargo Yields ($/kg)	43
9	Kyrgyz Republic Pre-COVID-19 Air Cargo Yields ($/kg)	48
10	Pakistan Pre-COVID-19 Air Cargo Yields (US$/ kg)	57
11	Tajikistan Pre-COVID-19 Air Cargo Yields ($/kg)	61
12	Turkmenistan Pre-COVID-19 Air Cargo Yields ($/kg)	64
13	Uzbekistan Pre-COVID-19 Air Cargo Yields (US$/ kg)	69
A1.1	Airport Profile Azerbaijan-Baku (GYD)	72
A1.2	Airport Profile People's Republic of China, XUAR- Diwopu, Urumqi (URC)	72
A1.3	Airport Profile People's Republic of China, IMAR- Hohhot Baita (HET)	73
A1.4	Airport Profile People's Republic of China, IMAR- Hohhot Chilechuan-International Airport	73
A1.5	Airport Profile Georgia-Tbilisi (TBS)	74
A1.6	Airport Profile Almaty (ALA), Kazakhstan	74
A1.7	Airport Profile Nur Sultan (NQZ), Kazakhstan	75
A1.8	Airport Profile Karaganda (KGF), Kazakhstan	75
A1.9	Airport Profile Bishkek (FRU), Kyrgyz Republic	76
A1.10	Airport Profile Ulan Bator (UBN/ULN), Mongolia	76
A1.11	Airport Profile Islamabad (ISB), Pakistan	77
A1.12	Airport Profile Karachi (KHI), Pakistan	77
A1.13	Airport Profile Lahore (LHE), Pakistan	78

A1.14 Airport Profile Dushanbe (DYU), Tajikistan 78
A1.15 Airport Profile Turkmenabat International Airport (ASB), Turkmenistan 79
A1.16 Airport Profile Turkmenbashi International Airport (KRW), Turkmenistan 79
A1.17 Airport Profile Tashkent (TAS), Uzbekistan 80
A1.18 Airport Profile Navoi (NVI), Uzbekistan 80

Figures

1 Typical Air Freighter (IL'76) at Baku Airport xii
2 CAREC Consulting Team Visit to Baku Air Freight Terminal 1
3 CAREC Economic Output by Country, 2022 Current GDP in $ Billions 4
4 Russian-Built AN-12 Air Freighter at Tbilisi Airport Georgia 5
5 CAREC Merchandise Import Value 2015–2022 6
6 CAREC Merchandise Export Value 2015–2022 7
7 Modal Combinations in International and Domestic Freight Transport 10
8 Cost and Time Comparison by Mode, People's Republic of China to Europe 10
9 The Air Logistics Value Chain 11
10 Airline Cargo Revenues and Percentage of Total Industry Revenue 2004–2022 12
11 Freighter Share of Cargo Traffic 2013–2022 12
12 Air Cargo Industry Share by Carrier Type 13
13 Cargo Airline Cost Drivers 14
14 CAREC Air Cargo Traffic 2015–2022 15
15 CAREC Air Cargo Traffic by Country 2022 vs. 2019 in Thousands of Tonnes 16
16 CAREC Scheduled International Air Cargo Capacity Jan 2015–Dec 2023 18
17 CAREC Air Cargo Connectivity Jan 2015 – Dec 2023 19
18 Industry-Wide Air Cargo Rates 2004–2022 20
19 CAREC and Siberian Airports Utilized by Freighters for Technical Landings 21
20 Azerbaijan Trade by Air 2015–2022 26
21 Azerbaijan Top Air Trading Partners by Weight 2022 27
22 Azerbaijan Top Air Trade Commodities by Weight 2022 27
23 Azerbaijan Air Cargo Traffic 2016–2022 28
24 Azerbaijan Flights and Capacity on Cargo and Passenger Flights 2015–2023 28
25 XUAR – CAREC Trade Overview 2017–2022 in $ Billions 30
26 XUAR Air Cargo Traffic 2015–2022 31
27 XUAR Flights and Capacity on Cargo and Passenger Flights 2015–2022 31
28 IMAR – CAREC Trade Overview 2017–2022 in $ Billions 33
29 IMAR Air Cargo Traffic 2015–2022 33
30 Georgia Trade by Air 2016–2022 35
31 Georgia Top Air Trade Partners by Weight 2022 36

32	Georgia Top Air Trade Commodities by Weight 2022	36
33	Tbilisi (TBS) Air Cargo Traffic 2015–2022	37
34	Georgia Air Cargo Traffic by Carrier, 2021	37
35	Georgia Air Cargo Traffic by Carrier, January–September 2022	38
36	Georgia Flights and Capacity on Cargo and Passenger Flights 2015–2023	38
37	Kazakhstan Air Trade 2015–2022	40
38	Kazakhstan Top Air Trade Partners by Weight 2022	41
39	Kazakhstan Top Air Trade Commodities by Weight 2022	41
40	Almaty (ALA) and Nur Sultan (TSE/NQZ) Cargo Traffic 2015–2022	42
41	Kazakhstan Flights and Capacity on Cargo and Passenger Flights 2015–2023	42
42	Kyrgyz Republic Trade by Air 2017–2022	45
43	Kyrgyz Republic Top Air Trade Partners by Weight (2022)	46
44	Kyrgyz Republic Top Air Trade Commodities by Weight 2022	46
45	Kyrgyz Republic Cargo Traffic 2017–2022	47
46	Kyrgyz Republic Flights and Capacity on Cargo and Passenger Flights 2015–2023	47
47	Mongolia Trade by Air 2017–2022	50
48	Mongolia Top Air Trading Partners by Weight in 2019 and 2021	51
49	Mongolia Top Air Trade Commodities 2018 and 2021	51
50	Ulan Bator (ULN/UBN) Air Cargo Traffic 2015–2022	52
51	Mongolia Flights and Capacity on Cargo and Passenger Flights 2015–2023	52
52	Pakistan Air-Relevant Trade Weight 2017–2022	54
53	Pakistan Top Air-Relevant Trading Partners by Weight 2022	55
54	Pakistan Top Air Trade Relevant Commodities by Weight 2022	55
55	Pakistan Airport Traffic 2015 - 2022	56
56	Pakistan Flights and Capacity on Cargo and Passenger Flights 2015–2023	56
57	Tajikistan Trade in Air-Relevant Products 2017–2022	58
58	Tajikistan Top Air-Relevant Trading Partners by Weight 2022	59
59	Tajikistan Top Air-Relevant Commodities by Weight 2022	59
60	Dushanbe (DYU) Air Cargo Traffic 2015–2022	60
61	Tajikistan Flights and Capacity on Cargo and Passenger Flights 2015–2023	60
62	Turkmenistan Import and Export Value 2015–2022 in $ Billions	63
63	Turkmenistan Flights and Capacity on Cargo and Passenger Flights 2015–2023	63
64	Uzbekistan Trade in Air-Relevant Products 2017–2022	66
65	Uzbekistan Top Air-Relevant Trading Partners by Weight 2022	67
66	Uzbekistan Top Air Trade Relevant Commodities by Weight 2022	67
67	Uzbekistan Air Cargo Traffic 2015 -2022	68
68	Uzbekistan Flights and Capacity on Cargo and Passenger Flights 2015–2023	68

ABBREVIATIONS

ADB	Asian Development Bank
CAREC	Central Asia Regional Economic Cooperation
EU	European Union
GDP	gross domestic product
IMAR	Inner Mongolia Autonomous Region
JAT	Japan Airport Terminal
JICA	Japan International Development Agency
JV	joint venture
PPP	purchasing power parity
PRC	People's Republic of China
TEU	twenty-foot equivalent units
US	United States
XUAR	Xinjiang Uygur Autonomous Region

Weights and Measures

kg	kilogram
km	kilometers
m^2	square meter
MGW	maximum gross weight
TEU	twenty foot equivalent unit
t	metric tonnes
tpa	tonnes per annum

EXECUTIVE SUMMARY

Market Overview of the Central Asia Regional Economic Corridor Air Cargo

The air cargo market under this study accounts for less than 1% of worldwide air cargo traffic or about 1 million tonnes of freight. Pakistan alone accounts for roughly 40% of this and the People's Republic of China (PRC) autonomous regions account for a further 30%. Although most air cargo markets in the region are small by global standards, they have significant regional importance due the nature of goods carried and destinations connected. Moreover, due to the geographic centricity of Central Asia's airports, it presents ongoing opportunities to capture traffic on the much larger Asia to Europe trade routes which account for some 6 million tonnes of air freight.

The region is host to an ecosystem of locally based air cargo carriers serving both regional and intercontinental long-haul markets. Currently there are about 30 airlines operating in the region, most of which deploy older generation Russian-built planes. Across the region there has been growth in freighter operations, yet this growth has been concentrated in those countries that benefit from favorable operating conditions. Most growth opportunities for air freight appear to be related to transit traffic rather than Central Asia Regional Economic Cooperation (CAREC) regional imports and exports.

Sanctions against the Russian Federation, following the Russian invasion of Ukraine, have stimulated new transit traffic opportunities particularly via the Central Asian and Caucasus Republics. Similarly, some countries experienced a temporary surge of freighter aircraft operations during the coronavirus disease (COVID-19) period to manage flight crew exchanges, which avoided quarantine delays at the PRC airports. However, this is tailing off.

There are resounding differences in the growth patterns and characteristics of the CAREC air cargo industry by country.

The nine countries and two autonomous regions of the PRC within the CAREC region exhibit distinct characteristics in terms of structure and development of their air cargo markets. As such, any air cargo strategy for the region will need to focus on the development of individual country strategies rather than a consolidated regional approach. The regional benefits will be created from sharing the lessons learned from the successes of the country-specific developments.

While it is important to take a distinct view toward each individual cargo market, it is possible to divide the region in the three broad submarkets which exhibit similarities in terms of air cargo market characteristics:

(i) Pakistan is a distinct market in its own right, not comparable with the other markets within the region.
(ii) The five Central Asian Republics—Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan, as well as Azerbaijan and Georgia have similarities.
(iii) Mongolia as well as the two autonomous northern regions in the PRC, Xinjiang Uygur Autonomous Region (XUAR) and Inner Mongolia Autonomous Region (IMAR), are similar in terms of being more PRC-focused from an air cargo perspective.

Extra-CAREC trade is significantly more important than trade between CAREC countries, although data confirms strong trade relationships between Kazakhstan, the Kyrgyz Republic, and Uzbekistan.

The main trading partners from an air cargo perspective broadly include:

- Northeast Asia particularly the PRC; Hong Kong, China; and the Republic of Korea
- Western Europe
- The Russian Federation
- Türkiye, the United Arab Emirates, and India
- The United States

The two autonomous PRC regions, XUAR and IMAR, are primarily focused on domestic trade, but cross-border trade to the west is also important.

Constraints and Development Opportunities

Many market access and infrastructure constraints are country-specific and unique to individual locations. These are addressed in the individual country findings.

Overall, adopting more integrated strategy and planning approach regarding freight and logistics is beneficial. This could include:

(i) Development of country and regional level freight and logistics strategies that consider all modes—air, rail, road, and sea.
(ii) Set up and management of freight advisory councils or logistics community groups that bring together infrastructure operators, logistics companies and major shippers, capacity providers, and regulators to discuss constraints and development opportunities and providing a forum for input into government policy and investment decisions.
(iii) Development of common governance structures for the development of infrastructure, tender, and management of operating concessions.
(iv) Review of Bilateral Aviation Relations and implementation of a multilateral approach to air service agreement within the CAREC region and between CAREC and non-CAREC countries.

Figure 1: Typical Air Freighter (IL'76) at Baku Airport

Source: Authors.

1 INTRODUCTION

This report provides an overview of the air cargo market across the Central Asia Regional Economic Cooperation (CAREC) region and identifies both constraints and opportunities for further growth.

The study area comprises nine countries and two autonomous provinces of the People's Republic of China (PRC). The region spans a diverse set of countries from Georgia and Azerbaijan in the west to Mongolia and Inner Mongolia Autonomous Region (IMAR) in the east, as well as Pakistan in the south. The PRC is part of CAREC as a whole country, but this study focuses on the and Xinjiang Uygur Autonomous Region (XUAR) and IMAR.

This project builds on the aviation-related work carried out in earlier phases. The CAREC Aviation program was initially launched in 2017, following a recommendation by the Pakistan prime minister at CAREC's 15th Ministerial Conference in October 2016.

The Asian Development Bank (ADB) has provided support for CAREC Aviation in parallel with support for other transport sectors. This air cargo study can leverage

Figure 2: CAREC Consulting Team Visit to Baku Air Freight Terminal

Source: Authors.

some of this support as air freight will be reviewed from a multimodal and logistics perspective. ADB's country partnership strategy for trade facilitation from transport was supported by the CAREC Transport Strategy 2030.[1] This program addresses trade and transport challenges by promoting international good practice in developing regional and national transport policies, developing and maintaining multimodal transport infrastructure, and improving cross-border transport operations. The strategy also aims to foster cooperation between its members to reduce nonphysical trade and logistics barriers.

This study will cover air freight as well as other modes of transport, providing a detailed assessment of air cargo and intermodal opportunities. Prior CAREC Aviation studies have only looked at air freight briefly as part of an overall assessment of the aviation sector and potential aviation opportunities. This study will build on these studies and provide a specific air freight focus at an important time given the long-term opportunities for air freight in CAREC. The multimodal aspect of this study is also important as it will also build on earlier CAREC studies on other modes of transport that were funded under this technical assistance. This multimodal aspect will also include an assessment of the different modes including from a cost perspective.

The CAREC region's aviation sector is not achieving its full potential. In most international markets, connectivity and airline competition remain low. The main difficulty for landlocked developing countries is to generate enough traffic to attract recurrent air freight services that are both frequent and competitively priced. Permitting free competition, or "open skies," for air cargo services can be significant but not sufficient if most cargoes are transported as small shipments in passenger aircraft. Liberalizing passenger services to include fifth freedoms[2] has been a greater challenge, especially in countries with a national carrier and limited passenger volumes. Also important is expanding the role of consolidators, especially the large integrators such as the international freight forwarders specializing in air cargo, as well as local forwarders with international connections.

[1] ADB. 2020. *CAREC Transport Strategy 2030*. Manila.
[2] Fifth freedoms refer to the ability for an air carrier to serve city pairs outside of its home country as part of routings that include the home country.

2 REGIONAL ECONOMIC AND POPULATION OVERVIEW

Key Findings:

- The CAREC population is expected to grow by 30 million people between 2021 and 2026.
- Most economic activity in the region is driven by Pakistan, Kazakhstan, Uzbekistan and the two autonomous regions of the People's Republic of China.
- Per capita incomes in the CAREC region are forecast to grow by 2.7% per annum between 2021 and 2026, with Georgia and the Kyrgyz Republic exhibiting the highest performance.

Growth in economic activity, population, and wealth are key enablers of increased air cargo demand. Gross domestic product (GDP) recovered strongly from 2021 onward post-pandemic (Table 1). The CAREC region has a total population of almost 370 million and economic output more than $1.1 trillion. Table 2 provides an overview of population by country as well as the two autonomous regions of the PRC that comprise the CAREC region. Pakistan alone accounts for 60% of the region's population. Five additional countries and regions have populations over 10 million—Azerbaijan, IMAR, Kazakhstan, Uzbekistan and XUAR. Between 2021 and 2026, the region's population is expected to grow by an additional 30 million people, mostly in Pakistan and Uzbekistan, both of which forecast population growth of 10% over this period. Population growth in most countries is expected to range between 6% and 11% cumulative over the period, except for Georgia where the population is forecast to decline by 2%. Note that this excludes the PRC.

Table 1: Gross Domestic Product Growth, Central Asian Countries (Annual Percentage)

	2019	2020	2021	2022	2023 Forecast
Caucasus and Central Asia	4.7	(2.0)	5.6	3.6	4.0
Kazakhstan	4.5	(2.5)	4.0	3.2	3.9
Kyrgyz Republic	4.6	(8.4)	3.6	2.0	2.5
Tajikistan	7.5	4.5	9.2	2.0	3.0
Turkmenistan	n.a.	n.a.	5.0	6.0	5.8
Uzbekistan	5.7	1.9	7.4	4.0	4.5

( ) = negative, n.a. = not available.
Source: CAREC Institute 2023. *Resilience and Economic Growth in Times of High Uncertainty*. Xinjiang, People's Republic of China.

Table 2: CAREC Population Overview and Forecast 2022–2027

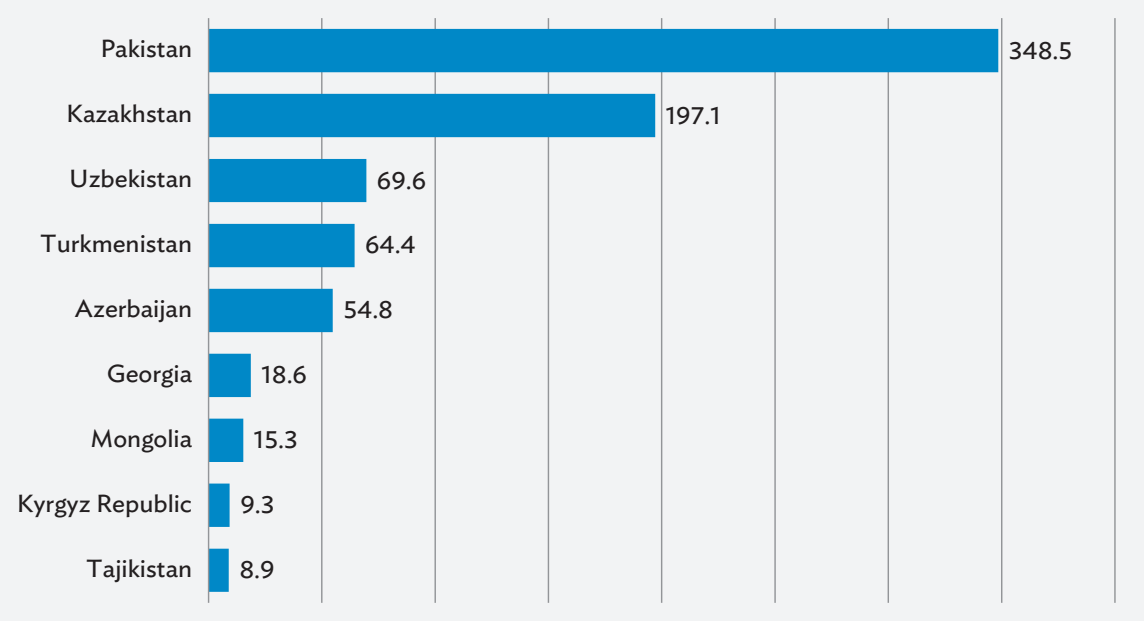
Country/ Region	Population (2022) (millions)	Cumulative Population Growth 2022–2027
Pakistan	227.0	+ 10%
Uzbekistan	35.3	+ 11%
XUAR	25.9 (2021)	n.a.
IMAR	24.0 (2021)	n.a.
Kazakhstan	19.8	+ 5%
Azerbaijan	10.2	+ 6%
Tajikistan	9.8	+ 9%
Kyrgyz Republic	6.8	+ 11%
Turkmenistan	6.2	+ 6%
Georgia	3.7	- 2%
Mongolia	3.5	+ 7%

CAREC = Central Asia Regional Economic Cooperation, IMAR = Inner Mongolia Autonomous Region, n.a. = not available, XUAR = Xinjiang Uygur Autonomous Region.

Source: International Monetary Fund. 2023. *National Global Divergences. World Economic Outlook October 2023*. Washington, DC; National Bureau of Statistics China. 2022. *China Statistical Yearbook 2022*. Beijing: China Statistics Press.

Excluding the two regions of the PRC, three countries account for 80% of the region's economic output—Pakistan, Kazakhstan, and Uzbekistan. Figure 3 provides an overview of the pre-coronavirus disease (COVID-19) output by country in billions of dollars. GDP in XUAR is about $200 billion and about $250 billion in IMAR.

Figure 3 - CAREC Economic Output by Country, 2022 Current GDP in $ Billions



CAREC = Central Asia Regional Economic Cooperation, GDP = gross domestic product.

Source: International Monetary Fund. 2023. National Global Divergences. World Economic Outlook October 2023. Washington, DC.

Table 3: CAREC GDP Per Capita 2019, 2022 and 2027

$ 000s	2019	2022 (vs. 2019)	2027 Forecast (vs. 2019)
Kazakhstan	26.2	25.9 (-1%)	29.3 (+12%)
Turkmenistan	16.4	16.1 (-2%)	16.8 (+2%)
Georgia	15.0	17.1 (+14%)	22.6 (+51%)
Azerbaijan	14.5	15.1 (+4%)	16.1 (+11%)
Mongolia	7.5	11.9 (-3%)	13.5 (+11%)
Uzbekistan	5.4	8.2 (+9%)	9.6 (+29%)
Pakistan	5.4	5.7 (+5%)	6.0 (+10%)
Kyrgyz Republic	5.3	5.2 (-2%)	5.7 (+7%)
Tajikistan	3.6	4.2 (+17%)	4.9 (+37%)

CAREC = Central Asia Regional Economic Cooperation, GDP = gross domestic product.

* In constant 2017 US dollars, at PPP (purchasing power parity).

Source: International Monetary Fund. 2023. *National Global Divergences. World Economic Outlook October 2023*. Washington, DC.

Within the CAREC region, Kazakhstan has the highest per capita income, comparable to countries like Bulgaria, Chile, Malaysia, and Türkiye. Per capita incomes in the region range from $3,600 in Tajikistan to around $15,000–$16,000 in Azerbaijan, Georgia, and Turkmenistan to $26,000 in Kazakhstan. Depending on the country, per capita incomes are skewed by energy related exports. Table 3 provides an overview of per capita incomes in constant 2017 US$ at purchasing power parity (PPP) for 2019, 2021 share of 2019, and expected growth to 2026.

Post COVID-19 per capita income recovery has been mixed with Kazakhstan, Turkmenistan, Mongolia, and Kyrgyz Republic below 2019 levels in 2022 and all other countries exceeding 2019 levels. All countries are expected to see per capita income growth through to 2017 compared to 2019, with Georgia, Uzbekistan, and Tajikistan posting the largest gains.

Figure 4: Russian-Built AN-12 Air Freighter at Tbilisi Airport Georgia

Source: Authors.

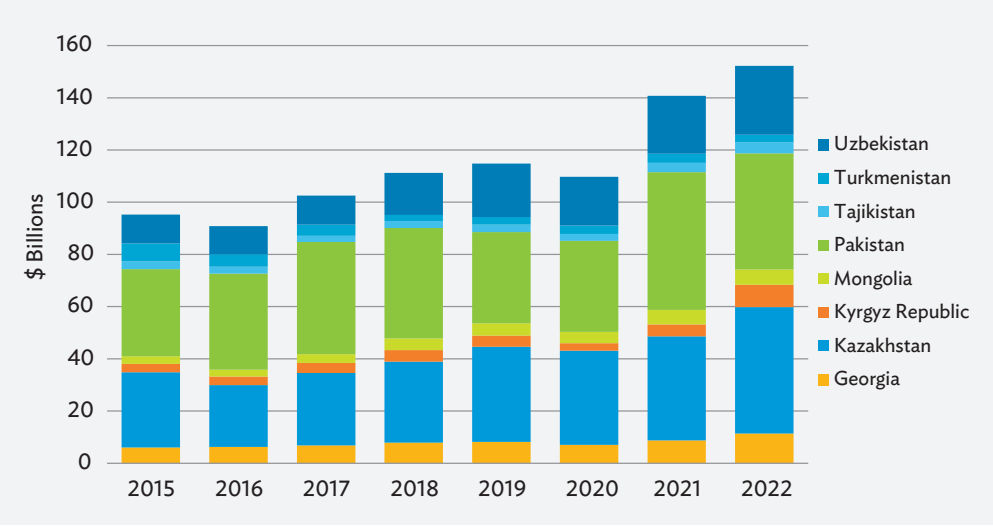
3 CAREC FREIGHT MARKET OVERVIEW

Key Findings:

- $165 billion worth of merchandise imports was handled into CAREC countries 2022.
- $95 billion worth of merchandise exports was handled from CAREC countries in 2022.
- Air cargo traffic handled 701,000 tonnes in 2022.
- Rail freight traffic handled 243,625 million tonne-kilometers in 2018.
- CAREC seaports handled 28.3 million tonnes and 580,000 twenty-foot equivalent units in 2019.

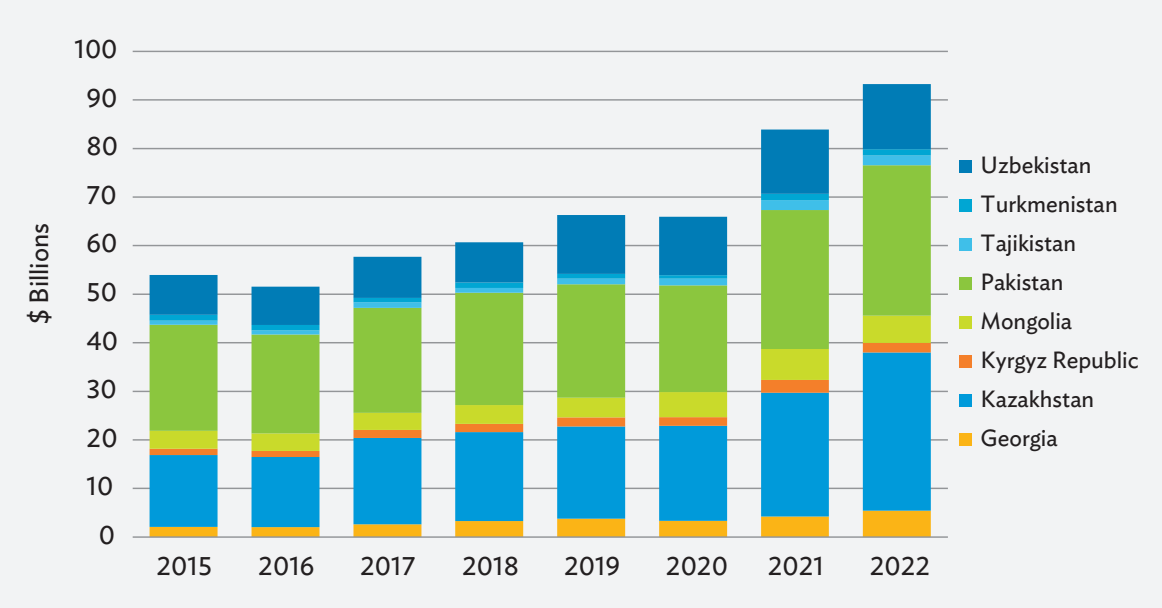
Excluding fuel and petroleum products, CAREC merchandise imports and exports totaled $165 billion and $95 billion, respectively, in 2022. Export value was 80% higher than in 2015, while imports were approximately 65% higher. Figure 5 and Figure 6 provide an overview of merchandise import and export value over the past 8 years.

Figure 5: CAREC Merchandise Import Value 2015–2022



CAREC = Central Asia Regional Economic Cooperation.
Note: Export value in $ billions. Excludes fuel and petroleum products.
Source: Authors. UNCTAD.

Figure 6: CAREC Merchandise Export Value 2015–2022



CAREC = Central Asia Regional Economic Cooperation.
Note: Export value in $ billions. Excludes fuel and petroleum products.
Source: Authors. UNCTAD.

The efficiency and cost-effective outcomes of transportation is vital to CAREC nations. The billions of traded tonnes of merchandise freight rely upon several key corridors that require modernization and enhanced capacity and design.

Despite the challenges, Central Asia is currently one of the few hot spots in the world where cargo flows grow double digits. Some prospective studies forecast that freight flows in some corridors could increase threefold by 2050, in particular, transit flows between the PRC and Europe by rail that grew from less than 7,000 twenty-foot equivalent units (TEU) in 2010, to 150,000 in 2016 and more than 300,000 in 2019. The number of trains on Eurasian rail freight transit grew from 308 trains in 2014 to 4,400 in 2018.[3] Still about 98% of volumes on the PRC–European Union (EU) route move by sea. However, the volume of cargoes that—because of their nature or time sensitivity—could shift from sea transport to rail on the land corridor Asia–Europe has been estimated to amount up to 5.4 million TEU.[4]

About 70% of the PRC–Europe land freight traffic is moved through Kazakhstan's two rail border crossing points with the PRC, and only 30% through the Trans-Siberian and/or Trans-Mongolian lines. Prior to the Russian invasion of Ukraine, the Russian Federation's railways were also busy capturing traffic from Japan and the Republic of Korea to Europe and vice-versa. Current infrastructure plans in CAREC countries are expected to improve connectivity and efficiency but might not be sufficient to accommodate all future growth.

Main overland bottlenecks exist at rail nodes between railway networks of the CAREC countries. Border crossings are not the only impediment and border regions have lower network density and the last stretches to the border are not always at the same quality and capacity as main sections of the countries'

[3] International Union of Railways. 2020. *Eurasian Corridors: Development Potential.* Paris.
[4] Eurasian Development Bank. 2018. *Silk Road Transport Corridors: Assessment of Trans-EAEU Freight Traffic Growth Potential*. Saint Petersburg.

networks. Attention should be paid to handling capacities and/or efficiency of operations at border crossings with bogies (wagon) changes. Such delays may be exacerbated with increased number and frequency of container trains between the PRC and Europe.

Cost of Rail Transport

Rail transport cost depends largely on the fees charged by the owner of the line and point infrastructure on which the train moves and which it uses. This condition also depends on the mode of transport in which it is operated. In this case, the locomotive and its efficiency are considered i.e. fuel or electricity consumption. The technical condition of the platform carriages and their maximum permissible speed when fully loaded is also important. The estimated cost is about $2,000 /TEU for the PRC to Poland route (Neumann 2021).

Cost of Sea Transport

Sea transport cost depends largely on the current fuel costs and the geopolitical situation. As in rail transport, the level of quality of the means of transport i.e. a ship, is important. The engine room's efficiency plays a key role in the amount of fuel used and thus translates into transport costs. The estimated cost for sea transport is at the level of $850 /TEU based on 18,000 TEU ships.[5]

For high-value electronic goods, for example, a 40-foot (ft) container can hold up to 22,000 kilograms (kg) of goods. In normalized supply chain conditions, by train the cost would be about $8,000/40 ft and by sea, it would cost around $4,000/40 ft. By air, as a final comparison the cost would rise to $32,000.[6] The time value of goods via overland rail from PRC to EU with savings of about 20 days would therefore lend itself to consider accepting the higher freight cost.

Sea Transit Time and Frequency

Sea transport from Asia to Europe is longer than that of overland routes including that of the Middle Corridor. However, the frequency of vessel sailings from the PRC gateway ports to Europe under normalized conditions, is about 5.35 sailings daily. The levels of competition between meg-shipping carriers that operate in global consortia will continue to create competitive tensions as each strives to satisfy the market shares that such high-value assets demand.

[5] Neumann, T. 2021. *Comparative Analysis of Long-Distance Transportation with the Example of Sea and Rail Transport*. Energies. 14(6): 1689. Department of Navigation, Gdynia Maritime University, 81-345 Gdynia, Poland.

[6] Dayal, R. 2021. *Sustainable Transport Connectivity between Asia and Europe - Sustainable Transport and Connectivity Developments and Challenges*. Asian Institute of Transport Development, Bangkok.

4 AIR CARGO INDUSTRY CHARACTERISTICS

Key Findings:

- Air cargo accounts for approximately 40% of the value of world trade, but less than 1% of the weight.
- Air cargo is the most expensive mode of transportation but offers time benefits compared to sea and rail options.
- Cargo generally accounts for around 12% of global airline industry revenues, but during the pandemic this increased to as high as 40%.

Mode Combinations

Globally, air cargo accounts for approximately 40% of the value of world trade. Air cargo's share of weight, on the other hand, is below 1% as major bulk commodities dominate global trade volumes.

Figure 7 provides an overview of the different modal combinations available to freight transportation customers. All flights connect to traffic to and from road-based ground transport. While there are some specific markets where sea-to-air connections do take place, generally there is no interaction between rail or ocean shipping and air cargo. However, we note that in the PRC, air–rail combined freight transport has been piloted and developed gradually in line with the overall development of the high-speed rail network.

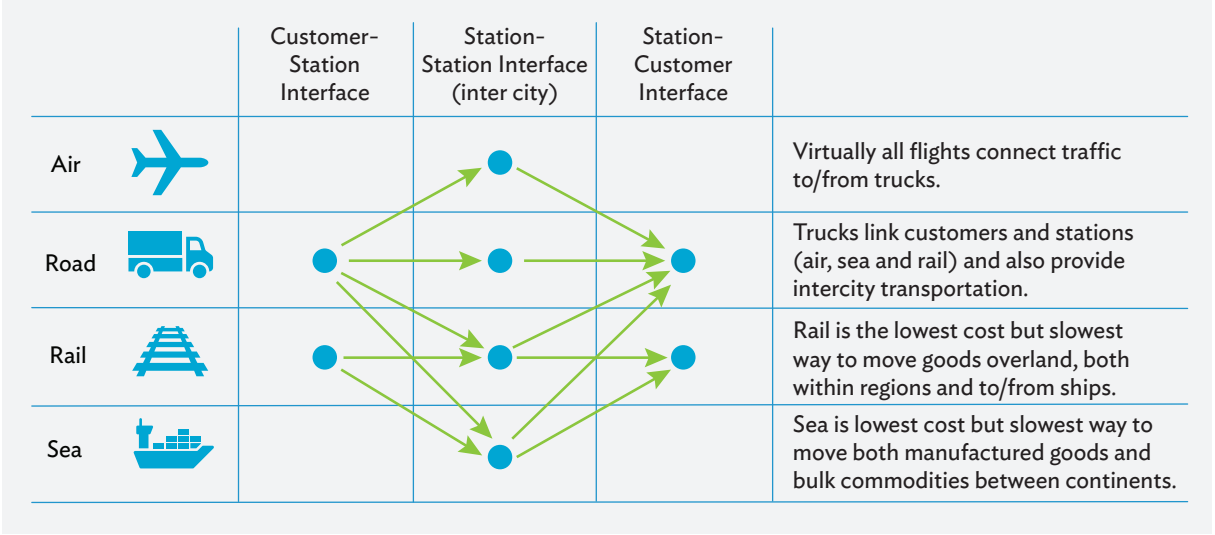
There are some examples of sea-to-air markets in directionally heavy air trade lanes. Shippers can benefit from the low cost of containership transport for the first segment of a shipment movement as well as the high reliability of air transport for the last segment of long-haul delivery. An example of an active market is sea-to-air traffic via the United Arab Emirates to points on the African continent. No substantial sea-to-air market potential within the CAREC region has yet been identified.

Within the air cargo business there are three major segments:

- General cargo accounts for approximately 80% of international cargo volumes. This consists primarily of intermediate goods, capital equipment, consumer goods, and perishables. Normally about half of worldwide air cargo traffic moves in the lower hold of passenger aircraft and the other half on freighters.
- Express shipments accounts for 17%–18% of international cargo volumes. This traffic consists primarily of business to business as well as business to consumer small package traffic. FedEx, UPS, and DHL account for most international express traffic.
- Postal Traffic accounts for about 2%–3% of global air cargo. Postal traffic also consists of small package traffic and letters. This type of traffic is carried in the lower hold of passenger aircraft in international markets. The postal share of air cargo has been declining over time.

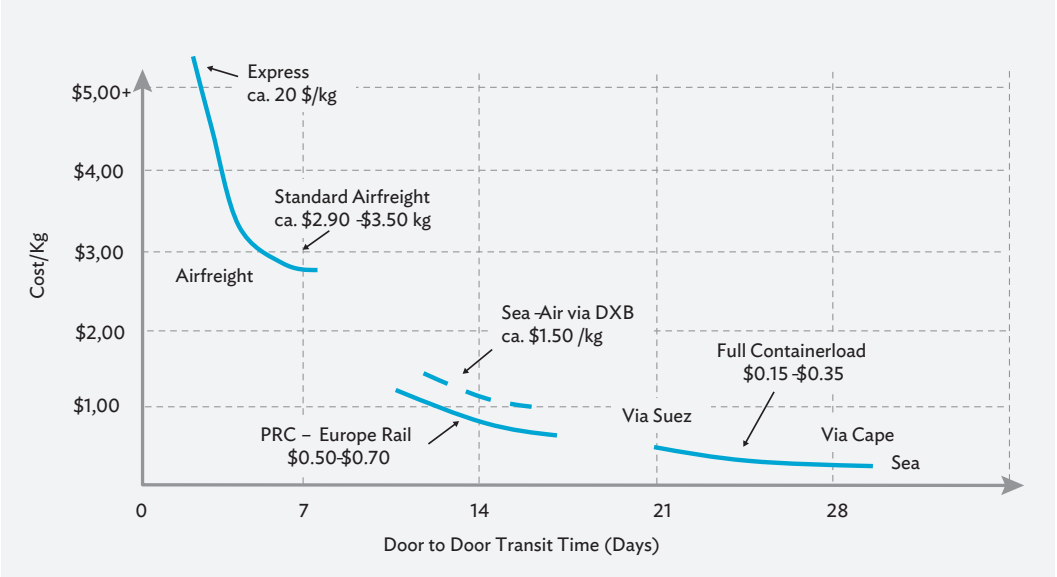
Air cargo is more expensive than other modes but provides time and service benefits (Figure 8). As such, most products that move by air tend to be higher value than those that move by sea or rail.

Figure 7: Modal Combinations in International and Domestic Freight Transport



Source: Authors.

Figure 8 - Cost and Time Comparison by Mode, People's Republic of China to Europe



ca = circa or approximately, DXB = Dubai International Airport, kg = kilogram, PRC = People's Republic of China.
Source: Authors.

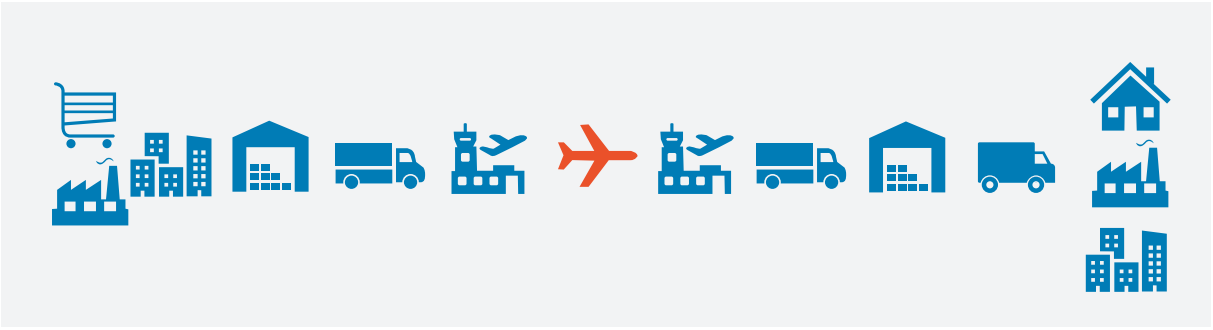
Air Cargo Value Chain

Figure 9 provides a simplified overview of the air logistics value chain. Freight forwarders, express companies, e-commerce platforms, and postal providers control the end-to-end shipper customer relationship and the flow of goods through the air logistics value chain.

Except for express companies that operated vertically integrated networks, separate parties provide services to freight forwarders and logistics companies. This includes road feeder services to and from airports, airport cargo and ramp handling, customs brokerage, and air transportation.

The primary constraints to the efficient and timely movement of air cargo are handling, customs clearance, and quarantine. Within the CAREC region, there are large differences in the efficiency of facilities which are addressed in the country-specific findings. It is recommended that trade facilitation studies are undertaken at a national level for each CAREC country. These studies should form the development of overall national freight and logistics plans.

Figure 9: The Air Logistics Value Chain



Source: Authors.

Air Cargo Industry Revenue and Profitability

Globally, airline air cargo revenues fluctuated between $70 billion–$118 billion between 2004 and 2019. Part of this fluctuation has been due to changing traffic levels, but the biggest driver has been the price of fuel. During this period, air cargo accounted for declining share of overall revenues. Air cargo revenues accounted for 12% of industry revenues in 2019, the last year before the pandemic.

The last 3 years have been an anomaly. Due to a massive loss of passenger capacity during the pandemic, air cargo has experienced a significant revenue boost—2021 and 2022 revenues were almost twice as high as that of the pre-pandemic level. Between 2020 and 2022, air cargo has accounted for between 28% and 40% of overall airline industry revenues (Figure 10).

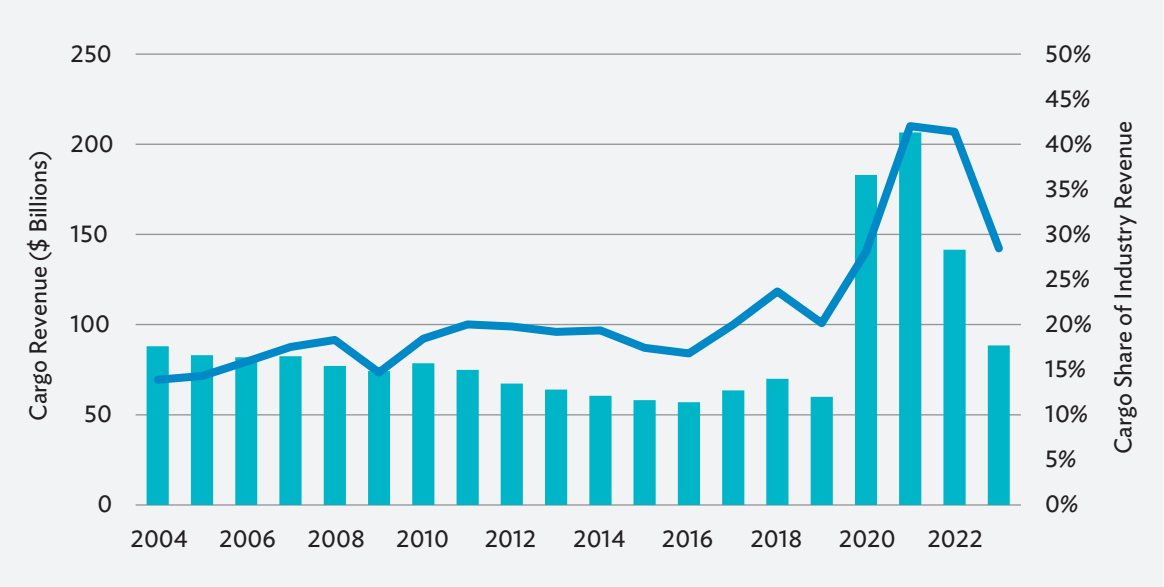
As international passenger traffic and capacity returns and air cargo rates normalize, cargo industry revenues are likely to converge to their pre-pandemic levels.

For a large part of the airline industry, cargo is viewed as a by-product of the scheduled passenger business although cargo took on a more prominent position over the past 3 years.

About half of global cargo volumes are carried by so called belly only and combination carriers, which operate both passenger aircraft and freighters (Figure 11). About 38% is carried by express companies such as FedEx, UPS, and DHL which account for vast majority of international express traffic. Only about 11% of traffic is carried by all cargo carriers, which operate freighters only.

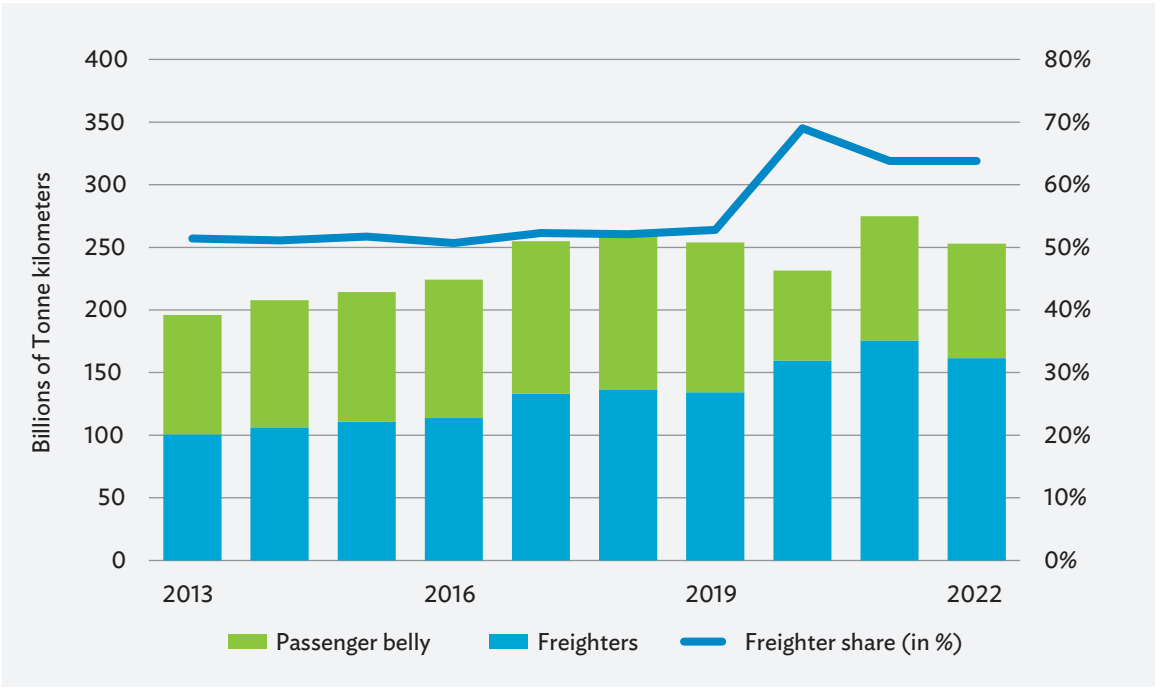
Apart of from revenue, the key drivers of cargo airline profitability are management of fuel, aircraft capital or lease expenses, and crew and maintenance expenses.

Figure 10: Airline Cargo Revenues and Percentage of Total Industry Revenue 2004–2022



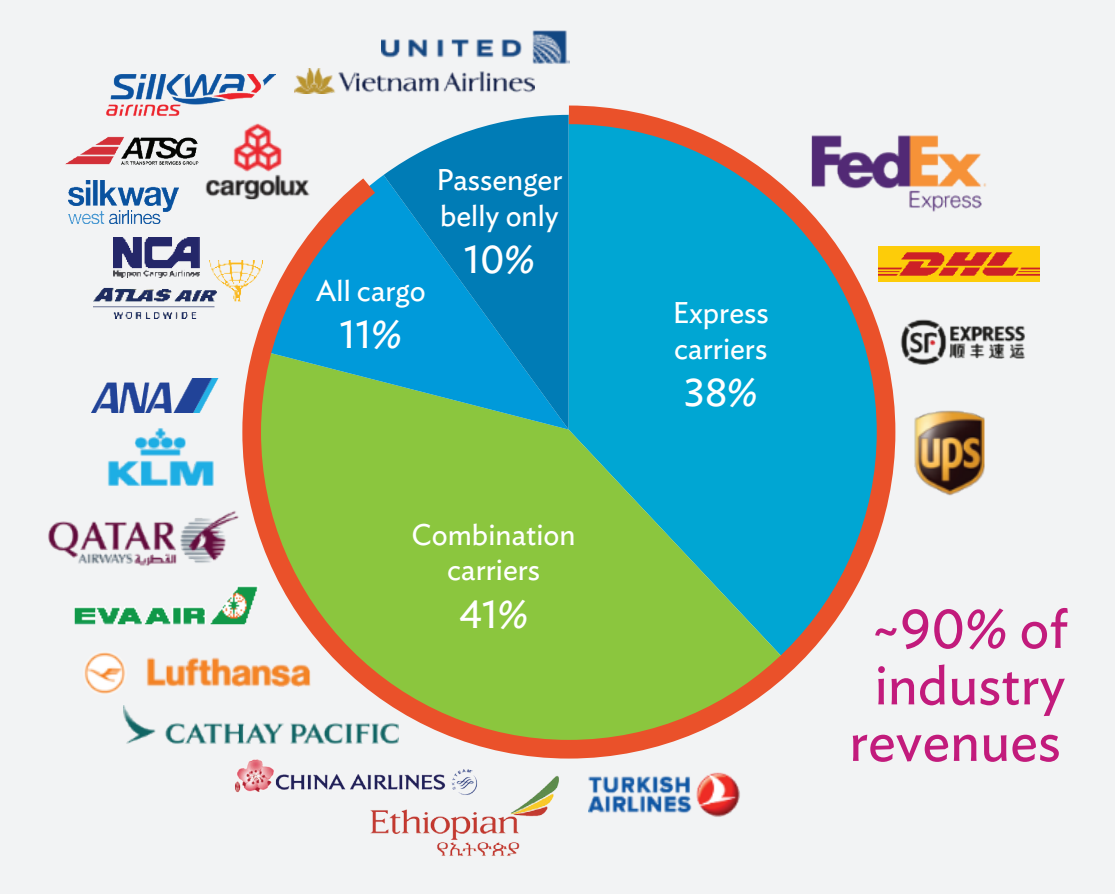
Source: International Air Transport Association (IATA) Industry Outlook, Multiple Years. Latest update 5 June 2023.

Figure 11: Freighter Share of Cargo Traffic 2013–2022



Source: International Air Transport Association (IATA) World Air Transport Statistics, multiple years.

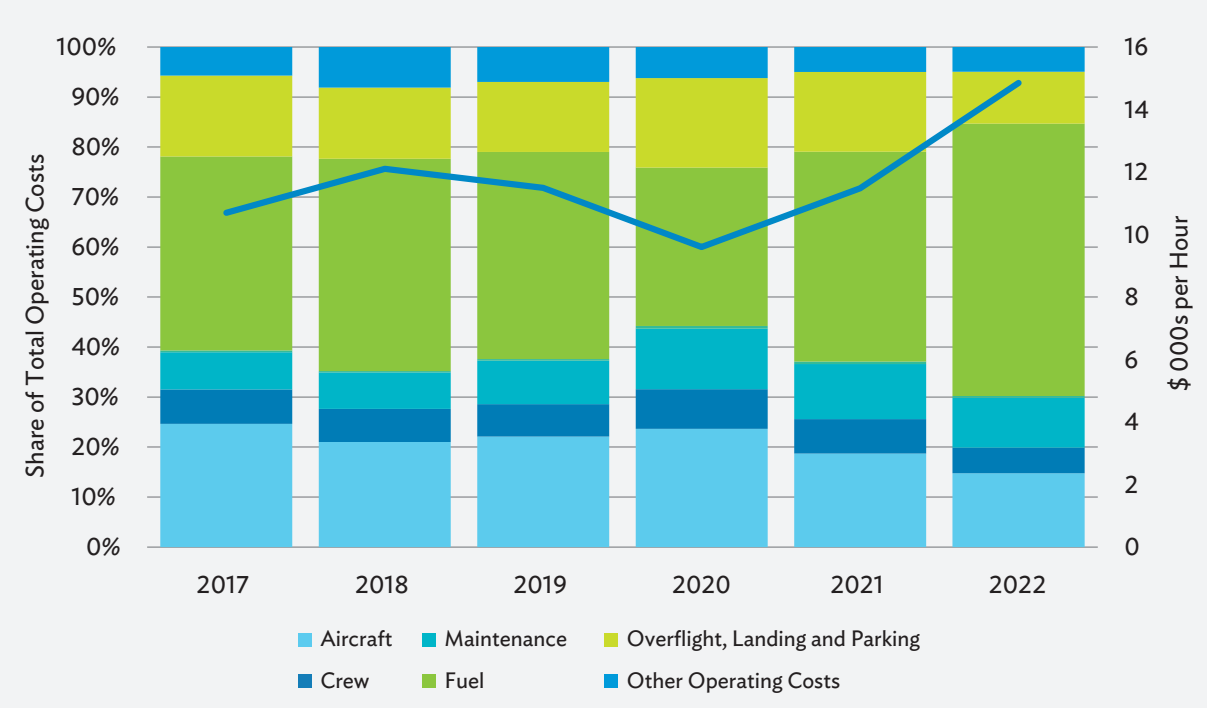
Figure 12: Air Cargo Industry Share by Carrier Type



Source: Boeing World Air Cargo Forecast 2022; Cirium; United States Department of Transport; Airline data, Boeing.

The importance of each of these components varies from year to year primarily because of fluctuations in fuel prices. Fuel is the main cost for both the airline industry overall and for the air cargo business. Fuel has fluctuated between 16% and 33% of total airline industry costs. For an air cargo operation, fuel can account for between 30% and 54% of total costs. Figure 13 provides an overview of the key air cargo business cost drivers.

Figure 13: Cargo Airline Cost Drivers



Note: Based on a long-haul 777 freighter operation for the period between 2017 and 2022.
Source: Authors.

5 CAREC AIR FREIGHT MARKET OVERVIEW

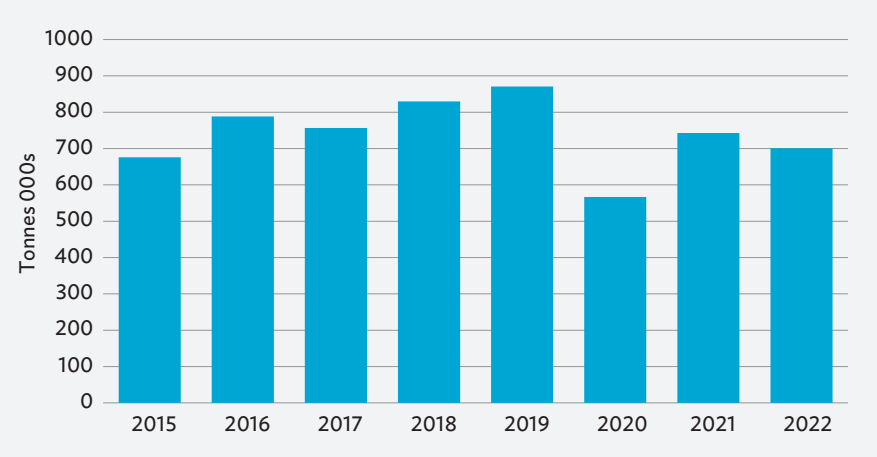
Key Findings:

- CAREC airports handled 701,000 tonnes in 2022 compared with 743,000 tonnes in 2021 and 870,000 tonnes in 2019, indicating recovery from pre-COVID-19 is lagging.
- Demand is considerably lower than belly and freighter aircraft capacity provided to/from and via the region.
- Of the 14 main airport cargo hubs in the region, 10 are either capacity-constrained today or will face constraints in the near future.
- At the end of 2022, freighter connectivity in the region is higher than that in 2019, yet belly capacity connectivity has not yet recovered to pre-pandemic levels.

Air Cargo Traffic and Demand

Total CAREC air cargo traffic handled was approximately 701,000 tonnes in 2022. This represents a drop from 742,000 tonnes in 2021 and remained 20% below 2019 levels (Figure 14). CAREC represents less than 1% of the size of the global air cargo market. While a post-pandemic recovery of volumes has been underway, volumes in some key markets remain below 2019 levels.

Figure 14: CAREC Air Cargo Traffic 2015–2022



CAREC = Central Asia Regional Economic Cooperation.
Source: Airports Council International; national airport data; authors' estimates.

Pakistan, XUAR, IMAR, Kazakhstan, Uzbekistan, and the Kyrgyz Republic account for over 90% of traffic handled in the region. In 2022:

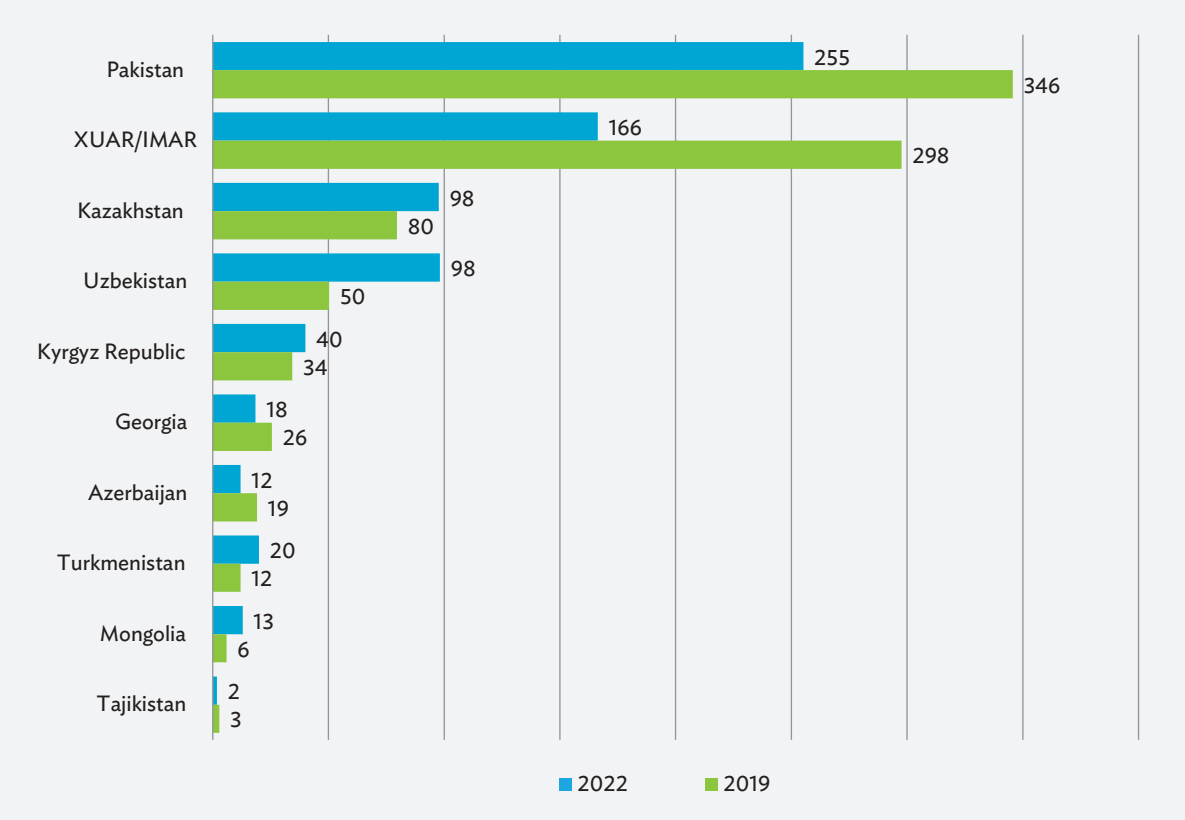
- Pakistan along accounted for about 35% of CAREC traffic,
- XUAR and IMAR accounted for a further 23%,
- Kazakhstan accounted 13%, and
- Uzbekistan accounted for 14%.

Within the region, cargo volumes are concentrated around a small number of airports, specifically Urumqi (URC); Almaty (ALA); the three main airports in Pakistan–Karachi (KHI), Lahore (LHE), Islamabad (ISL); Hohhot (HET); Tashkent (TAS); and Bishkek (FRU). These eight airports account for three-quarters of overall cargo volumes.

For Azerbaijan, PRC (XUAR/IMAR), Georgia, Pakistan,and Tajikistan, cargo volumes in 2022 were still significantly below 2019 levels. Volumes in Kazakhstan, Kyrgyz Republic, Mongolia, Turkmenistan, and Uzbekistan were higher than in 2019 (Figure 15).

Except for Pakistan and Mongolia, all other CAREC country-level markets are import rather than export focused, in terms of both tonnage and value. Table 4 provides an overview of the three main CAREC submarkets.

Figure 15: CAREC Air Cargo Traffic by Country 2022 vs. 2019 in Thousands of Tonnes



CAREC = Central Asia Regional Economic Cooperation, IMAR = Inner Mongolia Autonomous Region, XUAR = Xinjiang Uygur Autonomous Region.

Source: Airports Council International; national data; authors' estimates.

Table 4: CAREC Air Cargo Market Summary

Market	Description	Trading Partners	Commodities
Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, Uzbekistan, Azerbaijan, and Georgia	Highly imbalanced with import volumes of airfreight related goods around 3–5 times as high as exports.	Europe, the People's Republic of China (PRC), Republic of Korea, Japan, Türkiye, and the United States (US).	Imports are a mix of industrial equipment, household goods, electronics, beauty products, apparel.
Pakistan	Air exports around 200,000 tonnes per annum, imports around 150,000 tonnes per annum.	Imports: PRC, Japan, Southeast Asia, Europe, US exports, Europe, US, PRC, and other points in the Middle East and South Asia.	Exports are geared around apparel and footwear, household goods and food. Imports a mix of industrial equipment, electronics, consumer goods, textiles raw materials and food.
Mongolia	Small air cargo market with about 6,000 tonnes per year total, about two-thirds of which are imports and a third exports.	PRC, Republic of Korea, Japan, Europe, United Kingdom, but also Türkiye and India.	Imports are a mix of products including industrial equipment, pharmaceuticals, computer and electronics and other consumer goods. Exports focused around textile raw materials, apparel and footwear, and some food exports.
PRC (Xinjiang Uygur Autonomous Region [XUAR]/Inner Mongolia Autonomous Region [IMAR])	The XUAR/IMAR air cargo markets are primarily focused on domestic PRC.	XUAR international trade is dominated by trade with neighbouring Kazakhstan and Kyrgyz Republic.	Not modeled, as very little international air cargo flows from IMAR and XUAR that fall within the scope of this study. Also, PRC provincial trade data does not allow analysis at a mode level.

Source: Authors' analysis of trade and airport data.

Air Cargo Capacity

Cargo capacity in and out of the region is significantly higher than region specific air cargo demand. This is a direct consequence of the role of the region as a transit or tech stop location on flights between the PRC and Europe. Therefore, deployment of cargo capacity into the CAREC region is primarily dependent on the PRC to Europe airfreight demand and not the overall global capacity situation.

Nominal all cargo and passenger belly cargo capacity through the region is about 1.4 million tonnes per year, two-thirds of which is on freighters. 2020 saw a large COVID-19-related drop in passenger capacity. Pre-COVID-19 levels were reached in mid-2022. Freighter capacity through the region did not experience a significant drop in 2020 and 2021 as freighter operations between Europe and Asia continued.

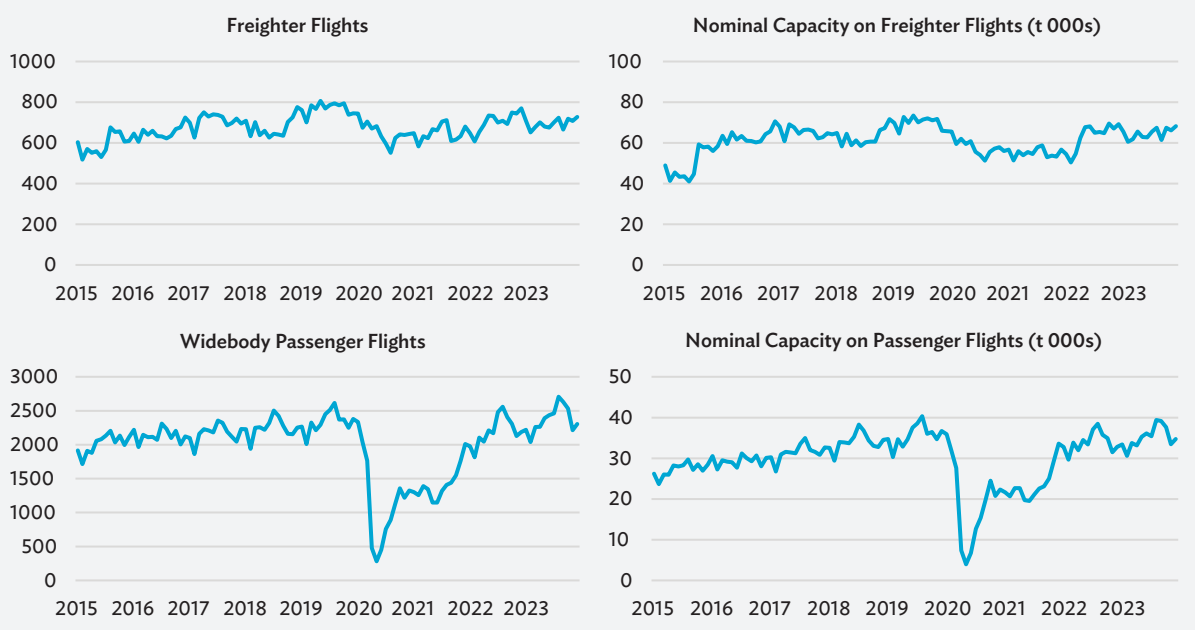
Scheduled international capacity into the region on freighters is approximately 60,000–70,000 tonnes per month, nominal cargo capacity on widebody passenger flights is around 40,000 tonnes.

Around half of international passenger flights within the region take place on narrowbody aircraft with only limited bulk cargo capacity. Although this adds another 20,000 tonnes per month of capacity, except for routes out of Pakistan, carriers generally make little use of this type of capacity.

Approximately 25 airports within the region have or had scheduled air cargo services within the last 3 years.

- Around half of the region's freighter capacity has operated through Baku (GYD), which is the operating base and hub for the region's main cargo carrier Silkway West.

Figure 16: CAREC Scheduled International Air Cargo Capacity Jan 2015–Dec 2023



CAREC = Central Asia Regional Economic Cooperation.

Note that nominal cargo capacity does not represent allocated capacity in tonnes. Includes all CAREC countries except Mongolia and Pakistan. Passenger flights only include widebody aircraft.

Source: Authors.

- Bishkek (FRU), Almaty (ALA), Navoi (NVI), Ashgabat (ASB) have also seen substantial freighter operations.
- Most of the operations through the above-mentioned airports represent through services or hub operations and are less geared toward local traffic.

The key carriers with substantial all cargo operations through the region include Silkway West/Silk Way Airlines, Turkish Airlines, Cargolux, Qatar Airways, Hong Kong Air Cargo, Lufthansa, Korean, DHL Express, SF Airlines, and YTO Airlines.

- Most of these operations are part of international long-haul operations between Europe and Asia, but some such as Turkish Airlines have developed a strong presence in the western part of the region.
- In the case of PRC-based carriers such as SF Airlines, YTO Airlines and China Postal Airlines the focus is on domestic Chinese flights to Xinjiang and Inner Mongolia.

Airlines across the region have been positioning themselves for growth by committing to freighter capacity. Currently, there are approximately 30 airlines with freighter operations in the region, although most operate Russian-built equipment including AN26 and IL76 aircraft types.

- Silk Way West remains the largest and most important cargo carrier in the region, although most of its business is not related to the region but on routes between Asia and Europe. The airline has committed to additional freighter capacity which will see its fleet expand from 12 747 freights to around 20 aircraft including 777 and A350 freighters.
- Uzbekistan Airlines operates a fleet of two 767–300 freighters and has plans to expand with further passenger to freighter conversions over the next 3 years.
- Other airlines in the region have also been committing to additional freighter capacity, including Georgia-based Georgian Airlines, MyWay Airlines, Camex Airlines, Geo-Sky,

Easy Charter, Turkmenistan Airways, and MIAT Mongolian Airlines.

- Other than Silk Way and Turkmenistan Airlines much of the capacity being added to the region is narrowbody freighter capacity and as such will be more focused on providing connectivity to rather than via the region.
- European carriers such as Cargolux or Lufthansa Cargo, Asian carriers such as Korean Air or Middle Eastern carriers such as Qatar Airways, Emirates or Turkish Airlines play an important role in providing connectivity to and from the region.
- Pakistan has so far not been an attractive location for the addition of all cargo capacity as market yields have been too low for operations to be economical and the country is well served by capacity operated by Gulf-based carriers. However, we note that there is increasing interest from Pakistan-based carriers in operating freighter capacity.

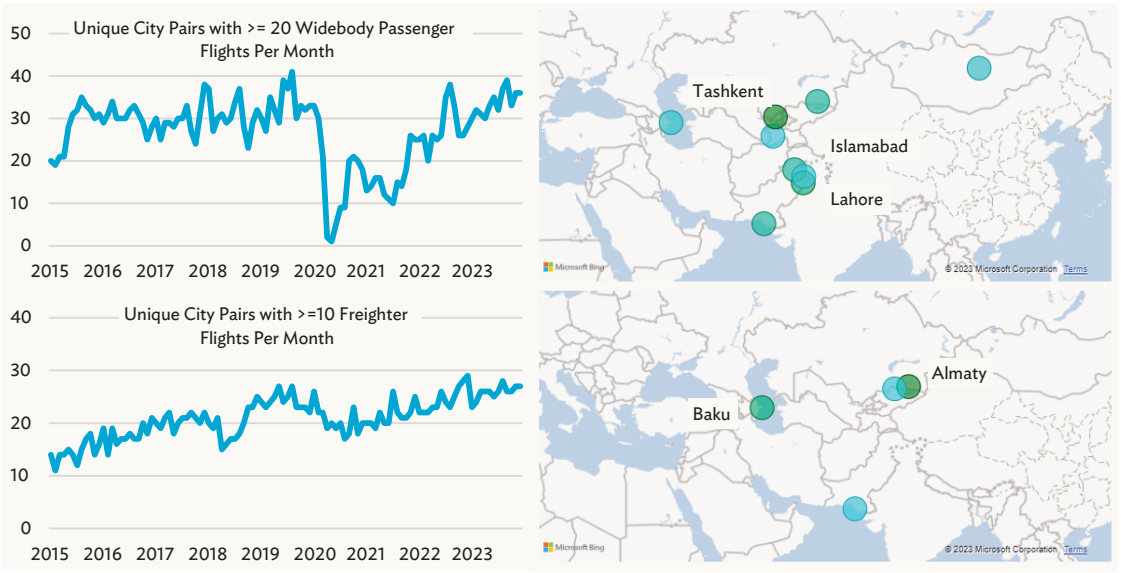
Air Cargo Connectivity

Connectivity varies substantially across the region. Overall, the number of city pairs with at least 20 international widebody passenger flights per month is still below pre-COVID-19 levels, but has shown a consistent recovery trend. Cargo connectivity in the region at the end of 2022 was higher than it was before the onset of the pandemic.

Cargo connectivity has been defined in two different ways. In the case of belly cargo connectivity, the number of city pairs with 20 or more international widebody passenger flights per month (or about 5 per week) has been tracked. This excludes narrowbody flights as, except for markets in South Asia, the bulk cargo capacity provided by these aircraft are not used by the market. To measure the change of freighter connectivity the number of city pairs with 10 or more flights per month (or about 2 per week) was also tracked.

Tashkent (TAS), Islamabad (ISB) and Lahore (LHE) have the greatest level of belly cargo connectivity in the CAREC region, while Baku (GYD) and Almaty (ALA) have the highest levels of freighter connectivity.

Figure 17: CAREC Air Cargo Connectivity Jan 2015–Dec 2023



CAREC = Central Asia Regional Economic Cooperation.
Source: Authors.

Air Cargo Rates

Westbound air cargo rates into CAREC countries generally reflect Asia to Europe rate levels, while eastbound air cargo rates from Europe are higher than from Europe to the PRC.

Due to the nature of airline networks, air cargo traffic from Asia particularly into Caucasus and Central Asian CAREC countries competes with traffic destined for Europe. Consequently, rate levels are similar to rates for Europe bound traffic, despite a shorter distance traveled. Eastbound rates into CAREC countries from Europe tend to be higher than rates from Europe into the PRC. This is a direct consequence of imbalances in eastbound vs. westbound air cargo. There is a stronger demand from northeast Asia to Europe than from Europe to northeast Asia.

Rates in and out of Pakistan tend to be lower than other South Asian economies including Bangladesh, India, and Sri Lanka. This is the main reason why the market has not been able to attract many regular freighter services.

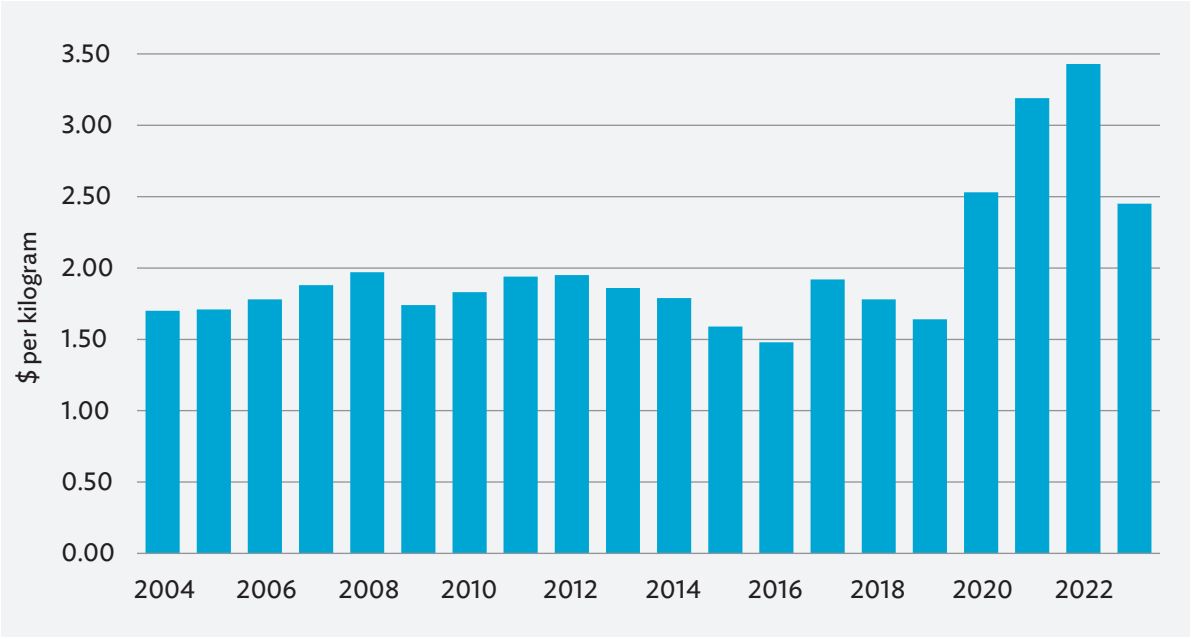
There is no reliable rate data available for Mongolia and XUAR and IMAR. However, a number of freighter businesses have established themselves in Mongolia and both Chinese autonomous regions have domestic express freighter services.

Rate levels particularly to and from countries or areas highly dependent on passenger belly capacity increased substantially during 2020 and 2021 but have started to normalize in 2022 as international passenger capacity returned.

- Outbound rates from Pakistan were 2.5–3 times their normal levels in 2020/2021, while inbound rates were double normal levels. Pakistan is highly dependent on belly capacity.
- Meanwhile, inbound rates into the five Central Asian Republics, Georgia and Azerbaijan from Europe did not experience an increase, while rates from the PRC and Hong Kong, China were 2.5–3 times their normal levels. These markets have a high level of freighter service, which did not decline during the pandemic.

It is expected that air cargo yields will converge toward pre-pandemic levels in the coming years (Figure 18).

Figure 18: Industry-Wide Air Cargo Rates 2004–2022



Source: International Air Transport Association (IATA) Industry Outlook, Multiple Years. Latest Update 5 June 2023

Freighter Technical Landings

A number of cargo operators with services between northeast Asia and Europe use airports within the CAREC region for technical landings and fuel stops. Figure 19 provides an overview of airports that have been used over the past 3–5 years.

Cargo airlines utilize the opportunity for technical landings for a number of reasons, including:

- Increase in available payload on flights to and from northeast Asia, particularly eastern and southern PRC; Hong Kong, China; Japan; and the Republic of Korea.
- Fuel price differentials to home base and destination markets.

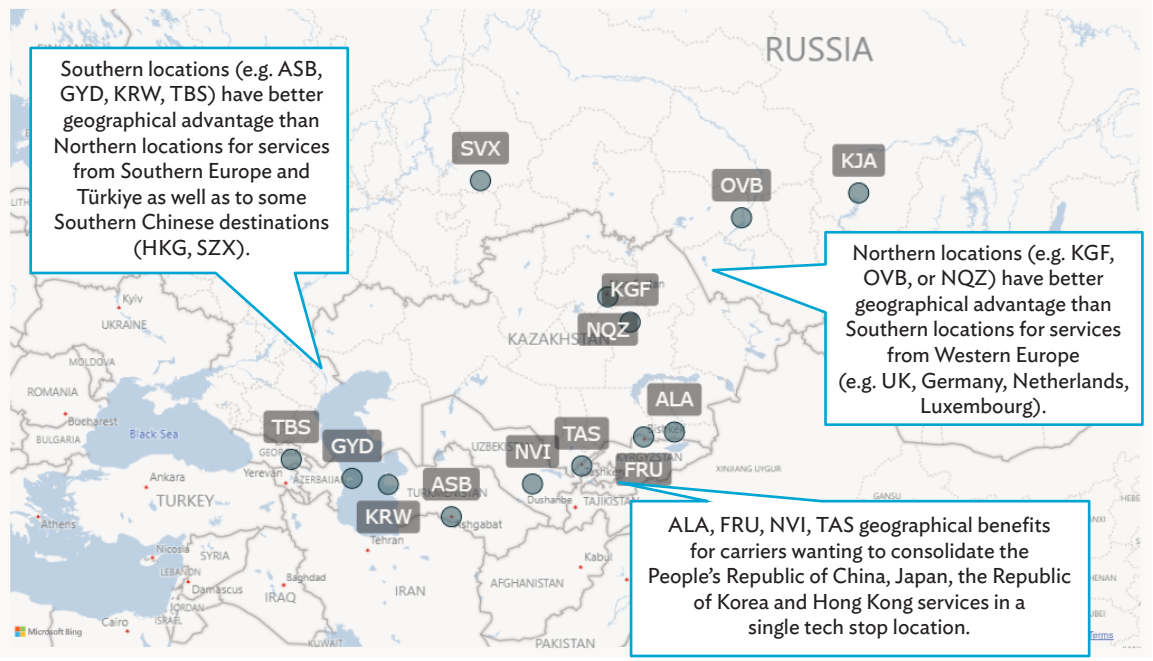
Locations that offer a mix of geographical advantage, airport facilities, crew accommodation facilities and attractiveness as a destination, commercial cargo opportunities, and fuel price advantage are more likely to attract long-term technical landing related business.

Locations in XUAR, IMAR, Pakistan, and Mongolia are not geographically suitable as technical stop locations between Asia and Europe.

Within the CAREC region, particularly Almaty (ALA), Baku (GYD), Tbilisi (TBS), Tashkent (TAS), Navoi (NVI) attract regular and substantial cargo movements.

- Almaty (ALA) has the largest mix of carriers utilizing the airport while other operations are often limited to a number of dominant carriers such as Navoi (Korean Air),
- Other destinations with varying levels of usage over the past 5–10 years include Bishkek (FRU), Türkmenbashi (KRW), Karaganda (KGF), Astana/Nur Sultan (YSE/NQZ), Ashgabat (ASB) and within the Russian Federation, Krasnoyarsk (KJA) and to a certain extent, Yekaterinburg (SVX).

Figure 19: CAREC and Siberian Airports Utilized by Freighters for Technical Landings



ALA = Almaty, ASB = Ashgabat, FRU = Bishkek, GYD = Baku, HKG = Hong Kong, KGF = Karaganda, KJA = Krasnoyarsk, KRW =Türkmenbashi, NQZ = Nur Sultan, NVI = Navoi, PVB = Novosibirsk, SVX = Yekaterinburg, SZX = Shenzhen, TAS = Tashkent, TBS = Tbilisi.

Note: Label shows airport code.

Source: Authors.' analysis of airport data, carrier schedules.

Since 2020 carriers have also been using locations in Central Asia and Siberia to avoid the need for flight crew quarantine in the PRC, specifically by performing crew changes in locations such as Almaty or Novosibirsk to allow a single crew to perform a return leg to the PRC and then a second crew to perform the onward flight to/from Europe. Novosibirsk (PVB) saw a massive consequential increase in cargo only movements from around 4,300 in 2019 to 10,000 in 2020 and 12,500 in 2021.

However, much of the technical stop activity via the region has ceased due to the ongoing Russian invasion of Ukraine, and the inability of western and many Asian carriers to utilize the airspace of the Russian Federation. Both CAREC and the Russian Federation routings require the use of the latter's airspace to be economical. Stakeholder consultation indicated that once the PRC opens, technical landings from Türkiye and Gulf-based carriers will be further reduced.

6 CONSTRAINTS AND OPPORTUNITIES

Key Findings:

- CAREC economies would benefit from the development of multimodal freight and logistics plans to forecast demand, plan infrastructure requirements, as well as guide policy and investment.
- The establishment of freight advisory committees and user groups could involve industry stakeholders in the development of policy and systems.
- Ten of the 14 main airport cargo facilities are either capacity constrained today or will face constraints in the near future. This creates an immediate need to consider potential public–private partnership and/or joint venture arrangements to allow further developments.

One of the primary objectives of this study and stakeholder consultation was to identify impediments to further growth of air cargo services throughout the region. Some of these relate to infrastructure, governance, or external factors outside the influence of policy or investment. This chapter outlines the primary issues identified as part of the study. More detailed country-specific findings can be found in Chapter 7.

Governance

Integrated National Logistics Plans

A common theme identified across multiple countries was the absence of an integrated national freight and logistics strategy to guide investment and policy development. While the study team did not identify major governance issues, there was evidence that there is a need for integrated long-term freight and logistics plans that take a multimodal approach to:

- Forecasting freight and logistics demand
- Planning and location of infrastructure
- Terminal network access
- Noise, community, and emissions impacts

An integrated logistics plan is critical toward coordinating the development infrastructure across the various user levels and national objectives of supporting trade. The opportunity exists for countries to create their own masterplan approach that designs future investment needs across the logistics networks that keep pace with future demand.

Other Governance Arrangements

Other governance arrangements could include the setup of freight advisory councils or logistics community group. Stakeholder consultation identified the need for and willingness of industry to engage in an ongoing dialogue with government, infrastructure providers, and other freight precinct stakeholders. Freight advisory councils or logistics community groups would bring together infrastructure operators, logistics companies and major shippers, capacity providers, and regulators to discuss constraints and development opportunities and

providing a forum for input into government policy and investment decisions.

Across a number of countries, users expressed dissatisfaction with access, pricing, and concession management arrangements. The nature of these grievances requires additional work at a national level to fully understand their validity. Regardless, the study team sees merit in the establishment of common governance structures for the development of infrastructure, tender, and management of operating concessions.

Air Cargo Market Liberalization

Cargo market liberalization is important in facilitating cargo market access and ensuring that sufficient capacity can be added to markets to meet demand. Cargo market liberalization can involve aspects including elimination of frequency and capacity restrictions, routing flexibility, pricing freedom, and an efficient ground-side environment. Access for cargo carriers was not identified as a key constraint in the CAREC region, although passenger aviation liberalization benefits cargo flows was. Globally, almost half of air cargo moves in the lower holds of passenger aircraft and as such, increased passenger services provide additional options. Connectivity to the region has generally improved since 2015. Connectivity would further benefit from a review of Bilateral Aviation Relations and implementation of a multilateral approach to air service agreement within the CAREC region and between CAREC and non-CAREC countries.

Infrastructure

Air cargo facilities across the region vary significantly in terms of capacity utilization, equipment, and systems. Table 5 provides a graphical overview of the level of peak year capacity utilization of the main air cargo facilities assessed across the region. Ten of the fourteen main airport cargo facilities are either capacity-constrained today or will face capacity constraints in the near future.

Table 5: Capacity Utilization of CAREC Air Cargo Facilities

Country	Airport	Approximate Peak Year Capacity Utilization*
Azerbaijan	Baku (GYD)	30%
Georgia	Tbilisi (TBS)	57%
Kazakhstan	Almaty (ALA)	63%
	Nur Sultan (NQZ)	96%
Kyrgyz Republic	Bishkek (FRU)	169%
Mongolia	Ulan Bator (UBN)	108%
Pakistan	Islamabad (ISB)	76%
	Karachi (KHI)	54%
	Lahore (LHE)	48%
People's Republic of China	Hohhot (HET)	103%
	Urumqi (URC)	11%
Tajikistan	Dushanbe (DYU)	42%
Turkmenistan	Ashgabat (ASB)	15%
Uzbekistan	Navoi (NVI)	44%
	Tashkent (TAS)	190%

* Based on internationally representative throughput factors of approximately 6 metric tonnes per square meter of warehouse space. Peak year traffic refers to highest volume levels seen over the past 22 years. Actual throughput capabilities depend on multiple factors including the type of traffic and level of handling required, terminal operating hours. As such capacity utilization figures are indicative of the level of constraints faced by the facility.

Source: Authors.

A number of facilities are highly constrained given the current or pre-pandemic level of demand, including Islamabad, (ISB), Tashkent (TAS), Bishkek (FRU), Nur Sultan (NQZ), Ulan Bator (ULN) and Hohot (HET). Other terminals with potential future constraints include Tbilisi (TBS), Almaty (ALA), and Karachi (KHI). Terminals in Ashgabat (ASB), Dushanbe (DYU), Urumqi (URC), Navoi (NVI), Baku (GYD) and Lahore (LHE) are unconstrained and have sufficient capacity to cater for future growth. Post-COVID-19 traffic recovery may accelerate the need for expanded infrastructure developments. This will require both government and private sector evaluation. This may also allow new joint venture or public–private partnership (PPP) arrangements to flourish under the correctly defined terms of approach and contractual transaction structures. The study team sees further opportunities to evaluate new PPP and/or joint venture models for air cargo centers that would benefit from private sector investments.

Other infrastructure constraints can arise out of insufficient ramp space, runway length to support large widebody aircraft, and airport access issues. Where relevant, these have been addressed in the country-specific findings.

Systems and Processes

Aging infrastructure and slow take-up of digital transformation for processing of air cargo shipments at some locations could limit the current and future potential of attracting and retaining traffic.

Further evaluation of current operational process and mapping the efficiency of the supply chain at CAREC air cargo centers would elaborate the opportunities for technical assistance to modernize systems at the interface of both statutory and private sector air cargo handling. The objective would be to create a more competitive air cargo center with more efficient flow of traffic receival, delivery and transit. This would include further work on digital transformation of customs systems.

External Factors

Growth opportunities in the region are driven by external factors outside the remit of policy, and investment of local market developments.

For example, during the pandemic, many airports in the region saw an increase in freighter aircraft traffic because of PRC crew quarantine requirements. Many airlines selected Central Asian airports such as Almaty as a crew changeover location. This opportunity has largely disappeared following the reopening of borders.

However, because of sanctions imposed on Russia following the Russian invasion of Ukraine, the region will now have access to potential transit traffic that traditionally flowed via Russian airports. With the correct level of infrastructure and growth of home-based air cargo carriers, airports may have the opportunity to permanently capture this traffic even after the conflict ceases. Additional work is required to determine the circumstances under which this traffic can retained permanently by CAREC-based airport and carriers.

7 COUNTRY PROFILES AND FINDINGS

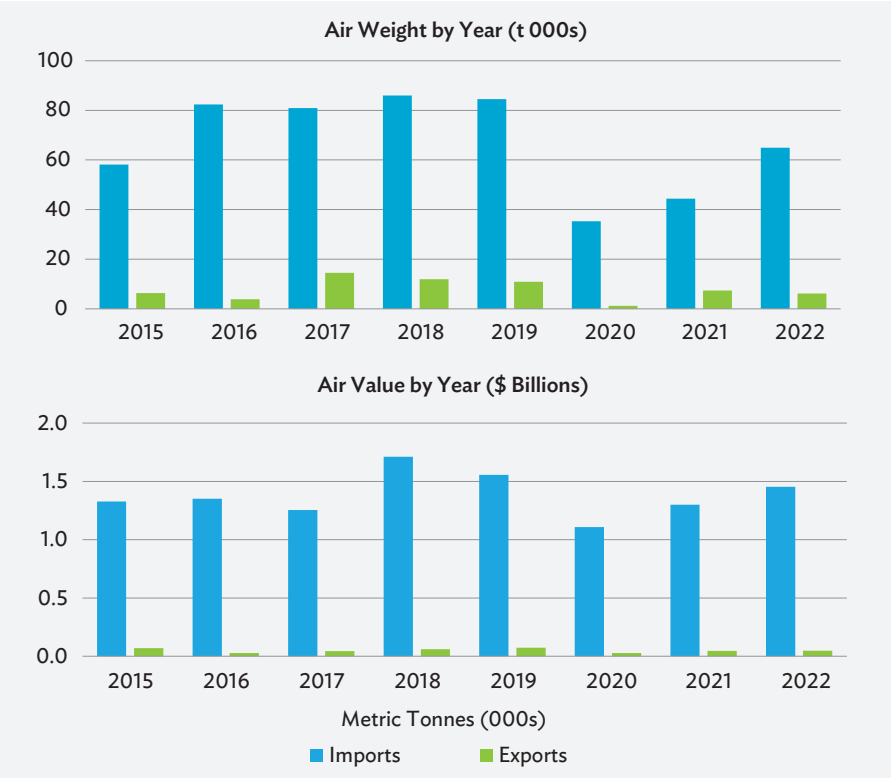
Azerbaijan

Air Trade

Like most markets within the CAREC region, Azerbaijan is primarily an import market.

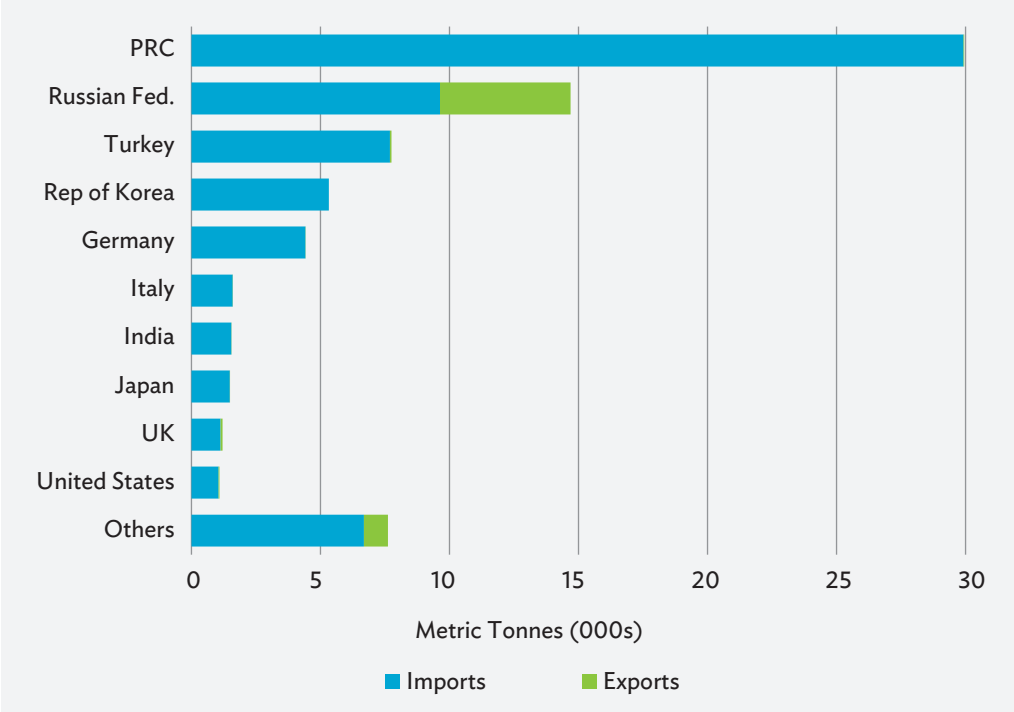
Its most important trading partners include the PRC, the Russian Federation, Türkiye, the Republic of Korea, and the EU. Air Cargo imports have not yet recovered to pre-pandemic levels. This has not been due to lack of capacity as home base carrier Silk Way West operates ample capacity through Baku (GYD) on Europe to Asia services.

Figure 20: Azerbaijan Trade by Air, 2015–2022



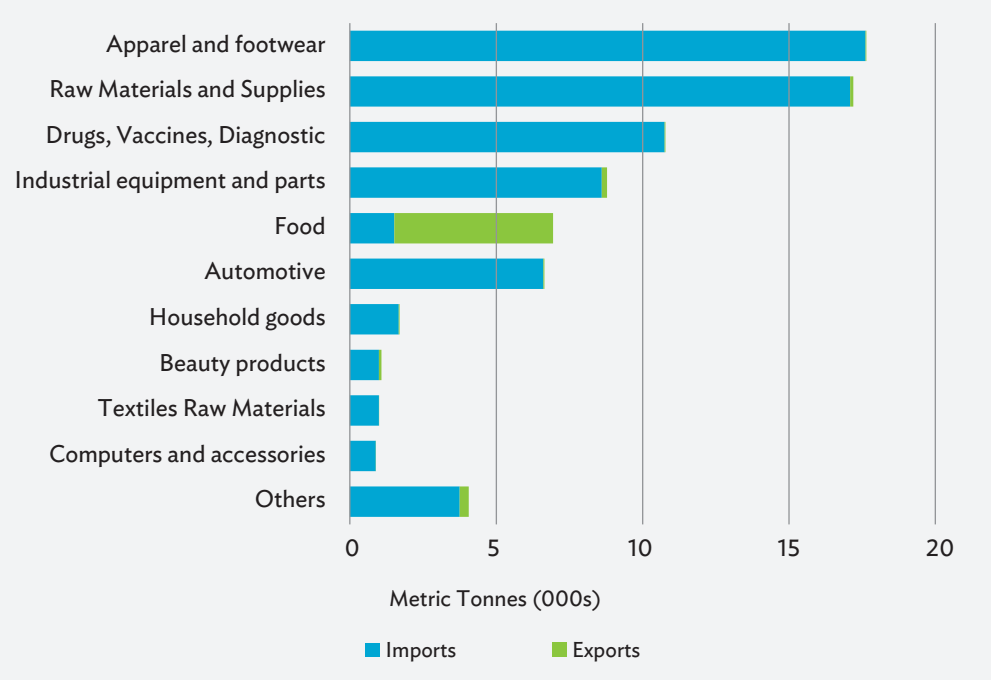
t = metric tonnes.
Source: Authors.

Figure 21: Azerbaijan Top Air Trading Partners by Weight 2022



PRC = People's Republic of China, UK = United Kingdom.
Source: Authors.

Figure 22: Azerbaijan Top Air Trade Commodities by Weight 2022



Source: Authors.

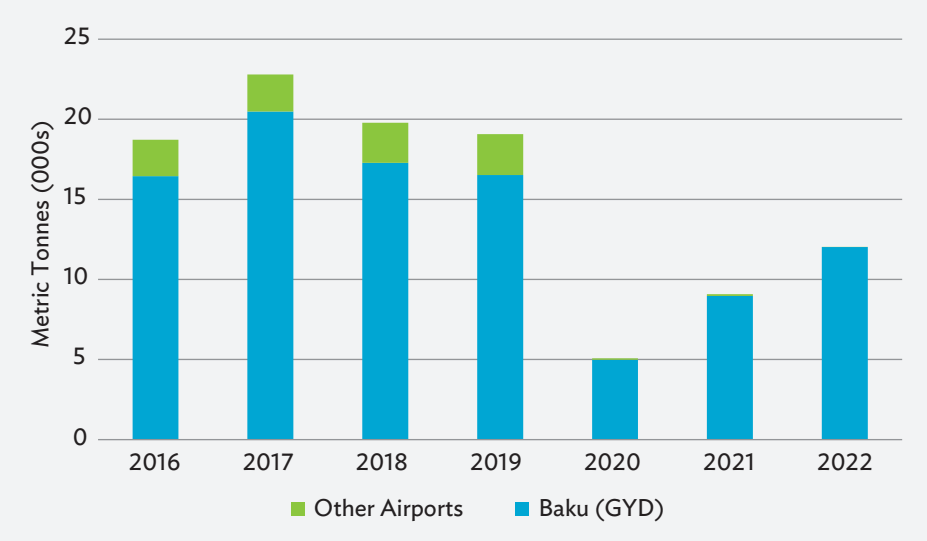
Air Cargo Traffic

Reported air cargo traffic data at Baku (GYD) airport is somewhat inconsistent with trade statistics and does not include transit traffic, which in the most recent years has accounted for 95% of cargo volumes. Figure 23 shows traffic excluding transit traffic.

Air Cargo Capacity

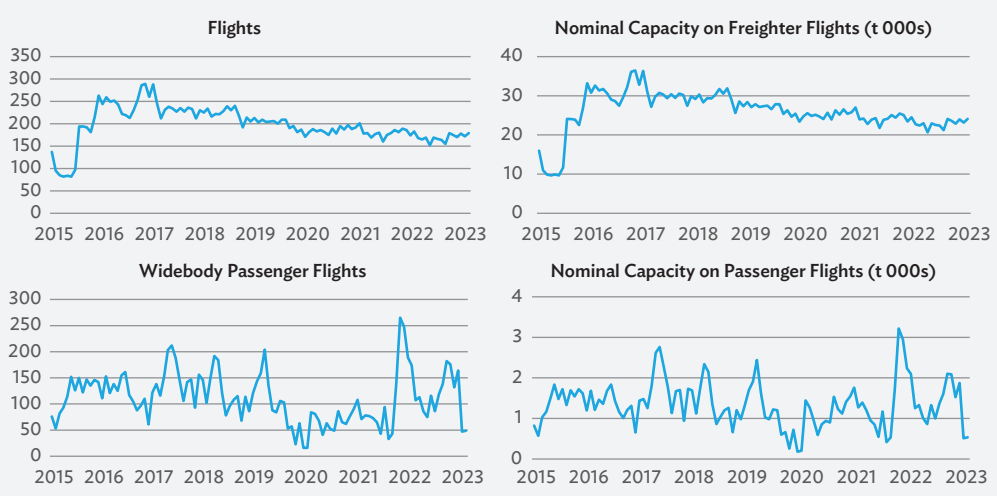
Due to the existence of home-based Silk Way West, Azerbaijan has significant international cargo capacity transiting its airport relative to the size of its true origin–destination market. Scheduled cargo capacity is likely to increase in the coming years in line with Silk Way West fleet growth plans.

Figure 23: Azerbaijan Air Cargo Traffic 2016–2022



Source: Airports Council International, National Airport Statistics, Authors' estimates.

Figure 24: Azerbaijan Flights and Capacity on Cargo and Passenger Flights 2015–2023



t = metric tonne.

Note that nominal cargo capacity does not represent allocated capacity in tonnes. Passenger flights only include widebody passenger flights and exclude narrowbody and turboprop aircraft.

Source: Authors.

Air Cargo Prices

Table 6: Azerbaijan Pre-COVID-19 Air Cargo Yields ($/kg)

Market	Outbound	Inbound	Comments
All Markets	$1.50	$2.00	
People's Republic of China/ Hong Kong, China	(...)	$3.00	Inbound rates increased threefold during COVID-19
Europe	$2.50	$2.00	Higher outbound than inbound yields because of special and outsized cargo. No change to inbound yields during COVID-19
United States	(...)	$3.00	
Gulf/ Türkiye	(...)	$1.50	

... = not available, COVID-19 = coronavirus disease, kg = kilogram.
Source: Industry sources, authors' analysis.

Findings

Item	Comments
Infrastructure	• Baku airside capacity: 2 runways, longest 13,123 ft (4,000 m), Elevation 10 ft (3 m) • Ramp/apron capacity: Up to 10,747 aircraft, Apron area 163,000 m^2 • Warehouse capacity: Single company ASG operated all handling capacity at the airport. Total space of 22,000 m^2 consisting of an import/export warehouse (12,000 m^2) and transit warehouse (10,000 m^2–12,000 m^2). 500 ULD storage positions in stacker system (approximately ten 747s). • High-tech Baku Cargo Terminal, supporting infrastructure and plant equipment, built 2005. • The Baku cargo terminal is 12,000 m^2 and apron area is 163,000 m^2. The apron area can handle 9-10 Boeing 747 or AN124 aircraft or up to 15 IL76s. • At time of visit: Three 747 freighters operational at ramps and two IL76s, plus two Georgian Airlines freighters operating for Silk Way West within the region. • The use of Azerbaijani air transport in multimodal transportation of goods from the PRC is complicated by high transshipment rates on the Chinese-Kazakh border in the Khorgos settlement. The imperfection of the process of crossing the border often entails a long demurrage of road and container cargo.
Air Cargo Traffic	• Baku Gateway air cargo: 2021: 9,000 t, 2019: 16,000 t. Terminal handled 300,000 t in 2021, of which 95% consisted of transit cargo. This does not include traffic on Silk Way and other aircraft that is not transferred between aircraft but remains on board. Based on current Silk Way operations, 2022 volumes are likely to be similar but increase over time as the company increases its fleet. • 80% of capacity operated by Silk Way West and Silk Way Airlines. AZAL, Cargolux, and Turkish Airlines have an important presence. Ninety-five percent of capacity operated through the airport is on all cargo aircraft.
Governance	• The Baku Cargo Terminal is owned and operated by ASG Ground Handling Co. (exclusive operator). • ASG demonstrates effective business structure and investments in technical systems for cargo handling and tracking. There was some informal advice of monopolistic behavior from ASG. • Despite this, there are cases when airlines "work faster than the terminal."
Constraints	• Fuel availability has been an issue to ongoing upgrade of refining capacity in Baku. • Cost of ground handling versus other regional centers may be higher per kg comparison. • Diversion costs for Baku versus other air cargo terminals on PRC-EU transit cargo routes.

continued on next page

Table continued

Item	Comments
Opportunities	• Growth opportunities as a transit hub directly linked to Silk Way West rather than other carriers. Limited import and export potential. • Some opportunity for intermodal connectivity with aspirational suggestion of future rail link for cargo to the air cargo terminal. • The Free Economic Zone established in the seaport of Alat is empty. The basis of the Azerbaijani economy is the extraction and export of oil and gas, which are exported by gas pipelines. • Overarching national master planning for all AZE freight sectors – sea, rail, road, air and intermodal. The masterplan for air cargo should include a prioritized 0–5 year strategic development for infrastructure, systems, and governance, and a 5–15–20-year plan for growth against targets and performance standards.

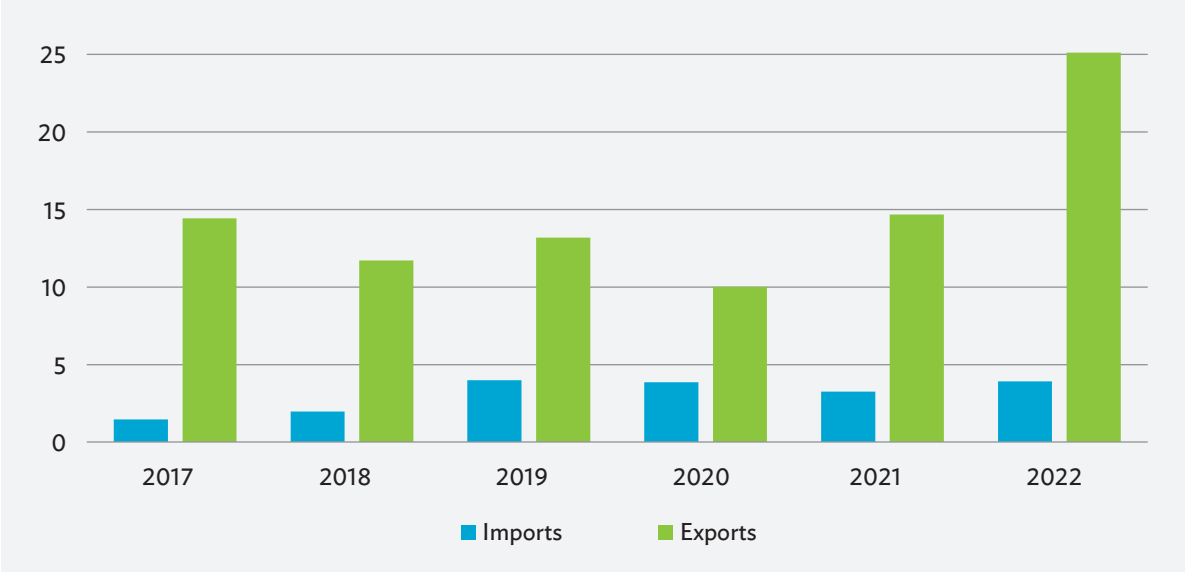
AZE = Azerbaijan, EU = European Union, ft = feet, m = meter, m^2 = square meter, PRC = People's Republic of China, t = metric tonnes, ULD = unit load device.

Source: Authors.

People's Republic of China–Xinjiang Uygur Autonomous Region

Trade

Figure 25: XUAR – CAREC Trade Overview 2017–2022 ($ Billions)

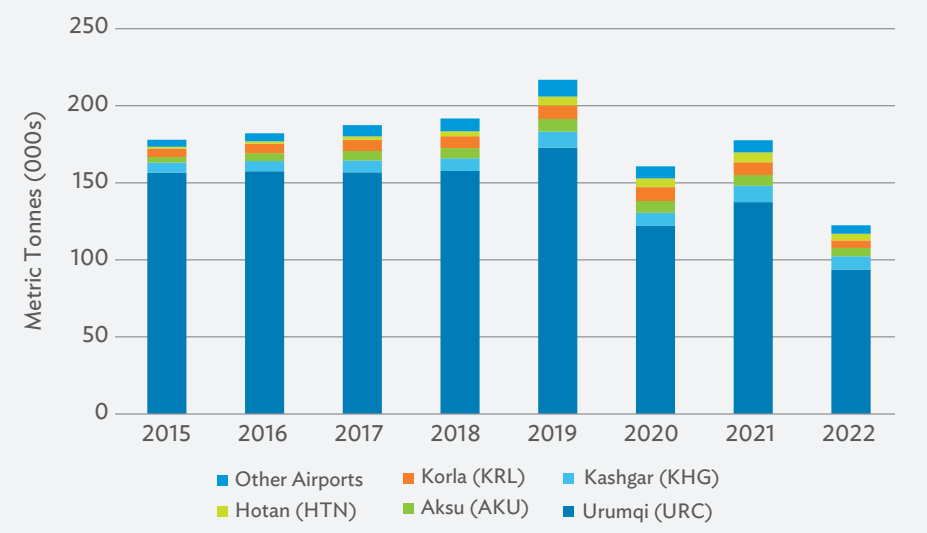


CAREC = Central Asia Regional Economic Cooperation, XUAR = Xinjiang Uygur Autonomous Region.

Source: Authors.

Air Cargo Traffic

Figure 26: XUAR Air Cargo Traffic 2015–2022

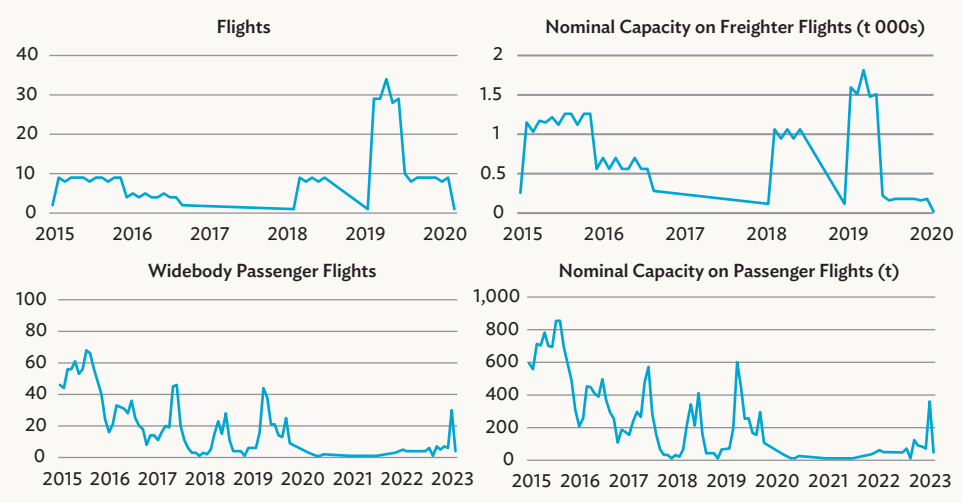


XUAR = Xinjiang Uygur Autonomous Region.
Source: Authors.

Air Cargo Capacity

Scheduled air cargo capacity in and out of XUAR is primarily focused in domestic PRC, with very few international flights. Most passenger belly capacity is on narrowbody flights, which are generally not used for transporting cargo.

Figure 27: XUAR Flights and Capacity on Cargo and Passenger Flights 2015–2022



t = metric tonnes, XUAR = Xinjiang Ughur Autonomous Region.
Note that nominal cargo capacity does not represent allocated capacity in tons. Passenger flights only include widebody passenger flights and exclude narrowbody and turboprop aircraft.
Source: Authors.

Air Cargo Prices

This study has not been able to source reliable yield data to and from XUAR.

Findings

Item	Comments
Infrastructure	• Urumqi Diwopu International Airport, constructed in 1939. It is the PRC's national gateway hub airport for Central Asia, West Asia, and connecting Europe and Asia. Airside Capacity 2 runway, 11,811 ft (3,600 m), Elevation 2,126 ft (648 m), Ramp/Apron Capacity 837,600 m^2. • Two cargo operation areas, the east cargo operation area covers 200,000 square meters, consisting of domestic cargo warehouses, international cargo warehouses, hazard goods warehouse, living body warehouse, and supporting facilities. The west cargo operation area covers 62,990 square meters, mainly consisting of loading/unloading warehouses.
Air Cargo Traffic	• Terminal throughput in 2021: 137,444 t, 2019: 172,800 t. • Proportion of all cargo aircrafts: Air cargo was mainly carried in the belly of passenger aircraft, accounting for 95. 3% in 2017 (mainly for domestic airlines), while 4.7% of all cargo aircrafts. SF Express and Postal Express operate all cargo aircrafts at the airport, and handled 5,682 t and 1,568 t in 2017 respectively.
Governance	• Urumqi Airport is owned and operated by Xinjiang Airport (Group) Co., LTD. • There are two base airlines at Urumqi airport, namely China Southern Airlines and Hainan Airlines The airport saw an average of 460 flights per day in 2017, with less than 16 widebody flights.
Constraints	• The proportion of all cargo aircrafts is low, which is mainly attributed to the competition of other airports in the PRC and PRC-Euro Express. • Lack of industrial zone and logistics parks in the vicinity of the airport, leading to limited demand growth. • Long-distance between Xinjiang and economic pillars of the PRC, leading to high costs and long time for cargo transit through Diwopu International Airport.
Opportunities	• Geographic advantages based on short distances to the other CAREC countries. • Developing opportunities brought by the Belt and Road initiatives. • Demand increasing resulted from better railway connections to economic pillars of the PRC.

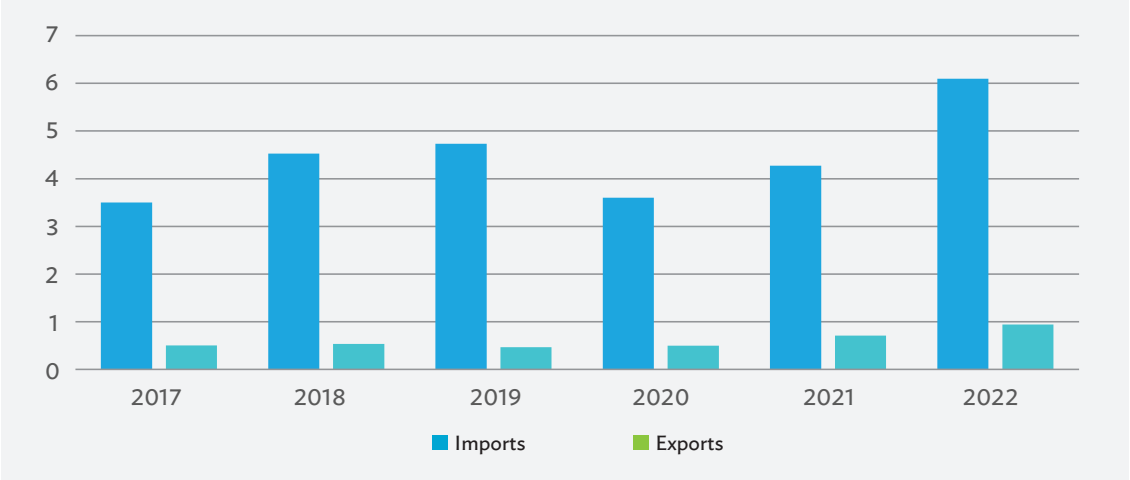
CAREC = Central Asia Regional Economic Cooperation, ft = feet, m = meter, m^2 = square meter, PRC = People's Republic of China, t= metric tonnes..

Source: Authors.

People's Republic of China–Inner Mongolia Autonomous Region

Trade

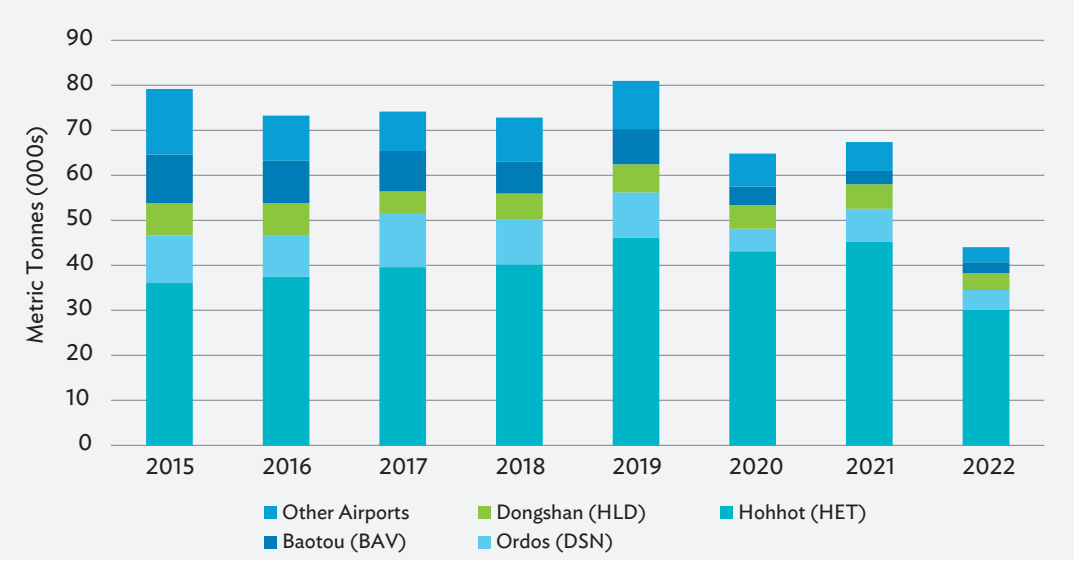
Figure 28: IMAR – CAREC Trade Overview 2017–2022 ($ Billions)



CAREC = Central Asia Regional Economic Cooperation, IMAR = Inner Mongolia Autonomous Region.
Source: Authors.

Air Cargo Traffic

Figure 29: IMAR Air Cargo Traffic 2015–2022



IMAR = Inner Mongolia Autonomous Region.
Source: Airports Council International, National Airport Statistics, authors' estimates.

Air Cargo Capacity

Scheduled air cargo capacity in and out of IMAR is primarily domestic PRC-focused, with very few international flights. Most passenger belly capacity is on narrowbody flights, which are generally not used for transporting cargo.

Air Cargo Prices

This study has not been able to source reliable yield data to and from IMAR.

Findings

Item	Comments
Infrastructure	• Hohhot Baita International Airport, constructed in 1958. • Airside Capacity: 1 runway, 3,600 m; Elevation 1,084 m; Ramp/Apron Capacity 70 stands. • By 2020, Hohhot Baita International Airport has been operating 202 air routes, 40 airlines, 103 navigable cities and 8 international and regional navigable cities. • Warehouse capacity 7,500 m^2 • 28 airlines provide cargo service, SF, and Postal Express are operating all cargo aircrafts. • A new international airport (Hohhot Chilechuan International Airport) is under construction, planned to be open to traffic in 2024, with 2 runways of 3,800 m and 3,400 m respectively, estimated cargo throughput 200,000 tonnes in 2025.
Air Cargo Traffic	• Terminal throughput in 2020: 43,142 t; 2019: 46,157 t.
Governance	• The airport is owned and operated by Inner Mongolia Civil Aviation Airport Group Corporation.
Constraints	• Compared to Xinjiang, much closer to economic centres of the People's Republic of China, hence facing strong competition of other cities in terms of air cargo market. • Topographic limitations of Hohhot Baita International Airport led to barriers of future expansion.
Opportunities	• Geographic advantages, connecting to Mongolia and close to the other CAREC countries. • Construction of the new airport in Hohhot will significantly improve air cargo capacity of IMAR and provide multimodal logistics services with better railway and road connections.

CAREC = Central Asia Regional Economic Cooperation, IMAR = Inner Mongolia Autonomous Region, m = meter, m^2 = square meter, t = metric tonnes..

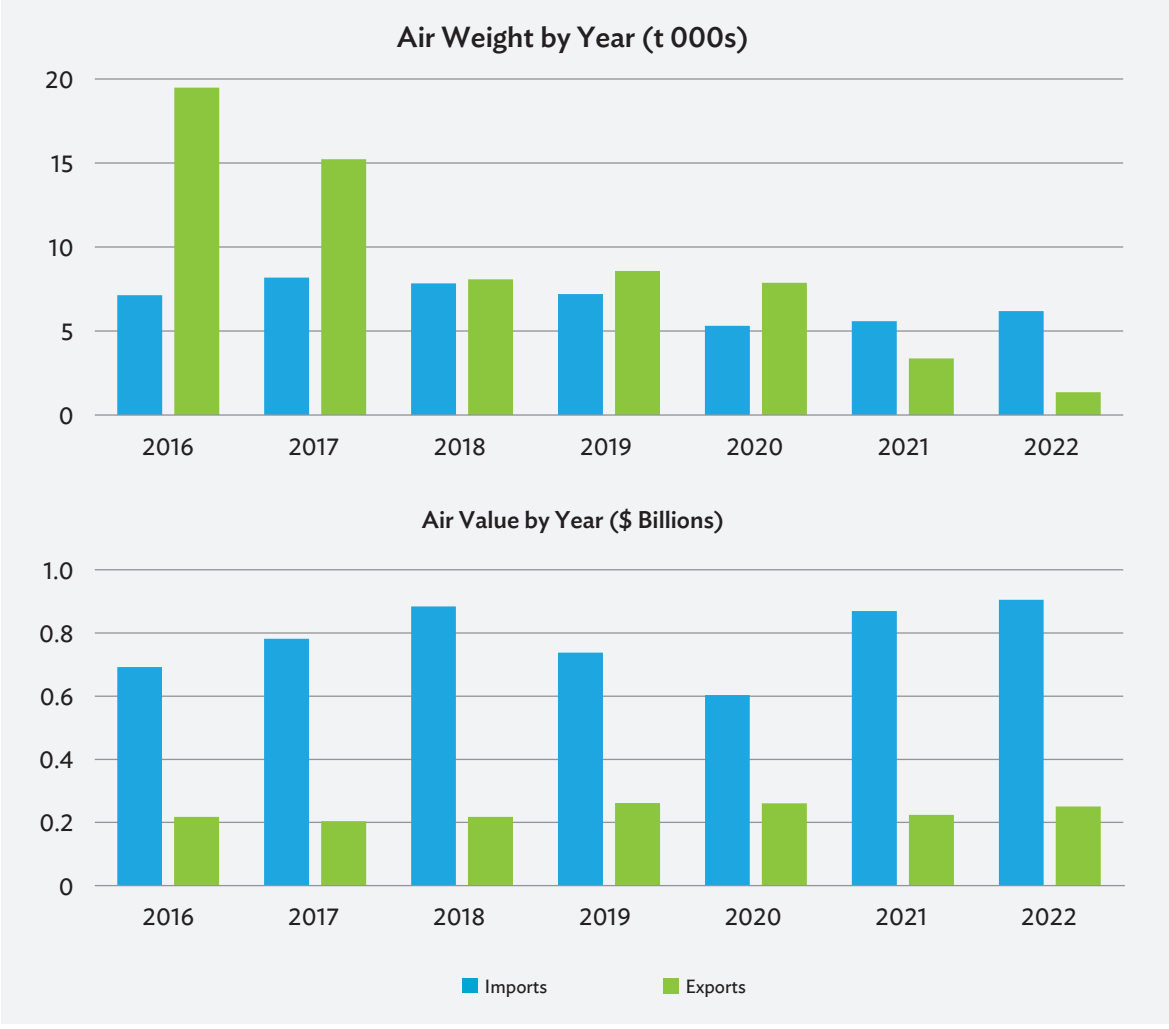
Source: Authors.

Georgia

Trade

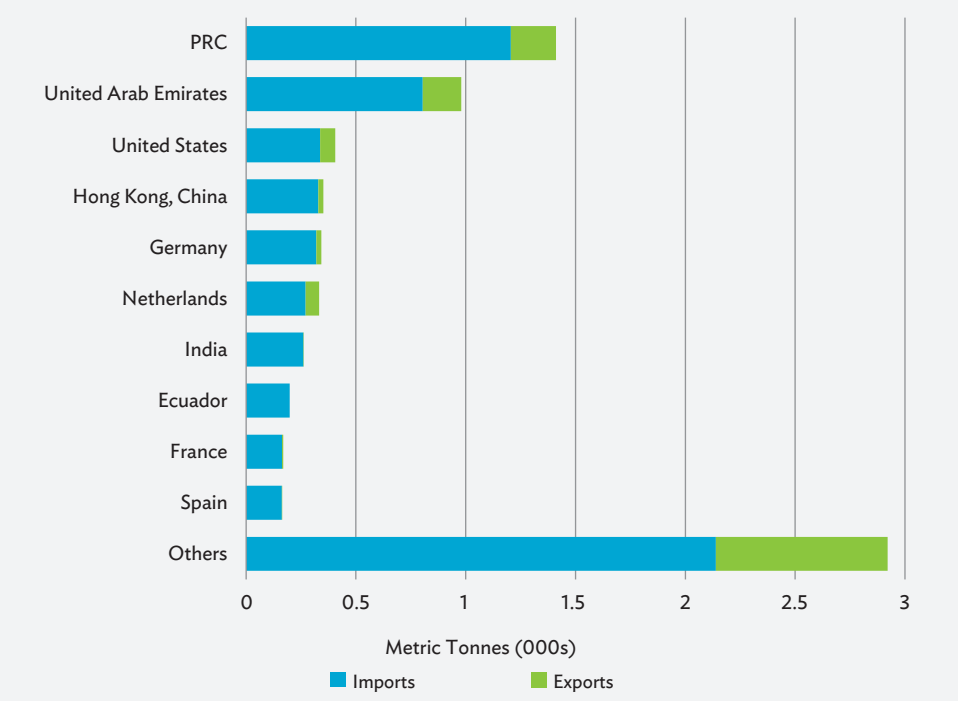
Georgia previously had strong live animal exports by air to the Gulf, but after 2017 this market disappeared. Now Georgia is primarily an air import market, with the PRC, the United Arab Emirates, the EU, and US being the major trading partners.

Figure 30: Georgia Trade by Air 2016–2022



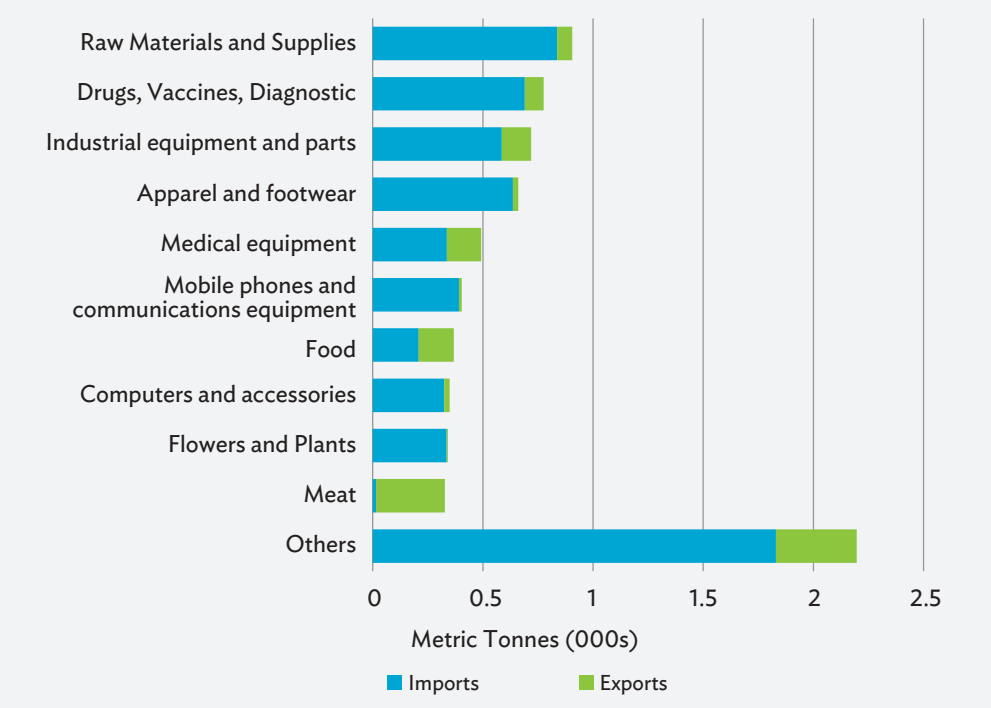
t = metric tonnes.
Source: Authors.

Figure 31: Georgia Top Air Trade Partners by Weight 2022



PRC = People's Republic of China.
Source: Authors.

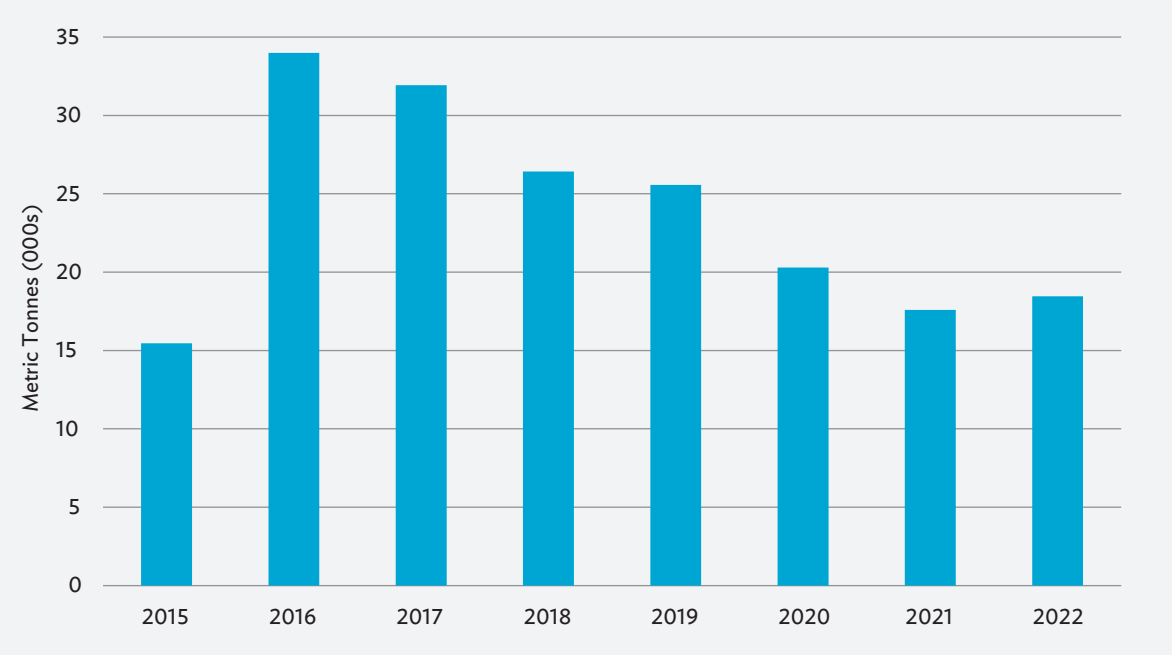
Figure 32: Georgia Top Air Trade Commodities by Weight 2022



Source: Authors.

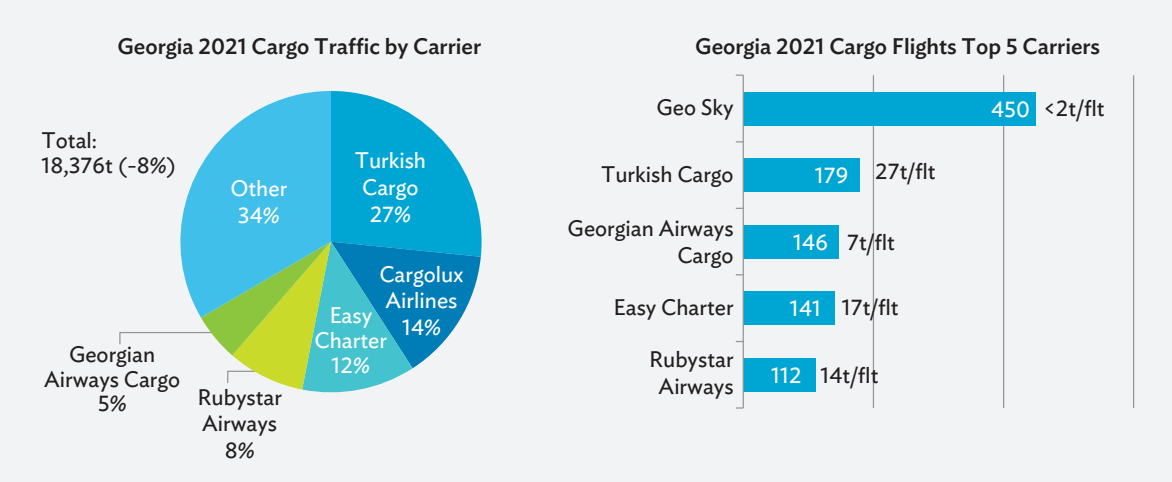
Air Cargo Traffic

Figure 33: Tbilisi (TBS) Air Cargo Traffic 2015–2022



Source: Airports Council International; National Airport Statistics; Authors' estimates

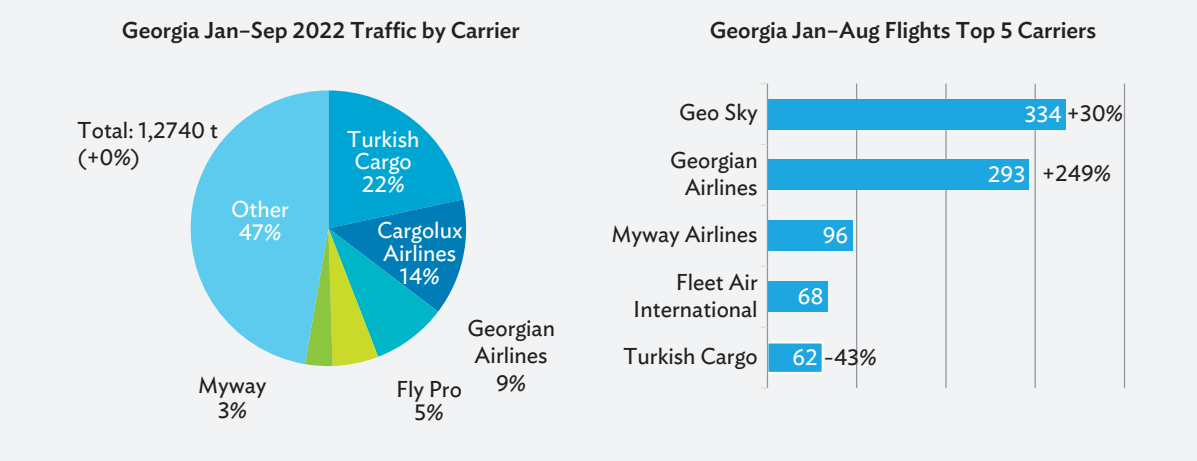
Figure 34: Georgia Air Cargo Traffic by Carrier, 2021



flt = flight, t = metric tonnes.

Source: Civil Aviation Agency, Avianews.ge, Concise Aerospace.

Figure 35: Georgia Air Cargo Traffic by Carrier, January–September 2022



flt = flight, t = tonnes.

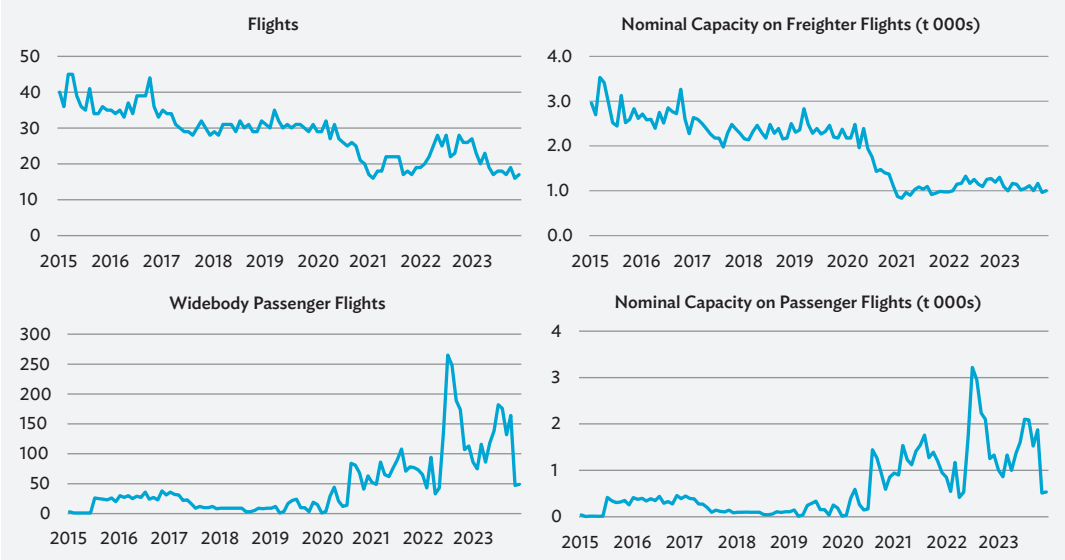
Source: Civil Aviation Agency, Avianews.ge, Concise Aerospace.

Air Cargo Capacity

Published schedules through Georgia understate the amount of freight capacity to, from, and through Georgia. It is estimated that up to one-half of total cargo capacity operates on non-scheduled services.

Georgia has a significant number of home-based carriers operating freighters. This includes Geo-Sky, CamEx, Georgian Airlines, Easy Charter and MyWay. By the end of 2022, passenger capacity had recovered to 2022 levels.

Figure 36: Georgia Flights and Capacity on Cargo and Passenger Flights 2015–2023



t = metric tonnes.

Note that nominal cargo capacity does not represent allocated capacity in tonnes. Passenger flights only include widebody passenger flights and exclude narrowbody and turboprop aircraft.

Source: Authors.

Air Cargo Prices

Table 7: Georgia Pre-COVID-19 Air Cargo Yields ($/kg)

Market	Outbound	Inbound	Comments
All Markets	$1.50–$2.00	$2.70	Inbound rates from the PRC or Hong Kong, China are similar to the PRC/Hong Kong, China rates to Europe as market competes with capacity dedicated to that lane. Outbound rates are not meaningful as Georgia is primarily an import market
PRC/ Hong Kong, China	(...)	$3.00	Inbound rates doubled during COVID-19
Europe	(...)	$2.20	
United States	(...)	$2.60	

(...) = not available, COVID-19 = coronavirus disease, PRC = People's Republic of China.
Source: Industry sources; Authors' analysis

Findings

Item	Comments
Infrastructure	• Tbilisi airside capacity: One runway, 9,843 ft (3,000 m); Elevation 1,578 ft (495 m) • Ramp/Apron Capacity 20,000 m^2 • Warehouse Capacity: Three cargo handling companies namely: Georgian Post, Lasare, Tbilisi Cargo Service. Lasare handles most airlines at the airport. Approx footprint 10,000 m^2. Tbilisi Cargo Service has previously focused largely on live animal transport. • Existing privately-owned (build-operate-transfer) main cargo terminal is well-laid out and sufficient for handling import and export cargo levels. • Customs and other processes are repeatedly advised as being very efficient • Three cargo handling companies: Georgian Post, Lasare, Tbilisi Cargo Service. Lasare handles most airlines at the airport. Approx footprint 10,000 m^2. • Kutaisi Airport is mainly intended for air cargo transportation. Despite the relatively better geographical position in the country, Kutaisi Airport has a number of difficulties. The operator at the airport is United Airports of Georgia. Some experts express the opinion that for Georgia, considering the volume of cargo handling, one airport in Tbilisi is quite enough. • Existing airport concession to 2027. Concession does not cover the cargo terminals.
Air Cargo Traffic	• Tbilisi Gateway air cargo: 2021: 25,000 t, 2019: 18,000 t. Cargo aircraft accounted for 13%, 24% and 5% of total aircraft movements in 2021, 2020 and 2019, respectively. • 2022 volumes are expected to be similar to 2021. Facility handles transit cargo to Armenia, but focus is import and export. Through traffic carried on carriers such as Geo-Sky is not handled at the airport. • Turkish Airlines, Cargolux, Etihad, Georgian Airways are the main airlines. All cargo service currently operated by Turkish Airlines, Coyne Airways and Cargolux. Approximately 50% of capacity into TBS is on all cargo services.
Governance	• Strong private sector activity and competition. • Some complaints were raised about airport operator, but these appear difficult to substantiate.
Constraints	• Runway length of 3,000 m leads to take of weight limitations for larger aircraft. TBS has the shortest runway of all major gateways and hubs in the region. • Some levels of discontent voiced by air cargo terminal users.

continued on next page

Item	Comments
Opportunities	• The government has been pursuing a policy of liberalizing the air cargo market since 2005 and is actively supporting private traders. • Current airport concession expires in 2027. Opportunities to strengthen concession parameters. • Runway extension would provide enhanced capabilities. • Some possibilities to develop Kutaisi as a transit hub with extended runway, but stakeholders exhibited mixed opinions given that customer base and logistics distribution centers are based inTbilisi. • Across the region, Georgia is viewed by stakeholders as the market with the most growth potential and a supportive regime for private sector development. • Overarching national master planning for all Georgian freight sectors—sea, rail, road, air, and intermodal. The masterplan for air cargo should include a prioritized 0–5-year strategic development for infrastructure, systems, and governance. And a 5–15–20-year plan for growth against targets and performance standards. ADB is in the process of commencing an Airport Sector Assessment (TA-6707). • The government plans to build a second runway in Kutaisi.

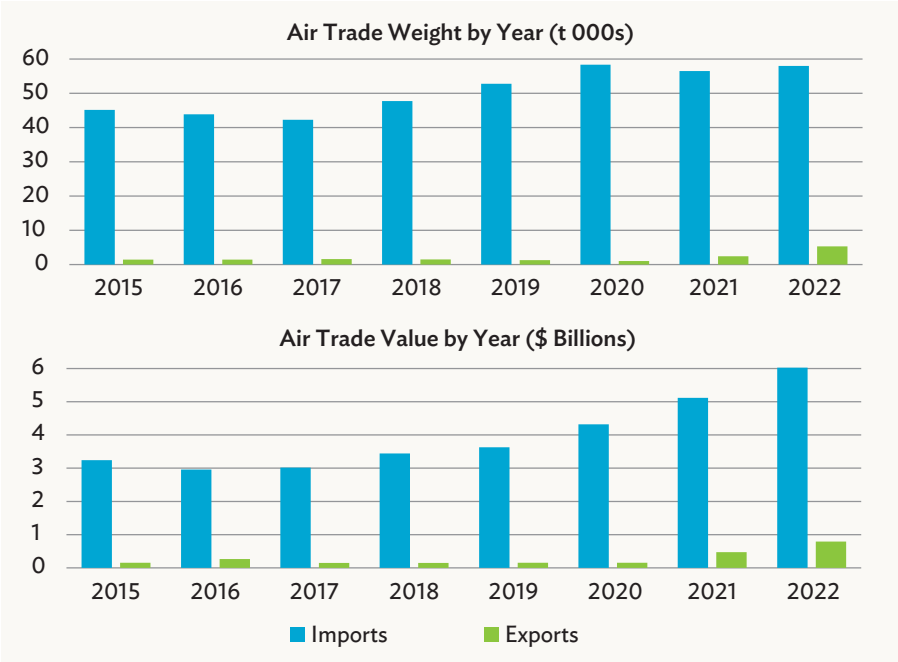
ADB = Asian Development Bank, ft = feet, m = meter, m^2 = square meter, t = metric tonnes, TBS = Tbilisi Airport.
Source: Authors.

Kazakhstan

Trade

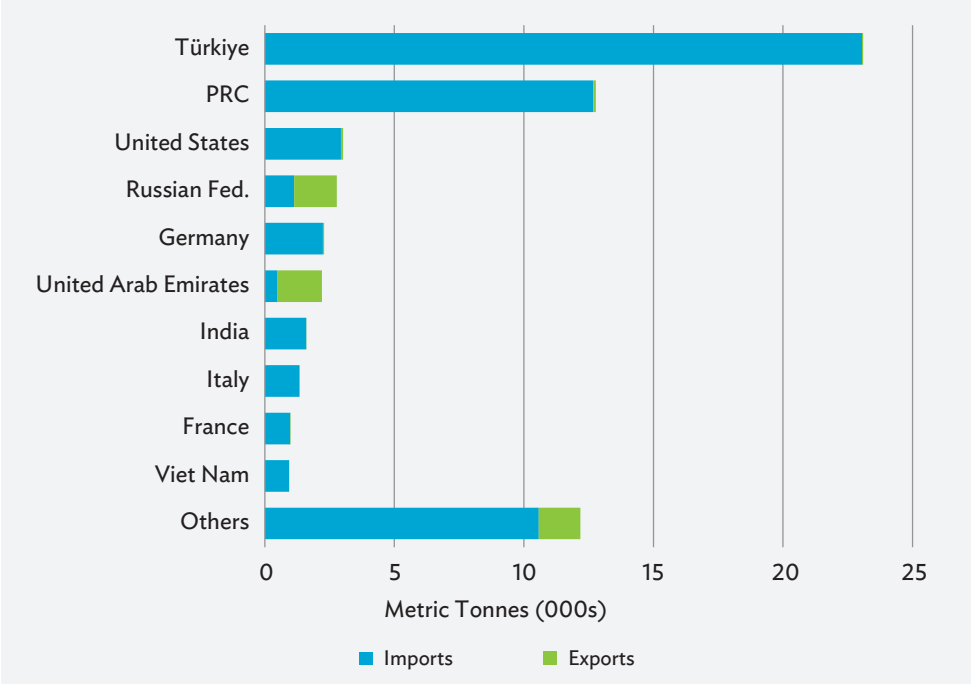
Kazakhstan is also primarily an import market for products relevant to air cargo. The PRC and the Russian Federation are the main import partners, followed by the EU.

Figure 37: Kazakhstan Air Trade 2015–2022



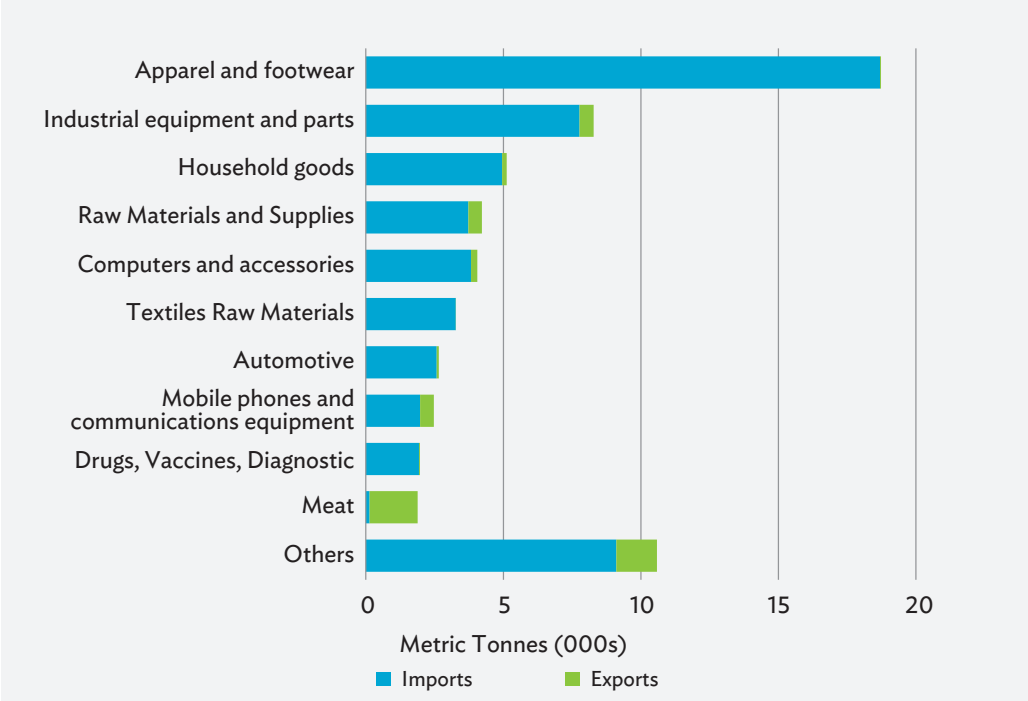
t = metric tonnes.
Note: Air Trade from 2015 - 2020 is estimates, 2021 and 2022 based on actual reported air trade figures.
Source: Trade and Transport Group Kazakhstan Trade Monitor

Figure 38: Kazakhstan Top Air Trade Partners by Weight 2022



PRC = People's Republic of China.
Source: Authors.

Figure 39: Kazakhstan Top Air Trade Commodities by Weight 2022

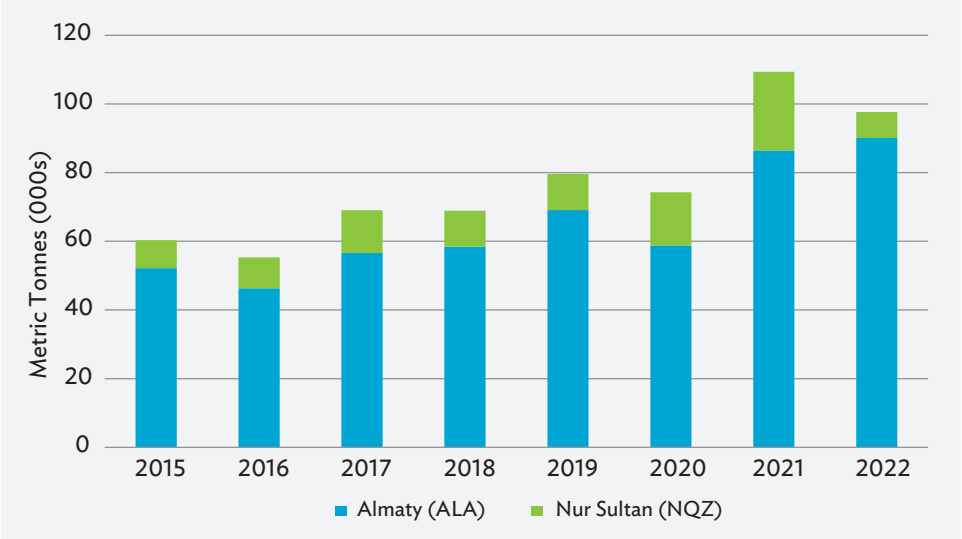


Source: Authors.

Air Cargo Traffic

Air cargo traffic volumes through both Almaty and Nur Sultan increased in 2021, primarily due to increased transit and technical stop traffic. This is a direct consequence of changes to aircraft flight patterns to avoid the requirement for COVID-19 related crew quarantine in the PRC.

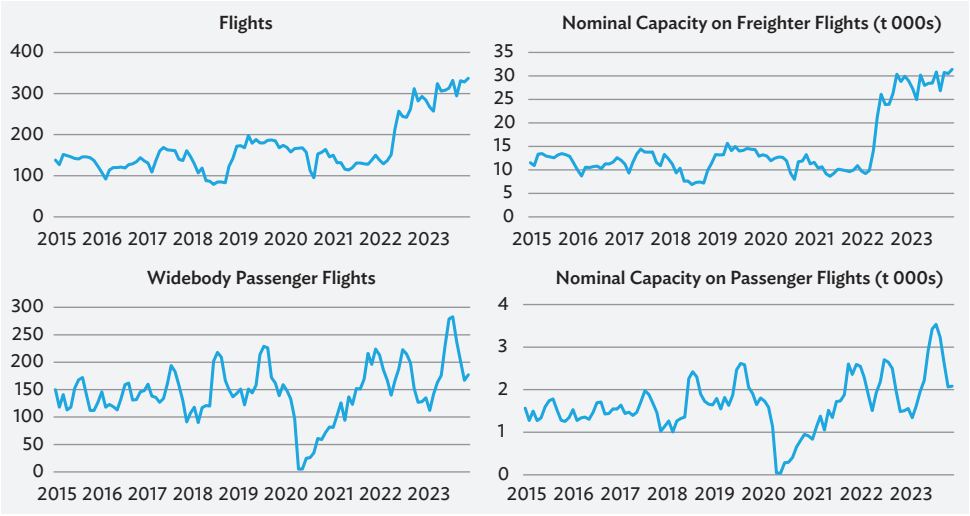
Figure 40: Almaty (ALA) and Nur Sultan (TSE/NQZ) Cargo Traffic 2015–2022



Source: Airports Council International; National Airport Statistics; authors estimates.

Air Cargo Capacity

Figure 41: Kazakhstan Flights and Capacity on Cargo and Passenger Flights 2015–2023



t = metric tonnes.

Note that nominal cargo capacity does not represent allocated capacity in tonnes. Passenger flights only include widebody passenger flights and exclude narrowbody and turboprop aircraft.

Source: Authors.

Air Cargo Prices

Table 8: Kazakhstan Pre-COVID-19 Air Cargo Yields ($/kg)

Market	Outbound	Inbound	Comments
All Markets	$2.00	$2.00	Import rates increase about 50% during COVID-19. Outbound rates which are strongly correlated with the People's Republic of China to Europe rates increased 2.5 times during COVID-19.
People's Republic of China/ Hong Kong, China	(...)	$3.00	Inbound rates increased 2.5 times during COVID-19.
Europe	$2.00	$2.00	Inbound rates were largely unchanged during COVID-19 due to no loss of capacity. Europe to Kazakhstan rates are better than eastbound rates from Europe into the People's Republic of China and create an incentive for stops.
Türkiye/ Gulf	$1.50	$1.50	
United States	$3.10	$3.00	

(...) = not available, COVID-19 = coronavirus disease.
Source: Industry sources; Authors' analysis.

Findings

Item	Comments
Infrastructure	• Almaty Cargo terminal is appropriately sized for traffic levels and there is adjacent space available to expand. No automation, but terminal is fit for purpose. Terminal is operated by company affiliated with airport owner TAV. Handover taking place from TAV to affiliated company HAVAS. • Class A warehouse designation for air cargo including DG Haz warehouses for various levels of DG classifications. International Air Transport Association (IATA) Pharma certification allows additional handling and storage revenues. • Cargo parking ramp approximately 1.2 km from warehouse. • Samsung has opened its regional hub at the airport for the import and subsequent distribution of its products. • Almaty Airport: Airside Cap 2 runways, longest 14,764 ft (4,500 m), Elevation: 2,238 ft (682 m). • Ramp/Apron Capacity: Approximately 5 stands for 747 aircraft. 80,000 m^2. • Warehouse Capacity: Entire area 55 m^2. Main warehouse 20,000 m^2 divided into four blocks. Truck and Railway warehouse 2,700m^2, open container area 14,000m^2. • Development Plans: None at this stage, but handling company will be taken over by Havas, another group linked to TAV. • Nur Sultan Airport - airside capacity 1 runway, 11,814 ft (3,601 m), Elevation 1,766 ft (538 m). • Warehouse Capacity: 3,500–5,000 m^2.

continued on next page

Table continued

Item	Comments
Air Cargo Traffic	• Almaty Gateway air cargo = 2021: 86,000 t, 2019: 69,000 t. Cargo aircraft accounted for 11%, 15% and 6% of total aircraft movements in 2021, 2020 and 2019, respectively. Cargo handling tonnage including transit: 100,632 (2021), 58,794 (2020), 69,098 (2019). • Approximately 80% represents transit cargo. Note that transit cargo is counted twice (on import and on export). • Most capacity operating through ALA has been on all cargo services utilizing the airport as a combined traffic and technical stop. The largest carrier into the airport has been Turkish Airlines, followed by ASL Airlines, Polar Air Cargo, Hong Kong Air Cargo, Air Astana, Qatar Airways, Cargolux, Lufthansa. Almaty has consistently hosted a diverse number of cargo carriers on services between northeast Asia and Europe. • Nur Sultan gateway air cargo: 2021: 23,000 t, 2019: 11,000 t. Cargo services negligible over the past years, but in the mid-2010s cargo aircraft accounted for around 6% of overall movements. • Almost exclusively served by passenger belly capacity, although in the past has been utilized as technical landing location for all cargo carriers such as ACT, Turkish Airlines Cargo, EL AI, ULS, Cargolux and Lufthansa. About 50% of capacity is on narrowbody aircraft. Widebody services have been dominated by Lufthansa, Air Astana, Aeroflot and Turkish Airlines.
Governance	• Given the airport is owned by TAV and not under concession, there is limited opportunity for government to influence service levels and pricing at Almaty Airport. • Observed standards of reasonable management regime in terminal operations.
Constraints	• Cargo ramp space is over 1 km from terminal which limits overall efficiency and productivity of transfer and handling of air cargo. • Handover between cargo handling and aircraft handling company are linked to TAV. Originally cargo and aircraft handling were performed by a single company, but the split into two companies has created interface issues. These should be solvable. • Once PRC fully reopens and normalized freight volumes return, tech stop traffic is likely to decrease. • Temporary fuel availability issues. • Almaty Airport is limited in cargo flows. The volume of exports from the region is minimal due to the lack of export-oriented products in the industries of the city and the region. • Almaty Airport is mainly used by Turkish Airlines and Lufthansa on a systematic basis.
Opportunities	• Investment in new ramp space. • Overarching national master planning for all KAZ freight sectors—sea, rail, road, air, and intermodal. The masterplan for air cargo should include a prioritized 0–5-year strategic development for infrastructure, systems, and governance. And a 5–15–20-year plan for growth against targets and performance standards. • In connection with the reorganization at the airport, additional structures were created that deal with the delivery of goods directly to the aircraft. This complicated the activities of forwarding companies and agents. To create more favorable working conditions at the Almaty airport, they plan to create an association of agents, acting in the semblance of trade unions.

ft = feet, KAZ = Kazakhstan, m = meter, m^2 = square meter, t = metric tonnes.

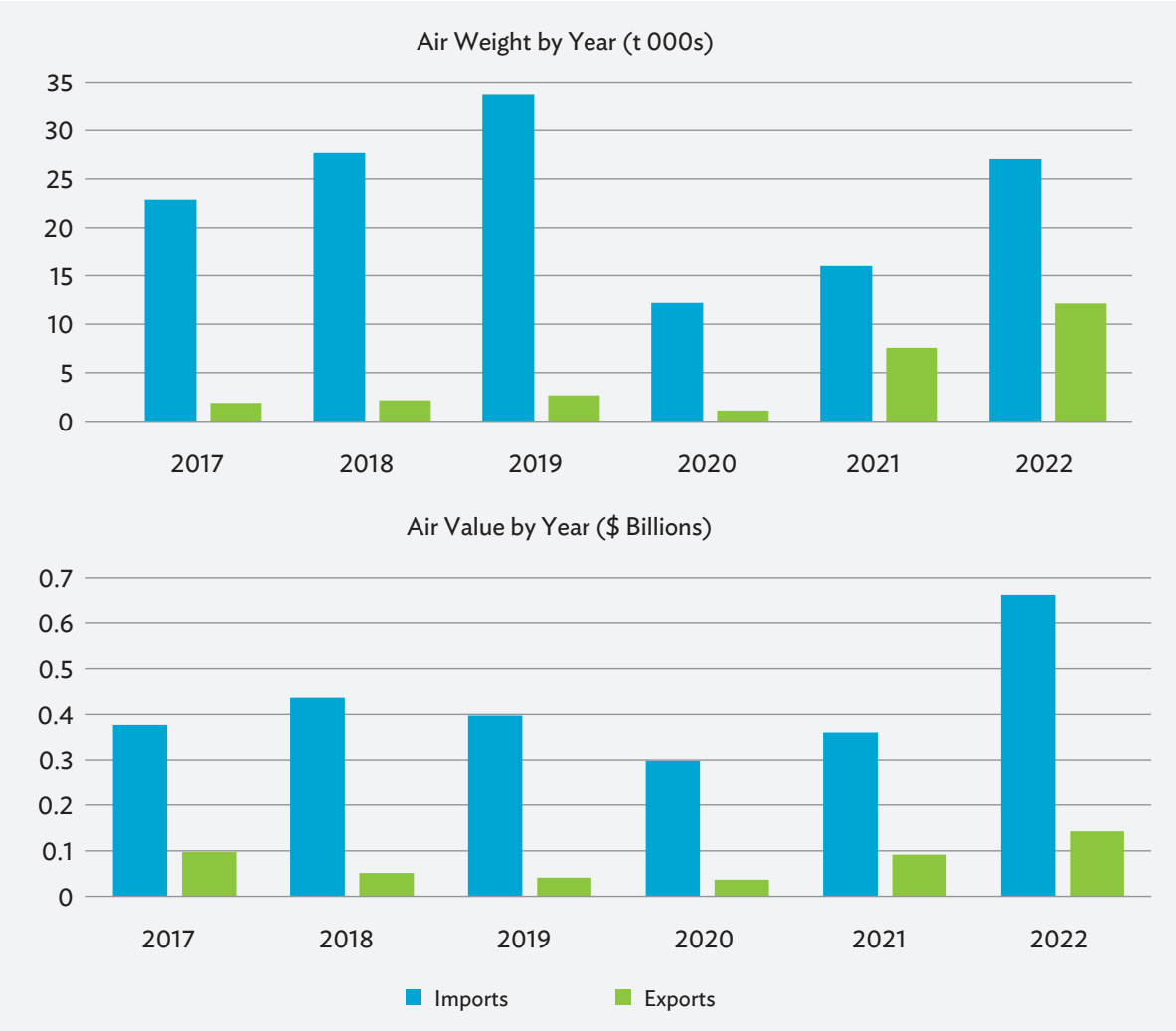
Source: Authors.

Kyrgyz Republic

Trade

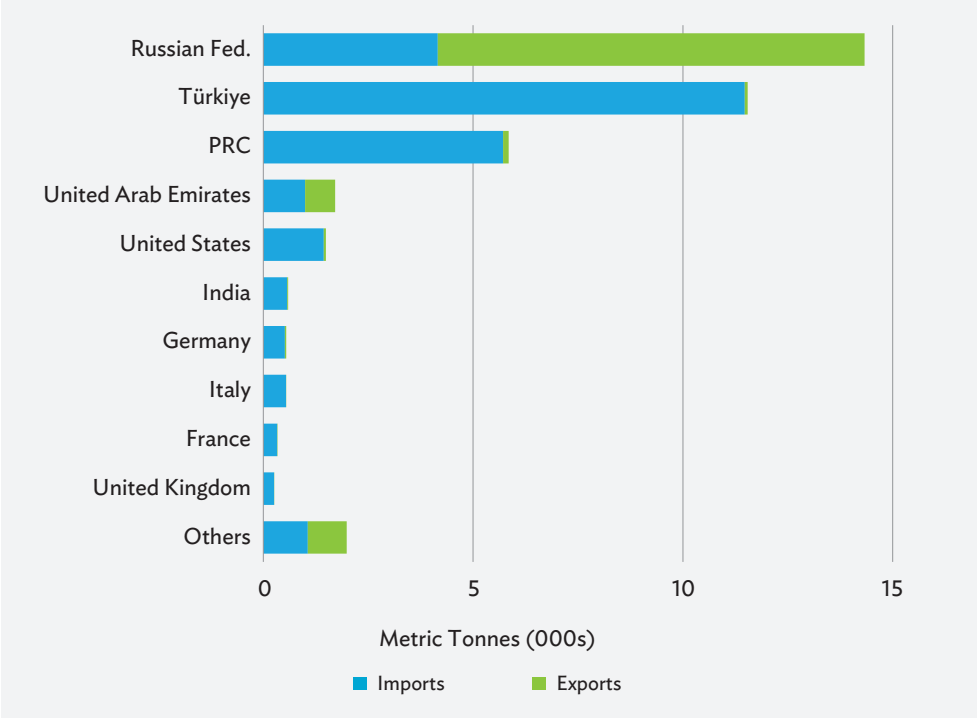
Trade by air into the Kyrgyz Republic has recovered to pre-pandemic levels with Türkiye, the PRC, and the Russian Federation as the main sources of imports.

Figure 42: Kyrgyz Republic Trade by Air 2017–2022



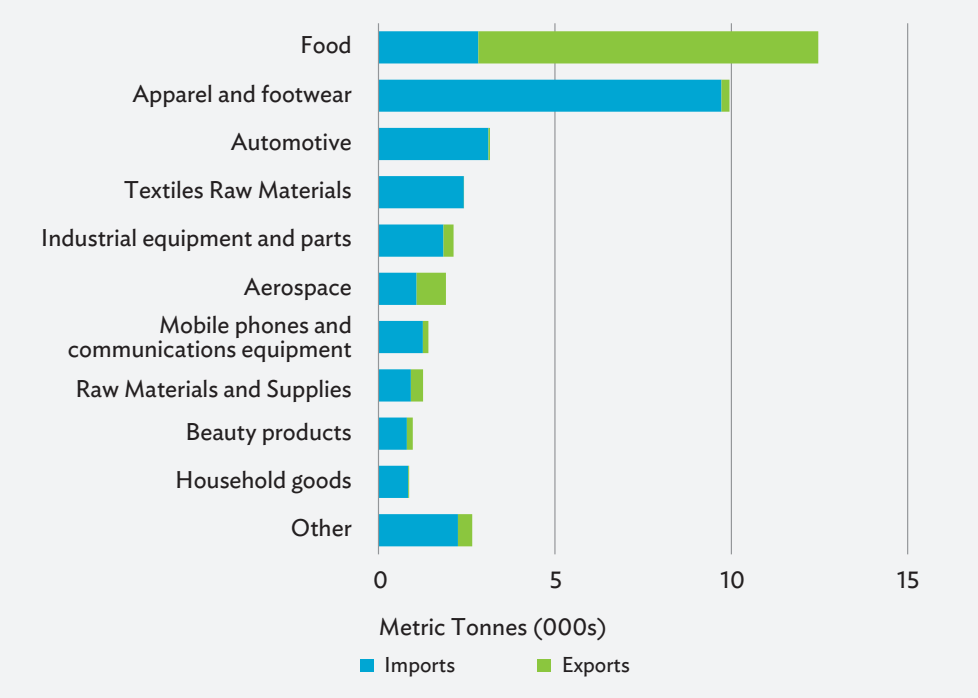
t = metric tonnes.
Source: Authors.

Figure 43: Kyrgyz Republic Top Air Trade Partners by Weight (2022)



PRC = People's Republic of China.
Source: Authors.

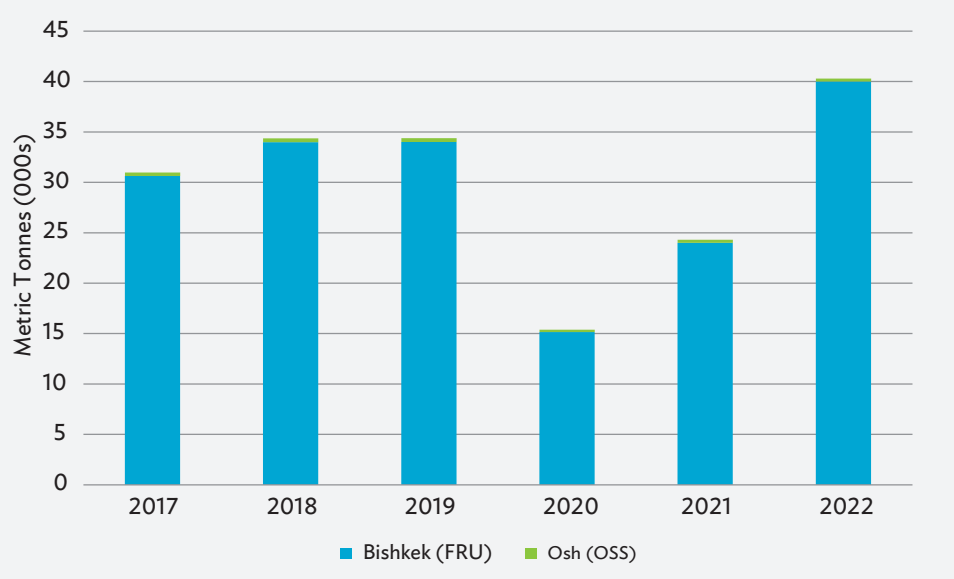
Figure 44: Kyrgyz Republic Top Air Trade Commodities by Weight 2022



Source: Authors.

Air Cargo Traffic

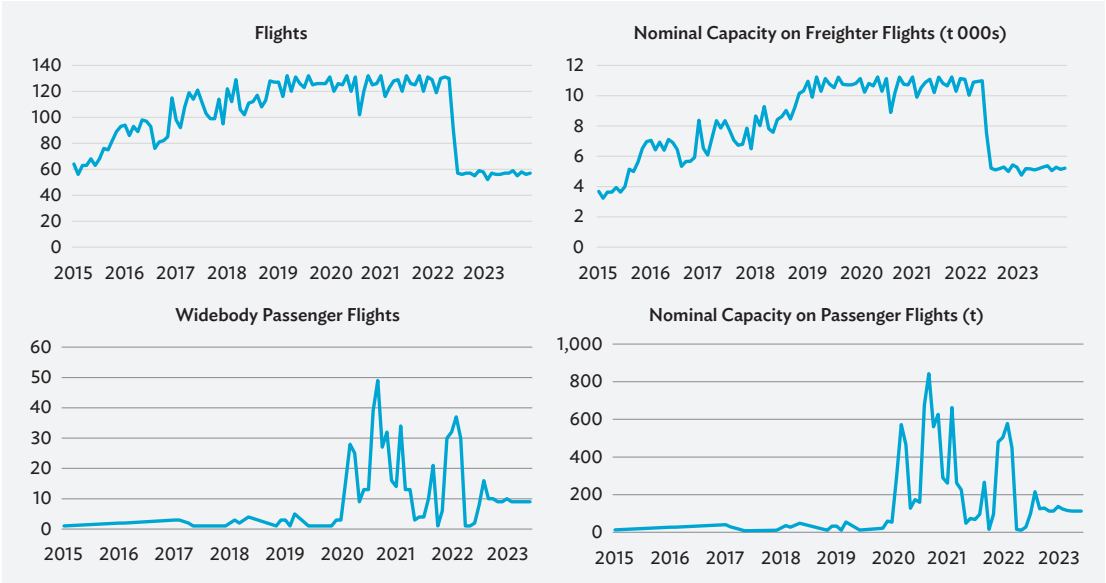
Figure 45: Kyrgyz Republic Cargo Traffic 2017–2022



Source: Airports Council International; National Airport Statistics; authors' estimates.

Air Cargo Capacity

Figure 46: Kyrgyz Republic Flights and Capacity on Cargo and Passenger Flights 2015–2023



t = metric tonnes.

Note that nominal cargo capacity does not represent allocated capacity in tons. Passenger flights only include widebody passenger flights and exclude narrowbody and turboprop aircraft.

Source: Authors.

Air Cargo Prices

Table 9: Kyrgyz Republic Pre-COVID-19 Air Cargo Yields ($/kg)

Market	Outbound	Inbound	Comments
All Markets	(...)	$2.00–$2.20	Increase to $2.50–$3.00 during COVID-19 and has stayed high.
Türkiye	(...)	$1.50–$1.70	No increase during COVID-19
Europe	(...)	$2.80–$3.00	Has been trending upward in the past year, largely independent of the COVID-19 situation
United States	(...)	$3.00	Short spike during the first year of COVID-19 and has stabilized around $3.50
People's Republic of China/ Hong Kong, China	(...)	$3.00	Increased threefold during COVID-19 and has stayed persistently high.

(...) = not available, COVID-19 = coronavirus disease, kg = kilogram.
Source: Industry sources; Authors.

Findings

Item	Comments
Infrastructure	• Manas International Airport (Bishkek) is located at an altitude of 2,090 feet (637 m). The apron area is 242,000 m^2 and has 38 stands and 2 telescopic ladders. The airfield has two runways, almost one as long as 13,790 feet (4,204 m). The total area of the cargo terminal is 3,360 m^2. It is equipped with a wide range of unloading and loading equipment, which allows one to work simultaneously on two aircraft. Warehouses are equipped with freezing and refrigerating chambers, separate rooms are provided for storing especially valuable, explosive, toxic, radioactive cargo, as well as keeping animals. The capacity of the Air Cargo Center is 100,000 tons per year. There are 100 maintenance staff. The terminal is functional, service rates are competitive, and a flexible system of discounts for services is provided for customers. The second largest passenger and freight traffic is the Osh International Airport. The altitude is 2,926 feet (892 m). The airport has three taxiways. The airport apron has a total area of 59,200 m^2 and is equipped with 14 parking lots. The runway is 10,535 feet (3,212 m) long.
Air Cargo Traffic	• Air transport mainly exports agricultural products—meat, live sheep (Dubai, Iran, Qatar), cherries (Guangzhou), as well as individual industrial products. By import, consumer goods, electronics, equipment, fabrics, building materials, cars, consolidated cargo (electronic commerce) are brought into the country. Among the main supplier countries are Türkiye, the PRC, the United Arab Emirates, and the European Union countries. • Before the pandemic, the volume of cargo transportation by air amounted to 1,000 t (2018). Over the next 2 years, there was a decline to 300 t and 100 t, respectively. In 2021, this figure was 400 t, and according to the results in 2022, there was a decrease to 300 t. • In January–October 2022, 30.6 t of export cargo was transported from Kyrgyz Republic by air. Istanbul, Guangzhou, and Shanghai became the main destinations. In addition, air transportation was carried out to Hong Kong, China; Turkmenistan; and the United Arab Emirates. In 2021, this figure was 23.6 t, and in 2020, 15.3 t.

continued on next page

Table continued

Item	Comments
Governance	• Manas Management Company CJSC is the owner and operator of the Air Cargo Center and the In-Flight Catering Center at Manas International Airport. It is the only licensed company providing monopoly aircraft ground handling, cargo handling, and in-flight catering services.
Constraints	• Aviation of the Kyrgyz Republic since 2006 is on the "black list" of airlines that are prohibited from flying to European Union countries. The main reason is the lack of a full-fledged regulatory framework, procedural rules for overseeing flight safety, a modern navigation service and an up-to-date state policy in the field of aviation. To resolve the issue in the Kyrgyz Republic, a regulatory framework was prepared, the Air Code was adopted, an administrative reform was carried out, but procedures for the implementation of the rules were not introduced. As of April 2023, the issue continues to be open. • There is a low professional level of specialists and the lack of qualified personnel in all structures and services of the country's aviation sector. • Among other factors restraining the growth of cargo transportation, there are (i) sanctions imposed against the Russian Federation, in which Kyrgyz Republic airlines suspended the transport of goods to the Russian Federation from third countries; (ii) the need to obtain a license (certificate) CCR-29 for transport to the PRC; (iii) the imperfection of the legal framework that hinders the use of leasing schemes in the acquisition of aircraft; (iv) high customs duties on the import of aircraft and spare parts.
Opportunities	• To remove restrictions on flights of Kyrgyz aviation to the European Union countries, the government carried out a restructuring of the industry, as a result of which the Civil Aviation Agency was created with direct reporting to the Cabinet of Ministers. In 2019, changes were made to the Air Code in terms of granting the "fifth degree of air freedom." • The Manas airport is partially loaded, the cargo terminal provides a full range of services, the payment rates for which are assessed as acceptable. The airport has implemented an information technology system that controls the level of prices and rates. • Programs for the development of the aviation complex have been adopted. Most airports are upgrading their air navigation and meteorological equipment; runways and air traffic management systems are being modernized; reconstruction of air terminal complexes is carried out. • Aviation fuel supplies are carried out on the principle of an oligopoly from two companies - INTEK and Gazprom / AeroKyrgyzstan. At Manas Airport, the cost of aviation fuel is approximately $1,500 per tonne, while in neighboring countries, the cost is estimated to be higher.

m = meter, m^2 = square meter, PRC = People's Republic of China, t = metric tonnes.

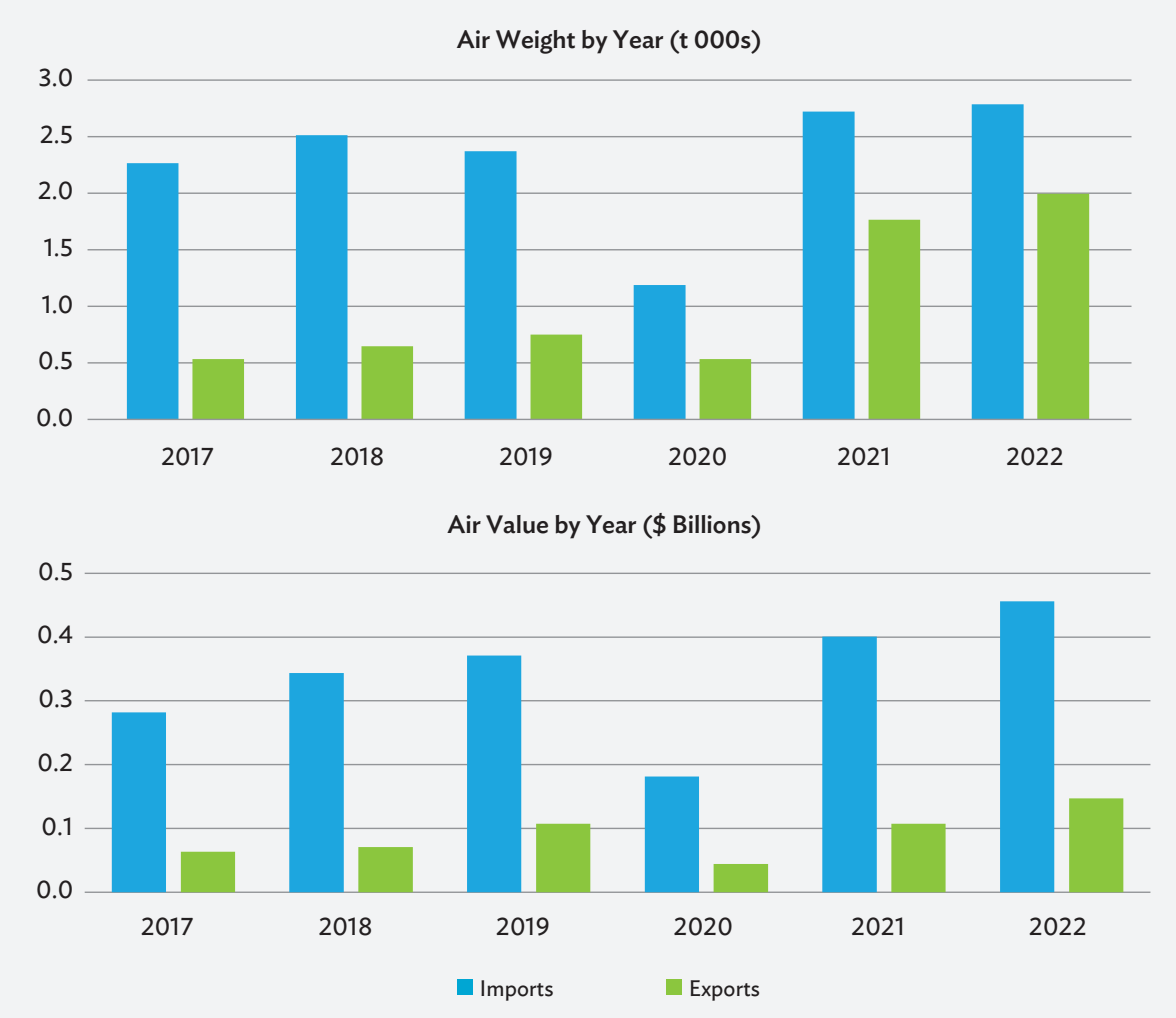
Source: Authors.

Mongolia

Trade

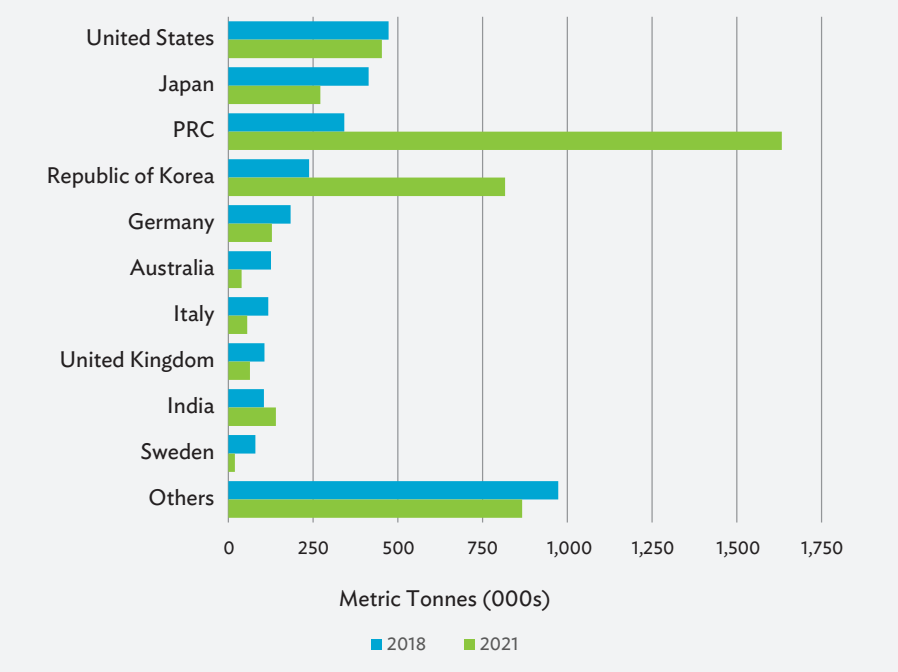
Mongolia's air imports and exports are more balanced than in other parts of CAREC. The US, Japan, and the PRC are the main air import partners, while the PRC, Republic of Korea, the US, and Japan are the main export partners. The market recovered in 2021, but the commodity and partner mix in that year still reflected COVID-19 related trade. As such we show commodity and partner mix for 2018 and 2021 for comparison purposes.

Figure 47: Mongolia Trade by Air 2017–2022



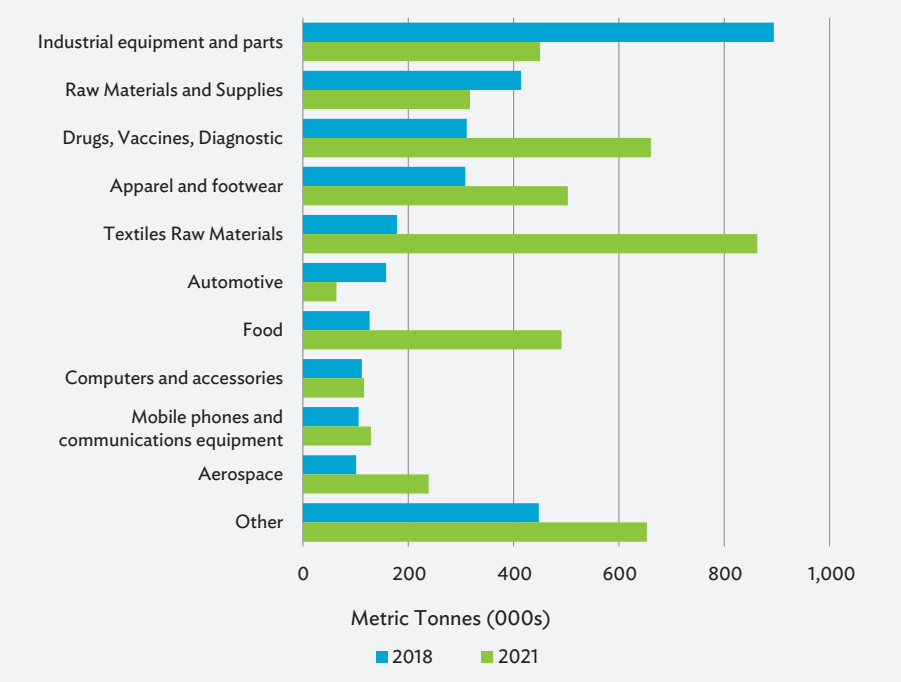
t = metric tonnes.
Note: 2022 data estimated based on overall development of air trade relevant commodities.
Source: Authors.

Figure 48: Mongolia Top Air Trading Partners by Weight in 2019 and 2021



PRC = People's Republic of China.
Note: 2022 air trade and 2019 air import data not available.
Source: Authors.

Figure 49: Mongolia Top Air Trade Commodities 2018 and 2021

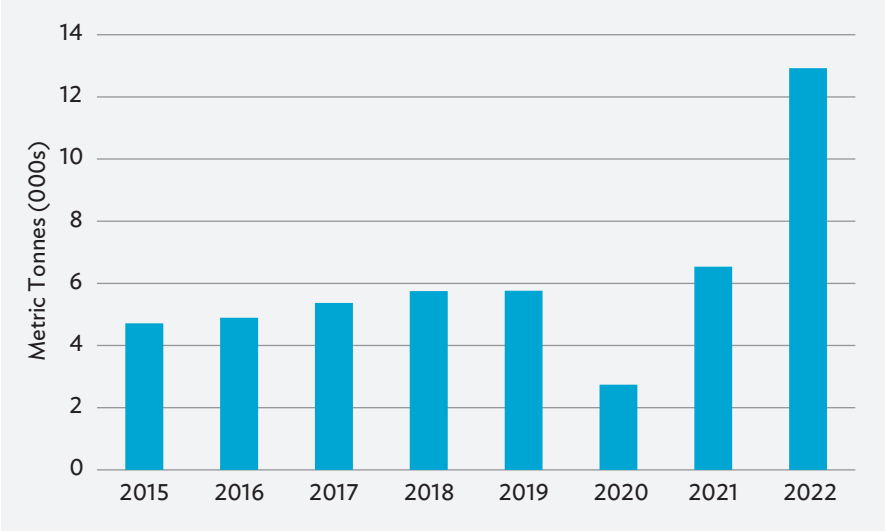


Note: 2022 air trade and 2019 air import data not available.
Source: Authors.

Air Cargo Traffic

Until 2021 traffic levels were around 6,000 metric tonnes per annum. Based on preliminary data for 2022, volumes doubled.

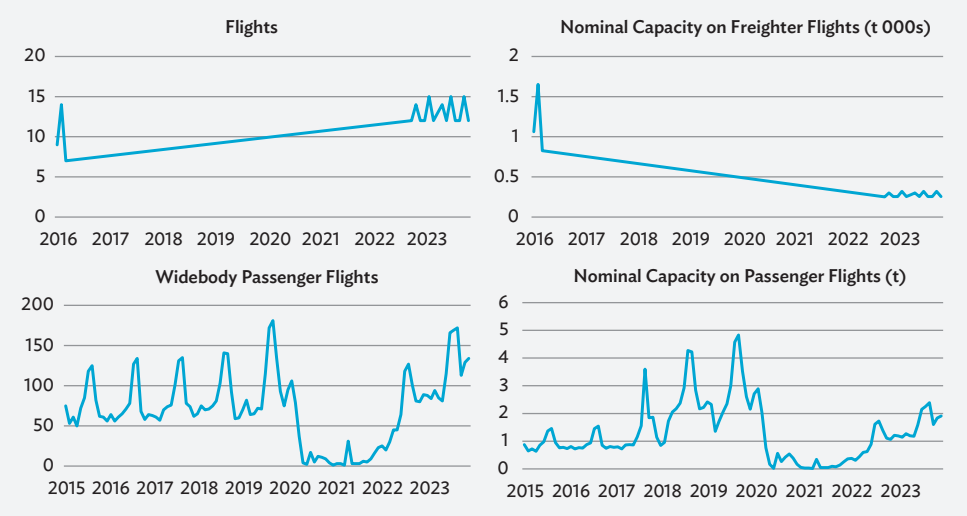
Figure 50: Ulan Bator (ULN/UBN) Air Cargo Traffic 2015–2022



Source: Airports Council International; National Airport Statistics; Authors' estimates.

Air Cargo Capacity

Figure 51: Mongolia Flights and Capacity on Cargo and Passenger Flights 2015–2023



t = metric tonnes.

Note that nominal cargo capacity does not represent allocated capacity in tonnes. Passenger flights only include widebody passenger flights and exclude narrowbody and turboprop aircraft.

Source: Authors.

Air Cargo Prices

The study was not able to source reliable air cargo yield data for Mongolia.

Findings

Item	Comments
Infrastructure	• The new Chinggis Khaan International Airport opened in 2021 and is located 52 km from Ulaanbaatar (Somon Sergelen, Tuva *aimag*) at an altitude of 4,480.5 feet (1,366 meters). The airfield has one runway of 3,600 meters. • Buyant-Ukhaa International Airport (until 2020 it was called Chinggis Khaan International Airport) is located at an altitude of 4,362.4 feet (1,330 meters). The airfield has two runways – 3,100 and 2,000 meters respectively. • The area of the cargo terminal at the new airport of Ulaanbaatar ("Chinggis Khaan ") is 3,750 m^2. The annual throughput of cargo and mail is only 11,900 tonnes. The terminal is equipped with warehouses for the storage of dangerous goods (56 m^2), warehouses for the storage of valuable goods (56 m^2), as well as refrigerators and freezers. • It is critical for Mongolia to expand this facility or reopen the old airport for air cargo. Logistics and intermodal infrastructure are also limited and would benefit from development, particularly in the vicinity of Ulaanbaatar's new airport.
Air Cargo Traffic	• 12,893 t (12,869 international and 24 domestic) in 2022. This was the highest air cargo throughput for Mongolia since 1988/1989, when it was about 14,000 t/13,000 t. In 2019, the last pre-pandemic year, it was 5,761 tons (5,678 international and 83 domestic). In 2020 it was only 2,741 t (2,643 international and 98 domestic) and in 2021 it was 6,429 t (6,414 international and 14 domestic).
Governance	• Several new airlines have launched over the last few years and Mongolia's fleet has expanded rapidly including the introduction of Mongolia's first freighters. The aviation authority would benefit from additional resources to manage its regulatory mandates. Stakeholder consultations reveal possible need to review airport charges and fees.
Constraints	• The scale of the cargo facilities appears to be insufficient to cater to market growth in the short to medium term. The geographic location of Mongolia limits its potential with addressable transit cargo market. Origin / destination traffic remains as the primary driver of air freight growth for Mongolia.
Opportunities	• A new logistics center adjacent to the new airport is under consideration and could facilitate air cargo growth. A new free trade zone near the People's Republic of China border could also be developed for air cargo. There are opportunities to pursue more transit cargo traffic particularly as MIAT and some of the newer private sector airlines expand their widebody fleets.

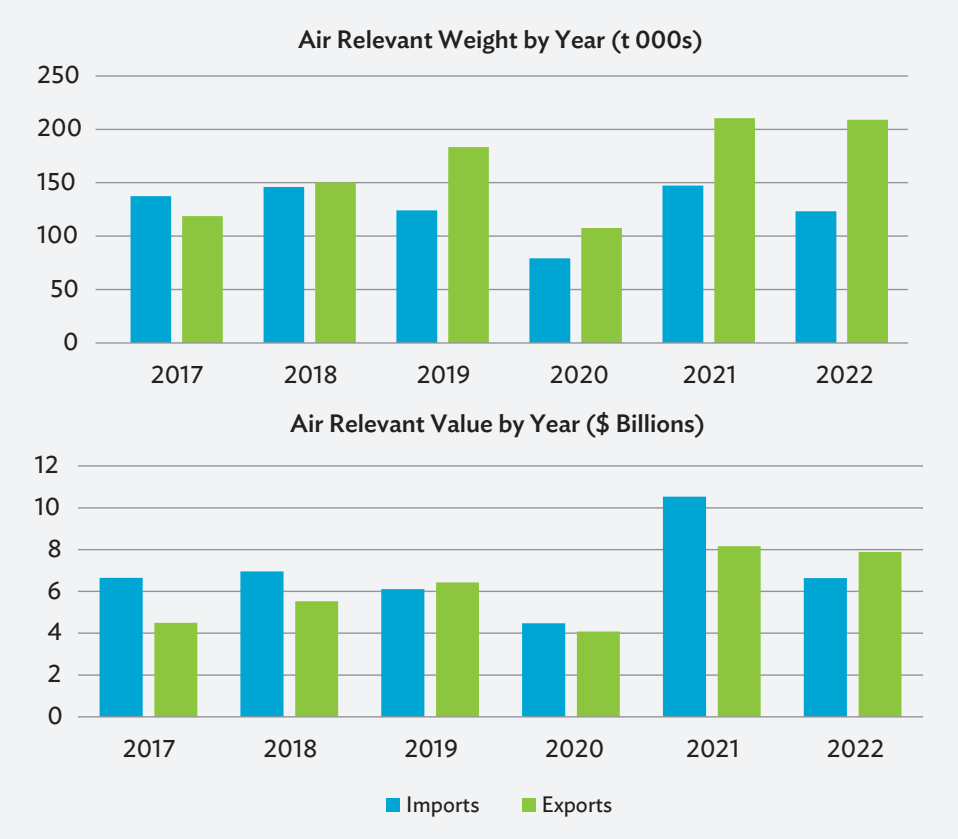
m^2 = square meter, t = metric tonnes.

Source: Authors.

Pakistan

Trade

Figure 52: Pakistan Air-Relevant Trade Weight 2017–2022

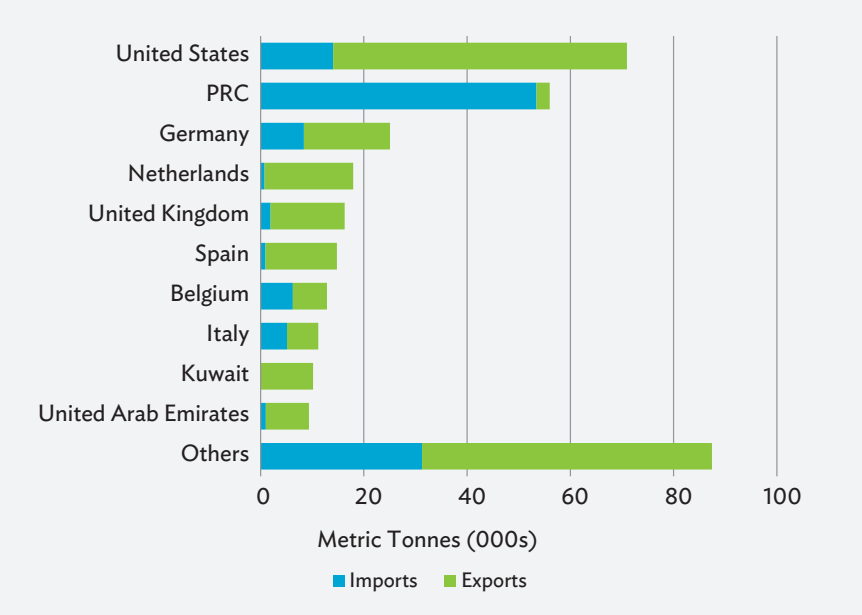


t = metric tonnes.

Note that Pakistan reported trade data does not have mode split. Air-relevant products are defined as all products with a customs value greater than $20 per kilogram, pharmaceuticals, and temperature-controlled products.

Source: Authors.

Figure 53 – Pakistan Top Air-Relevant Trading Partners by Weight 2022

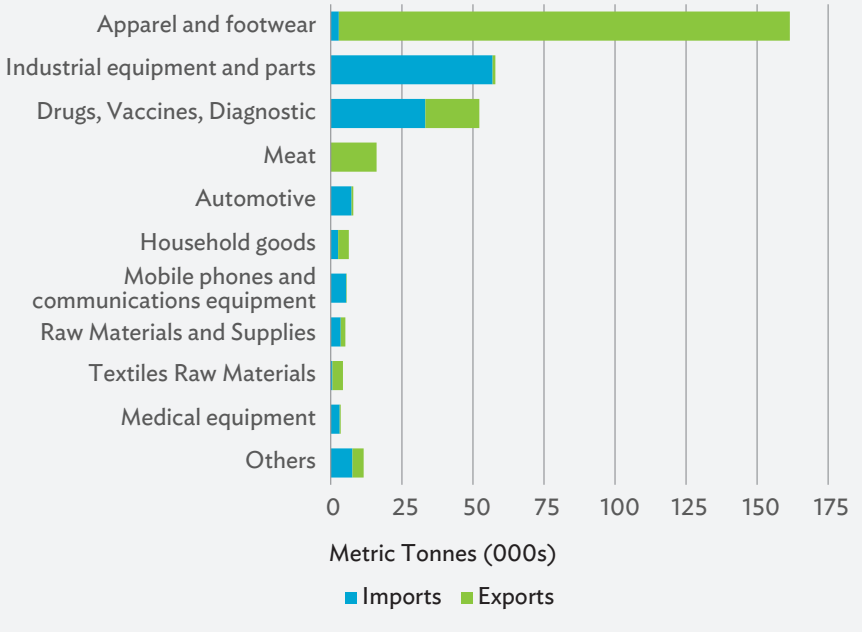


PRC = People's Republic of China.

Note that Pakistan reported trade data does not have mode split. Air-relevant products are defined as all products with a customs value greater than $20 per kilogram, pharmaceuticals, and temperature-controlled products.

Source: Authors.

Figure 54: Pakistan Top Air Trade Relevant Commodities by Weight 2022

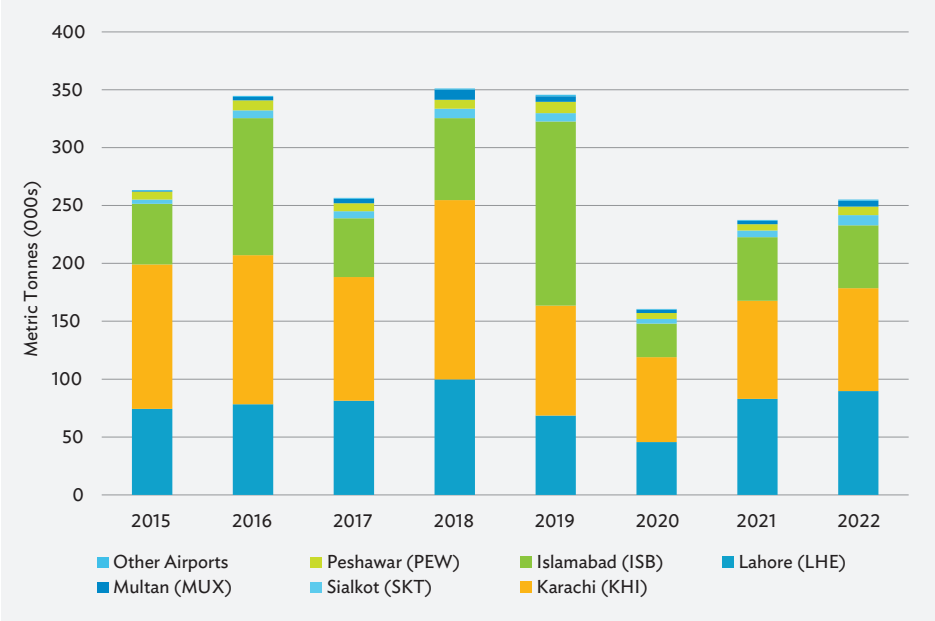


Note that Pakistan reported trade data does not have mode split. Air-relevant products are defined as all products with a customs value greater than $20 per kilogram, pharmaceuticals, and temperature-controlled products.

Source: Authors.

Air Cargo Traffic

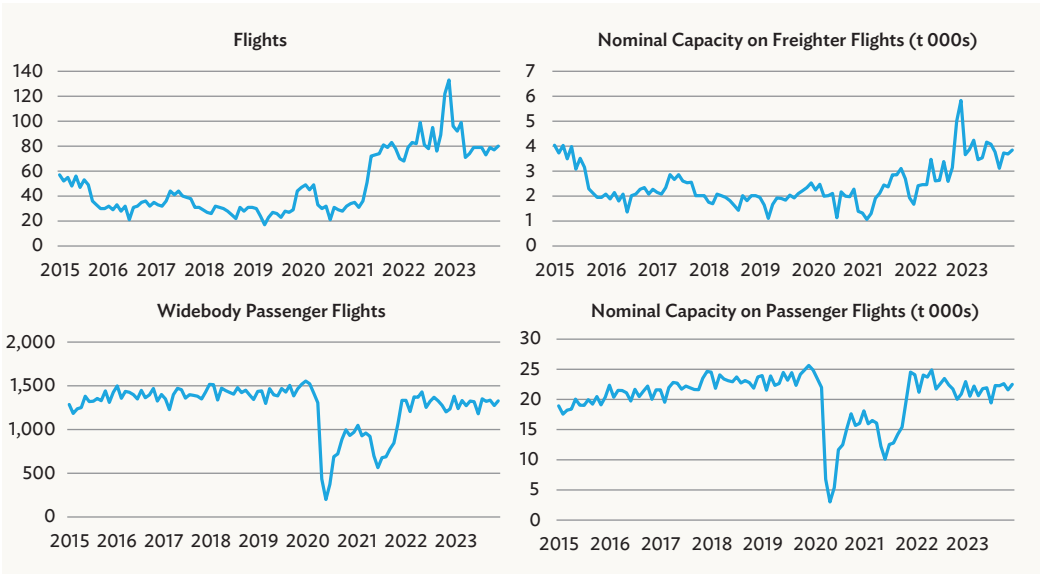
Figure 55: Pakistan Airport Traffic 2015–2022



Source: Airports Council International; National Airport Statistics; authors' estimates.

Air Cargo Capacity

Figure 56: Pakistan Flights and Capacity on Cargo and Passenger Flights 2015–2023



t = metric tonnes.

Note that nominal cargo capacity does not represent allocated capacity in tonnes. Passenger flights only include widebody passenger flights and exclude narrowbody and turboprop aircraft.

Source: Authors.

Air Cargo Prices

Table 10:Pakistan Pre-COVID-19 Air Cargo Yields ($/kg)

Market	Outbound	Inbound	Comments
All Markets	$1.10	$2.00	Export rates increased 2.5-3x during COVID-19 (2020/2021) while import rates doubled.
People's Republic of China/ Other APAC	$1.20	$2.70	
Gulf/ Middle East	$0.70–$0.80	$1.50	
United States	$2.20	$3.00	
Europe	$1.10	$1.60	

APAC = Asia Pacific, COVID-19 = coronavirus disease.
Source: industry sources; Authors' analysis.

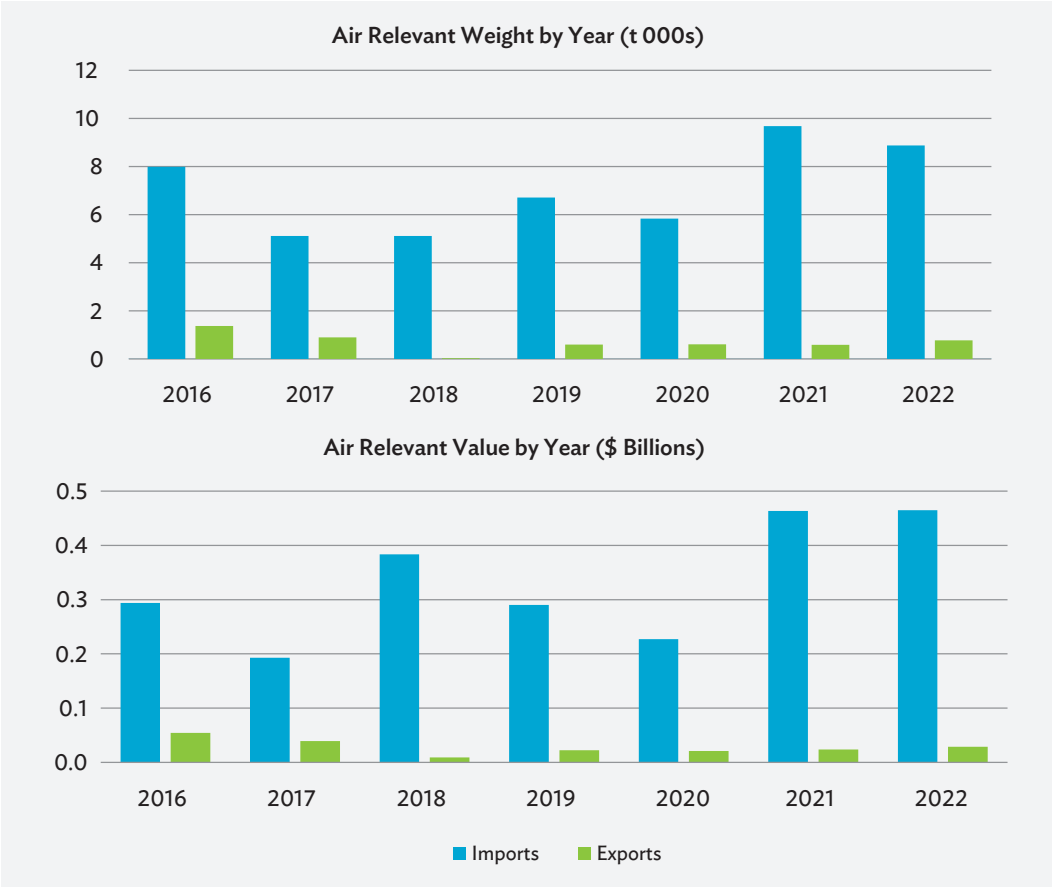
Findings

The study team has not been able to conduct on-site stakeholder consultation at this stage and as such findings are not available.

Tajikistan

Trade

Figure 57: Tajikistan Trade in Air-Relevant Products 2017–2022

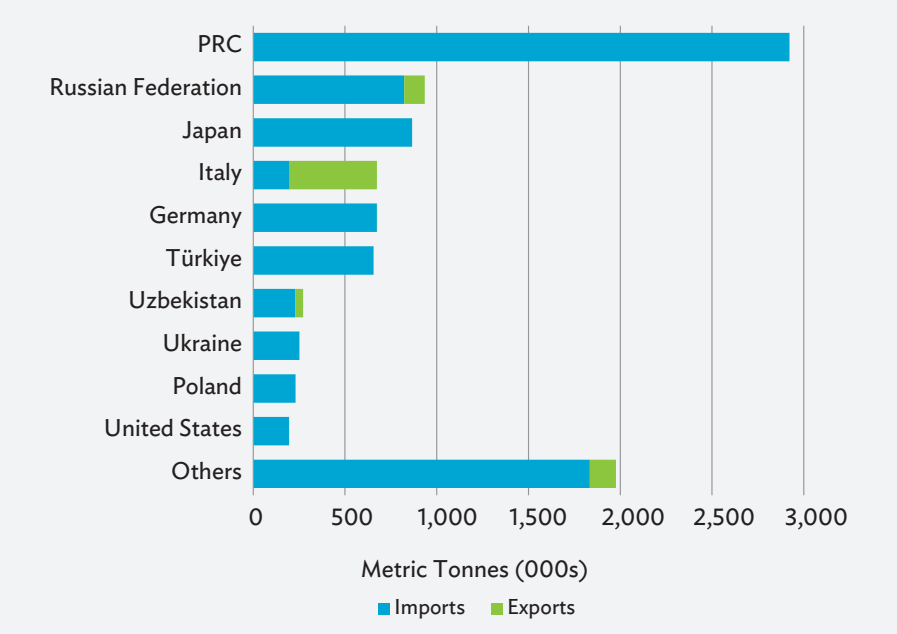


t = metric tonnes.

Note that Tajikistan reported trade data does not have mode split. Air-relevant products are defined as all products with a customs value greater than $20 per kilogram, pharmaceuticals, and temperature-controlled products.

Source: Authors.

Figure 58: Tajikistan Top Air-Relevant Trading Partners by Weight 2022

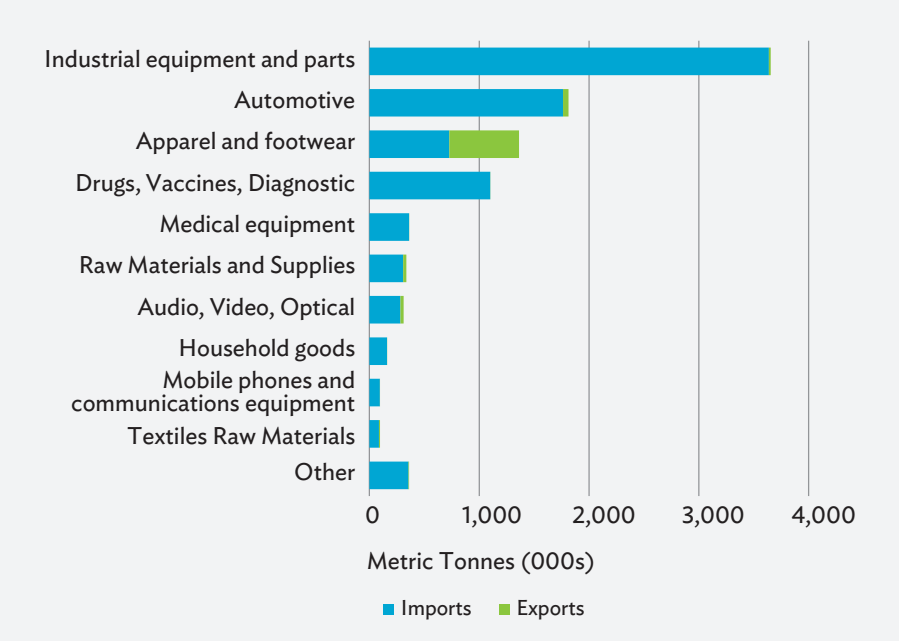


PRC = People's Republic of China.

Note that Tajikistan reported trade data does not have mode split. Air-relevant products are defined as all products with a customs value greater than $20 per kilogram, pharmaceuticals, and temperature-controlled products.

Source: Authors.

Figure 59: Tajikistan Top Air-Relevant Commodities by Weight 2022

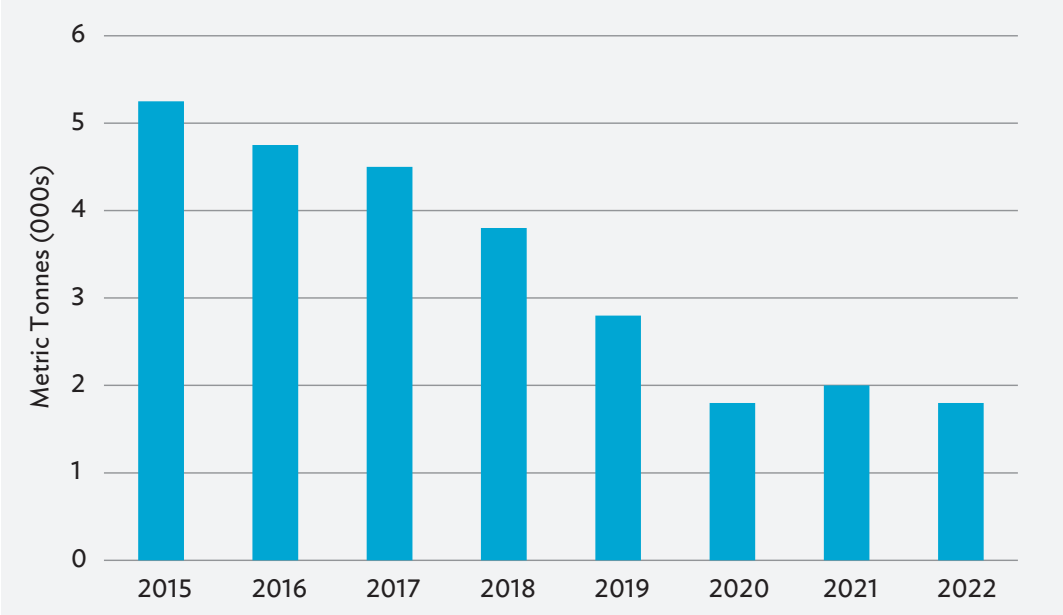


Note that Tajikistan reported trade data does not have mode split. Air-relevant products are defined as all products with a customs value greater than $20 per kilogram, pharmaceuticals, and temperature-controlled products.

Source: Authors.

Air Cargo Traffic

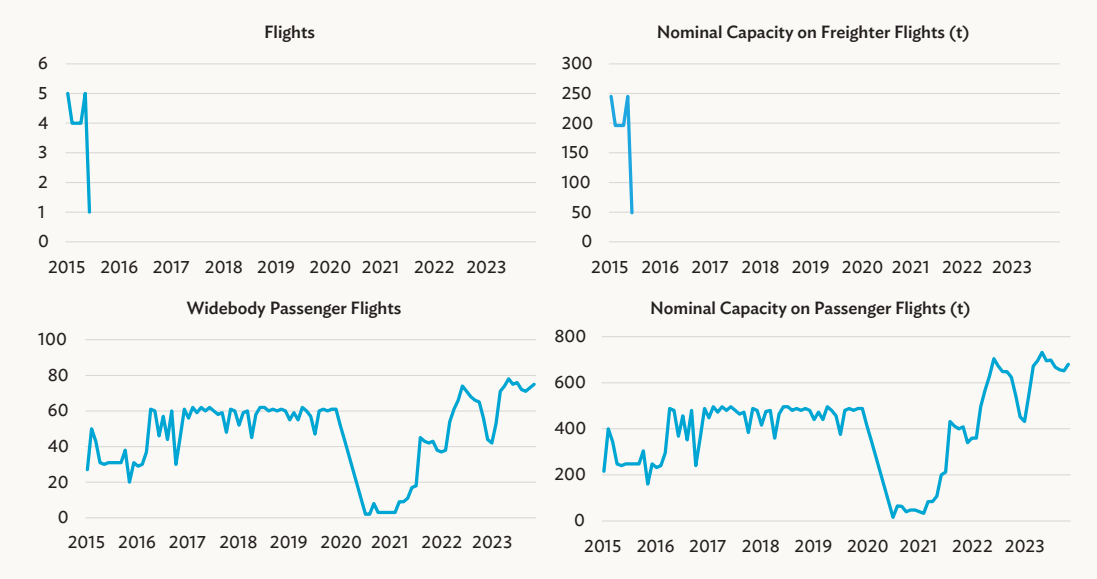
Figure 60: Dushanbe (DYU) Air Cargo Traffic 2015–2022



Source: Airports Council International; National Airport Statistics; Authors' estimates.

Air Cargo Capacity

Figure 61: Tajikistan Flights and Capacity on Cargo and Passenger Flights 2015–2023



t = metric tonnes.

Note that nominal cargo capacity does not represent allocated capacity in tonnes. Passenger flights only include widebody passenger flights and exclude narrowbody and turboprop aircraft.

Source: Authors.

Air Cargo Prices

Table 11: Tajikistan Pre-COVID-19 Air Cargo Yields ($/kg)

Market	Outbound	Inbound	Comments
All Markets	not available	$5.00	Threefold increase during COVID-19. Outbound market largely nonexistent.

COVID-19 = coronavirus disease, kg = kilogram.
Source: industry sources; Authors' analysis.

Findings

Item	Comments
Infrastructure	• Dushanbe International Airport is located at an altitude of 2,575.5 feet (785 meters) above sea level. The length of the new runway is 10,207 feet (3,112 meters). • The cargo terminal was built and equipped with machinery and equipment in 2018 funded by a $17.5 million grant from the Japan International Development Agency (JICA). Its total area is 3,713.8 m^2, warehouses are 2,400 m^2. The terminal's capacity is up to 20,000 tons of cargo per year. The platform, with an area of 6,400 m^2 (80x80), includes two large parking lots. • The terminal is equipped with four refrigerating and freezing chambers, designed for a one-time up to 2,604 t of cargo, large x-ray machines, separate rooms for storing dangerous goods, as well as 12 types of specialized equipment. The list of services includes a set of procedures for loading live animals. The staff of the cargo terminal is 50 people. • Khujand International Airport is the second busiest airport in the country. The airport is located at an altitude of 1,430 feet (436 m) above sea level. The runway is 10,496 feet (3,200 m.) long.
Air Cargo Traffic	• The air cargo transportation market in Tajikistan functions because of passenger airlines. National cargo carriers are not registered in the country, and there is no fleet of cargo aircraft. Foreign airlines carry out only individual one-time flights due to insignificant volumes of cargo, the absence of a permanent customer base, as well as the internal monopoly observed in the market. • There are two passenger airlines registered in Tajikistan, namely:Somon Air and Tajik Air. The national carrier, Tajik Air has now suspended its activities due to the difficult internal financial and economic situation that has developed in the company. There are up to 10 foreign passenger carriers on the Tajik market, with Turkish Airlines holding the leading position. Tajikistan's main partner countries include the Russian Federation, the PRC, the United Arab Emirates, Türkiye, the European Union, and Dubai. • Tajikistan is an agro-industrial country and, as a result, the basis of its exports is seasonal agricultural products: perishable goods, fruits, lamb. The range of import supplies is presented more widely—textiles, consumer goods, food products, specialized machinery, and equipment are imported into the republic. • Dushanbe International Airport in 2022 handled more than 1,800 metric tonnes of export-import cargo. • During the pandemic, the volume of air traffic has significantly decreased. Mostly humanitarian goods and anti-covid drugs were imported into the country. United States Agency for International Development deliveries are carried out on a periodic basis.
Governance	• The owner of international airports is the Government of Tajikistan (state form of ownership), and the sole operator is Dushanbe International Airport OJSC. The Dushanbe cargo terminal is a structural subdivision of the airport and all specialized machinery and equipment for cargo handling at the side of the aircraft is on the balance sheet of the airport.

continued on next page

Table *continued*

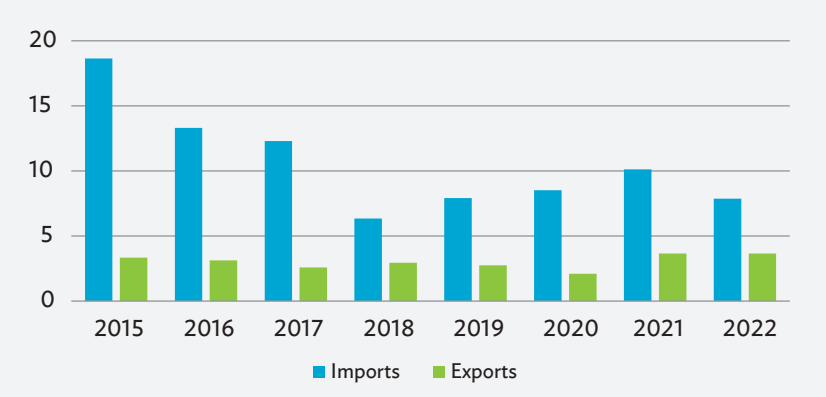
Item	Comments
Constraints	• Having only one cargo terminal at the Dushanbe airport significantly hinders the development of the air cargo market. Schemes for the collection of goods from the regions of the country with their subsequent consolidation in Dushanbe are unprofitable and time-consuming. The creation of regional logistics centers in the country can promote the promotion of goods to foreign markets, as well as speed up the process of revitalizing the work of most domestic airports. • The "Single Window" created in the cargo terminal does not fully fulfill the functions assigned to it, and therefore cargo owners spend a lot of time on paperwork and solving all the formalities. The difficulty is caused by delays in notification of the arrival of cargo, the peculiarities of the entrance of trucks to the territory of the terminal, waiting for specialized equipment at the airport, high rates for cargo handling, as well as the high cost of jet fuel. • There is a shortage of professional personnel in the entire aviation industry of Tajikistan. Airports are experiencing difficulties with the recruitment of competent highly qualified specialists, as well as with the training and advanced training of existing personnel.
Opportunities	• The implementation of the State Target Program for the Development of the Transport Complex of Tajikistan until 2025 will contribute to the activation of the air services market. The most pressing issues to be addressed include further upgrading of airport infrastructure, construction of terminal complexes, improving the quality of service for cargo owners and airlines, and reducing the cost of jet fuel. Promising directions are the creation of cargo airlines in the republic, the formation of a national fleet of cargo aircraft, the improvement of conditions for increasing the number of technical landings by foreign airlines, the development of multimodal cargo transportation schemes in the Central Asian region, as well as the creation of cargo consolidation Centers. • The establishment of an Air Transport Development Working Group within the CAREC Transport Sector Coordinating Committee is encouraged (following the example of the Railway Working Group); creation of a training Center on the safety of transportation of dangerous goods (possibly based on the CAREC Institute); creation of a technical Center for the maintenance and repair of aircraft in the country.

CAREC = Central Asia Regional Economic Cooperation, m^2 = square meter, PRC = People's Republic of China..
Source: Authors.

Turkmenistan

Trade

Figure 62: Turkmenistan Import and Export Value 2015–2022 ($ Billions)



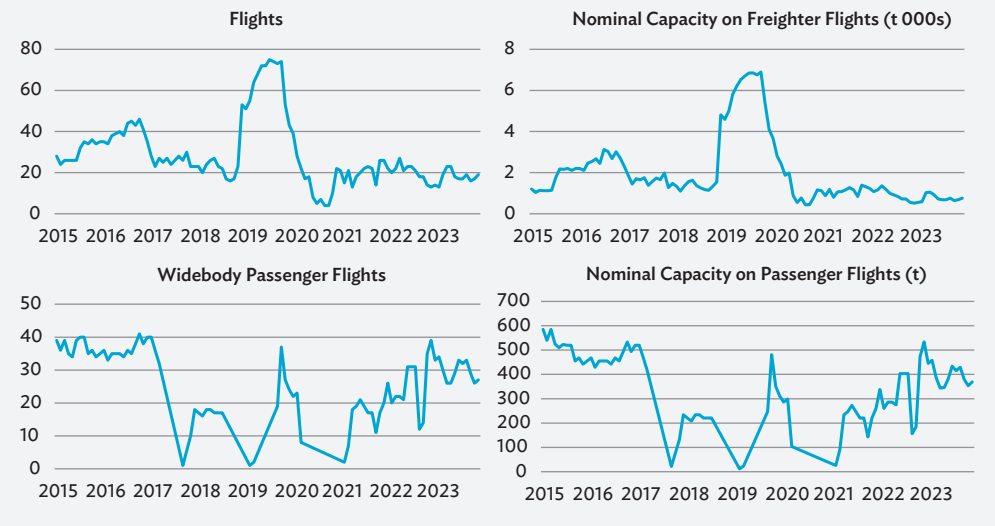
Note: Excludes fuel and petroleum products, crude materials, iron and steel.
Source: Authors., UNCTAD.

Air Cargo Traffic

Time series not available. See Airport Profiles section for more information.

Air Cargo Capacity

Figure 63: Turkmenistan Flights and Capacity on Cargo and Passenger Flights 2015–2023



t = metric tonnes.
Note that nominal cargo capacity does not represent allocated capacity in tonnes. Passenger flights only include widebody passenger flights and exclude narrowbody and turboprop aircraft.
Source: Authors.

Air Cargo Prices

Table 12: Turkmenistan Pre-COVID-19 Air Cargo Yields ($/kg)

Market	Outbound	Inbound	Comments
All Markets	(...)	$3.50-$4.00	Except for Europe, inbound rates more than doubled during COVID-19. Outbound rates have not been included as very little outbound freight exists
Europe	(...)	$3.00	Rates experienced a short spike in 2020 but moderated in 2021
People's Republic of China/ Republic of Korea	(...)	$5.00	
United States	(...)	$4.00	
Türkiye	(...)	$3.50	

(...) = not available, COVID-19 = coronavirus disease.
Source: Industry sources; Authors' abalysis.

Findings

The study team has not been able to conduct on-site stakeholder consultation at this stage and as such findings are not available. The study team is awaiting feedback from local stakeholders.

Item	Comments
Infrastructure	• Oguz Khan International Airport (Ashgabat) was completely rebuilt in 2016. The capacity of the new terminal is 1,600 passengers per hour, which corresponds to an annual passenger flow of approximately 1.3 million people. • The airport is located at an altitude of 692 feet (211 meters) above sea level. • The airfield has three runways, length: 12,465 feet (3,800 meters) concrete; 9,800 feet (2,990 meters) concrete, and 5,900 feet (1,800 meters) reinforced concrete. • The total area of the airport complex is 1,200 hectares. The airport has hangars and technical facilities for servicing aircraft with an area of 33,500 m^2. • The cargo terminal is in the western part of the airport and has a separate access road for vehicles. The area of the cargo terminal is 17,174 m^2, and its capacity is designed to handle 200,000 tonnes of cargo per year. On its territory there are: a cargo apron with five parking lots for aircraft, an export zone (2577.15 m^2) and an import zone (4524.78 m^2), warehouses for storing various types of cargo, six refrigerating chambers, rooms for animals, valuable and dangerous cargo. • The export and import zones have four loading and unloading stations each. • The terminal is equipped with specialized equipment and x-ray television equipment, ETV system. An automated storage system for an enlarged loading unit is provided. • The terminal has the Distribution Center of the State Company "Turkmenpochta" (Turkmen Post), a customs office, as well as a representative office of the veterinary service. • The cargo complex includes a special warehouse for perishable cargo, valuables, cargo with narcotic drugs, radioactive cargo, cargo with agricultural products, live cargo (animals), etc.

continued on next page

Table *continued*

Item	Comments
Air Cargo Traffic	• Cargo air transportation is carried out both on passenger aircraft and on cargo ones. Currently, the country's arsenal includes cargo Il-76TD, with a carrying capacity of up to 40 metric tonnes - 8 units, Airbus A330-200P2F, with a carrying capacity of up to 61 metric tonnes - 2 units, and a Boeing 777-200 LR - 1 unit. • The main carriers are Aeroflot, Turkish Airlines, S7Airlines, Air bridge cargo, which operate regular flights to Moscow, Kazan, Frankfurt am Main, Dubai, Istanbul, Beijing, Brno (Czech Republic). • During the pandemic, Turkmen Airlines carried out weekly cargo flights on a Boeing B777-200LR aircraft to Beijing and Frankfurt, while the volume of cargo carried at a time could reach 35 tonnes. Also, IL-76 carried cargo to Istanbul, Delhi, and Abu Dhabi every week.
Governance	• "Turkmenhowayollary" Agency (Turkmenistan Airlines) is the owner of the Ashgabat International Airport and the Cargo Terminal. Turkmenistan Airlines is owned by the state (represented by the "Turkmenistan" Aviation Enterprise) and its aircraft fleet, respectively, is based at the specified airport. • The "Turkmenhowayollary" State National Service administers the territory of the airport which is a member of ICAO, as well as "Turkmenistan" Air Transport Enterprise and the Flight squad of the airline. • Air cargo transportation is one of the main activities of the airline.
Constraints	• The use of Turkmenistan airspace, including licensing and the procedure for organizing air cargo transport are regulated by the Air Code of Turkmenistan, approved and put into effect by the Law of Turkmenistan on 23 January 2012.
Opportunities	• Turkmenistan is implementing the National Program for the Development of Civil Aviation for 2012–2030. The document provides for the expansion of existing production capacities, providing the industry with the latest equipment, training highly qualified specialists, purchasing new liners, and improving the quality of services provided. • As part of the modernization of ground handling of air cargo transportation at Ashgabat airport, innovative solutions are being gradually introduced, aimed at improving business process. One of them is the Elevating Transfer Vehicle system, which provides electronic control of the cargo handling process at loading and unloading stations and in the adjacent area near the aircraft parking. • In addition to developing its production and economic potential, the government intends to ensure the growth of air cargo transportation, as well as a more complete use of the country's transport infrastructure, including through the development of regional cooperation. The key areas are the implementation of an "open door" policy in the country, the creation of favorable conditions for foreign airlines and cargo owners, a wider participation of national stakeholders in the global market for the transportation of transit and specialized cargo, and the formation of new multimodal cargo transportation schemes.

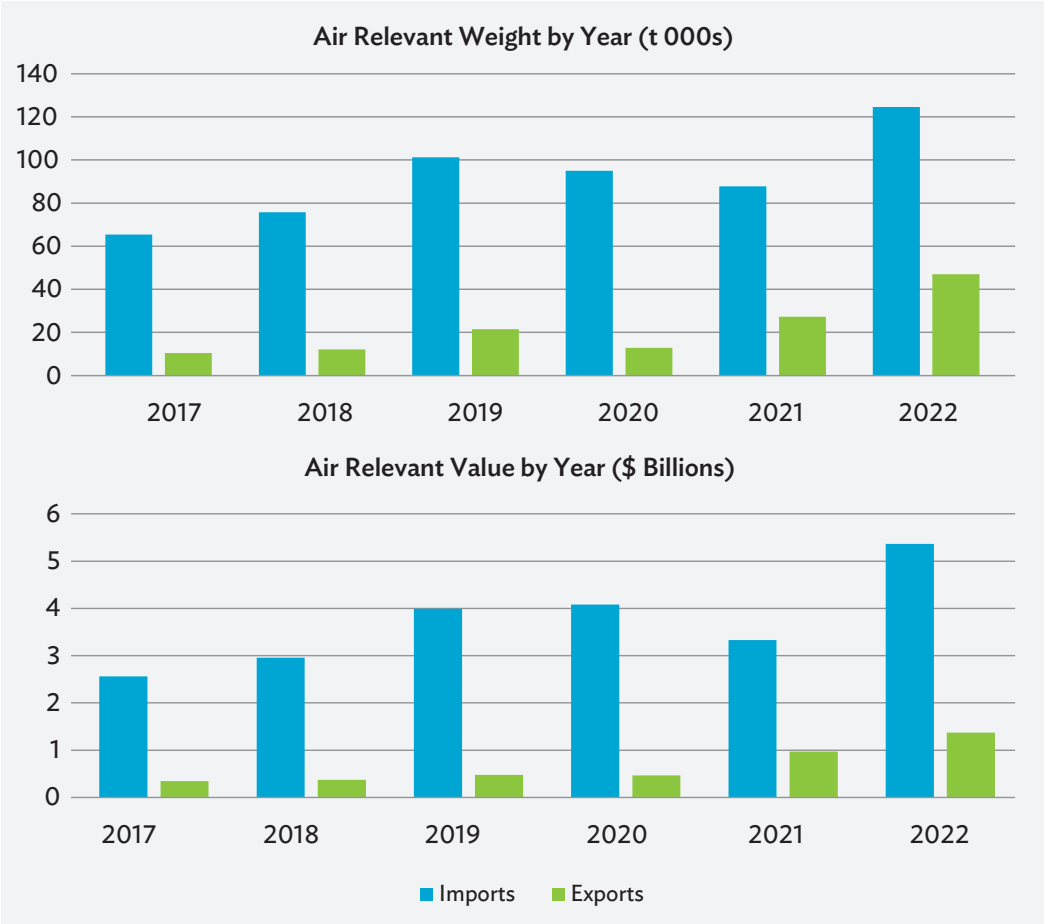
m^2 = square meter, ICAO = International Civil Aviation Organisation.

Source: Authors.

Uzbekistan

Trade

Figure 64: Uzbekistan Trade in Air-Relevant Products 2017–2022

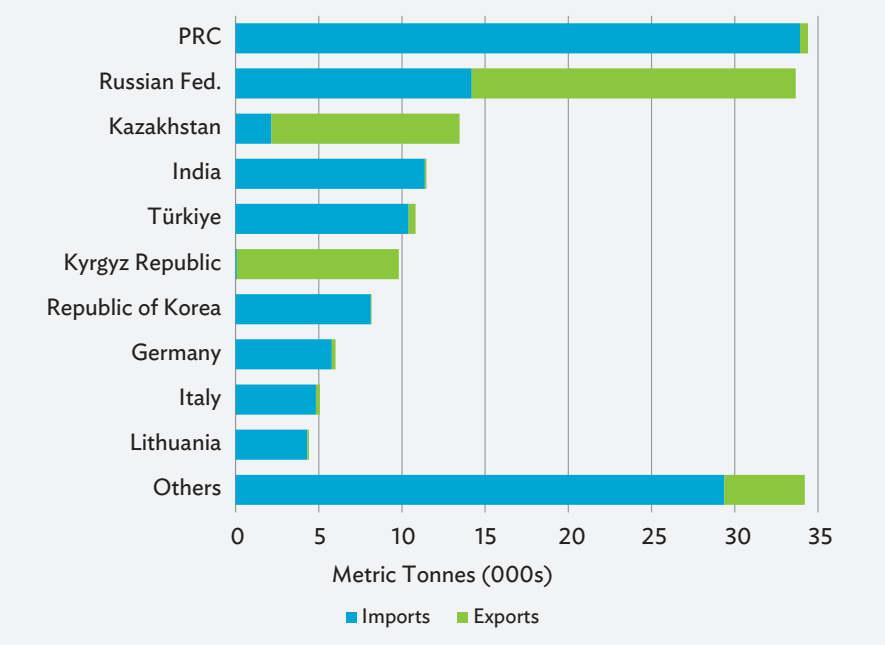


t = metric tonnes.

Note that Uzbekistan reported trade data does not have mode split. Air-relevant products are defined as all products with a customs value greater than $20 per kilogram, pharmaceuticals, and temperature-controlled products.

Source: Authors.

Figure 65: Uzbekistan Top Air-Relevant Trading Partners by Weight 2022

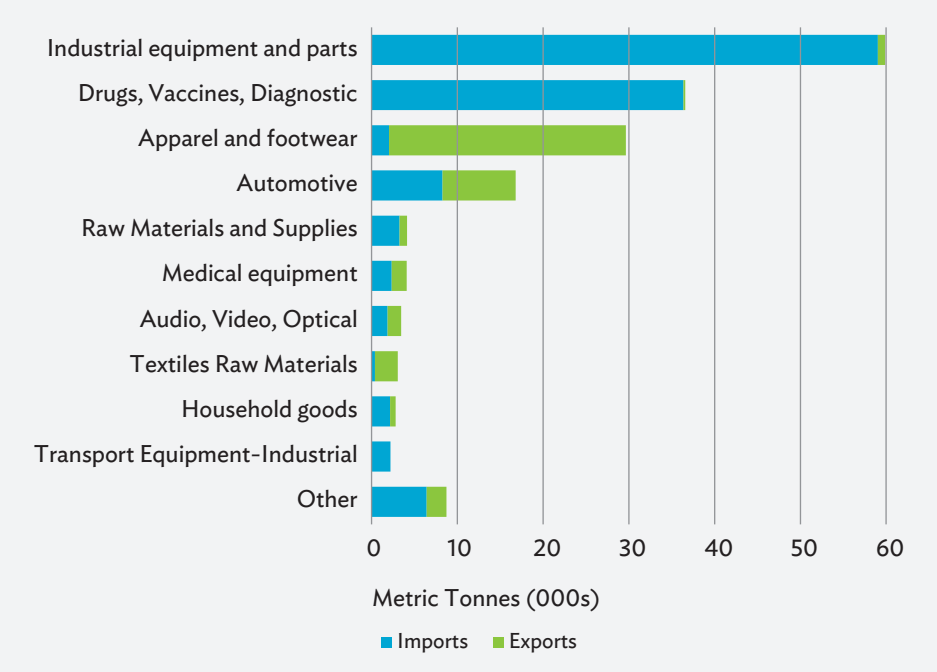


PRC = People's Republic of China.

Note that Uzbekistan reported trade data does not have mode split. Air-relevant products are defined as all products with a customs value greater than $20 per kilogram, pharmaceuticals, and temperature-controlled products.

Source: Authors.

Figure 66: Uzbekistan Top Air Trade Relevant Commodities by Weight 2022

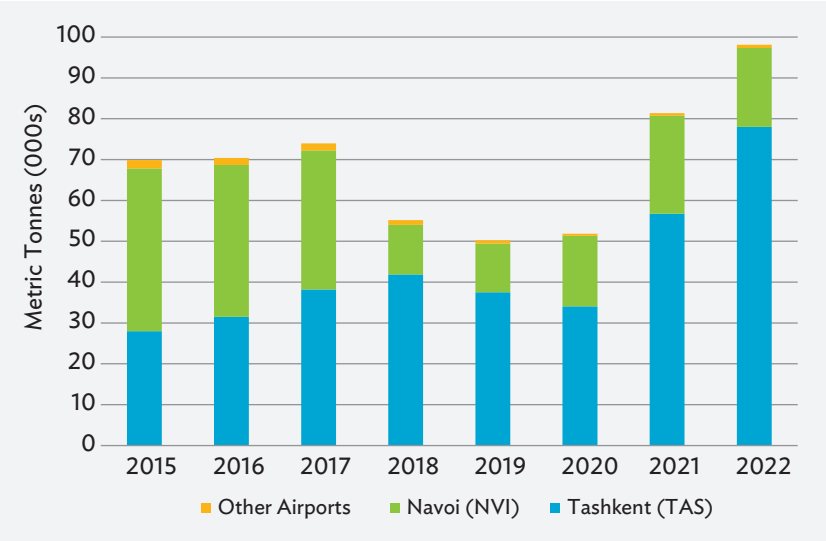


Note that Uzbekistan reported trade data does not have mode split. Air-relevant products are defined as all products with a customs value greater than $20 per kilogram, pharmaceuticals, and temperature-controlled products.

Source: Authors.

Air Cargo Traffic

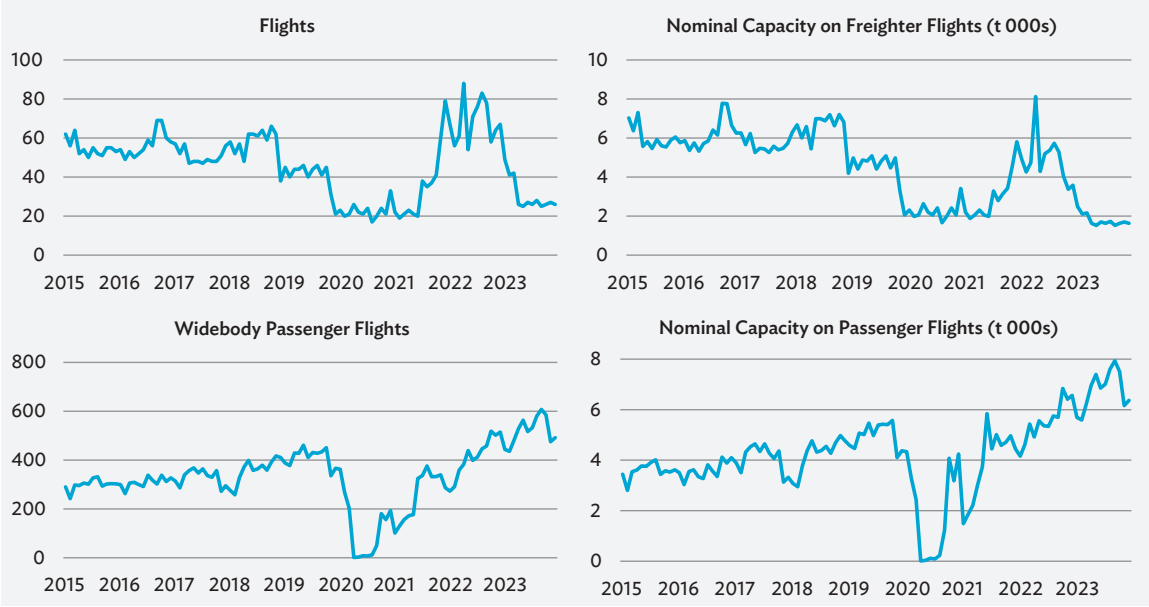
Figure 67: Uzbekistan Air Cargo Traffic 2015–2022



Source: Airports Council International; National Airport Statistics; authors' estimates.

Air Cargo Capacity

Figure 68: Uzbekistan Flights and Capacity on Cargo and Passenger Flights 2015–2023



t = metric tonnes.

Note that nominal cargo capacity does not represent allocated capacity in tonnes. Passenger flights only include widebody passenger flights and exclude narrowbody and turboprop aircraft.

Source: Authors.

Air Cargo Prices

Table 13: Uzbekistan Pre-COVID-19 Air Cargo Yields ($/kg)

Market	Outbound	Inbound	Comments
All Markets	(...)	$2.50	Only inbound yields have been included as air freight exports are largely nonexistent.
Türkiye	(...)	$1.90	Rates experienced a short spike in 2020 but moderated in 2021.
Europe	(...)	$3.00	
People's Republic of China/ Hong Kong, China/Republic of Korea	(...)	$3.00–3.50	
United States	(...)	$4.00	

... = not available, COVID-19 = coronavirus disease.
Source: Industry sources; Authors' analysis.

Findings

Item	Comments
Infrastructure	• Tashkent Cargo terminal is operating beyond its capacity and needs a priority upgrade. Insufficient undercover space for processing cargo. • Facilities in Navoi are viewed by some industry commentators as superior and have greater capacity and locational advantages for expansion. • Previously, Korean Air used Navoi airport to deliver its cargo to Uzbekistan and third countries. At the same time, the government provided discounts for the purchase of jet fuel on an annual basis. • Almost the entire cargo flow is directed to Tashkent. This is a problem. The Samarkand airport has been given privileges and benefits that will change this situation in the future. For this, the Marakanda company in Samarkand will create a large logistics zone. • Airports Tashkent. Samarkand, Navoi and Termez are the main promising cargo airports. Termez is not yet properly developed.
Air Cargo Traffic	• Tashkent Gateway air cargo in 2021 totaled 57,000 t and 37,000 t in 2019. Cargo aircraft accounted for 9%, 16% and 2% of total aircraft movements in 2021, 2020 and 2019, respectively. Approximately 78,000 t in 2022. Transit cargo mainly relates to Uzbekistan Airways freighter operation marketed by MyFreighter. MyFreighter is adding 747 units and as such transit cargo expected to increase. • Uzbekistan Airways accounts for approximately 50% of capacity. Historically about 85% of capacity into Tashkent has been on passenger aircraft. Uzbekistan Airways, Turkish Airlines, Lufthansa, Challenge Air Cargo, and Titan Airways have been providing freighter capacity through Tashkent over the past years. • Navoi gateway air cargo in 2021 totaled 24,000 t and 12,000 t in 2019. Cargo aircraft accounted for 51%, 61% and 36% of total aircraft movements in 2021, 2020 and 2019, respectively. • Turkish Airlines, MNG Airlines and Korean Air have used Navoi as a technical / traffic stop over the past year. All cargo carriers account for almost all capacity through NVI. Korean Air has been a long-standing tenant.

continued on next page

Table *continued*

Item	Comments
Governance	• The airport company, cargo terminal, and airline are all owned and operated by the Government of Uzbekistan. Aircraft and cargo handling company was split into two units but still owned and operated under legacy government arrangements that have changed little from 1980s. • There were some insights on "new advisers" on-site that may drive improvements. • №PP-5100 dated 30 April 2021, as well as pursuant to Order No.454 of the Chairman of the Board of the JSC Uzbekistan Airports dated 30 September2022, the Postal and Cargo Complex has been split off from the Tashkent International Airport. And has been reorganized into the Uzbekistan Airports Cargo Ltd. Today, this enterprise has an independent bank account and manages its budget independently, carries out independent economic activities following the established procedure. • The study team observed legacy management arrangements and legacy operational procedures in place that would benefit from modernization and aligned to best practices.
Constraints	• Current Tashkent cargo terminal layout and capacity not fit for purpose. • Jet A1 Fuel supply limitations and high price. • Current Freighter aircraft availability and costs are constraining Uzbekistan Airways' growth. • The big problem is the cost of jet fuel. • Local airlines are not interested in operating domestic flights. • The process of reforming services was launched later than in other countries, so rates continue to be not fully competitive. One direction is to reduce manual labor at airports. • The government is hatching plans to build a new airport in Tashkent outside the city. However, in 2023, construction of a new cargo terminal with an area of 10,000 m^2 is planned to begin near Tashkent airport. In case of transferring the airport, this terminal will be sold to third-party business organizations at auction.
Opportunities	• The country has adopted the Airport Development Strategy, where one of the priorities is the development of infrastructure. • The Samarkand airport was transferred to the private management of the Marakanda company. The issue of transferring the airports of Urgench and Bukhara is currently being worked out. A specialized public–private partnership agency has been established under the Ministry of Finance, which prepares all the documentation. • The construction of a new air cargo terminal and adjacent ramp space should assess opportunity for private sector investment in and operation of cargo terminal. Plans for new 10,000 m^2 and terminal do not appear to have a clear associated timeline. • Population as well as local production are driving air freight volume growth. • The government is pursuing a policy of liberalizing the activities of the aviation sector of the economy. New private airlines receive licenses and enter the transportation market, new aircraft are purchased. This also contributes to the growth of air traffic volumes. • There is opportunity to develop Navoi, but this would have to be done in an integrated way with a view to investments made at Tashkent. • Other suggestions include developing Samarkand Airport as a regional cargo hub due to international carrier privileges and desire of government to maximize utilization of recent development of new airport infrastructure. • Overarching national master planning for all Uzbekistan freight sectors—rail, road, air, and intermodal. The masterplan for air cargo should include a prioritized 0–5-year strategic development for infrastructure, systems, and governance. And a 5–15–20-year plan for growth against targets and performance standards. • Private sector inclusion in air cargo operations and public–private partnership/build-operate-transfer concessions. • In September 2022, aircraft fuel produced in Uzbekistan at the GTL plant was certified.

m^2 = square meter, t = metric tonnes.

Source: Authors.

APPENDIX 1
AIRPORT PROFILES

Where available, the study team compiled information on the nature of cargo operations and facilities at each of the main airports in the Central Asia Regional Economic Cooperation (CAREC) region. This includes the following items:

- Basic contextual information about the airport.
- Information and current cargo traffic levels.
- Main providers of belly and freighter cargo capacity at the airport between 2019 and the end of 2022.
- Information on the facilities available at the airport including airside, cargo ramp/apron, and warehouse capacity. The study team has not included an assessment of ground connectivity at the airport nor special cargo facilities, although it is noted that all the terminals are generally able to handle a multitude of commodities.
- Development plans.
- Any other relevant information.

Data for airports have been compiled from a multitude of sources, including:

- Airport operator and cargo terminal information
- Analysis of published schedules
- Airport traffic data collected by Airports Council International and other national authorities
- International Air Transport Association (IATA) One Source
- Other news sources and open-source information
- Trade and Transport Group PTY LTD proprietary airport and traffic databases

Where information is not available, estimates have been made, specifically:

- Cargo terminal footprint and cargo ramp area based on satellite imagery.
- Cargo terminal capacity has been estimated using the assumptions of 6-8 tons per square meter (m^2) and year. Note that actual capacity will vary depending on commodities, handling, and freight profile.

Generally, the level of publicly available information for airports within the region is limited. As such the on-site interviews are expected to gather more relevant knowledge in relation to facilities, challenges, and development potential. These will also be fundamentally important in verifying the information above.

The list of airports is not exhaustive but focuses on the most important locations within the CAREC region from a cargo perspective.

Azerbaijan

Table A1.1: Airport Profile – Baku (GYD)

Item	Comments
Description	Main of 11 airports in Azerbaijan. Main hub for Silk Way West and Silk Way.
Traffic	2022: 12,000 t, 2021: 9,000 t, 2019: 16,000 t. Terminal handled 300,000 t in 2021 and an estimated 340,000 in 2022, of which 95% consisted of transit cargo. This does not include traffic on Silk Way and other aircraft that is not transferred between aircraft but remains on board.
Carriers	80% of capacity operated by Silk Way West and Silk Way Airlines. AZAL, Cargolux and Turkish Airlines have an important presence. 95% of capacity operated through the airport is on all cargo aircraft.
Airside Capacity	2 runways: longest 13,123 ft (4,000 m), Elevation 10 ft (3 m)
Ramp/Apron Capacity	Up to 10 747 aircraft, Apron area 163,000 m^2
Warehouse Capacity	Single company, ASG operated all handling capacity at the airport. Total space of 22,000 m^2 consisting of an import/export warehouse (12,000 m^2) and transit warehouse (10,000 m^2–12,000 m^2). 500 ULD storage positions in stacker system (approximately 10 747s).
Development Plans	No expansion plans at this stage. Further investment plans on hold due to uncertain post-pandemic, post Russian invasion of Ukraine environment.
Other relevant information	Origin terminal built in 2005, second facility completed in 2012–2013. Airport can handle all types of cargo and ambient temperature, cooling, and dangerous goods facilities.

t = metric tonnes, ft = feet, m = meters, m^2= square meters, t = metric tonnes.

Source: Authors.

People's Republic of China

Table A1.2: Airport Profile – Diwopu, Urumqi (URC), Xinjiang Uygur Autonomous Region

Item	Comments
Description	Main airport in Xinjian Uygur Autonomous Region (XUAR)
Traffic	Terminal throughput in 2022: 94,000 t, 2021: 137,444 t, 2019: 172,800 t.
Carriers	Approximately two-thirds of capacity is on freighter aircraft with Silk Way, ASL Airline Belgium, YTO, Turkmenistan Airlines and SF providing most capacity. YTO and SF capacity is domestic focused. Belly capacity primarily provided on China Southern Airlines services, but this is primarily on narrowbodies. Widebody services also on China Southern, Ethiopian Airlines, Uzbekistan Airlines, and Air Astana. International freighter capacity currently limited to a once weekly Ethiopian Airlines flight.
Airside Capacity	1 Runway 11,811 ft (3,600 m), Elevation 2,126 ft (648 m)
Ramp/Apron Capacity	Approx 837,600 m^2
Warehouse Capacity	Approx 262,990 m^2
Development Plans	A third runway: 3,200 m, width of 60 m. T4 terminal in the North District with an area of 455,000 m^2
Other relevant information	

t = metric tonnes, ft = feet, m = meters, m^2= square meters

Source: Authors.

Table A1.3: Airport Profile – Hohhot Baita (HET) Inner Mongolia Autonomous Regioin

Item	Comments
Description	Current main airport in Inner Mongolia Autonomous Region (IMAR)
Traffic	2022: 30,000 t, 2021: 45,000 t, 2019: 46,000 t. Cargo aircraft accounted for between 1%–2% off all aircraft movements between 2019 and 2021.
Main Carriers	Domestic focused with Air China and China Southern providing the bulk of capacity. SF Airlines, China Postal Airlines and Loong Air provide domestic all cargo services.
Airside Capacity	1 Runway, length 11,811 ft (3,600 m), Elevation 3,556 ft (1,084 m)
Ramp/Apron Capacity	70 aircraft stands
Warehouse Capacity	The airport is owned and operated by Inner Mongolia Civil Aviation Airport Group Corporation.
Development Plans	A new airport is under construction in Hohhot (see next Table A1.4)
Other relevant information	

t = metric tonnes, ft = feet, m = meters, m^2= square meters, t = metric tonnes.

Source: Authors.

Table A1.4: Airport Profile – Hohhot Chilechuan International Airport, Inner Mongolia Autonomous Region

Item	Comments
Description	Under construction to be opened to traffic in 2024 and will be the main airport in Inner Mongolia Autonomous Region (IMAR)
Traffic	Expected cargo throughput 200,000 metric tonnes in 2025.
Main Carriers	Not applicable as few international services
Airside Capacity	Two runways: 12,467 ft (3,800 m), 11,155 ft (3,400 m), Elevation 3556 ft.
Ramp/Apron Capacity	130 aircraft stands
Warehouse Capacity	The airport will be owned and operated by Inner Mongolia Civil Aviation Airport Group Corporation.
Development Plans	
Other relevant information	

t = metric tonnes, ft = feet, m = meters, m^2= square meters, t = metric tonnes.

Source: Authors.

Georgia

Table A1.5: Airport Profile – Tbilisi (TBS)

Item	Comments
Description	Airport is managed by TAV Airports (part of Aeroports de Paris Group) with a concession that runs from 2005 to 2027.
Traffic	2022: 18,500 t, 2021: 25,000 t, 2019: 18,000 t. Cargo aircraft accounted for 13%, 24% and 5% of total aircraft movements in 2021, 2020 and 2019, respectively.
Main Carriers	Turkish Airlines, Cargolux, Jeju Air, Etihad, Georgian Airways, and Fly Dubai are the main airlines. All cargo service currently operated by Turkish Airlines, Coyne Airways and Cargolux. Approximately 50% of capacity into TBS is on all cargo services.
Airside Capacity	One runway: 9,843 ft (3,000 m), Elevation 1,578 ft (495 m)
Ramp/Apron Capacity	20,000 m^2
Warehouse Capacity	Three cargo handling companies: Georgian Post, Lasare, Tbilisi Cargo Service. Lasare handles most airlines at the airport. Approx footprint 10,000 m^2.
Development Plans	
Other relevant information	Georgia Post Ltd and Kutaisi Cargo Service LLB also hold a certificate to receive, check, process, load, unload, store, and issue cargo and/or dangerous goods.

t = metric tonnes, ft = feet, m = meters, m^2= square meters

Source: Authors.

Kazakhstan

Table A1.6: Airport Profile – Almaty (ALA)

Item	Comments
Description	Airport operations run by TAV Airports (part of Groupe Aeroports de Paris) since April 2021. Owns 85% of airport and associated fuel and catering businesses. First Airport in TAV portfolio where the company owns the airport rather than a concession.
Traffic	2022: 90,000 t, 2021: 86,000 t, 2019: 69,000 t. Cargo aircraft accounted for 11%, 15% and 6% of total aircraft movements in 2021, 2020 and 2019, respectively. Cargo handling tonnage including transit: 100,632 t (2021); 58,794 t (2020); 69,098 t (2019).
Carriers	Most capacity operating through ALA has been on all cargo services utilizing the airport as a combined traffic and technical stop. The largest carrier into the airport has been Turkish Airlines, followed by ASL Airlines, Polar Air Cargo, Hong Kong Air Cargo, Air Astana, Qatar Airways, Cargolux, Lufthansa. Almaty has consistently hosted a diverse number of cargo carriers on services between northeast Asia and Europe.
Airside Capacity	Two runways: longest 14,764 ft (4,500 m), Elevation: 2,238 ft (682 m)
Ramp/Apron Capacity	Approximately 5 stands for 747 aircraft. 80,000 m^2.
Warehouse Capacity	Entire area 55 m^2. Main warehouse 20,000 m^2 divided into four blocks. Truck and railway warehouse 2,700 m^2, open container area 14,000 m^2.
Development Plans	None at this stage, but handling company will be taken over by Havas, another group linked to TAV.
Other relevant information	Facility holds IATA CEIV Pharma certification.

t = metric tonnes, ft = feet, m = meters, m^2= square meters, t = metric tonnes.

Source: Authors.

Table A1.7: Airport Profile – Nur Sultan (NQZ)

Item	Comments
Description	Second largest airport in Kazakhstan in terms of cargo handled. Previously also known as Astana (TSE).
Traffic	2022: 7,600 t, 2021: 23,000 t, 2019: 11,000 t. All cargo services have been negligible over the past years, but in the mid-2010s cargo aircraft accounted for around 6% of overall movements.
Carriers	Almost exclusively served by passenger belly capacity, although in the past has been utilized as technical landing location for all cargo carriers such as ACT, Turkish Airlines Cargo, EL Al, ULS, Cargolux and Lufthansa. About 50% of capacity is on narrowbody aircraft. Widebody services have been dominated by Lufthansa, Air Astana, Aeroflot, and Turkish Airlines.
Airside Capacity	One runway: 11,483 ft (3,500 m), Elevation 1,166 ft (355 m)
Ramp/Apron Capacity	3 widebody stands near cargo facility
Warehouse Capacity	Approximately 4,000 m^2
Development Plans	
Other relevant information	

t = metric tonnes, ft = feet, m = meters, m^2= square meters, t = metric tonnes.
Source: Authors.

Table A1.8: Airport Profile – Karaganda (KGF)

Item	Comments
Description	Airport located approximately 200 km southeast of Nur Sultan.
Traffic	...
Carriers	Air Bridge Cargo, El Al have been the primary user of the airport with scheduled services.
Airside Capacity	One runway: 11,814 ft (3,601 m), Elevation 1,766 ft (538 m)
Ramp/Apron Capacity	...
Warehouse Capacity	3,500 m^2–5,000 m^2
Development Plans	
Other relevant information	

t = metric tonnes, ft = feet, m = meters, m^2= square meters.
Source: Authors.

Kyrgyz Republic

Table A1.9: Airport Profile – Bishkek (FRU)

Item	Comments
Description	Manas International Airport is the main airport in the Kyrgyz Republic
Traffic	2021: 23,273 t, of which 70 t domestic. Airport expects to handle 40,000 t in 2022.
Carriers	Turkish Airlines has accounted for over 80% of cargo capacity operated through the airport. YTO, Silk Way, Aeroflot and Ural Airlines have been important capacity providers to the airport as well. Turkish Airlines currently makes extensive use of the airport for technical landings on about 11 flights per week. Silk Way West operates two flights per week.
Airside Capacity	One runway: longest 13,780 ft (4,204 m) Elevation 2,090 ft (627 m)
Ramp/Apron Capacity	Limited space in front of cargo terminal, space for several widebodies on eastern side of the airport.
Warehouse Capacity	3,360 m^2
Development Plans	
Other relevant information	

t = metric tonnes, ft = feet, m = meters, m^2= square meters, t = metric tonnes.

Source: Authors.

Mongolia

Table A1.10: Airport Profile – Ulan Bator (UBN/ULN)

Item	Comments
Description	Chinggis Khan International Airport opened in mid-2021. The airport is a Mongolian–Japanese joint venture. The airport was built as a replacement for Buyant-Ukhaa International Airport.
Traffic	2022: 12,900 t; 2021: 6,500 t; 2019: 6,000 t.
Carriers	Vladivostok Air has provided cargo capacity to ULN, but given the size of the market, cargo is almost exclusively carried in the bellies of passenger aircraft. MIAT Mongolian Airlines and Korean Air are the dominant carriers.
Airside Capacity	UBN (New Airport): 1 runway 11,811 ft (3,600 m), Elevation 4,485 ft (1,366 m); ULN (old airport): 2 runways, longest 10,170 ft (3,100 m), Elevation 4,364 ft (1,330 m)
Ramp/Apron Capacity	Approximately 10,000 m^2 measured
Warehouse Capacity	3,750 m^2, 11,900 t capacity. Warehouse is operated and managed by the airport company
Development Plans	
Other relevant information	NUBIA LLC has a 15-year concession to manage the airport. Narita International Airport (NAA), Mitsubishi Corporation (MC), Japan Airport Terminal (JAT) and JALUX are part of a joint venture (JV), which was formed in 2019 with the government of Mongolia to operate the new airport

t = metric tonnes, ft = feet, m = meters, m^2= square meters, t = metric tonnes.

Source: Authors.

Pakistan

Table A1.11: Airport Profile – Islamabad (ISB)

Item	Comments
Description	International airport serving Pakistan's capital city.
Traffic	2022: 54,000 t, 2021: 55,000 t, 2019: 160,000 t
Carriers	Pakistan International Airlines (PIA), Qatar Airways, Emirates, Saudia, Turkish Airlines, Etihad Airways. YTO Airlines (China operates freighter capacity). Generally, all capacity is belly capacity.
Airside Capacity	Two runways: longest 12,001 ft (3,657 m), Elevation 1,761 ft (537 m)
Ramp/Apron Capacity	22,000 m^2
Warehouse Capacity	35,000 m^2. Would imply capacity of approximately 210,000–280,000 t per year. SAPS and Menzies RAS are the main handling agents. Two other facilities: Air Asia Cargo: 2,400 m^2 and Air China Cargo: 4,500 m^2.
Development Plans	
Other relevant information	

t = metric tonnes, ft = feet, m = meters, m^2= square meters, t = metric tonnes.
Source: Authors.

Table A1.12: Airport Profile – Karachi (KHI)

Item	Comments
Description	Busiest international and domestic airport in Pakistan
Traffic	2022: 89,000 t, 2021: 85,000 t; 2019: 95,000 t
Carriers	Emirates, Qatar Airways, Saudia, Turkish Airlines, Pakistan International Airlines. Freighter capacity operated by Qatar Airways, Turkish Airlines and YTO Airlines.
Airside Capacity	Two runways: longest 11,155 ft (3,400 m), Elevation 100 ft (30 m)
Ramp/Apron Capacity	
Warehouse Capacity	Multiple terminals within cargo area. Gerry's DNATA is the main cargo handling agent in Karachi with over 78,000 t annually. Total cargo warehouse footprint approx. 48,000 m^2 across 5 warehouses. Additional courier facilities operated by DHL and FedEx.
Development Plans	
Other relevant information	

t = metric tonnes, ft = feet, m = meters, m^2= square meters, t = metric tonnes.
Source: Authors.

Table A1.13: Airport Profile – Lahore (LHE)

Item	Comments
Description	Second largest airport in Pakistan.
Traffic	2022: 90,000 t, 2021: 83,000 t; 2019: 68,000 t
Carriers	Qatar Airways, Pakistan International Airlines, Emirates, Saudia, Turkish Airlines, Etihad Airways. Qatar, YTO and Egypt Air operate freighter capacity.
Airside Capacity	Two Runways: longest 11,024 ft (3,360 m), Elevation 714 ft (217 m)
Ramp/Apron Capacity	
Warehouse Capacity	Approximately 35,000 m^2 from five warehouses. DNATA accounts for approximately 30% of cargo volumes handled. Space would imply capacity of approximately 200,000 t–250,000 t.
Development Plans	
Other relevant information	

t = metric tonnes, ft = feet, m = meters, m^2= square meters.
Source: Authors.

Tajikistan

Table A1.14: Airport Profile – Dushanbe (DYU)

Item	Comments
Description	Main airport in Tajikistan. Cargo terminal construction completed in 2018 with US$17.5m support from Japan International Cooperation Agency.
Traffic	Pre-pandemic: 2,800 t. 2022 (estimated): 1,800 t
Carriers	Scheduled capacity is almost exclusively provided through belly capacity. Over 80% of flights are on narrowbody services so are largely irrelevant for cargo.
Airside Capacity	One runway: 10,210 ft (3,112 m); Elevation 2,569 ft (785 m)
Ramp/Apron Capacity	Two aircraft parking stands
Warehouse Capacity	2,400 m^2. Annual handling capacity of 20,000 t.
Development Plans	Free trade zone under consideration.
Other relevant information	Total cargo terminal area of 3,700 m^2 includes 1,300 m^2 office space and warehouses 2,400 m^2. Full range of services available including dangerous goods, temperature-controlled cargo.

t = metric tonnes, ft = feet, m = meters, m^2= square meters, t = metric tonnes.
Source: Authors.

Turkmenistan

Table A1.15: Airport Profile – Turkmenabat International Airport (ASB)

Item	Comments
Description	Main airport in Turkmenistan.
Traffic	2021: 10,000 t (estimated). Nominal cargo turnover 200 t per year.
Carriers	Include Turkmenistan Airlines, Cargolux, Turkish Airlines. Lufthansa have provided the bulk of capacity over the past years. Currently there is only limited cargo capacity into the airport primarily used by cargo carriers for technical landings.
Airside Capacity	Two runways: longest 12,467 ft (3,800 m), Elevation 693 ft (211 m)
Ramp/Apron Capacity	Five aircraft stands approximately 45,000 m^2.
Warehouse Capacity	Terminal footprint: 17,000 m^2. Export warehouse: 2,582 m^2; Import warehouse 4,500 m^2. Total warehouse building footprint approximately 11,000 m^2.
Development Plans	
Other relevant information	

t = metric tonnes, ft = feet, m = meters, m^2= square meters, t = metric tonnes.
Source: Authors.

Table A1.16: Airport Profile – Turkmenbashi International Airport (KRW)

Item	Comments
Description	Airport that has been used as a technical landing location.
Traffic	20,000 metric tonnes.
Carriers	Limited scheduled passenger capacity provided by Turkmenistan Airlines and Turkish Airlines.
Airside Capacity	Two runways: longest 11,483 ft (3,500 m), Elevation 285 ft (86 m)
Ramp/Apron Capacity	
Warehouse Capacity	
Development Plans	
Other relevant information	

t = metric tonnes, ft = feet, m = meters, m^2= square meters.
Source: Authors.

Uzbekistan

Table A1.17 – Airport Profile Tashkent (TAS)

Item	Comments
Description	Main airport in Uzbekistan.
Traffic	2022: 78,000 t, 2021: 57,000 t, 2019: 37,000 t. Cargo aircraft accounted for 9%, 16% and 2% of total aircraft movements in 2021, 2020 and 2019, respectively. Expect to do about 55,000t in 2022. JSC "Uzbekistan Airways" data the ratio of air freight and passenger operations is as follows: Cargo flights Passenger flights 2019 40% 60% 2020 95% 5% 2021 80% 20% 2022 56% 44%
Carriers	Uzbekistan Airways accounts for approximately 50% of capacity. Historically about 85% of capacity into Tashkent has been on passenger aircraft. Uzbekistan Airways, Turkish Airlines, Lufthansa, Challenge Air Cargo and Titan Airways have been providing freighter capacity through Tashkent over the past years.
Airside Capacity	Two runways: longest 13123 ft (4000 m), Elevation 1417 ft (432 m)
Ramp/Apron Capacity	Not available
Warehouse Capacity	5, 000 m^2 over four warehouses.
Development Plans	New 10,000 m^2 facility on Southern side of airport being planned, but plans and timeframe are not concrete.
Other relevant information	

t = metric tonnes, ft = feet, m = meters, m^2= square meters, t = metric tonnes.
Source: Authors.

Table A1.18: Airport Profile – Navoi (NVI)

Item	Comments
Description	Airport is used as a point for commercial services and technical stop overs. Since 1 May 2023 the cargo terminal has been transferred for management to GPORTS (UAE).
Traffic	2022: 19,300 t; 2021: 24,000 t; 2020: 17,243 t; 2019: 11,854 t. Cargo aircraft accounted for 67%, 51%, 61% and 36% of total number of flights in 2021, 2020 and 2019, respectively.
Carriers	Currently cargo airlines "Turkish Airlines" and "MNG Airlines" use the airport services airport for their commercial flights. "MAERSK AIR CARGO" (MAC) has been using the Navoi airport for technical/transport stop overs in the past 5 months. All freight carriers perform almost all freight operation via NVI.
Airside Capacity	One runway: 13,123 ft (4,000 m); Elevation 1,142 ft (341 m).
Ramp/Apron Capacity	There are five parking lots for cargo aircraft, which may accommodate B747 and AN124. The total area is 60,000 m^2.
Warehouse Capacity	The total area of the warehouse is 16,800 m^2 (including the canopy on both sides). The throughput capacity is 300 t per day, and about 100,000 t per year.
Development Plans	
Other relevant information	

t = metric tonnes, ft = feet, m = meters, m^2= square meters, t = metric tonnes.
Source: Authors.

APPENDIX 2
RESEARCH AND STAKEHOLDER CONSULTATION

General Approach

The general approach to developing the findings of this study has been a mix of desktop research, face-to-face stakeholder consultation and site visits. The desktop research focused on analysis of trade, traffic, capacity, yield, economic and other relevant data. The purpose of the stakeholder consultation and site visits was to validate the desktop research and identify constraints and opportunities not able to be captured using data analysis alone. Stakeholders consulted include logistics companies, airlines, airports, handling companies, terminal operators, industry associations and government entities, among others. The bulk of the desktop research for this study took place between August 2022 and October 2022, while stakeholder consultation was conducted between October 2022 and February 2023. Further updates of the data analysis were undertaken in January and February 2023.

Stakeholder consultation was conducted in Azerbaijan, the People's Republic of China, Georgia, Mongolia, Kazakhstan, Kyrgyz Republic, Pakistan, Tajikistan, and Uzbekistan. Stakeholder engagement in Turkmenistan was not possible. Separately, consultation was undertaken with companies operating into or through the region but based in other areas including the Gulf, Europe, and northeast Asia.

Stakeholders Consulted

Azerbaijan

Organization	Persons Interviewed	Date
ADY Container	Kamal Jabbarov (Head of Baku Port Development) Ayaz Naghiyev (Head of Sales Department),	27 Oct 2022
Silk Way West Airlines	Vugar Mammadov (VP CIS and Central Asia) Sadig Alizada (Head of Rates and Revenue Department)	26 Oct 2022
ASG Ground Handling	Vuqar Zeynalov (Deputy Director) Abbas Mehtizade (Senior Expert, Procurement and Logistics Department)	26 Oct 2022
Air Cargo Azerbaijan	Javid Mammadov (Managing Director)	27 Oct 2022
Cargo Terminal Tour	Extended introductions and full guided tour	28 Oct 2022

People's Republic of China (Xinjiang Uygur Autonomous Region and Inner Mongolia Autonomous Region)

Organization	Persons Interviewed	Date
Logistics Branch of China Communications and Transport Association	Ms. Yuee Gao (Director of Logistics Branch)	10 Feb 2023
Beijing Jiaotong University	Prof. Jianhong Wu (Prof. in Transport Economics)	3 Feb 2023
China Federation of Logistics and Purchasing	Mr. Jingyan Gu (logistics Expert)	7 Mar 2023
SF Express	Mr. Yixiao Huang (Senior Engineer)	3 Apr 2023

Georgia

Organization	Persons Interviewed	Date
Ministry of Economy	Rati Devadze (Deputy Head of Transport and Logistics Development Policy Department)	24 Oct 2022
Georgian Airlines	Irakli Mezvrishvili (General Director) Tsisia Phanchvidze (First Deputy Director)	24 Oct 2022
Lasare Cargo Terminal	Sergo Lasareishvili (Director) Giorgi Kakashvili (Head of Legal Department) Zurabi Gaprindashvili (Cargo Ground Handling Manager)	24 Oct 2022
Cargo Terminal Tour	Lasare Cargo Terminal	24 Oct 2022
Geo-Sky Airlines LLC	Tornike Kortoshidze (President) Edison Pipia (Senior Vice President) Metin Kurtulus (Commercial Director)	25 Oct 2022
Camex Airlines	George Seturidze (CEO) Shako Seturidze (Chief Operating Officer)	25 Oct 2022
Georgian Civil Aviation Authority	Mindia Mindiashvili (Head of Air Transportation Department)	25 Oct 2022
TAV Airports	Akaki Barkaia (Ground Handling Manager) Nana Varshanidze (Contact chief)	25 Oct 2022
Easy Charter	Rati Dzeria (Director)	25 Oct 2022
Myway Airlines	Andy Liu (President)	25 Oct 2022

Mongolia

Not applicable.

Kazakhstan

Organization	Persons Interviewed	Date
EurAsiaTransit	Vladislav Tskhay (Operating Director)	19 Oct 2022
Asia Freight	Sergey Titz (CEO), Yevgeniy Katenichev	19 Oct 2022
TAV Airports	Timur Montayev (Head, Cargo Transportation Service), Miras Yerbulekov (Deputy Head, Cargo Transportation Service)	19 Oct 2022
Cargo Terminal Tour	TAV Kazakhstan LLP	19 Oct 2022
Turkish Airlines Cargo	Koray Dursun (Cargo Operations Manager)	21 Oct 2022
Air Astana Cargo	Olessya Konovalova (Manager Cargo Sales), Kamila Togambayeva (Senior Manager Cargo)	20 Oct 2022
Jupiter Jet	M.Dosymbekov (First Deputy General Director) Ziada Dosymbekov	20 Oct 2022

Kyrgyz Republic

Organization	Persons Interviewed	Date
Trans Asia Logistics	Larissa Zhakupova, Branch Manager	21 Nov. 2022
Manas International Airport OJSC	Meerim Alinbekova, Director of Commerce	21 Nov. 2022
Manas Management Company Air transport hub of Manas International Airport	Ulan Baryktabasov, Deputy General Director	21 Nov. 2022
KAP KG Airlines LLC Cargo transportation	Japar Abdubekov, Director-General Kubanichbek (?), Deputy Director	21 Nov. 2022
Fly Sky Airlines LLC	Talgat Sariev, Director	22 Nov. 2022
Globalink Logistics	Almas Sultankulov, Director	22 Nov. 2022
Sapsan Airline (Kg)	Bakyit Mamatazimov General Director	
AeroStan Air Company LLC	Almaz Mykyev, Director-General Mikhail Prozorov, Quality Manager	22 Nov. 2022
State Agency for Civil Aviation under the Cabinet of Ministers	Timur Askarov, Deputy Director Gulnara Shyrdakbaeva, International Relation Department, Head	22 Nov. 2022
Ministry of Transport together with Kyrgyz Temir Zholy	Shabdan Shamkashov, Road and Rail Way Department, Chief Cpesialist Telek Tursaliev, Freight Transportation and Commerce Department, Head Bekjan Rismindiev, Design of the Kyrgyz railway, Head of the Department	23 Nov. 2022
Geo Trans Service LLC	Natalya Snirshova	23 Nov. 2022

Pakistan

No on-site consultation has been conducted.

Tajikistan

Organization	Persons Interviewed	Date
Civil Aviation Agency under the Government of the Republic of Tajikistan	Dilshod Safarzoda, Director Shoira Karimova, International Relation Department, Head	16 Nov. 2022
Dushanbe International Airport State Unitary Enterprise Dushanbe Cargo terminal	Shavkat Vokhidov, Economics and Labor Service, Head Sobir Karimov, Flight Safety Inspection Service, Head Fazliddin Izatullozoda, Ground Handling, Head	16 Nov. 2022
Union of professional consultants of Tajikistan PO	Larisa Kislyakova, Chairperson	17 Nov. 2022
Somon Air Airline	Parviz Odyibekov, Commercial and Planning Department, Head	17 Nov. 2022
Globalink Logistics	Manuchehr Kasimov, Director	17 Nov. 2022
Tajik Air airline	Parviz Shodmonzoda, Director-General	17 Nov. 2022
Dunyo Cargo Logistics Services Transport and logistics company	Jamshed Rizoev, International Forwarding Department Kosimbek Abdurahimov, Business Development and Marketing Department, Director	18 Nov. 2022
MAVSIM Freight Forwarding Company	Nasima, Director	18 Nov. 2022
IMF	Madina Nurmatova, Program Manager for Central Asia, Asset based finance for SME	18 Nov. 2022
Hudjand International Airport OJSC Khujand airport terminal	Davlatsho Shobutolibov, Deputy Director-General	19 Nov 2022

Turkmenistan

No on-site consultation has been conducted.

Uzbekistan

Organization	Persons Interviewed	Date
Ministry of Transport	Jasurbek Choriyev (Deputy Minister), Bekzod Kholmatov (Director of Center for Research of issue in Development of Transport and Logistics)	17 Oct 2022
Green Line	Bobur Sirojiddinov (Owner в Green Line Group of Companies)	17 Oct 2022
Uzbekistan Airports	Alekseiy Tabakov (Adviser) Alisher Abdurazakov (Operations Coordination Manager)	17 Oct 2022
Cargo Terminal Tour	Vladimir Kosov (Deputy head of Postal and Cargo Complex of Tashkent Airport)	17 Oct 2022
Delta Global Solutions	Bahtiyar Nomozbaev (Senior Advisor)	17 Oct 2022
MNG Airlines	Emre Yilmaz (based in Türkiye, Cargo Revenue Officer)	17 Oct 2022
Cargo Point	Mirzali Murismonov (Head of Business Development)	17 Oct 2022
Uzbekistan Airways	Sultansaid Agzamkhodjaev (Deputy Manager of Cargo Department), Aziz Kambarov (Head of Cargo Department)	Oct 2022

CAREC Air Cargo Report

This report provides an overview of the air cargo market across the Central Asia Regional Economic Cooperation (CAREC) region and identifies both constraints and opportunities for further growth. The region is host to an ecosystem of locally based air cargo carriers serving both regional and intercontinental long-haul markets. CAREC countries exhibit distinct characteristics in terms of structure and development of their air cargo markets. As such, any air cargo strategy for the region will need to focus on the development of individual country strategies rather than a consolidated regional approach. The regional benefits will be created from sharing the lessons learned from the successes of country-specific developments.

About the Central Asia Regional Economic Cooperation Program

The Central Asia Regional Economic Cooperation (CAREC) Program is a partnership of 11 member countries and development partners working together to promote development through cooperation, leading to accelerated economic growth and poverty reduction. It is guided by the overarching vision of "Good Neighbors, Good Partners, and Good Prospects." CAREC countries include: Afghanistan, Azerbaijan, the People's Republic of China, Georgia, Kazakhstan, the Kyrgyz Republic, Mongolia, Pakistan, Tajikistan, Turkmenistan, and Uzbekistan.

CAREC SECRETARIAT
www.carecprogram.org
6 ADB Avenue, Mandaluyong City
1550 Metro Manila, Philippines
www.adb.org