



2022-2041

World Air Cargo Market Update and Forecast

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Marketing

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cargo facts *latam*
2023

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Agenda



Current state of world air cargo market

Latin America market dynamics

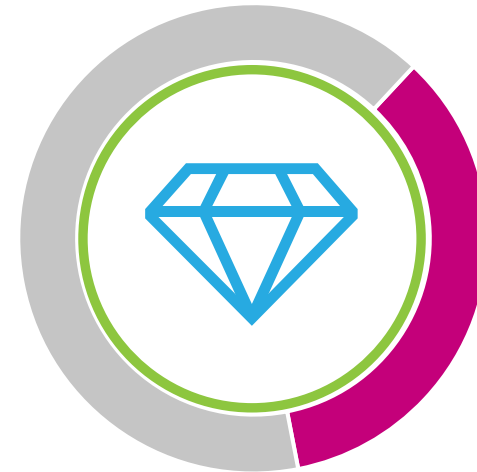
World freighter fleet forecast



Air cargo has a unique place in global trade

<1%

of reported world trade
TONNAGE
is carried by
Air Cargo



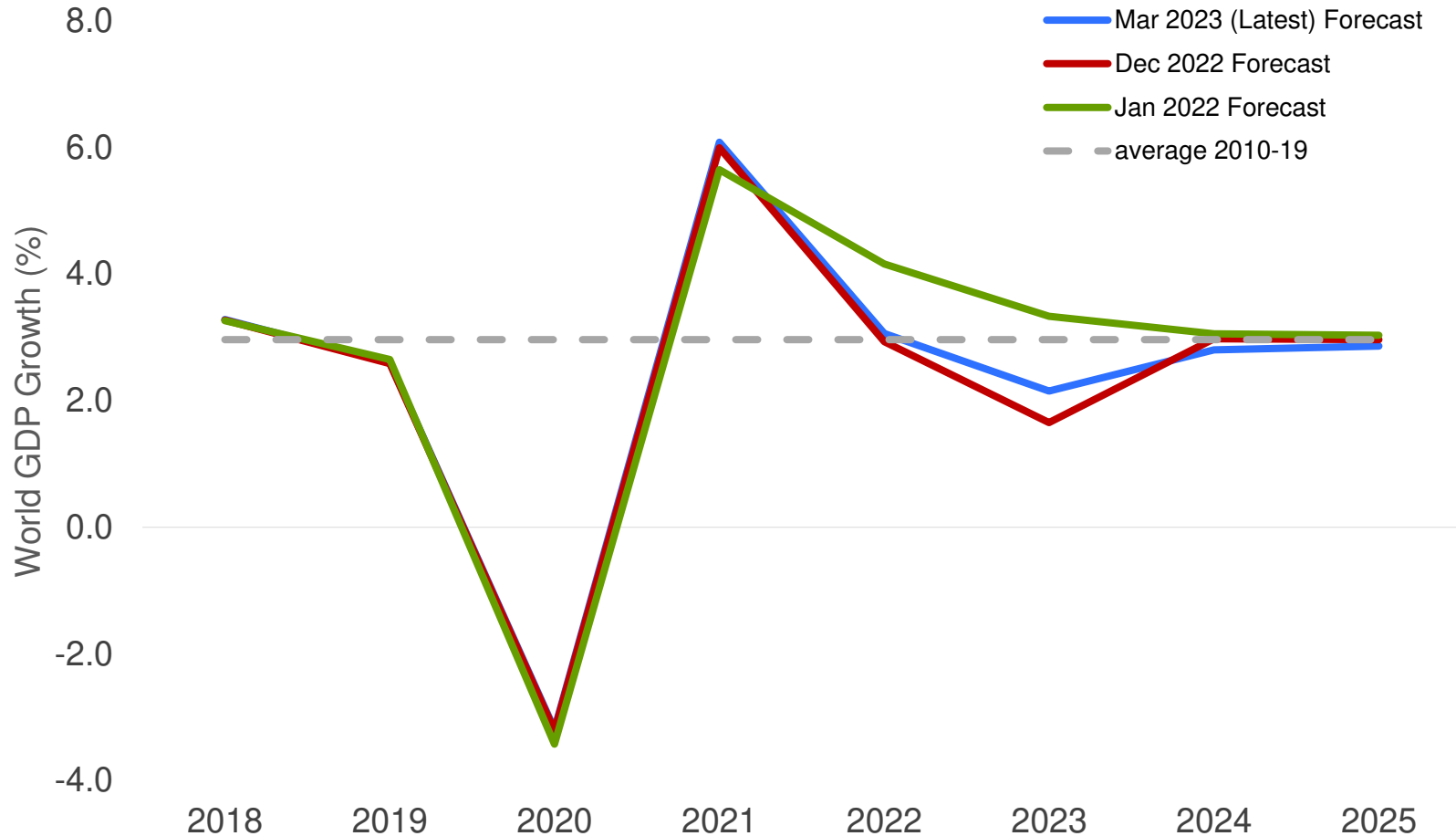
35%

of reported world trade
VALUE
is carried by
Air Cargo

SOURCES: IATA, ICAO, Flight Global, U.S. DOT, and airline financial reports, Boeing analysis

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World GDP growth back to trend in 2024

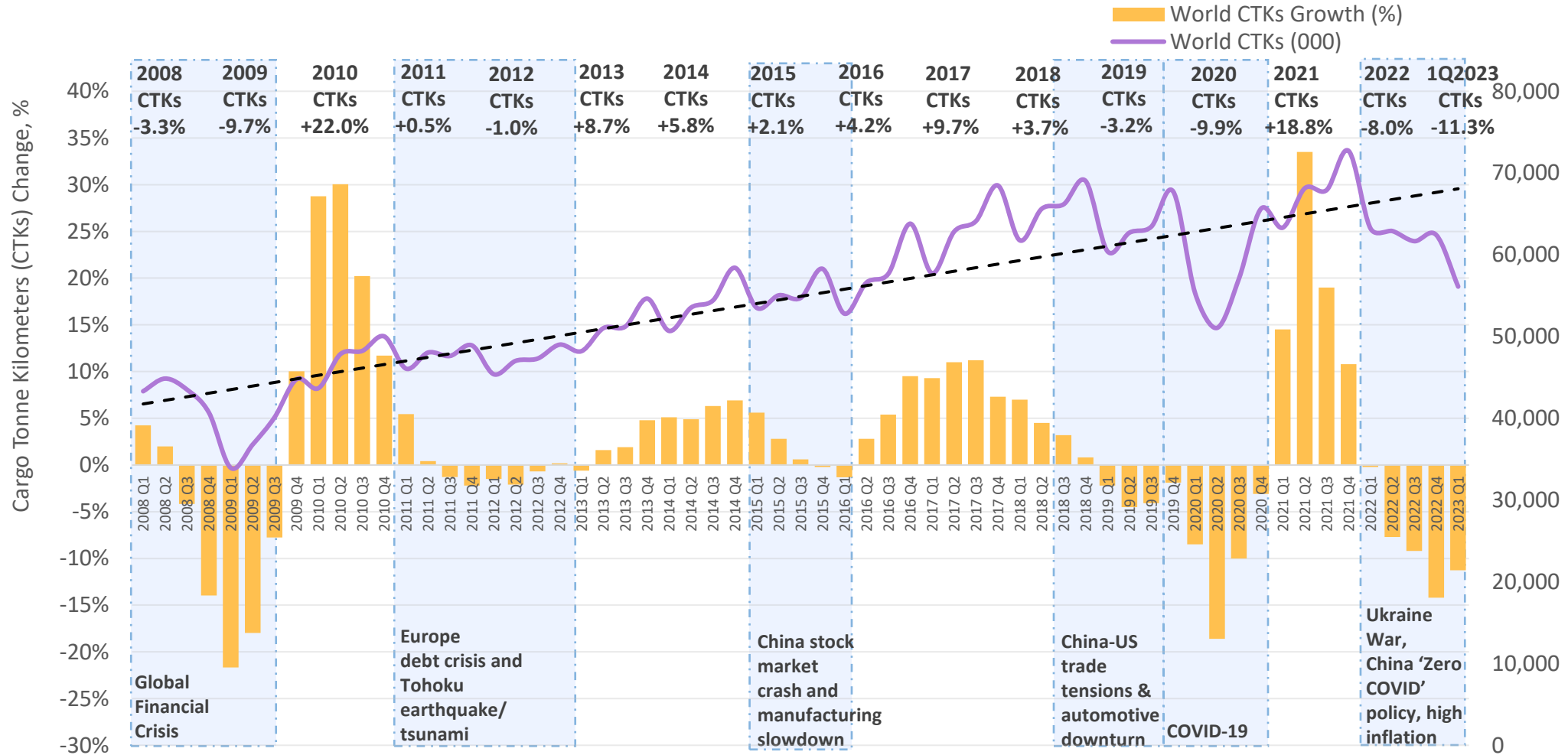


Source: S&P Global dated March 2023

- 2021: Strong world trade and GDP growth
 - World trade: 106% of 2019
 - World GDP: 102% of 2019
- 2022/2023: Risks impacting near term economic outlook
 - China and COVID
 - Europe and Ukraine impact
 - High inflation in part due to supply chain stress and energy price increase
- US economic indicators supportive of growth
 - Consumer spending growth remains positive
 - Strong labor market
 - 250,000 jobs added in April
 - Unemployment rate still historically low at 3.4%

World air cargo market is resilient

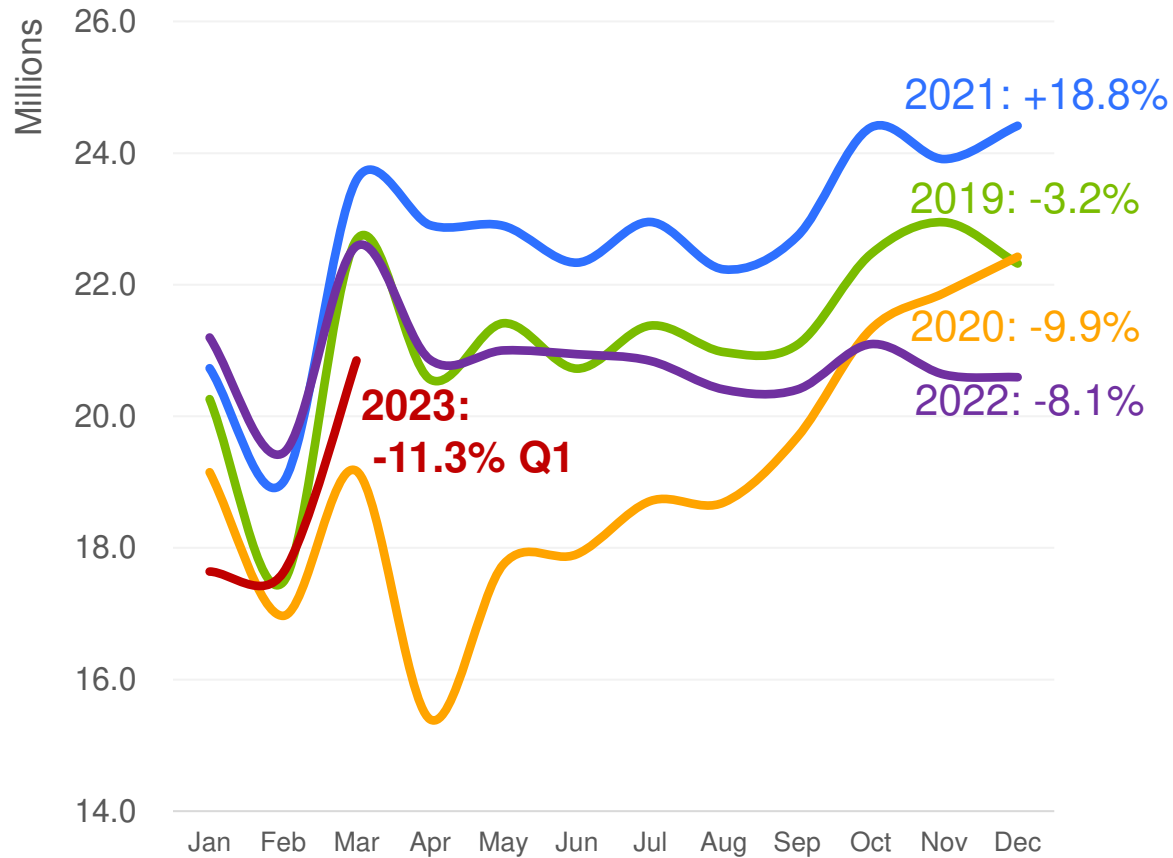
World air cargo market grew 1.1% in 2022 versus 2019



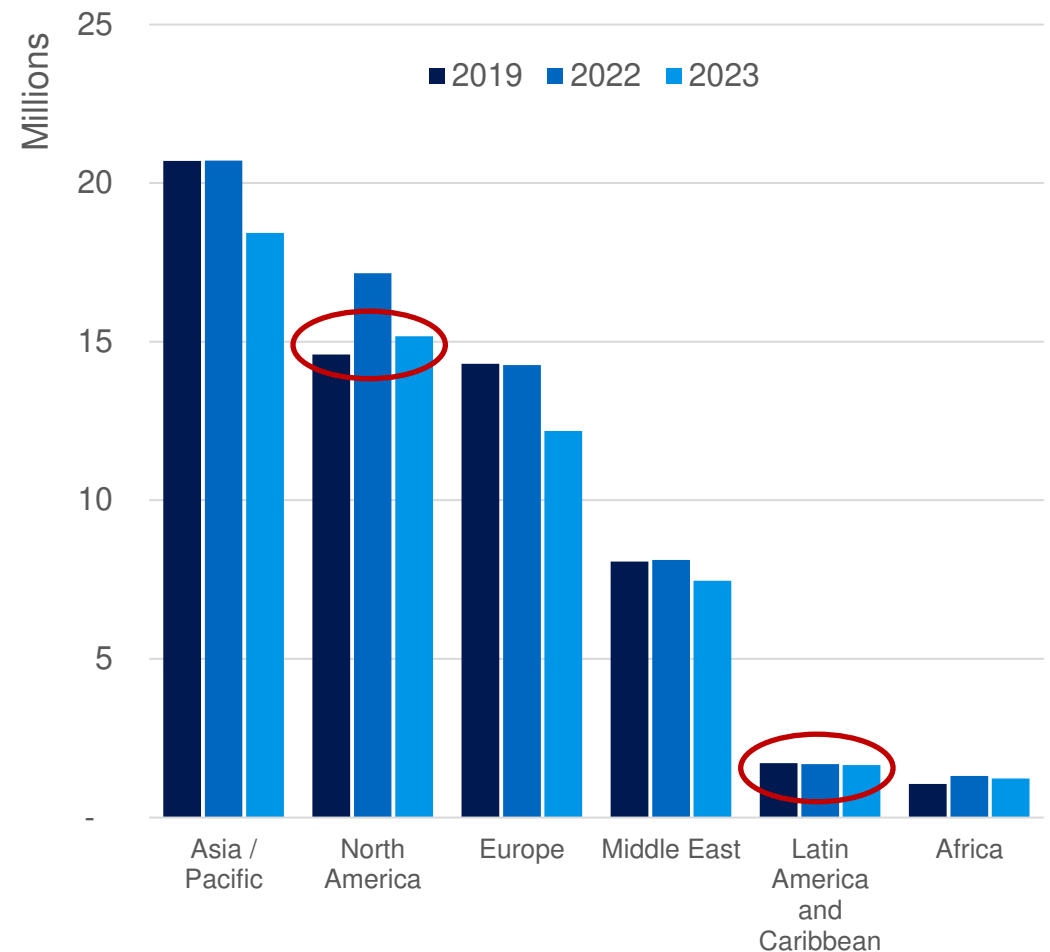
Source: IATA Monthly Tracker

World air cargo market declined 11.3% for Q1 2023 vs 2022; Latin America traffic holding steady

Monthly Cargo Tonne Kilometers

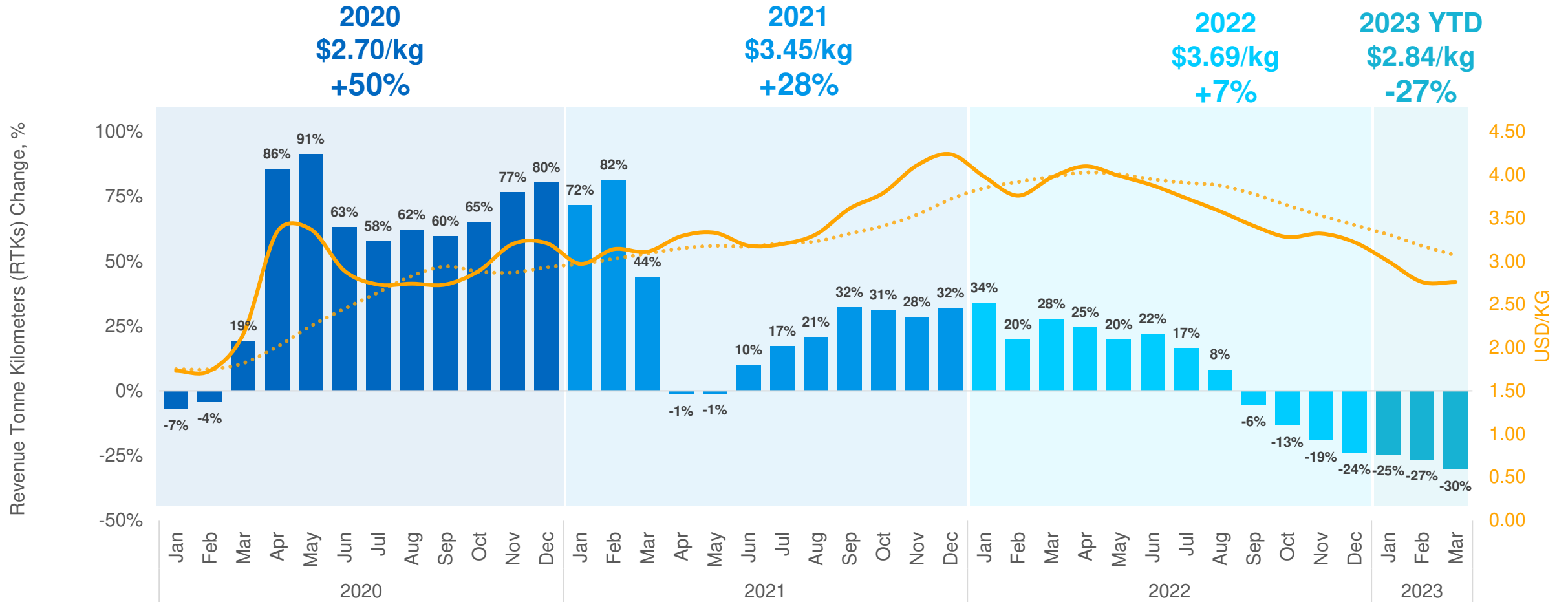


Q1 comparisons, CTKs

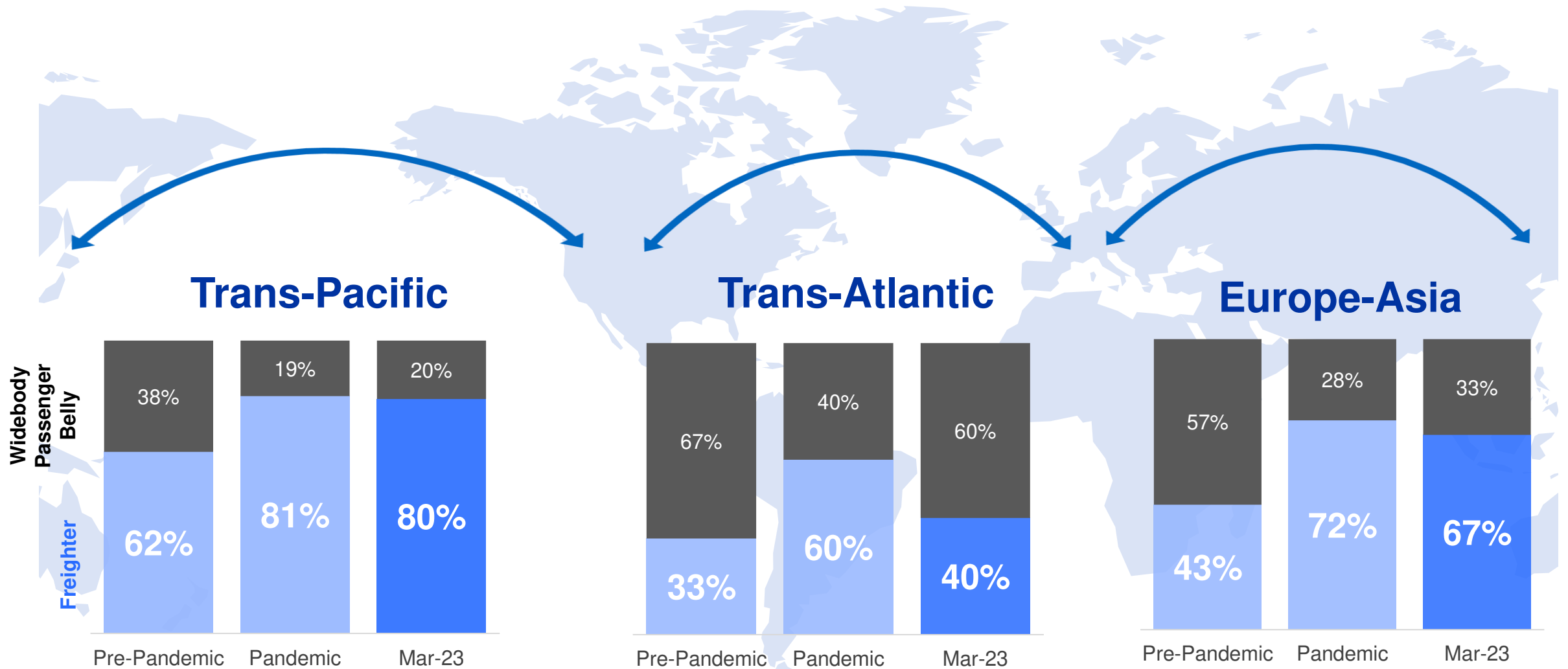


Source: IATA monthly tracker

Yields through March remain elevated +54% over pre-COVID levels



Industry remains reliant on freighters



Pre-Pandemic = March 2018 to February 2020 | *Pandemic* = March 2020 to February 2022

Freighter share of global air cargo capacity easing but remains elevated

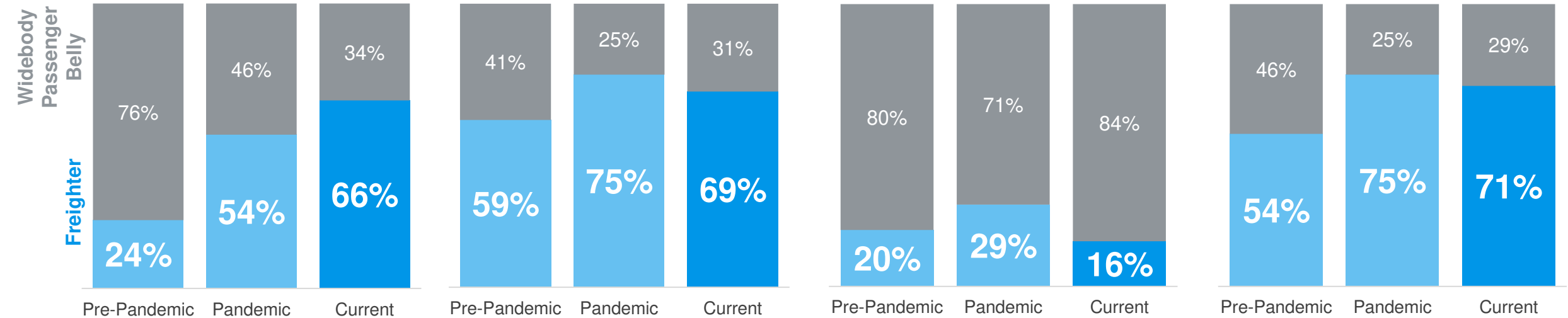


LATAM-EAST ASIA

LATAM-NORAM

LATAM-Europe

Intra LATAM



SOURCES: BR&T-E ADAPT/FlightRadar24

Yields are falling across major trade lanes as demand softens and passenger belly capacity returns



Global

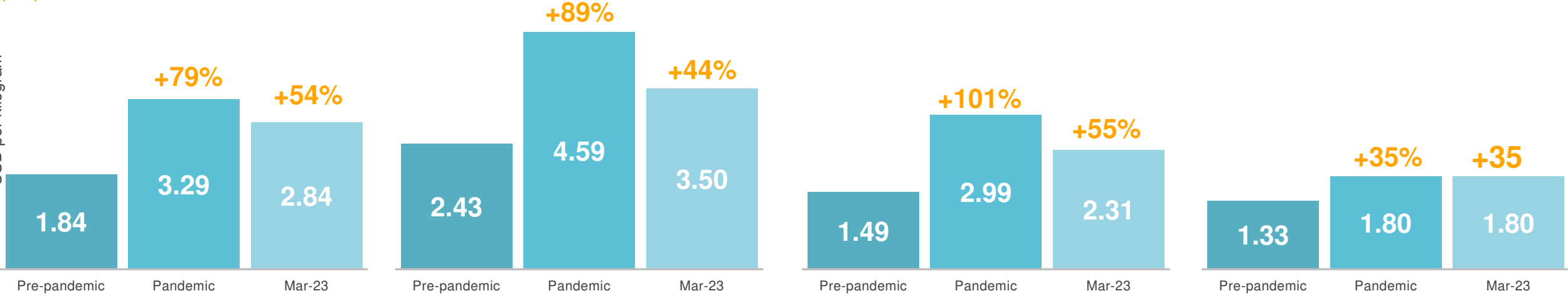
Trans-Pacific

Trans-Atlantic

NorAm-LatAm

vs. pre-pandemic

USD per kilogram



Pre-Pandemic = March 2018 to February 2020 | Pandemic = March 2020 to February 2022 | SOURCE: IATA CargoS

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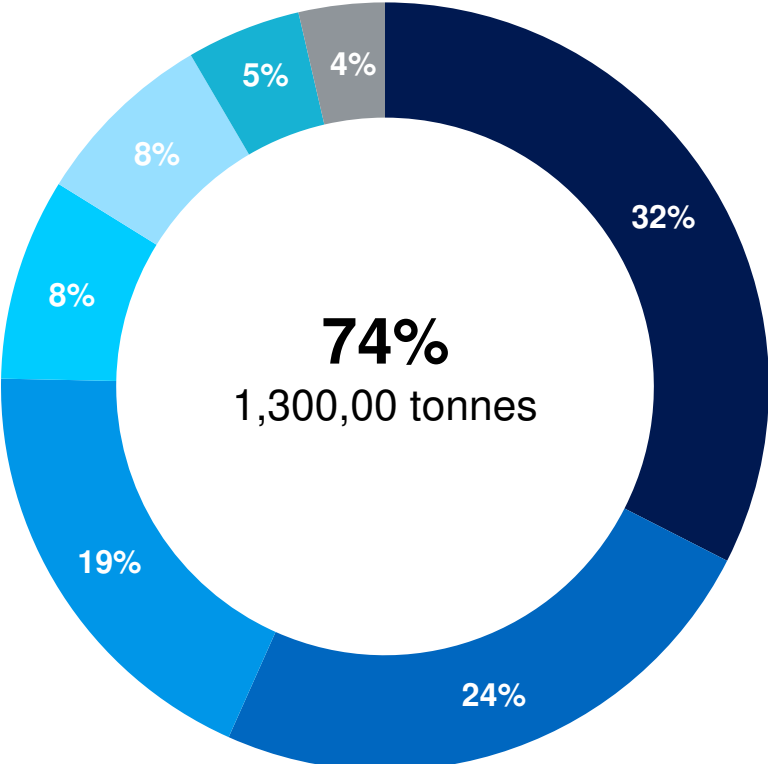
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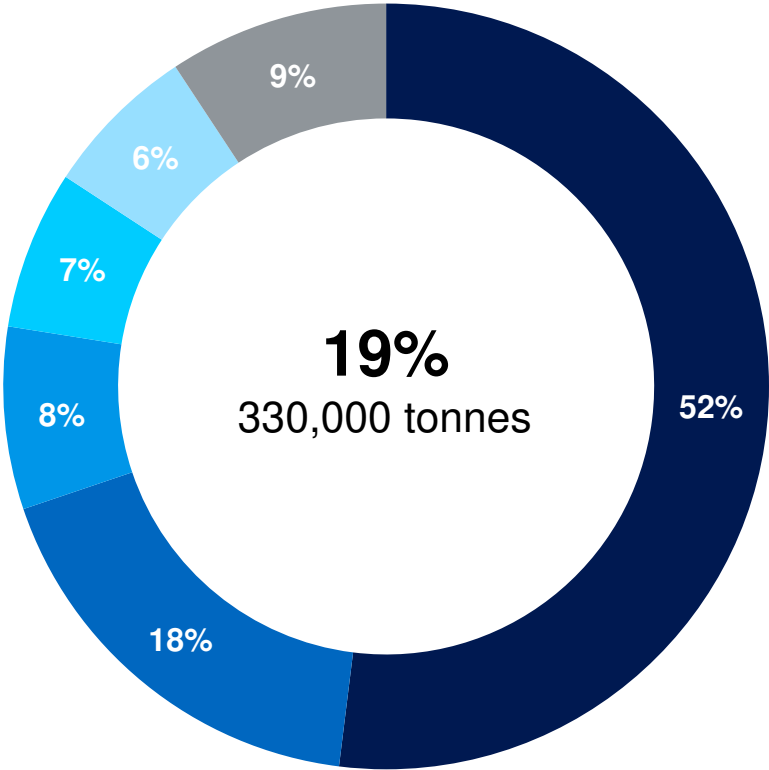
World freighter fleet forecast

South America makes up nearly 75% of traffic with North America

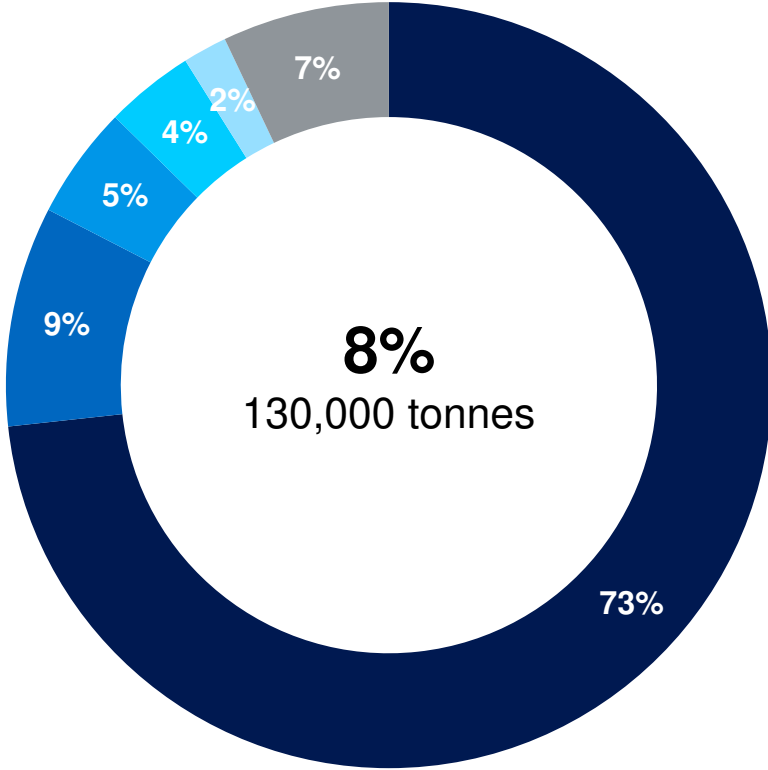
South America



Central America



Caribbean



- Chile
- Colombia
- Brazil
- Ecuador
- Argentina
- Peru
- Other

- Mexico
- Costa Rica
- Guatemala
- Honduras
- Nicaragua
- Other

- Dominican Republic
- Trinidad and Tobago
- Haiti
- Jamaica
- Barbados
- Other

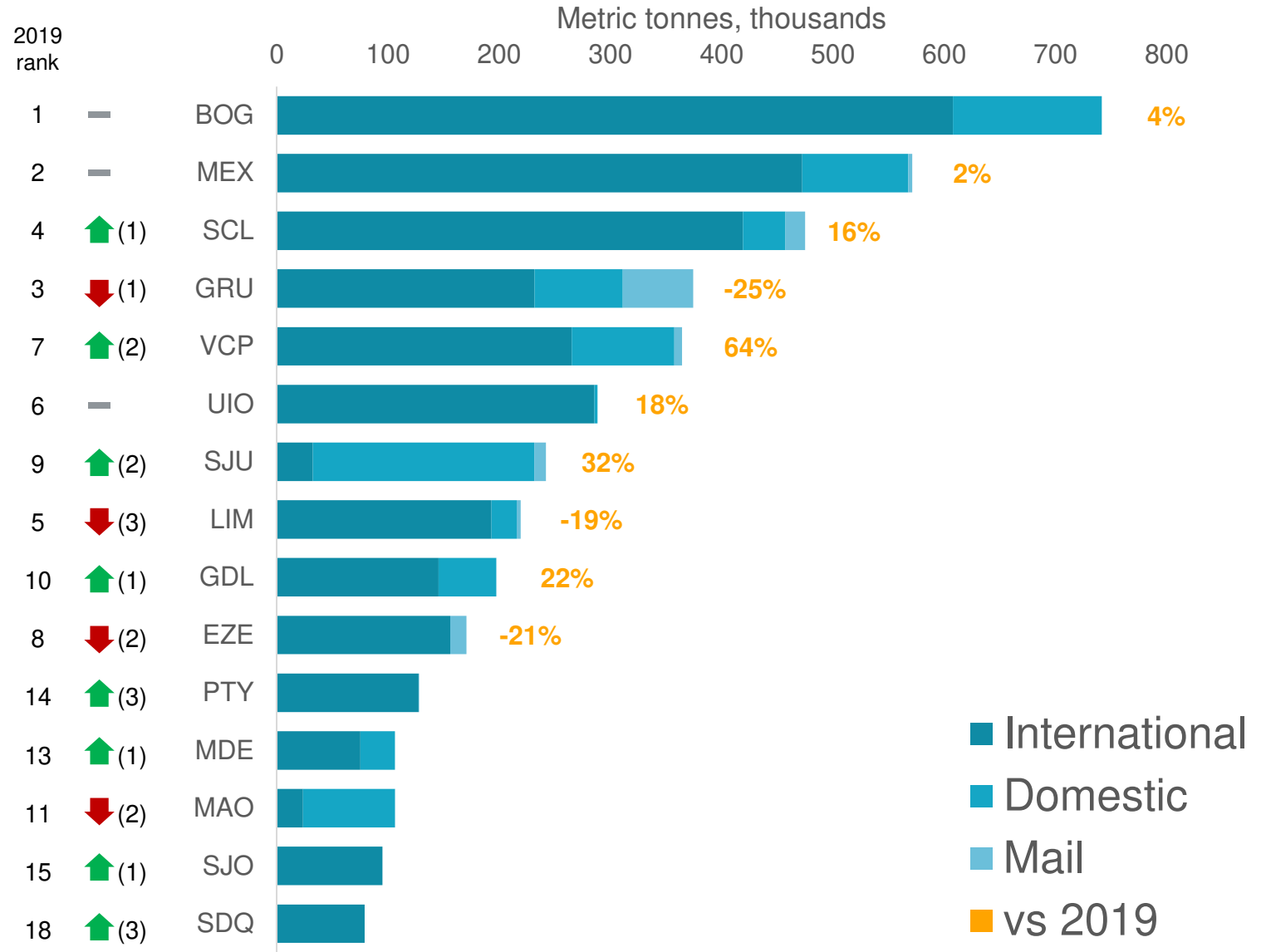
Source: US Trade Data, IHS GTA Dashboard

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74% LatAm air cargo was handled by top 15 airports in 2021



2021 Cargo handled at top Latin America airports

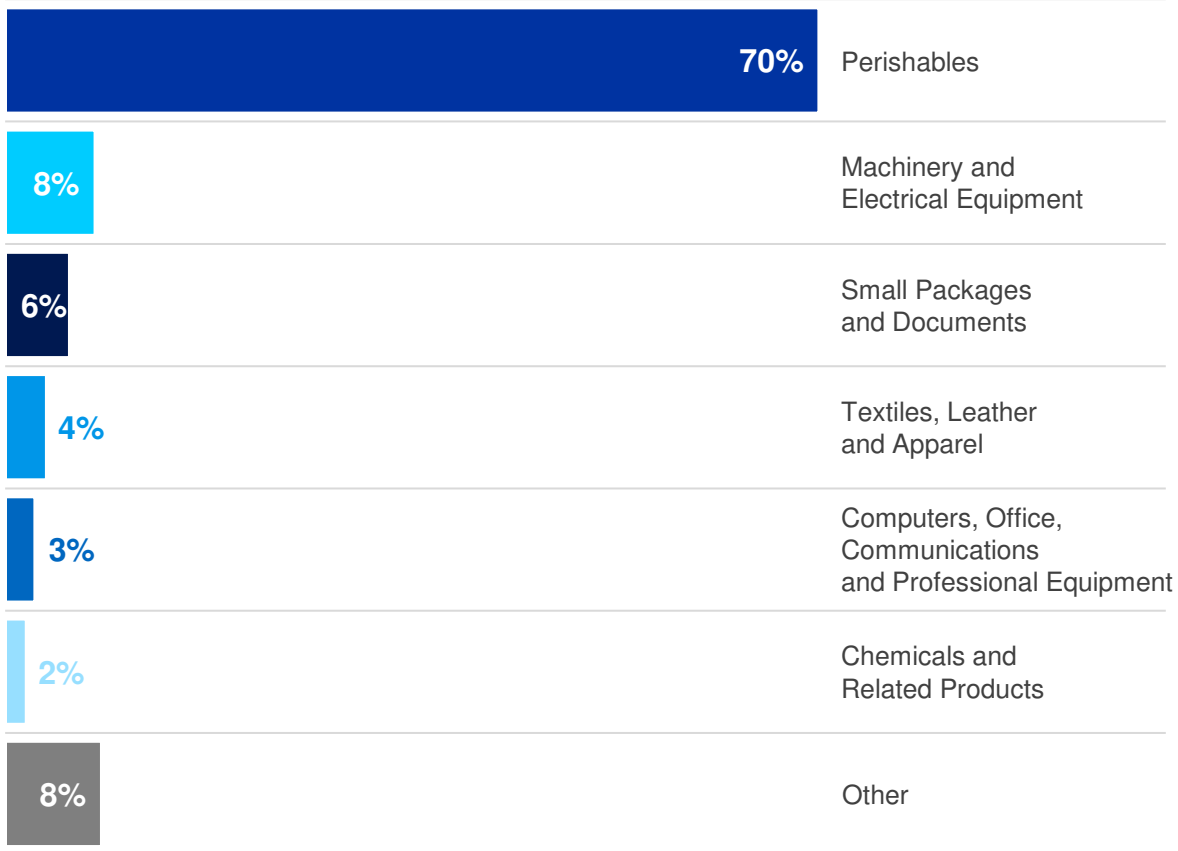


Source: Airports Council International (ACI)

For North-South air cargo flows, perishables drive northbound trade; industrial goods southbound

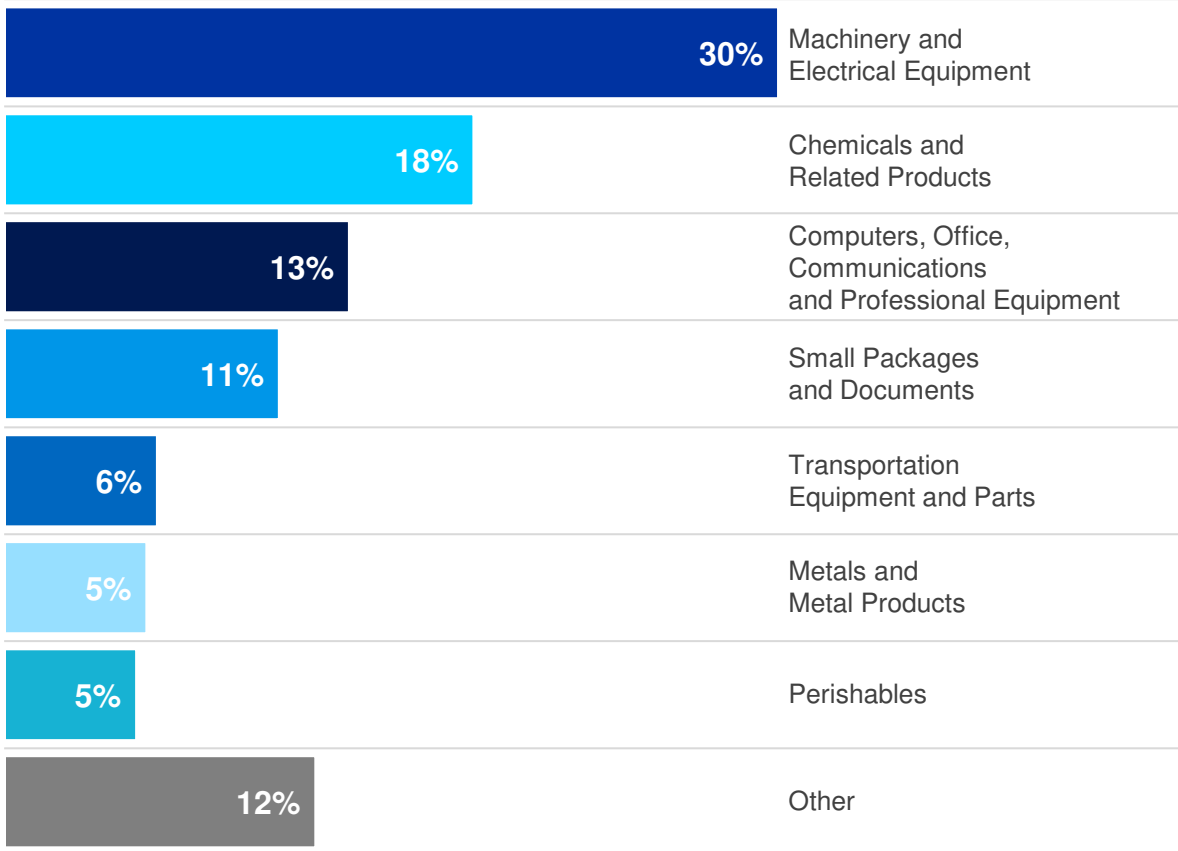
Latin America to North America

1,060,000 Tonnes



North America to Latin America

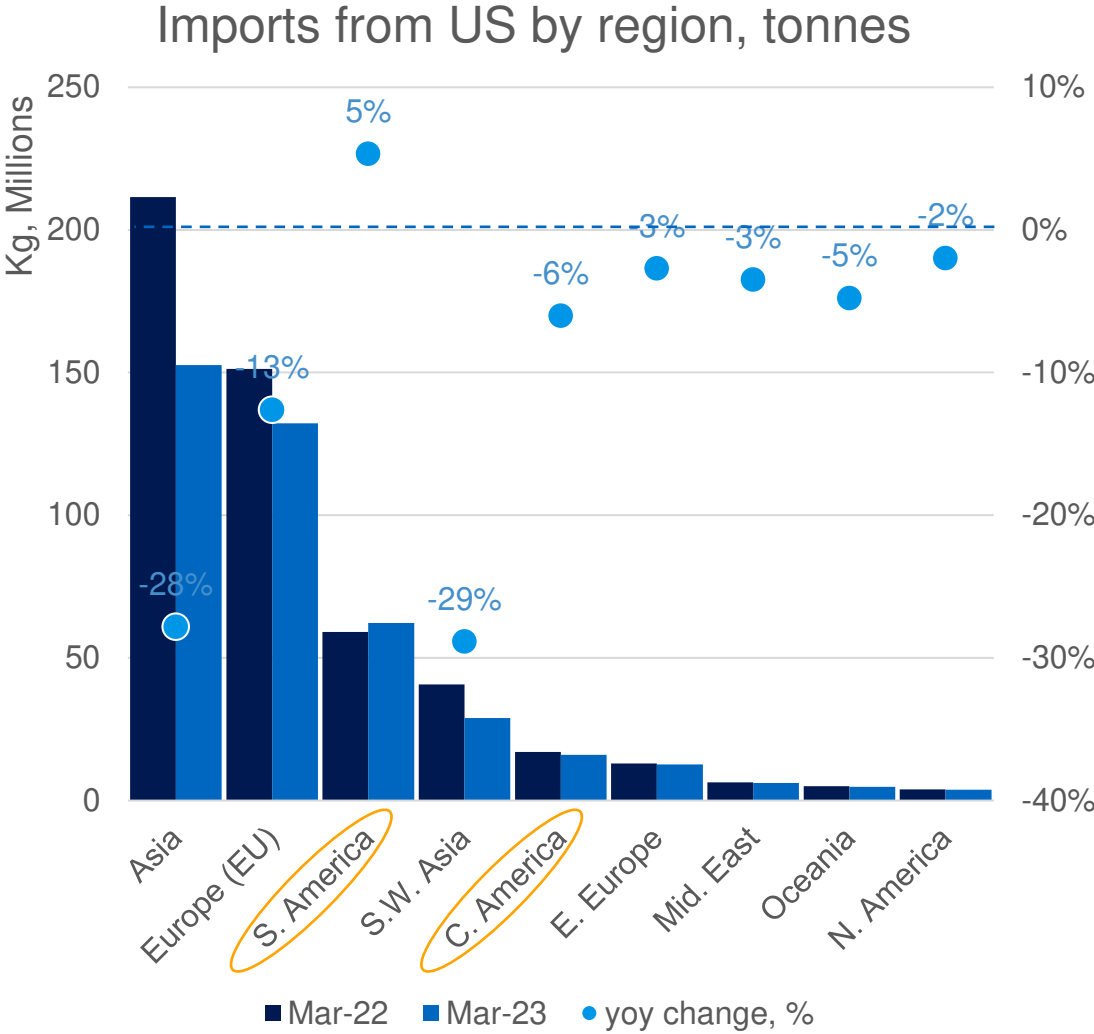
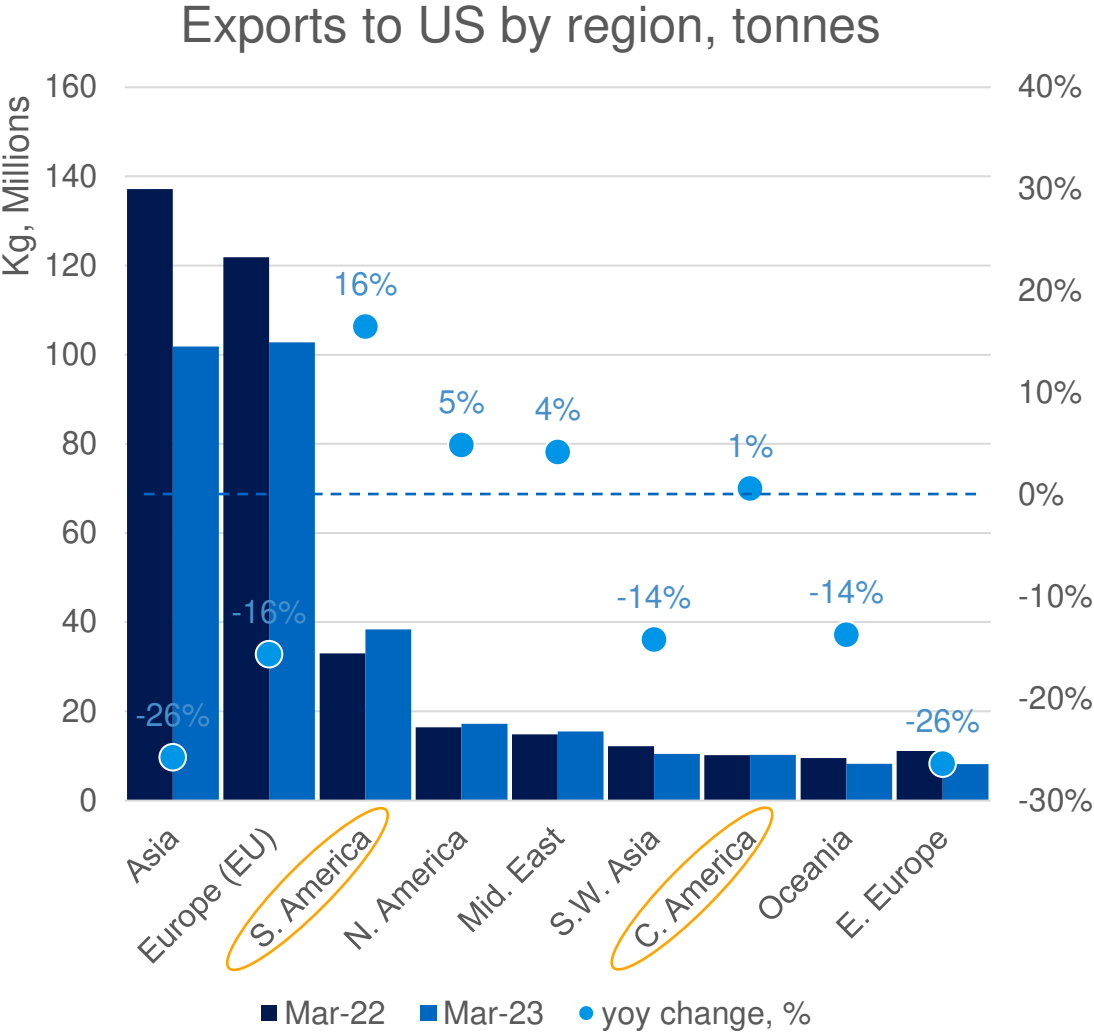
575,000 Tonnes



Source: US Trade Data, S&P Global – Trade Data (2021)

South America performing surprisingly well vs other regions

US exports and imports by region – March 2023

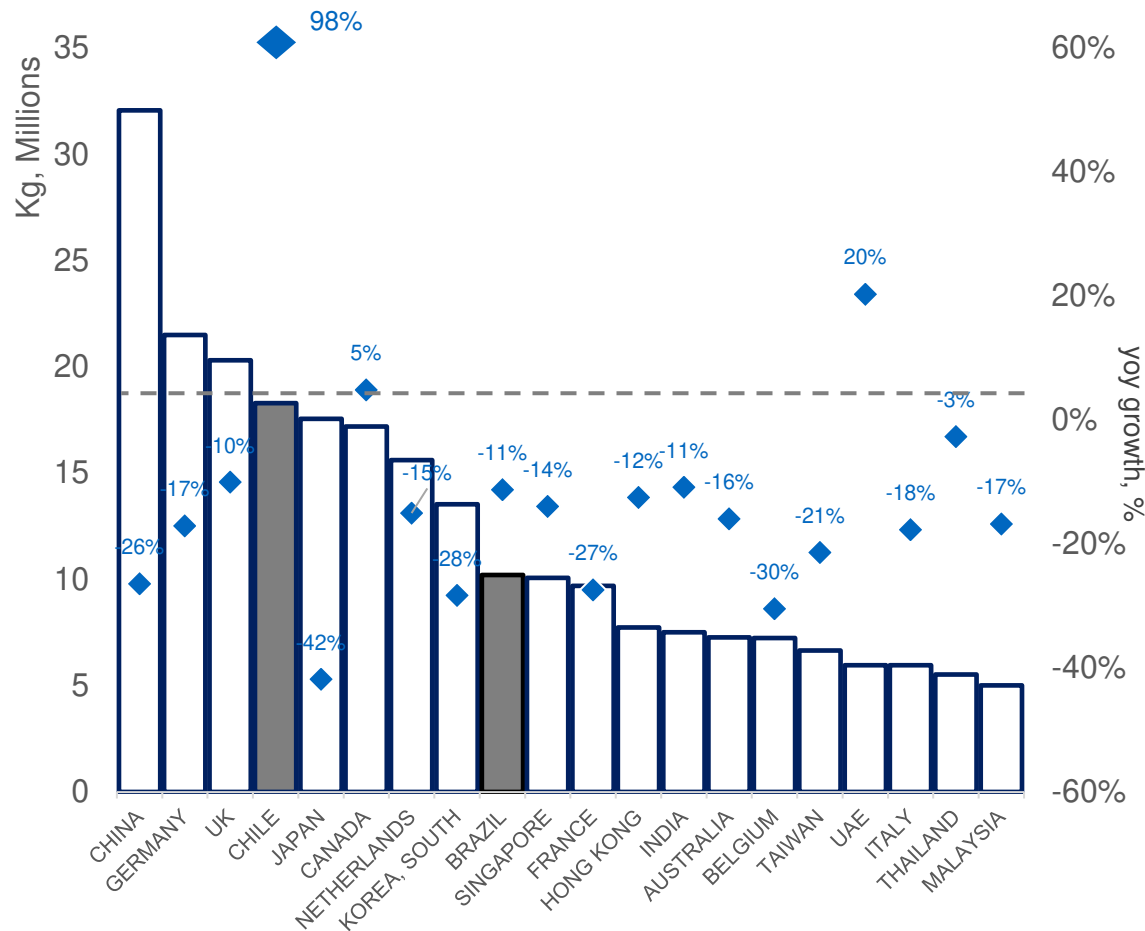


SOURCE: US Census Dept; low value shipments not included

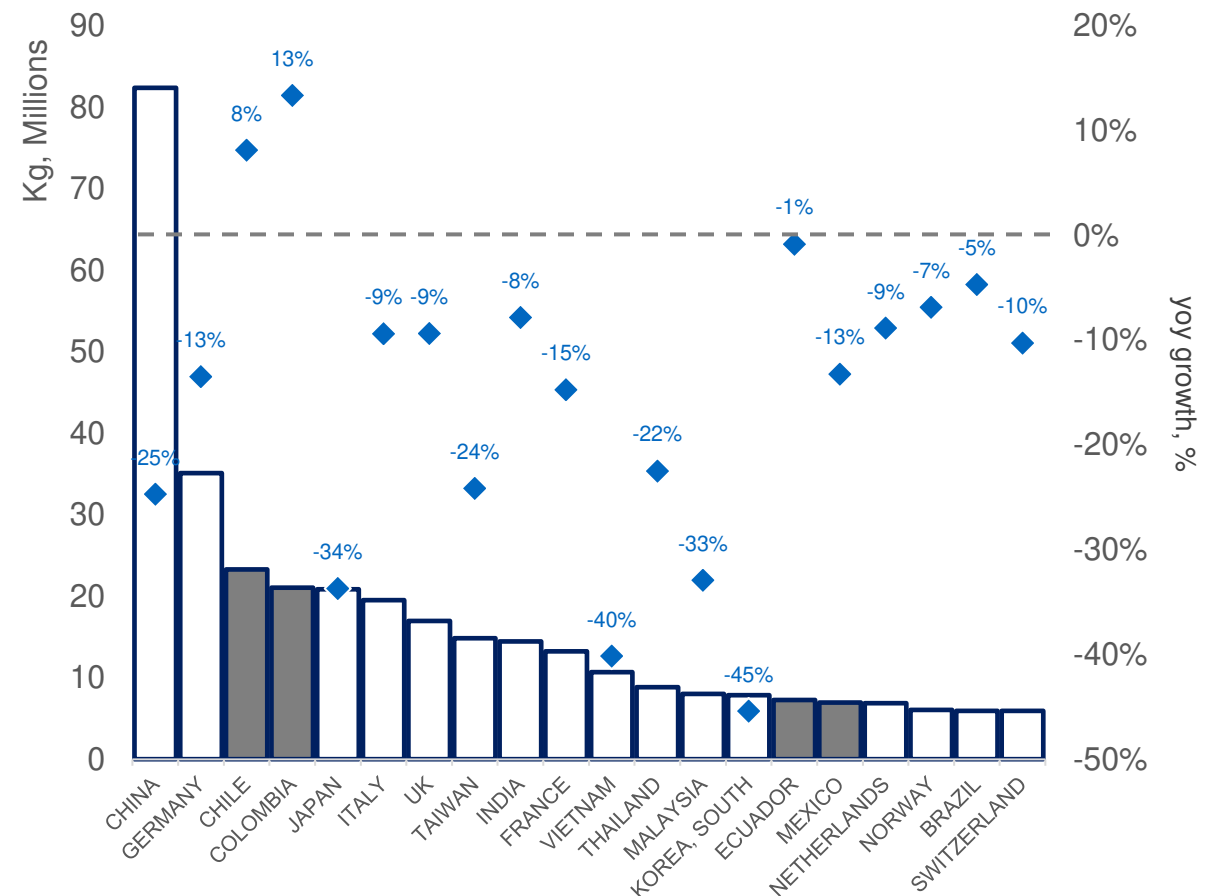
Major decline for air cargo exports/imports for virtually all top 20 air trade countries...except Chile and Colombia holding up well

Top air cargo export and import countries to/from US – March 2023

Air cargo exports from US

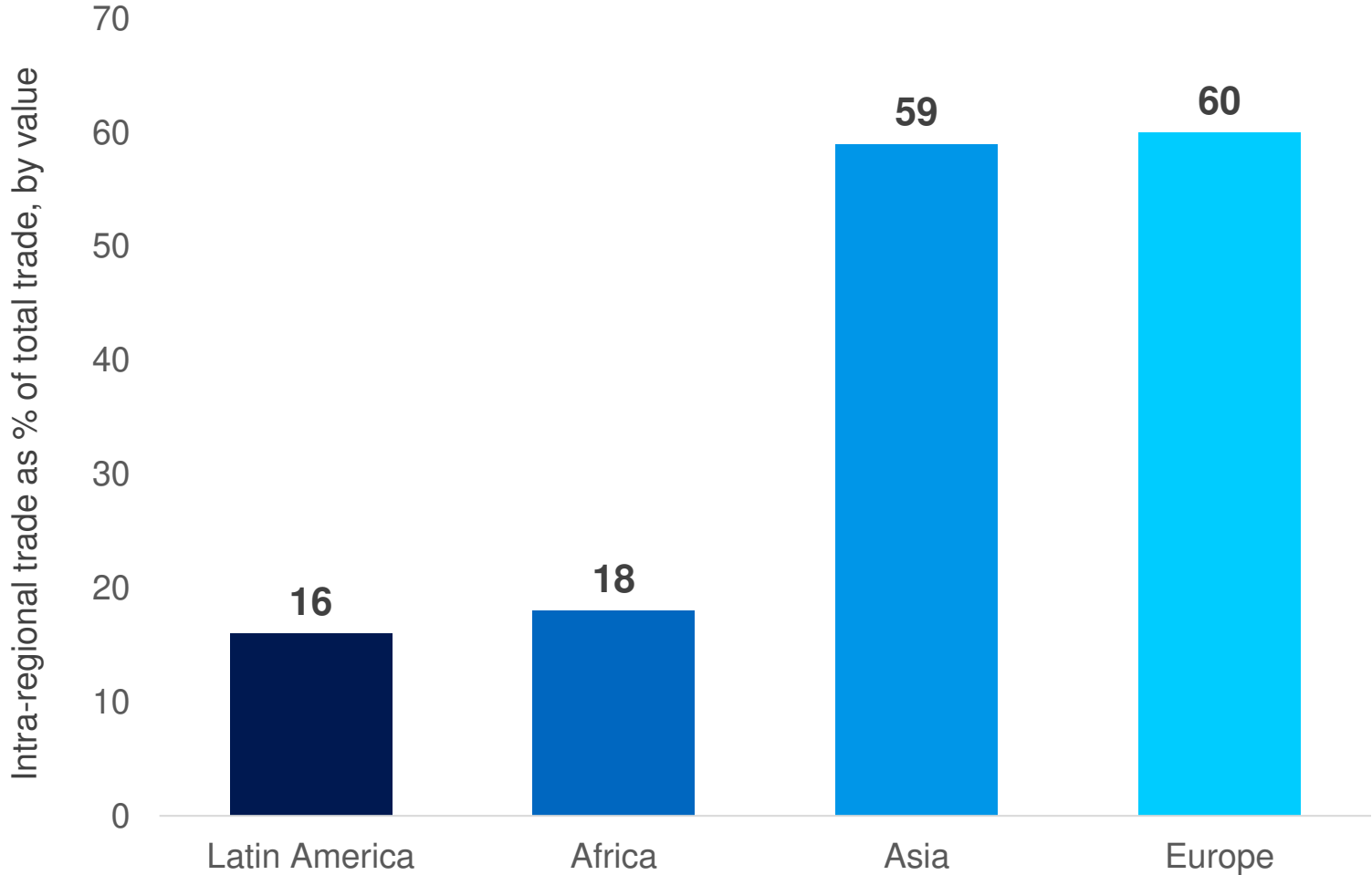


Air cargo imports to US



SOURCE: US Census Dept; low value shipments not included

Latin America intra-region trade has lagged other regions



SOURCES: Inter-American Development Bank, Eurostat, Asian Development Bank, African Development Bank

For *intra-regional* trade, freighters help to overcome unique challenges for Latin America

Darién Gap



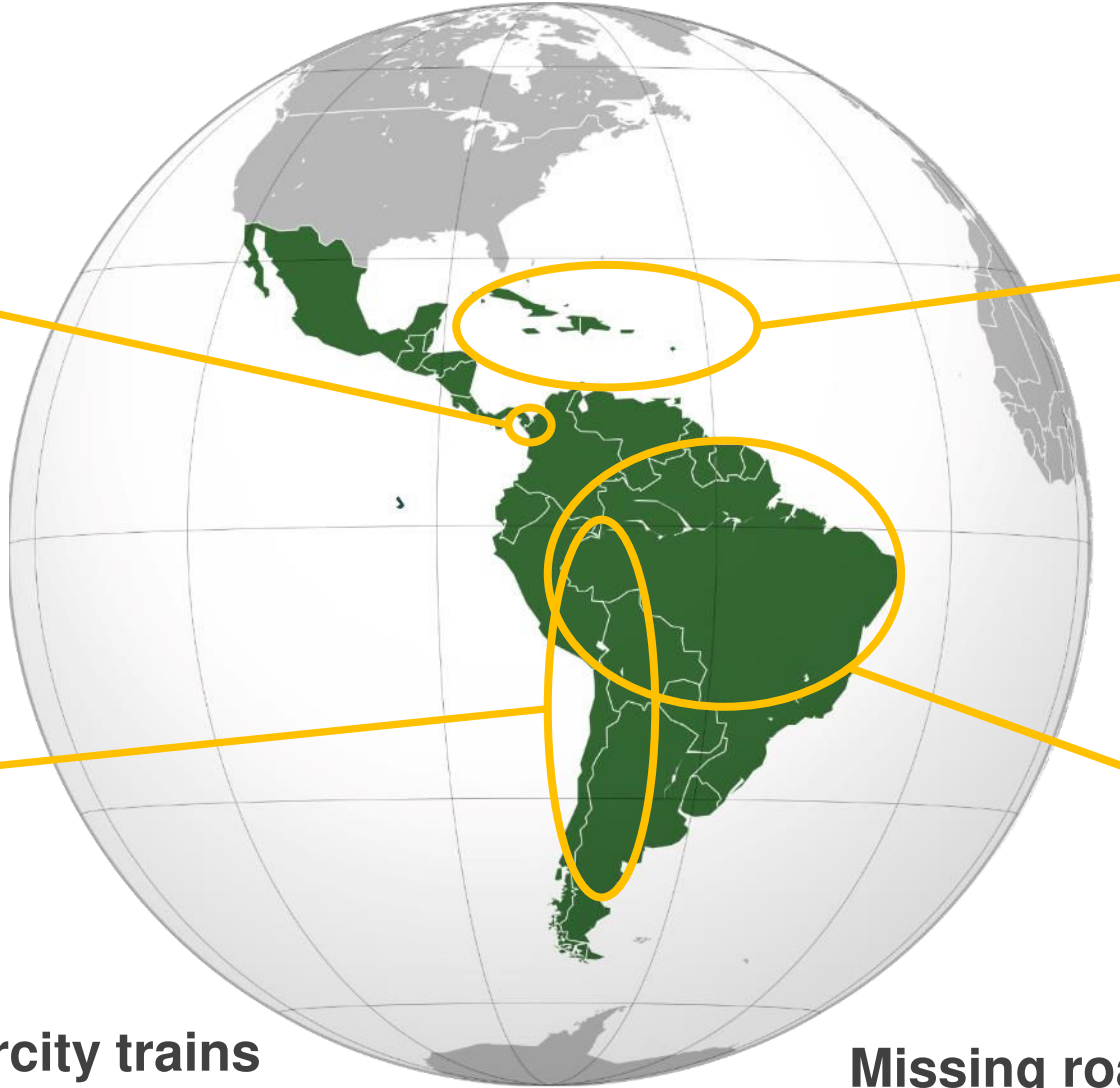
Island geographies



Andes mountains



Amazon river basin

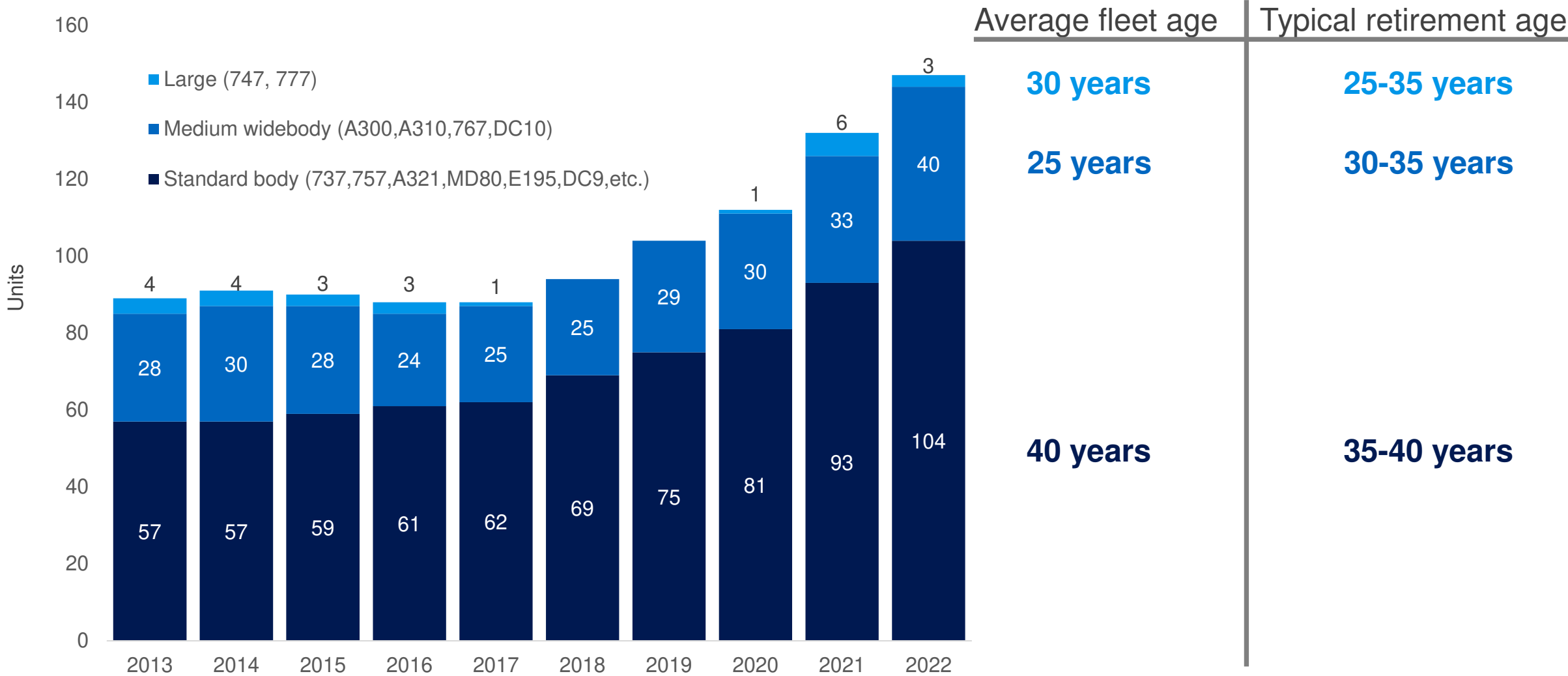


Limited intercity trains

Missing road connections

Latin American freighter fleet has grown >50% since 2017

Mexican carriers are responsible for 32 of the 59 unit increase since 2017



SOURCE: Cirium/Ascend (all jet powered excluding RJs) for EOY2022 fleet

Opportunities for future Latin American air cargo growth



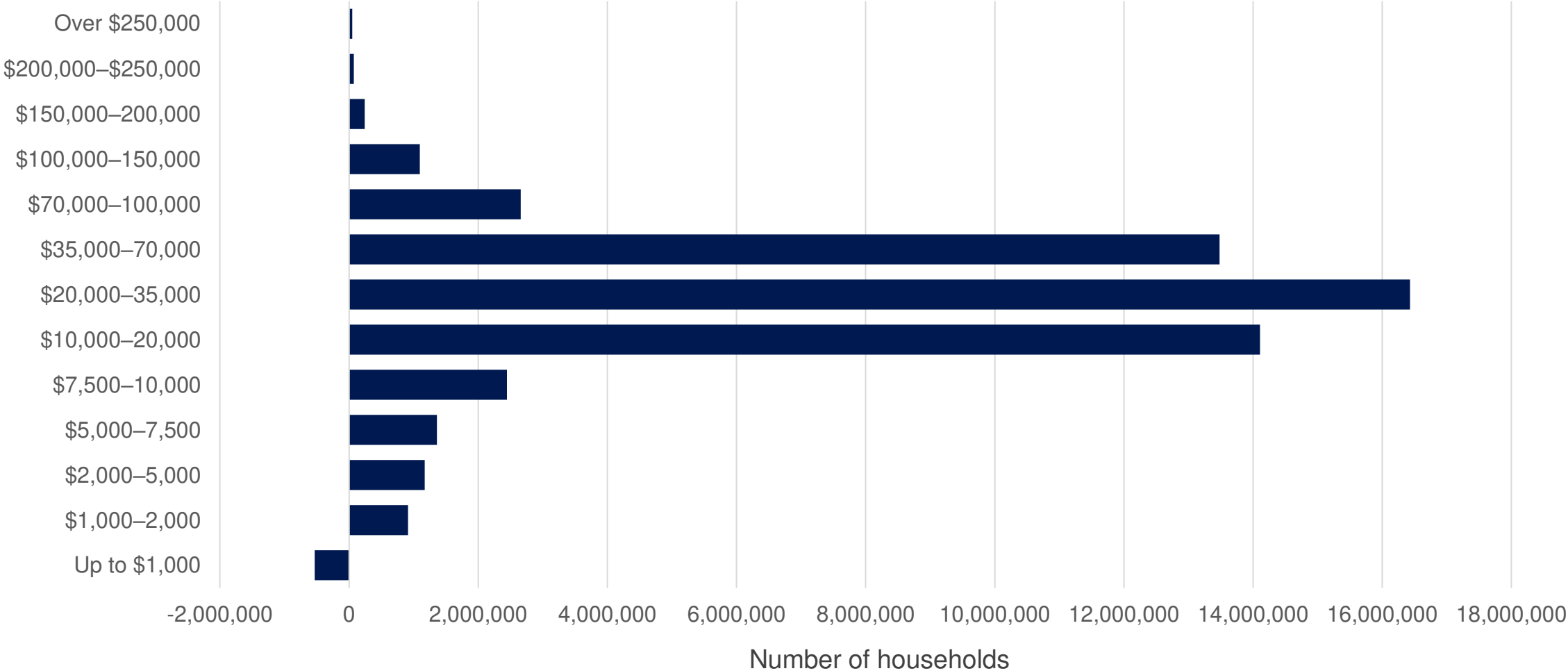
E-commerce

Intra-regional trade ties strengthened

Investments to de-risk global supply chains

Growing household incomes in key middle income ranges forecasted for Latin America, which will stimulate e-Commerce growth

difference in households by income ranges 2042 vs 2022



SOURCE: Oxford Economics

20-year Latin American air cargo growth below global forecast, but with substantial upside

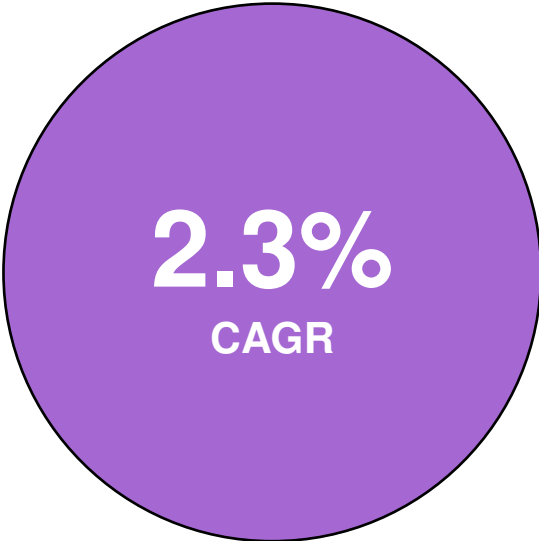
Average annual growth, 2022-2041

Macro air cargo growth drivers for Latin America:

- Build out of e-Commerce networks
- Regionalization of supply chains closer to US
- Favorable demographics (both in Latin America and in North America)

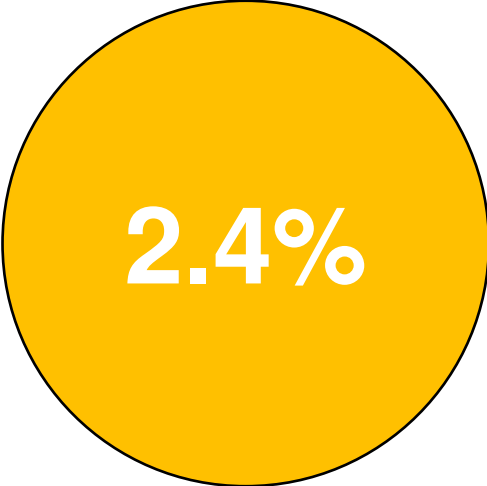
Latin America – North America

2,800K Tonnes (2041)



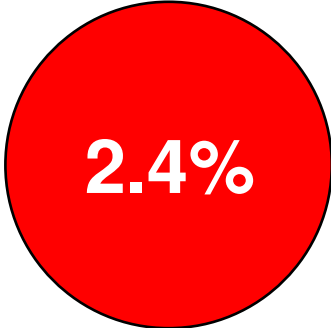
South America – North America

2,100K Tonnes



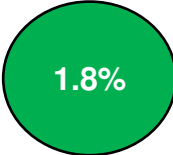
Central America – North America

535K Tonnes



Caribbean – North America

200K Tonnes



SOURCE: Boeing WACF

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Agenda



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Long-term fundamentals remain intact

Forecast period 2022-2041



World Air Cargo Traffic (CTK)

4.1%



World GDP

2.6%



World Trade

2.8%

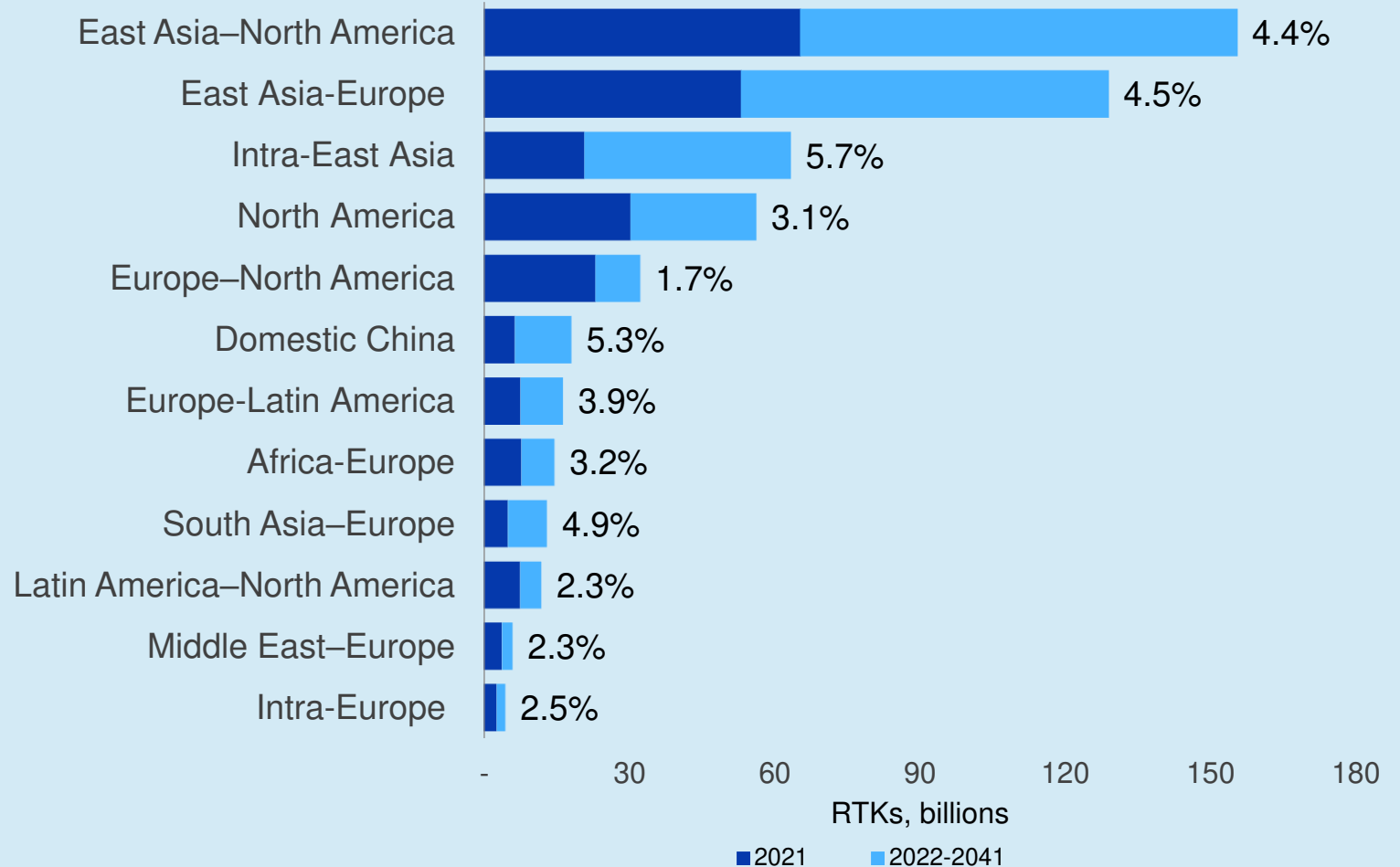


Industrial Production

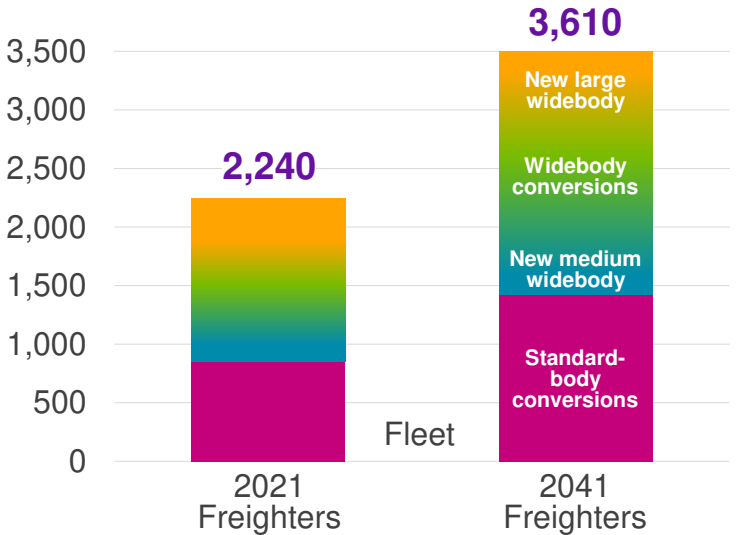
2.2%

Cargo Tonne-Kilometer (CTK)

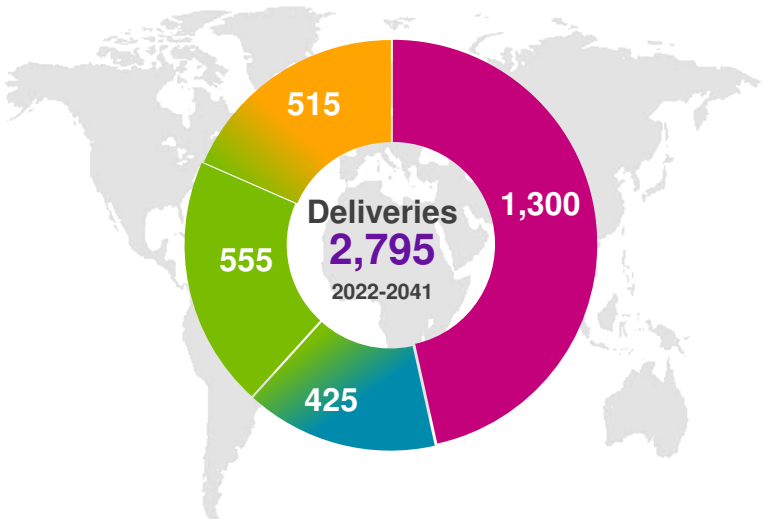
East Asia Markets will Continue to Lead Industry Growth



World freighter fleet to add 2,795 freighters to meet market demand

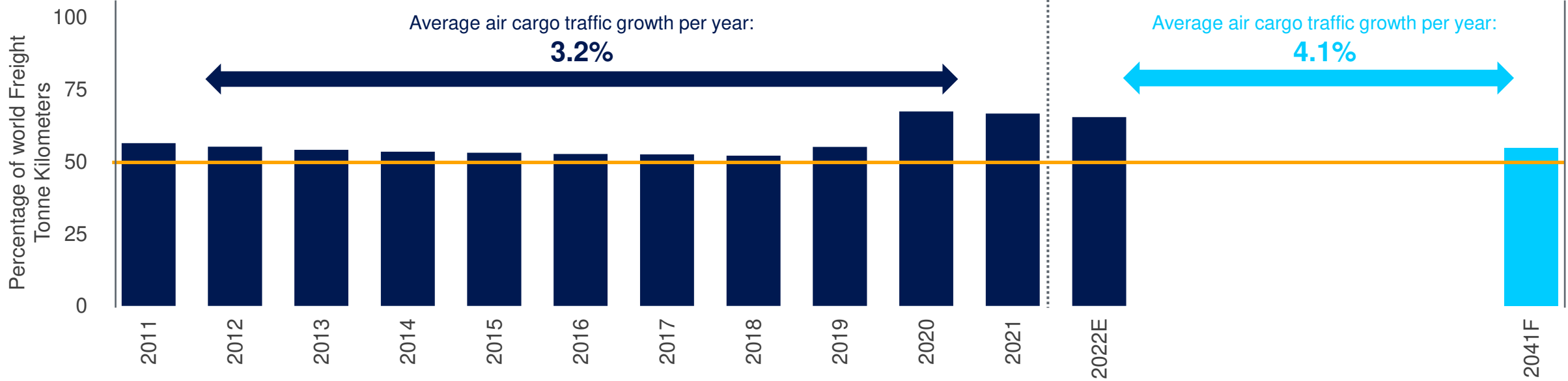


- New large >80 tonnes (777, 747, etc.)
- Widebody conversions 40-120 tonnes (767, 777, 747, A330, etc.)
- New medium widebody 40-80 tonnes (767, A330, etc.)
- Standard-body conversions <45 tonnes (737, 757, A320, A321, etc.)



Note: Russia & Central Asia domicile omitted for forecast period 2022-2041

Freighters Will Continue to Carry Over 50% of World Air Cargo Traffic



Boeing offers a complete family of freighters

Structural payload capability, tonnes [1,000 lb.]

Large widebody freighters
More than 80 tonnes of payload

140
[309]



777-8F (118.2 tonnes)

777F (107.0)

Medium widebody freighters
40 - 80 tonnes of payload

80
[176]



767-300F (56.6)

767-300BCF (56.5)

Standard-body freighters
Less than 40 tonnes of payload

40
[88]



737-800BCF (23.9)

0

737-800BCF | The market-preferred standard-body freighter

250+ orders and commitments, 115+ redeliveries



As of February 28, 2023

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767 Freighters are the preferred freighters in many markets

390+ orders and commitments

767-300F 280 orders and 225 deliveries				
				
				
				

767-300BCF 110+ orders and 60+ redeliveries				
				
				
				



777F | World's most efficient twin-engine freighter



777F Customer	Ordered	Delivered
A/S Maersk Aviation Holding	2	0
Air Canada	2	0
Air China Cargo	13	9
Air France	5	5
Altavair LLC	3	3
ANA Cargo	2	2
Atlas Air Worldwide	4	1
Boeing Capital Corp	2	2
CES Leasing Corporation	7	7
China Airlines	10	5
China Cargo	2	2
China Southern Air	15	15
CMA CGM	2	2
DAE 4 Ireland Limited	1	1
Deucalion Capital Ltd	8	8
DHL	28	18
Dubai Aerospace Enterprise	13	13
Emirates	7	2

777F Customer	Ordered	Delivered
Ethiopian Airlines	13	8
Etihad Airways	6	6
EVA Air	9	8
FedEx	52	46
Hong Kong Aviation	6	0
Korean Air	10	10
LATAM Airlines Brasil	1	0
LATAM Airlines Group	2	2
Lufthansa Cargo	12	10
NAS Aviation Services LLC	10	10
Oak Hill	4	4
Qatar Airways	28	26
Silk Way West Airlines	5	0
Turkish Airlines	8	8
Volga-Dnepr UK Ltd	6	0
Western Global Airlines	2	0
Unidentified	19	6
Total	319	239

Orders / Deliveries as of February 28, 2023



777-8F operator base continues to expand



LUFTHANSA GROUP

ANA Cargo

2027 EIS

118t Structural payload



silkway
west airlines

Ethiopian
የኢትዮጵያ



More volume
More payload
Lowest cost per tonne

84 orders and commitments



777-8F

31% lower CO₂ emissions per tonne
60% smaller noise footprint
vs 747-400F

Levers for sustainable aviation



Fleet
Renewal

15-30+% more
efficient freighters



Operational
Efficiency

Up to **10%** in
fuel savings



Renewable
Energy

100% SAF
compatible
before 2030



Advanced
Technology

75%
sustainable
R&D spending

