

## Airfreight - Global

## Air Cargo Watch #11 - seasonal peak arriving, but watch 2024 supply pressure

Industry Overview

#### Monthly Air Cargo Watch to track the airfreight industry

Our monthly Air Cargo Watch includes high frequency airfreight data to check the pulse of the industry. The worst of air cargo demand headwinds appears to have passed – but demand remains sluggish, down YoY through August/September, and our checks suggest a modest peak season ahead. The recovery in air cargo supply has somewhat stalled for now, although we see further belly capacity recovery ahead (only 85% of 2019 still) led by ramping Chinese flights and new aircraft deliveries. Air cargo rates have held around 20-30% above 2019 in recent months and could sequentially rally into the 4Q peak, but we see another downward leg to freight rates on supply pressure into 2024.

#### Demand: Headwinds abating, modest peak ahead

The worst of air cargo demand headwinds appears to have passed - with July 2023 traffic trending -0.8% YoY (up from -15% YoY in January 2023). Asia strengthened slightly MoM and recovered to 96% of 2019 levels in July, while Europe slid further to 86% of normal during the month. However high frequency data suggests no real demand inflection yet with August and September shipments still trending YoY lower led by North America and Europe. Looking ahead to the peak – airlines report that demand is seasonally improving supported by new tech product launches and sales events, but readthroughs from ocean suggest a more modest peak should be expected.

### Supply: Capacity recovery stalls, but more coming in 2024

Air cargo supply ramp has stalled for now holding at 103% of normal levels in July 2023. Freighter capacity held at 118% of 2019 levels in July 2023, while belly capacity remains stuck at 85% of 2019 levels. We see further upside to belly capacity ahead with timetabled flight data suggesting that belly capacity may further rebound as new widebody aircraft are delivered and with flights to/from China set to ramp into the upcoming winter season (Chinese airlines are targeting 70-80% international flight restoration by December 2023).

#### Rates: Peak upturn ahead, but more downside into 2024

Air cargo freight rates have held broadly flat through August and September 2023 at 20-30% above 2019 levels helped by the worst of demand headwinds passing and with supply additions stalling for now. Seasonality could drive a near-term sequential bounce in rates into 4Q23. But we don't think the worst has passed for air cargo freight rates yet and we see more downside into 2024 as passenger belly capacity continues to add.

#### Airlines: Cargo loads still below pre-COVID

Cargo load factors across Asian airlines region are broadly below pre-COVID levels with demand failing to keep up with supply. August cargo yields for China Airlines & EVA ramped to 23%/24% above pre-Covid levels respectively (up from 15%/18% in July).

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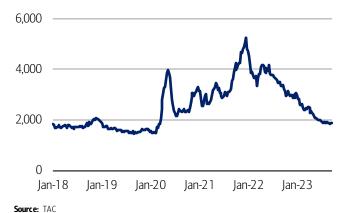
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## Airfreight rates

#### Exhibit 1: Weekly Global Baltic Airfreight Index

Baltic Airfreight index now at 1,893 down-44% YoY



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## **Exhibit 2: Baltic Airfreight Shanghai to US and Europe (US\$/kg)** Shanghai-Europe +46% and Shanghai-US +46% vs 2019 in the latest week



Source: TAC

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#### Exhibit 3: Key airfreight rates overview table, % change on 3Q23 data

Global rates are down - 12% QoQ in 3Q23 so far

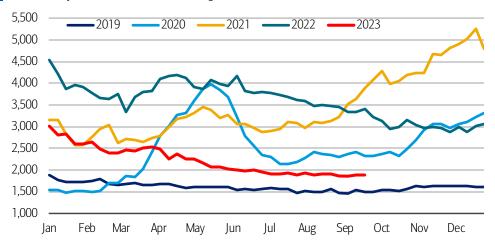
	Baltic Airfreight - Global	BAF-HK	BAF- Shanghai	BAF- Singapore	BAF- London	BAF- Chicago	Shanghai- Europe	Shanghai- US	HK- Europe	HK-US	HK-SE Asia	London- US	Singapore- SE Asia
1Q21	2,803	2,828	5,165	423	2,547	1,702	4.5	6.1	4.3	5.6	1.8	4.9	1.8
2Q21	3,136	3,545	5,867	425	2,755	1,672	4.5	7.7	4.6	8.0	1.8	5.5	1.9
3Q21	3,284	3,724	6,521	412	2,664	1,702	5.0	8.5	4.8	8.5	2.0	5.0	1.8
4Q21	4,562	5,230	9,898	417	2,928	2,322	7.8	12.8	7.5	11.6	2.5	4.9	1.8
1Q22	3,844	4,300	7,373	484	2,771	2,151	6.4	9.0	6.0	9.3	2.3	4.5	2.1
2Q22	3,995	4,226	7,717	564	2,890	2,424	7.2	8.9	6.1	8.9	2.3	4.2	2.5
3Q22	3,529	3,909	6,845	600	2,340	2,312	6.6	7.7	6.3	7.7	2.3	3.5	2.6
4Q22	3,002	3,288	5,477	528	2,210	1,973	5.5	5.9	5.7	6.1	2.1	3.3	2.3
1Q23	2,591	2,736	4,542	495	1,877	1,958	4.3	5.0	4.5	5.2	1.9	2.7	2.2
2Q23	2,148	2,742	3,777	425	1,512	1,436	3.3	4.4	3.8	4.9	1.8	1.9	1.9
3Q23	1,899	3,056	3,542	354	1,098	1,226	3.0	4.3	3.6	4.5	1.6	1.3	1.5
QoQ	-12%	11%	-6%	-17%	-27%	-15%	-9%	-4%	-4%	-7%	-12%	-35%	-17%
YoY	-46%	-22%	-48%	-41%	-53%	-47%	-54%	-45%	-42%	-41%	-30%	-65%	-41%
YTD YoY	-41%	-32%	-46%	-23%	-44%	-33%	-48%	-46%	-35%	-43%	-23%	-51%	-23%
vs 2019	25%	86%	34%	72%	25%	-6%	28%	36%	40%	38%	45%	29%	71%

Source: TAC, BofA Global Research

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#### Exhibit 4: Weekly Global Baltic Airfreight Index by year, 2019-23

Latest weekly rate index still on a weakening trend



Source: TAC, BofA Global Research



## Airfreight demand

### Global cargo traffic

Exhibit 5: Monthly global air cargo demand growth YoY %

Demand was down -0.8% YoY in July compared to -3.4% YoY in June

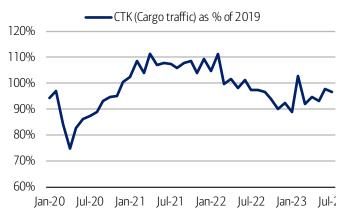


Source: BofA Global Research estimates, IATA

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#### Exhibit 7: Air cargo demand (CTK) as % of 2019 levels

Demand was at 97% of 2019 levels in July similar to 98% in June

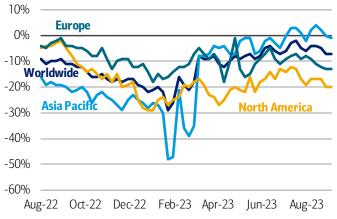


Source: RofA Global Research estimates

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## Exhibit 9: Weekly cargo chargeable weight, YoY % since Aug 2022

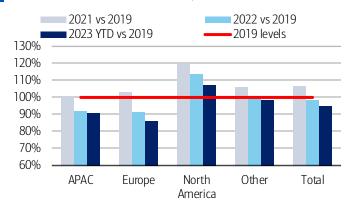
Global demand was down -7% YoY in the week of Sep  $10^{th} 2023$ 



Source: WorldACD, BofA Global Research

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#### Exhibit 6: Air cargo demand (CTK) vs 2019 levels by major regions 2022 demand was 2% below 2019 levels, YTD2023 so far at -5% vs 2019

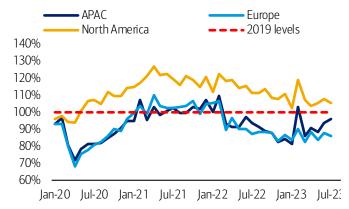


Source: IATA, BofA Global Research. YTD up to February 2023

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## Exhibit 8: Monthly air cargo demand by major regions vs 2019 levels

Demand from North America continues to be strong at 106% of 2019 levels

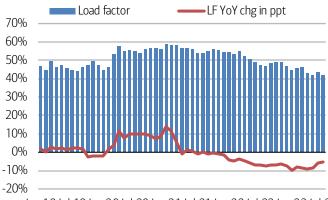


Source: IATA, BofA Global Research

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## Exhibit 10: Global cargo load factor and YoY changes in ppts

Load factor down to 42.2% in July from 43.4% in June

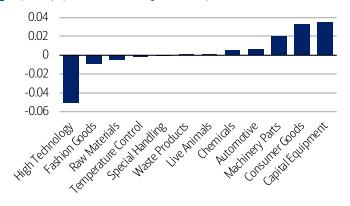


Jan-19 Jul-19 Jan-20 Jul-20 Jan-21 Jul-21 Jan-22 Jul-22 Jan-23 Jul-2

Source: IATA, BofA Global Research estimates

#### Exhibit 11: China air cargo: Growth by industry v. 2019, 6M2023

Capital equipment & consumer goods made positive contributions YTD2023



Source: Company report

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### Leading demand indicators

### Exhibit 13: Global air cargo demand yoy growth v. ISM new orders

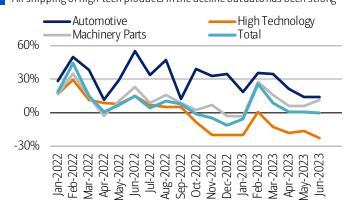
ISM new orders lead air cargo demand by 3 months with 0.65 correlations



Source: BofA Global Research, Bloomberg

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## **Exhibit 12: China monthly air cargo trade:** % **change from 2019 levels**Air shipping of high-tech products in the decline but auto has been strong



Source: Company report

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## Exhibit 14: Air cargo demand v. US inventory-to-sales ratio (inverted)

I/S ratios lead air cargo demand by 3 months with -0.56 correlations



Source: BofA Global Research, Bloomberg

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### Industry demand data

Global Industrials: BofA Industrial Momentum Indicator pauses – still waiting for a 'break out'

#### **Exhibit 15: BofA Industrial Momentum Indicator vs Global Manufacturing PMI**

BofA Industrial Momentum Indicator typically leads Global Manufacturing PMI



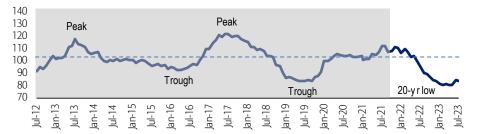
**Source:** BofA Global Research, Backtested period = January 2012, through January 2019, Actual Performance since February 2019. This performance is back-tested and does not represent the actual performance of any account or fund. Back-tested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein. Disclaimer: The indicator identified as BofA Industrial Momentum Indicator above is intended to be an indicative metric only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise relied upon by third parties for any other purposes, without the prior written consent of BofA Global Research. This indicator was not created to act as a benchmark



#### Global Memory Tech: BofA memory indicator muted in July, but Aug-Sept recovering

#### Exhibit 16: BofA Memory Indicator is derived from YoY change in price/exports/billings

July indicator (still trough cycle at 84) slightly lower vs June but better than Jan-May thanks to blended ASP recovery offsetting weakened bit-shipment growth; Korea's semis exports also recovered in Aug



Source: DRAMeXchange, WSTS, MoTIE Korea, BofA Global Research

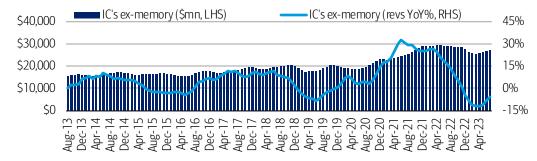
The shaded area represents backtested results from January 1991 to March 2021. The unshaded area represents actual performance since April 2021. This performance is backtested up to March-2021, and does not represent the actual performance of any account or fund. Back-tested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein. Disclaimer: The BofA Memory Indicator is intended to be an indicative metric only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise relied upon by third parties for any other purpose, without the prior written consent of BofA Gobal Research. This indicator was not created to act as a benchmark.

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#### Global Semiconductors: Semis sales decline as inventory digestion continues

#### Exhibit 17: IC ex-memory unit trends over the last 10 years (3mma)

IC ex-memory sales were down 5.8% YoY (3mma)



Source: SIA, BofA Global Research

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### Ocean vs air shipping

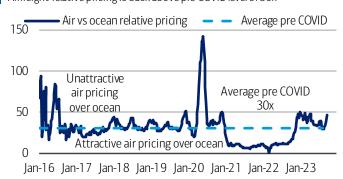
## Exhibit 18: Vessel capacity stuck in congestion (% of fleet), 2020-23

Congestion down to 4.9% of world supply now



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## **Exhibit 19: Airfreight relative pricings to ocean, China-Europe route** Airfreight relative pricing is back above pre-COVID level of 30x

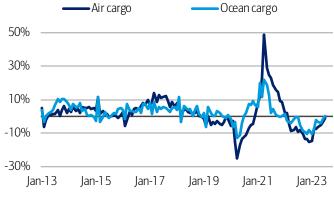


Source: BofA Global Research estimates, Bloomberg



#### Exhibit 20: Air and ocean cargo demand growth YoY %, 2013-23

Air cargo demand seeing sharper deceleration than ocean

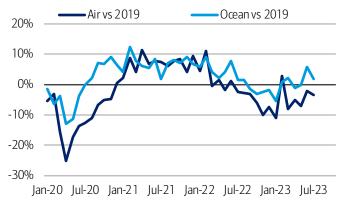


Source: Bloomberg, IATA, BofA Global Research estimates

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### Exhibit 21: Air and ocean demand compared to 2019 levels

Air cargo demand is -3% below 2019 vs ocean at +2% in July



Source: Bloomberg, IATA, BofA Global Research estimates

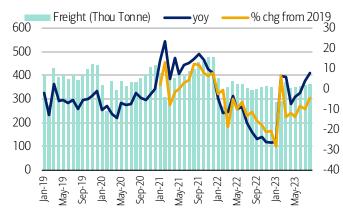
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### Airport cargo traffic

#### Asian airports

Key cargo hubs in the region (Hong Kong, Shanghai, Singapore, Beijing, Taipei, Seoul):

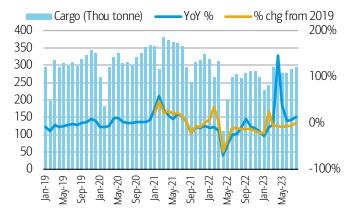
**Exhibit 22: Hong Kong – airport cargo traffic ('000 tonne) and % chg** July/August cargo traffic were -10%/-5% of 2019 levels, +4%/+8% YoY



Source: BofA Global Research, company report

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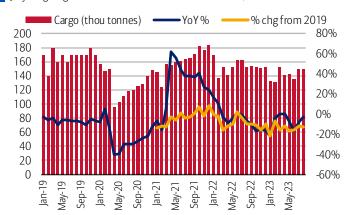
# Exhibit 23: Shanghai PVG- airport cargo traffic ('000 tonne) and % chg July/August cargo traffic were -6%/-1% of 2019 levels, +5.5%/+12% YoY



Source: BofA Global Research, company report

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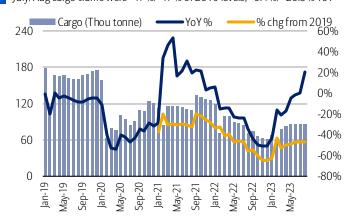
# **Exhibit 24: Singapore – airport cargo traffic ('000 tonne) and % chg** July/Aug cargo traffic were -12%/-12% of 2019 levels, -8%/-3% YoY



Source: BofA Global Research, company report

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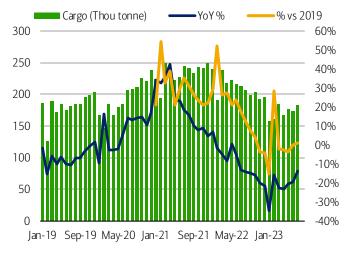
## **Exhibit 25: Beijing PEK – airport cargo traffic ('000 tonne) and % chg** July/Aug cargo traffic were -47%/-47% of 2019 levels, +0.4%/+20.5% YoY



Source: BofA Global Research, company report



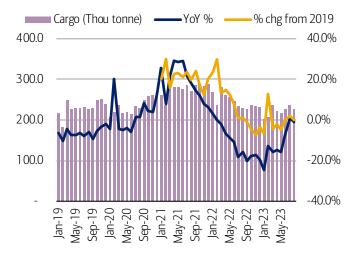
#### Exhibit 26: Taipei – airport cargo traffic ('000 tonne) and % chg July cargo traffic was +1% of 2019 levels, -14% YoY



Source: BofA Global Research, company report

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## **Exhibit 27: Seoul – airport cargo traffic ('000 tonne) and % chg** July/August cargo traffic were +2%/-0.2% of 2019 levels, +1%/-1% YoY



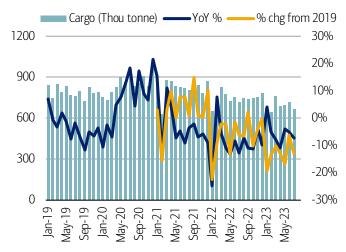
Source: BofA Global Research, company report

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#### **US** airports

Key cargo hubs for FedEx (Memphis) and UPS (Louisville):

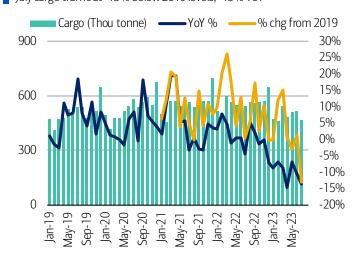
## **Exhibit 28: Memphis – airport cargo traffic ('000 tonne) and % chg** July cargo traffic at -13% below 2019 levels, -7% YoY



Source: BofA Global Research, company report

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#### Exhibit 29: Louisville – airport cargo traffic ('000 tonne) and % chg July cargo traffic at -13% below 2019 levels, -13% YoY

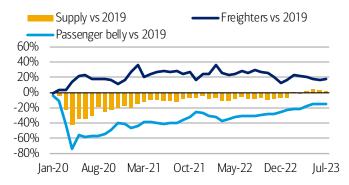


**Source:** BofA Global Research, company report

## Airfreight supply

### Exhibit 30: Global airfreight capacity vs 2019, freighters & belly

Airfreight capacity is above 2019 levels in July 2023

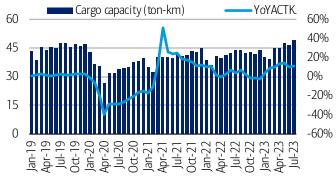


Source: BofA Global Research estimates, IATA

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### Exhibit 31: Global airfreight capacity (mn ton-km)

Global supply was up +11% YoY in July 2023



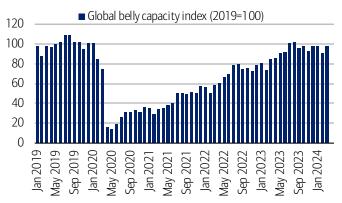
**Source:** IATA, BofA Global Research estimates

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### **Belly capacity**

### Exhibit 32: Payload adjusted global bellyhold capacity index, 2019=100

Belly cargo capacity rising to 98% of 2019 levels in 2024

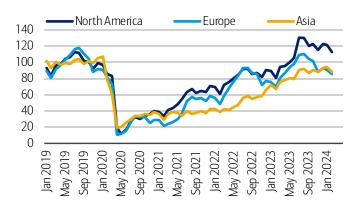


Source: BofA Global Research estimates, Diio, Boeing, Airbus

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## Exhibit 33: Payload adjusted belly capacity by region, 2019=100

Belly capacity return led by North America



Source: BofA Global Research estimates, Diio, Boeing, Airbus

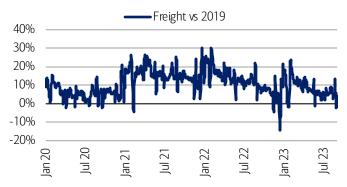
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#### **Freighter**

## BofA Commercial Aerospace: BofA Commercial Aerospace: 7-day avg. cycle declined for second week in a row

#### Exhibit 34: Global dedicated freighter flights tracked 7 day avg. YoY %

This excludes commercial aircraft used as freighter. It has become progressively weaker through 2022

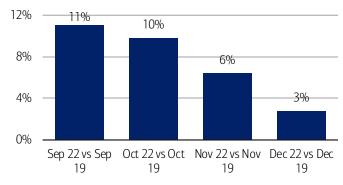


Source: BofA Global Research, Flightradar24

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#### Exhibit 35: Freight landings Sep – Dec 2022 vs 2019

Monthly average number of landings vs 2019 levels have cooled off since September 2022

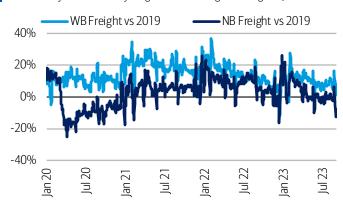


Source: BofA Global Research, Flightradar24



## Exhibit 36: Narrowbody vs Widebody dedicated freighter flights tracked 7 day avg. YoY %

Narrowbody and Widebody freight have converged through 3Q22

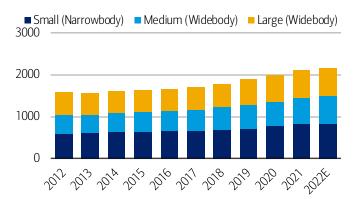


Source: BofA Global Research, Flightradar24

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#### Exhibit 38: Number of global freighter fleet from major OEMs

Fleet growth is at 3.2% CAGR since 2012

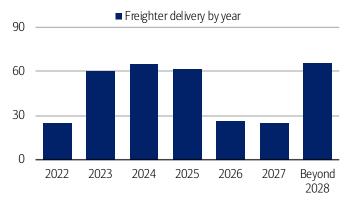


**Source:** Trade and Transport Group, BofA Global Research. Note excluding smaller feeder

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#### Exhibit 40: Number of freighter deliveries by year

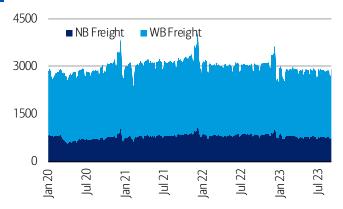
Deliveries will reach 60-65 freighter per year in 2023-25



Source: Cirium, BofA Global Research estimates

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## **Exhibit 37: Narrowbody vs Widebody dedicated freighter flights daily** Freight cycles typically peak around the holiday period in December

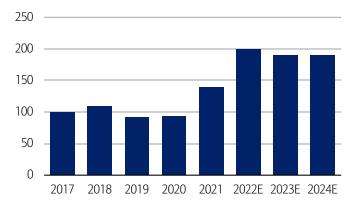


Source: BofA Global Research, Flightradar24

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### Exhibit 39: Number of freighter jet conversions from passenger

Annual conversions planned has doubled in 2022-24Evs pre-COVID



Source: Cirium, BofA Global Research estimates

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#### Exhibit 41: Annual freighter retirement as % of in service fleet

About 3.5% retirement rate a year through the cycle

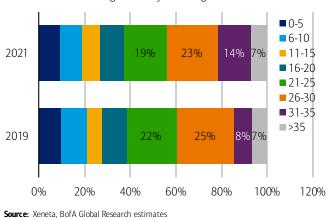


Source: Cirium, BofA Global Research estimates



#### Exhibit 42: Age of freighters by year, 2019 and 2021

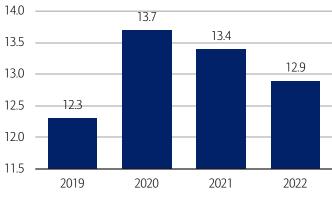
The share of fleet with age over 30 years is higher at 21% in 2021



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#### Exhibit 43: Large freighter hours flown per day

Utilization hours not far from 2019 levels



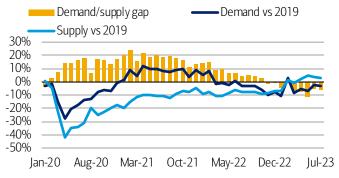
Source: Xeneta, BofA Global Research estimates

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## **Demand/supply balance**

## Exhibit 44: Global airfreight demand and supply vs 2019 levels and demand-supply gap $\,$

Balance has flipped to negative since November 2022

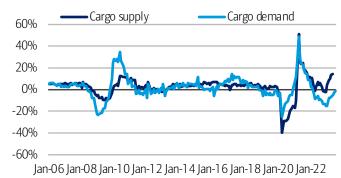


Source: IATA, BofA Global Research estimates

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### Exhibit 45: Global airfreight demand and supply growth YoY%

YoY cargo demand and supply worsening further



Source: IATA, BofA Global Research estimates

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## **BofA demand/supply model**

We expect air cargo to remain in oversupply in 2023-24:

#### Exhibit 46: Global air cargo annual supply & demand balance

We see demand-supply turning negative in 2022-24E

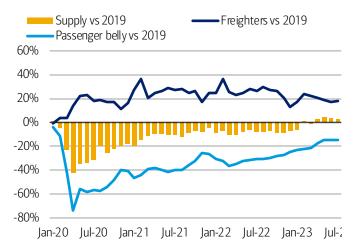
YoY %	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Demand (FTK)	20.8%	-0.7%	-1.0%	1.9%	4.5%	3.4%	3.8%	10.1%	3.7%	-3.3%	-8.9%	17.5%	-8.0%	-3.8%	3.2%
Capacity (AFTK)	8.9%	4.1%	1.1%	3.1%	3.7%	6.1%	5.3%	3.8%	5.2%	2.1%	-20.9%	12.8%	2.9%	7.3%	7.8%
Demand/supply balance	11.9%	-4.8%	-2.0%	-1.2%	0.8%	-2.7%	-1.5%	6.3%	-1.5%	-5.4%	12.0%	4.7%	-10.9%	-11.1%	-4.6%

Source: BofA Global Research estimates, IATA



#### Exhibit 47: Global airfreight capacity vs 2019, freighters & belly

Airfreight capacity is close to 2019 levels now

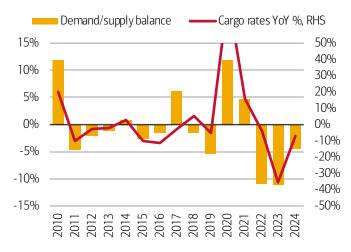


Source: BofA Global Research estimates, IATA

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#### Exhibit 49: Global air cargo balance and cargo yield YoY %

Cargo balance drives cargo yield with high correlation at  $0.77\,$ 

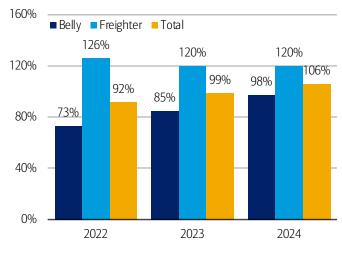


Source: IATA, BofA Global Research estimates

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#### Exhibit 48: Air cargo capacity by segment, as % of 2019 levels

We see global capacity to reach 93%/99%/106% of 2019 levels in 2022/23/24

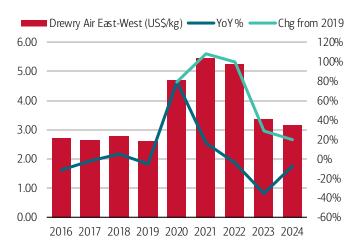


Source: BofA Global Research estimates

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#### Exhibit 50: Global air cargo yield and % change

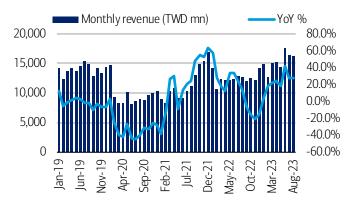
We expect cargo yield will continue to normalize in 2023-24



**Source:** Drewry, IATA, BofA Global Research estimates

## Airlines operating data

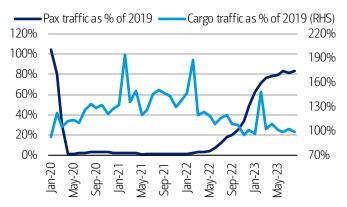
Exhibit 51: China Airlines - monthly revenue (TWD mn) and YoY % July/August revenue +27.5%/27.6% YoY



Source: BofA Global Research, company report

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#### Exhibit 53: CAL passenger (RPK) and cargo (FTK) traffic as % of 2019 Jul/Aug pax traffic at 82%/83% of 2019 levels & cargo traffic at 103%/99%

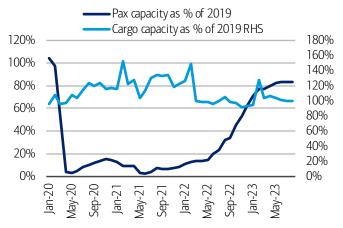


Source: BofA Global Research, company report

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## Exhibit 55: CAL passenger and cargo capacity as % of 2019

Jul/Aug pax capacity at 83%/83% of 2019 levels & cargo at 100%/100%

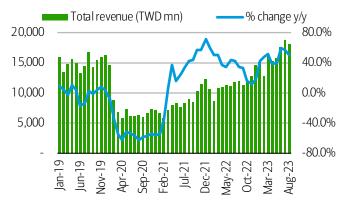


Source: BofA Global Research, company report

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## Exhibit 52: EVA Air - monthly revenue (TWD mn) and YoY %

July/August revenue +57.5%/50.9% YoY

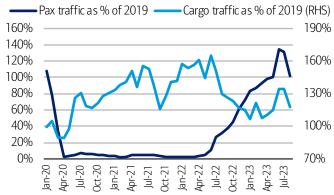


Source: BofA Global Research, company report

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## Exhibit 54: EVA passenger (RPK) and cargo (FTK) traffic as % of 2019

Jul/Aug pax traffic at 131%/101% of 2019 levels & cargo at 134%/118%

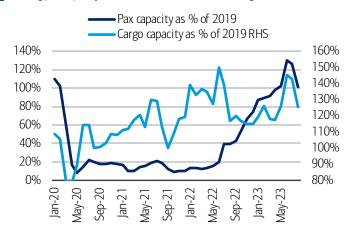


Source: BofA Global Research, company report

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#### Exhibit 56: EVA passenger and cargo capacity as % of 2019

Jul/Aug pax capacity at 126%/101% of 2019 levels; cargo at 143%/126%

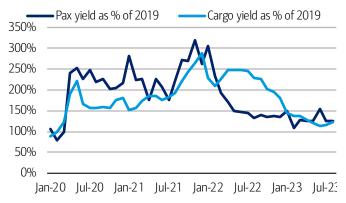


Source: BofA Global Research, company report



#### Exhibit 57: CAL passenger and cargo yields as % of 2019 levels

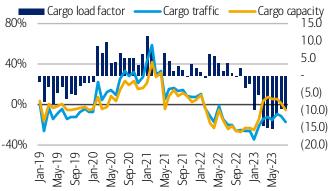
Jul/Aug pax yield at 125%/126% of 2019 levels; cargo yield at 115%/123%



Source: BofA Global Research, company report

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## **Exhibit 59: CAL cargo traffic, capacity growth, loads YoY chg (RHS)** Jul/Aug cargo load factor at 69%/66.5%, -10 ppts for both months YoY



Source: BofA Global Research, company report

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# **Exhibit 61: Cathay Pacific passenger and cargo capacity as % of 2019** Jul/Aug passenger (ASK) capacity at 53%/56% of 2019 levels and cargo (AFTK) capacity at 76%/76%

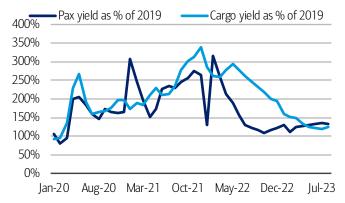


Source: BofA Global Research, company report

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#### Exhibit 58: EVA passenger and cargo yields as % of 2019 levels

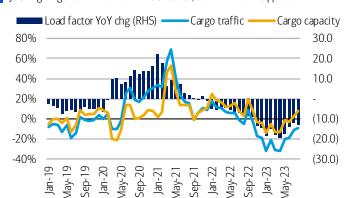
Jul/Aug pax yield at 136%/133% of 2019 levels & cargo yield at 118%/124%



Source: BofA Global Research, company report

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## **Exhibit 60: EVA cargo traffic and capacity growth, loads YoY chg (RHS)** Jul/Aug cargo load factor at 74.7%/73.6%, down -12 to -13ppts YoY

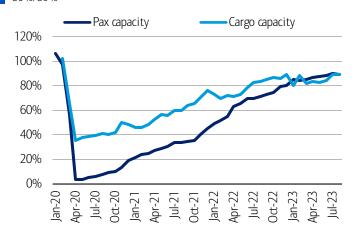


Source: BofA Global Research, company report

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#### Exhibit 62: Singapore Airlines pax & cargo capacity as % of 2019

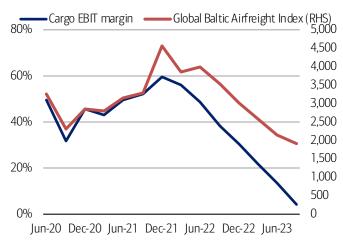
Jul/Aug passenger capacity at 90%90% of 2019 levels and cargo capacity at 89%/89%



Source: BofA Global Research, company report

## Exhibit 63: Singapore Airlines quarterly cargo EBIT margin and Baltic Airfreight Index (RHS)

Jun-Q SIA cargo margin at 13% and likely going down to 4% in Sep-Q

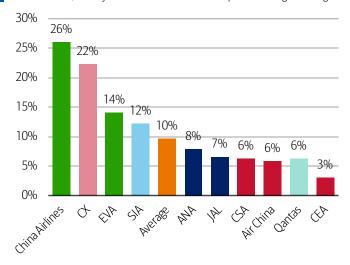


Source: BofA Global Research estimates, company report

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#### Exhibit 64: Asian airlines: Cargo as % of revenue in FY2019

China Airlines, Cathay Pacific and EVA are most exposed to cargo earnings

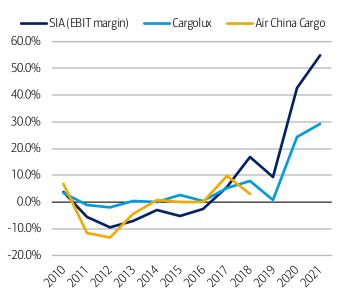


Source: BofA Global Research estimates, company report

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### Exhibit 65: Cargo margins for selected airlines with disclosures

Cargo historically has been largely a breakeven business

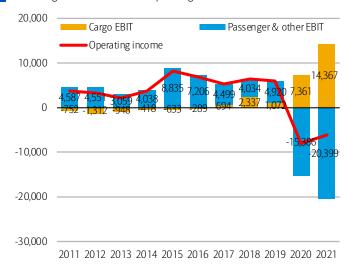


Source: BofA Global Research estimates, company report

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## Exhibit 66: Asian airlines estimated EBIT breakdown by cargo and other segments, USD mn

We estimate cargo has contributed US\$14bn in operating profit in 2021, offsetting >70% of the losses in passenger and other businesses



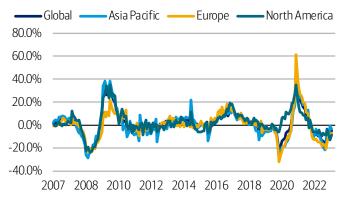
**Source:** BofA Global Research estimates, company report. Note airlines include Air China, CEA, CSA, JAL, ANA, EVA, China Airlines, CX and SIA



## Global airfreight market overview

#### Exhibit 67: Monthly air cargo demand growth YoY %

Cargo demand drives the cyclicality of the industry, CAGR at ~3% pre-COVID



Source: IATA, BofA Global Research

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## Exhibit 68: Monthly air cargo supply (AFTK) growth YoY %

Cargo supply has been relatively steady at 3-4% p.a. pre-COVID

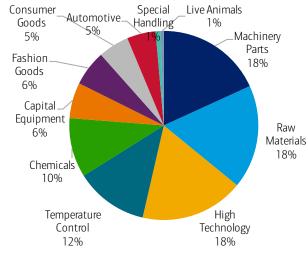


Source: IATA, BofA Global Research

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### Exhibit 69: Global air cargo demand (metric tonne) by industry, 2022

Major industries are machinery parts, raw materials and high tech

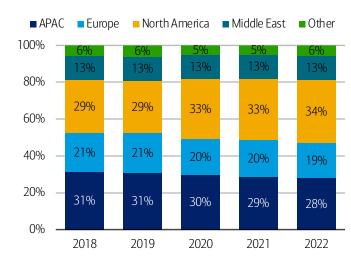


Source: BofA Global Research estimates

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### Exhibit 70: Global air cargo demand by region

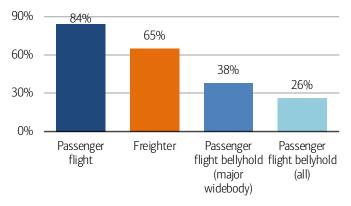
The share of North America has risen from 29% to 34% now



Source: IATA, BofA Global Research

## Exhibit 71: Seat/cargo load factors for different type of services, 2019

Freighter has higher cargo loads than bellyhold capacity

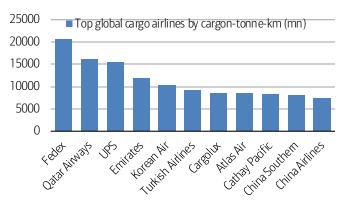


Source: IATA, Boeing

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## Exhibit 73: Top global cargo airlines by cargo-tonne-km (mn), 2021

Fedex, Qatar and UPS the global top  $3\,$ 



Source: IATA

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#### Exhibit 75: Global air cargo trade (metric ton) by trade lane

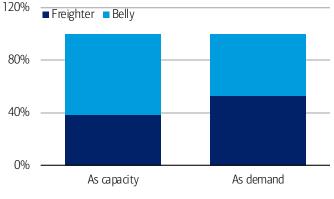
Trades among Asia, North America and Europe the top lanes



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### Exhibit 72: Capacity and demand breakdown by cargo fleet type, 2019

Freighter represented 39% of capacity but 53% of demand with higher loads

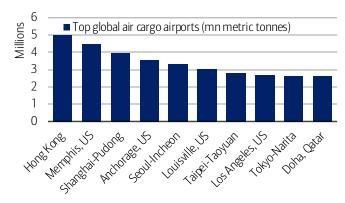


Source: IATA

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## Exhibit 74: Top global air cargo airports (mn metric tonnes), 2021

Hong Kong, Memphis and Shanghai-Pudong the global top 3

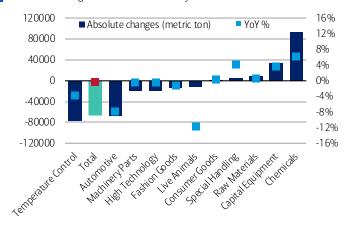


Source: ACI

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## Exhibit 76: Air cargo demand (metric tonne) YoY changes by industry

Global demand growth is flattish YoY % year to date



Source: BofA Global Research estimates, IATA





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# Investment rating Total return expectation (within 12-month period of date of initial rating) Ratings dispersion guidelines for coverage cluster<sup>R1</sup>

Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

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