ACI ASIA-PACIFIC & MIDDLE EAST
AIRPORTS COUNCIL INTERNATIONAL

FLARE | AVIATION CONSULTING

Airfare trends in Asia Pacific and Middle East

October 2023

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01 | Introduction and methodology

Objectives | The analysis has one objective

- Monitor trend in prices of air fares in the region
- Analyze which traffic segments have been more affected (domestic / international, short haul / long haul, FSC / LCC, large / medium / small airports)
- Identify the key drivers behind such increase: macroeconomic, airline-related, COVID-related, airport-related causes

Methodology | Methodology to understand the evolution of air fares in Asia-Pacific and Middle East is proposed in three phases

Methodology
Three-step approach

Collection of traffic and air fares data

- Data of air fares from SRS Cirium: "FM traffic and fares" database
- Data set containing the key markets in Asia-Pacific & Middle East: Australia, Bahrain, China, Hong Kong, India, Indonesia, Japan, Jordan, Malaysia, Oman, Qatar, Saudi Arabia, Singapore, South Korea, Thailand and UAE
- Period Q1 2014 to Q2 2023

Analysis of trends and behavior of air fares

- Analysis of the recent evolution of trends
- Break downs to understand specific dynamics in the market: by country, by type of airport, by type of airlines (LCC vs FSC), by type of market (domestic vs international), by route distance (long-haul vs short-haul,...)

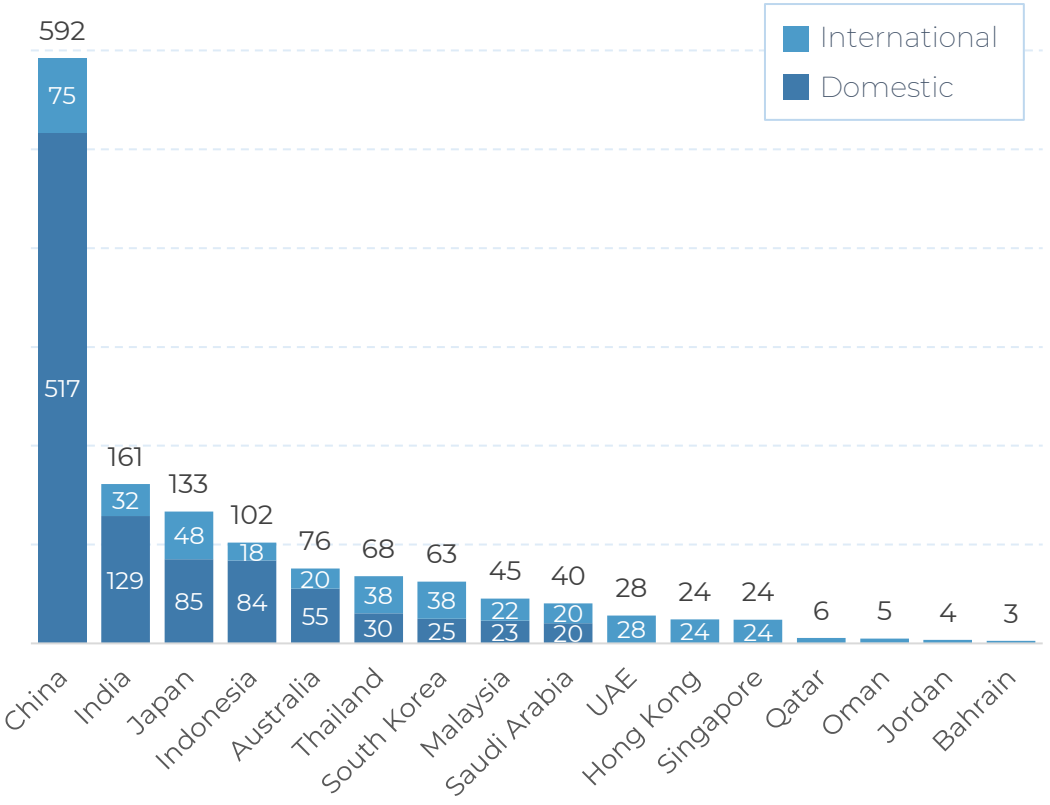
Correlation with independent variables

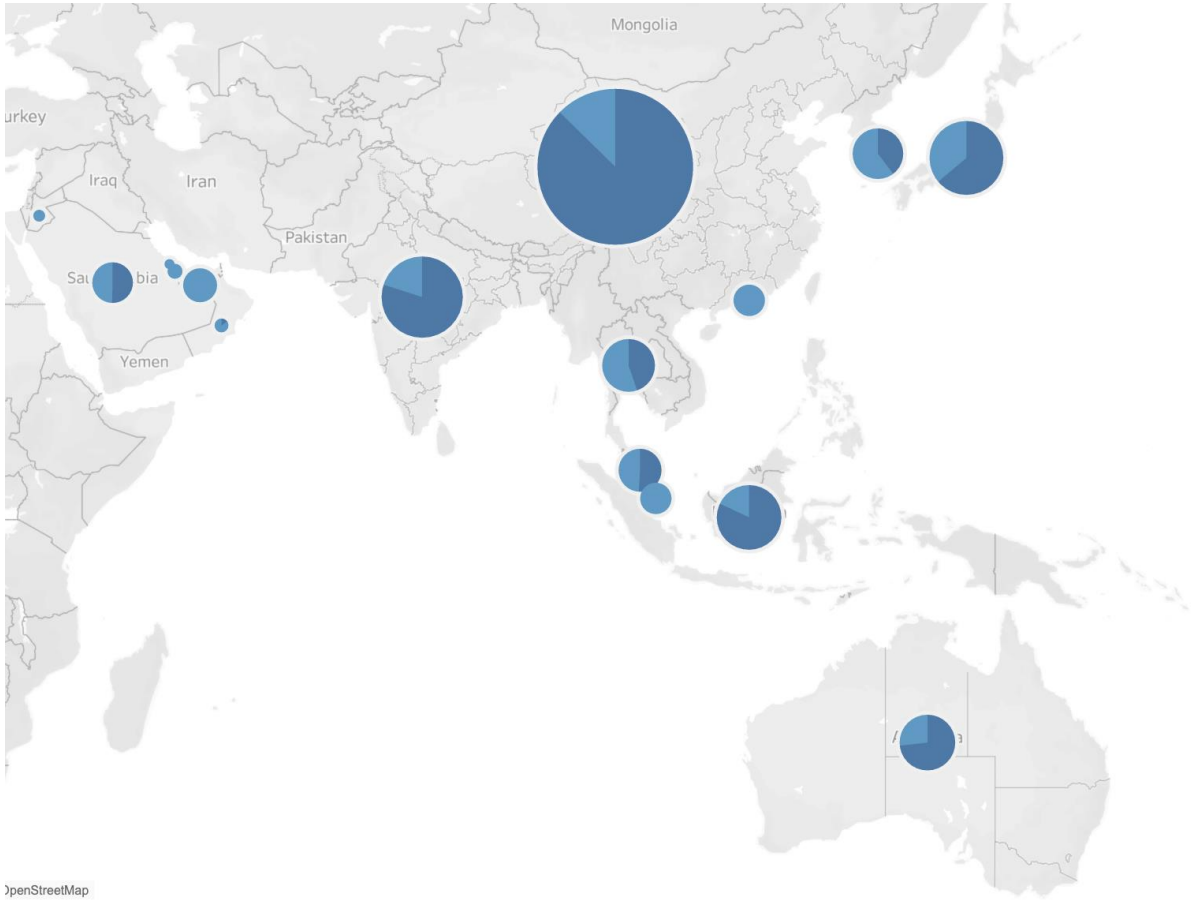
- Identification of the main variables causing air fares changes, such as inflation, fuel price, route-level competition, level of Covid recovery, etc.
- Understanding of the relationship between air fares and relevant drivers

Source: Flare analysis

Asia-Pacific and Middle East markets | Sample analyzed contains 16 countries

O/D traffic 2019 by country
Million passengers (excluding connections)





Source: SRS Cirium

Sources | SRS Analyser by Cirium is the main source used to carry out the analyses: it offers schedules, traffic and airfares data

Methodology
Source and uses

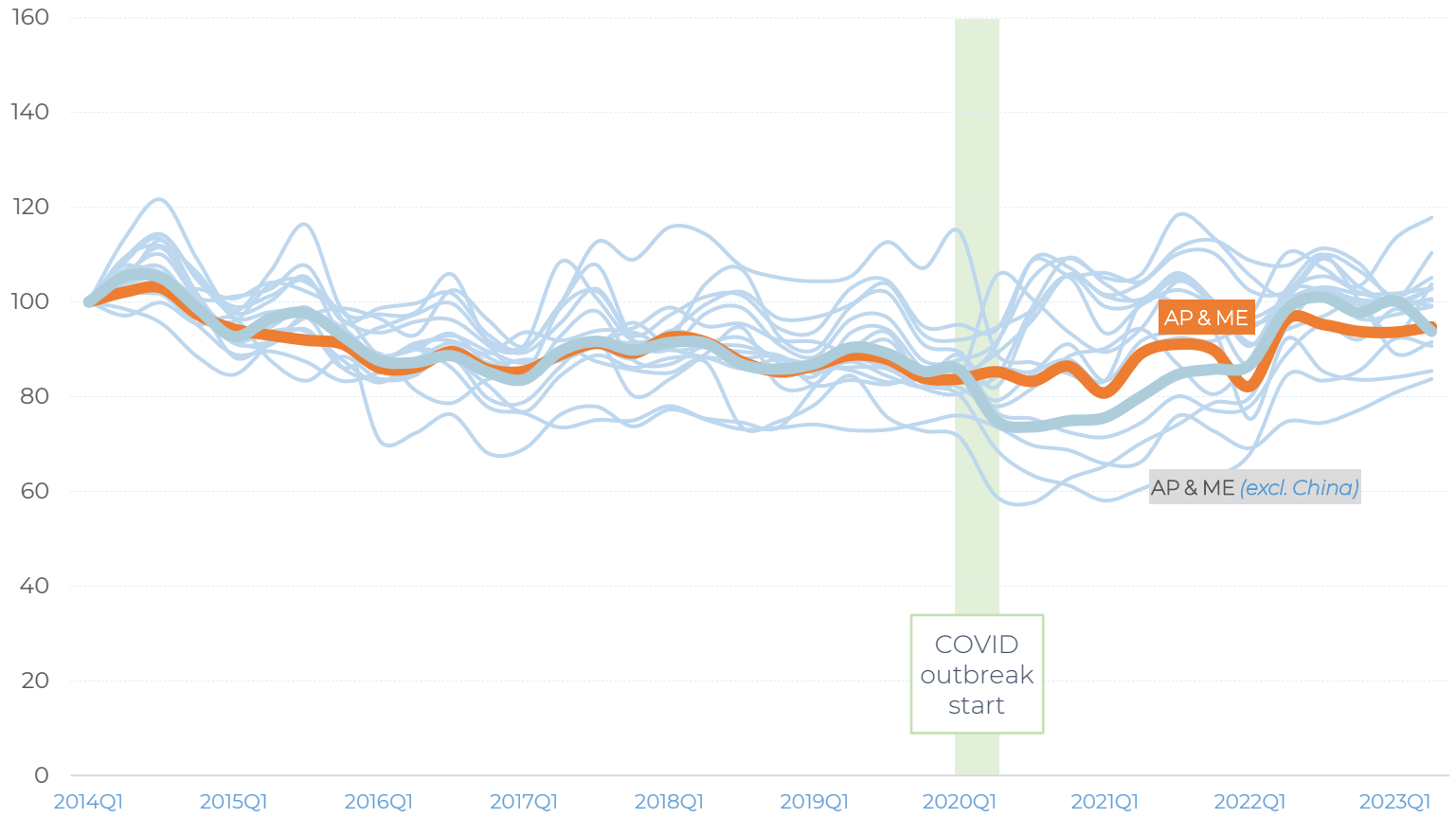
CIRIUM
SRS ANALYSER

DATABASE	CONTENT	USE FOR THIS REPORT
SCHEDULES	Flight schedules published by airlines (considered reliable up to Q4 2023)	*Flare analyzes quarterly seat supply evolution in the top 10 markets in Asia-Pacific and Middle East*
TRAFFIC & AIRFARES	Multi-GDS historical booking data (released up to Q2 2023)	*Flare analyzes quarterly Origin/Destination traffic and airfares from top markets in Asia-Pacific and Middle East at a route level (>40,000 routes analyzed)*

02 | Historical airfares Asia-Pacific & Middle East

Historical trend | Air fares have increased in Asia-Pacific & Middle East after COVID-19 outbreak, breaking with the decreasing trend seen in the previous 5 years

Airfare evolution by country (domestic & international)
Quarterly evolution from Q1 2014 (base = 100) to Q2 2023, nominal terms



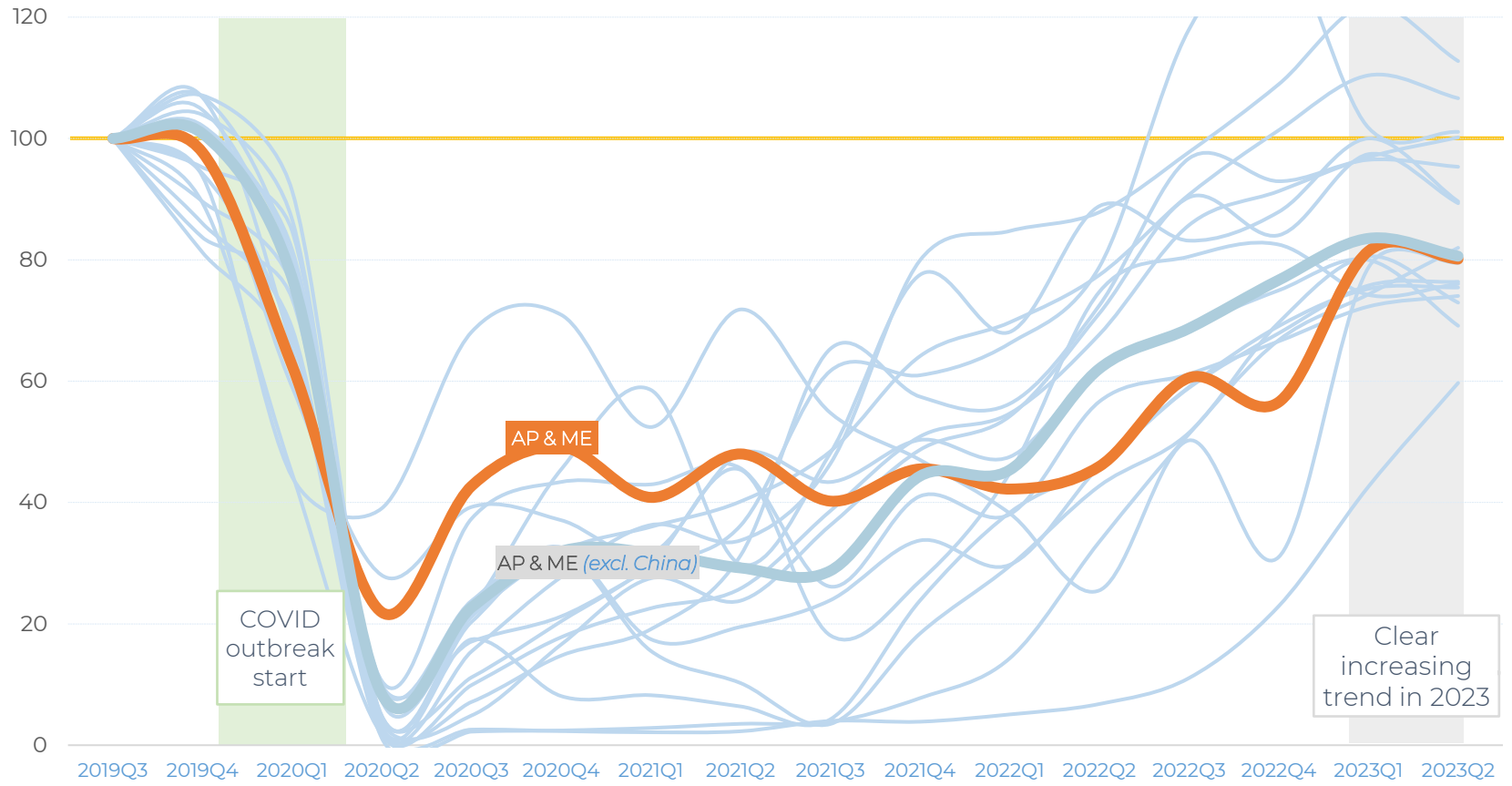
Increase	Q4 2014–Q4 2019	Q4 2019–Q4 2022	1st Half 22–1st Half 23
Australia	-17.0%	22.6%	7.0%
Bahrain	-16.3%	17.9%	-3.3%
China	-17.4%	0.6%	1.2%
Hong Kong	-18.2%	22.2%	1.6%
India	-34.9%	40.9%	12.6%
Indonesia	-23.1%	1.6%	20.0%
Japan	19.9%	-3.7%	11.5%
Jordan	-16.3%	10.3%	1.7%
Malaysia	-21.0%	18.7%	11.6%
Oman	-9.7%	14.0%	-6.2%
Qatar	-9.9%	17.3%	-2.6%
Saudi Arabia	-7.1%	6.6%	6.4%
Singapore	-7.9%	29.5%	4.9%
South Korea	-15.4%	4.8%	15.2%
Thailand	-27.4%	3.6%	14.4%
UAE	-15.6%	33.5%	-2.3%
AP & ME	**-13.7%**	**+11.7%**	**5.6%**
(excl. China)	***-13.4%***	***+14.5%***	***4.8%***

Source: SRS Cirium; Flare analysis

Traffic recovery | Traffic decreases have caused distortions in airfares since COVID outbreak hit the region (Q1 2020)

Air traffic passengers by country (airport passengers)
Quarterly evolution from Q3 2019 (base = 100) to Q2 2023

Market recovery
- +

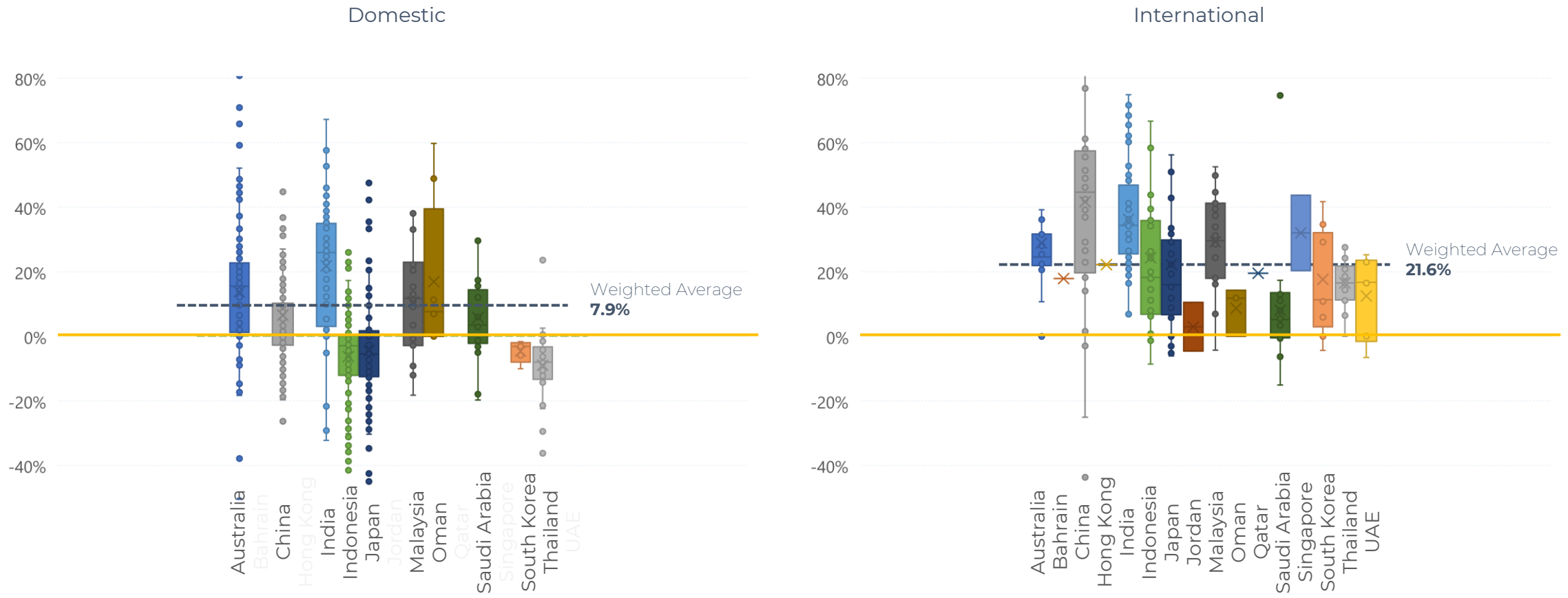


Q4 levels	2019 vs 2022
Australia	-18%
Bahrain	-9%
China	-70%
Hong Kong	-77%
India	-12%
Indonesia	-34%
Japan	-30%
Jordan	-7%
Malaysia	-32%
Oman	-16%
Qatar	+30%
Saudi Arabia	+2%
Singapore	-34%
South Korea	-24%
Thailand	-30%
UAE	+10%
AP & ME	**-43%**
(excl. China)	**-23%**

Source: SRS Cirium, Flare analysis

2019-2022 Fares by market | International markets suffered increases of ~22% in airfares given the travel bans imposed; domestic increases were more moderate (~8%)

Airfares increase by airport
Q4 2022 vs. Q4 2019, nominal terms



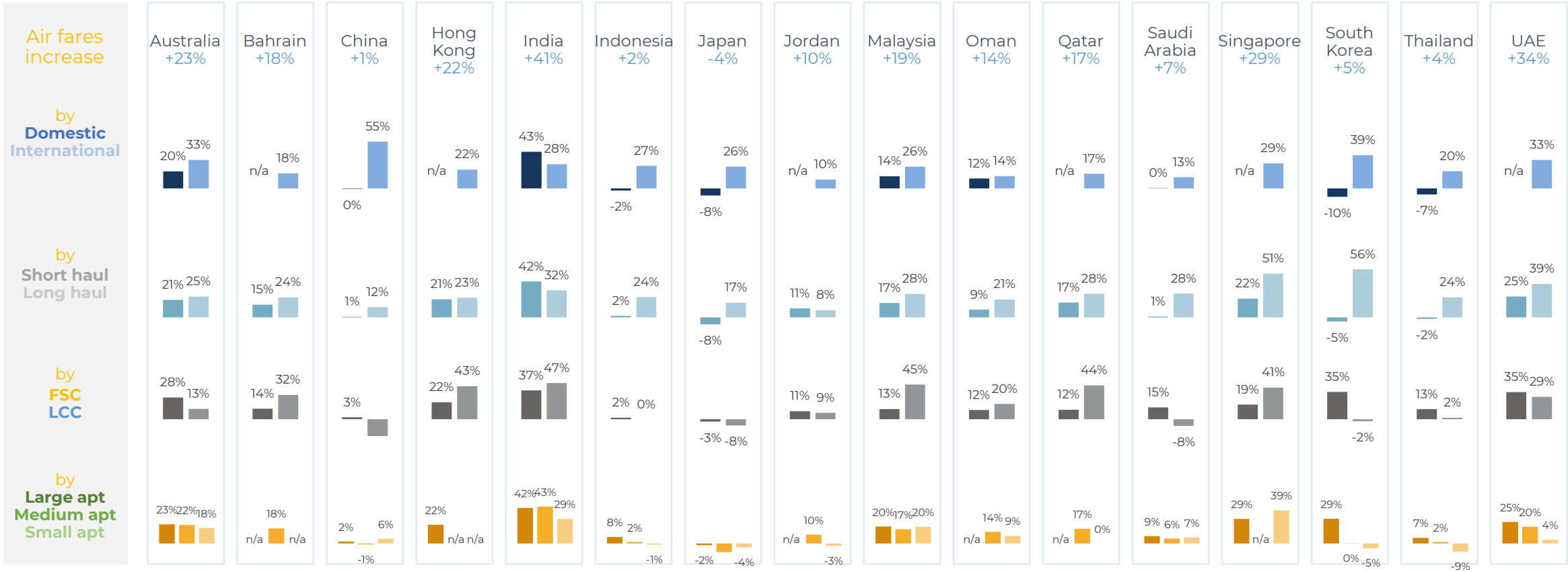
Source: SRS Cirium; Flare analysis

Increase by segment | Airfares have mainly increased in long haul markets, so higher increases were observed in large airports, with significant increases of both FSC and LCC

Air fare growth by segments
Q4 2022 vs. Q4 2019, nominal terms

Short haul: < 2,500 km
Long haul: > 2,500 km

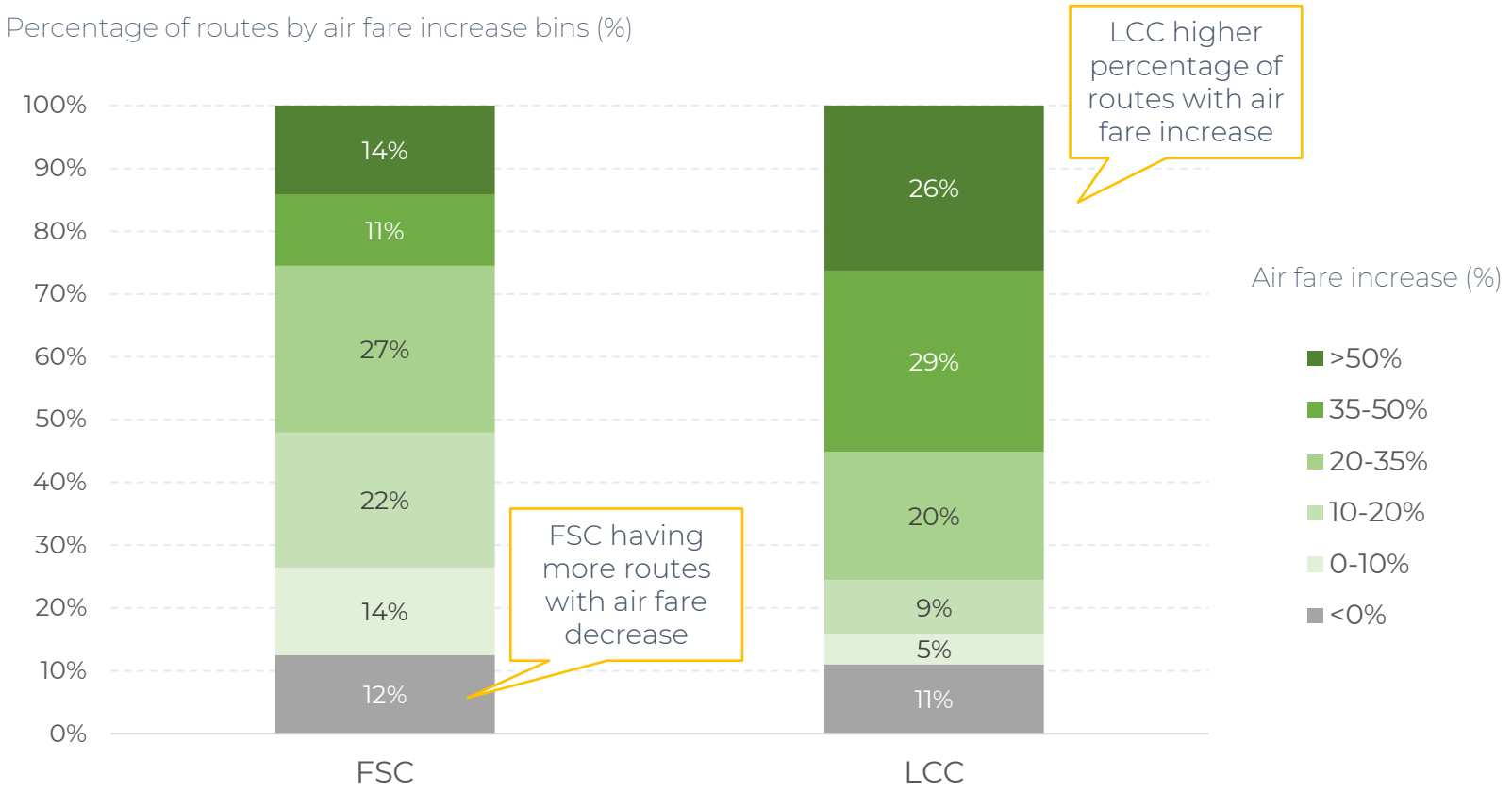
Large airports: > 10 Mpax
Medium airports: 1-10 Mpax
Small airports: <1 Mpax



Source: SRS Cirium, Flare analysis

The age of LCC dominance | Amongst all carriers operating in APAC, LCCs have had greater resilience to COVID, increasing market and bargaining power

Air fares evolution in Asia-Pacific and Middle East by airline type
Percentage of routes suffering air fares increases (2022 vs. 2019)

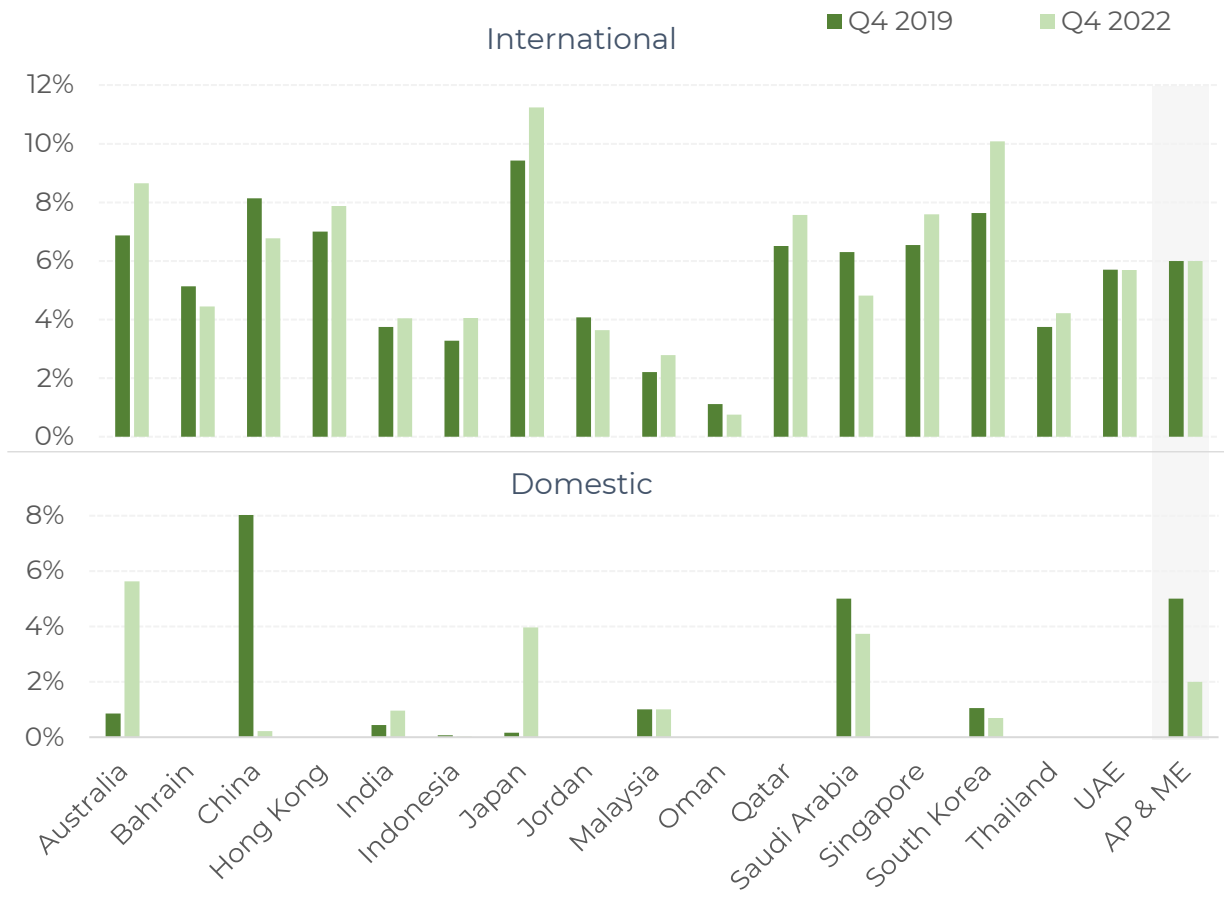


- During the pandemic, full-service carrier (FSC) in APAC were severely hit, not only because of financial constraints, but also because of their rigid business model
- On the other hand, low-cost carriers (LCC) have thrived during the pandemic, being able to accommodate seat capacity more swiftly and reduce fixed costs
- This increase in market and bargaining power has empowered LCCs to increase their yields

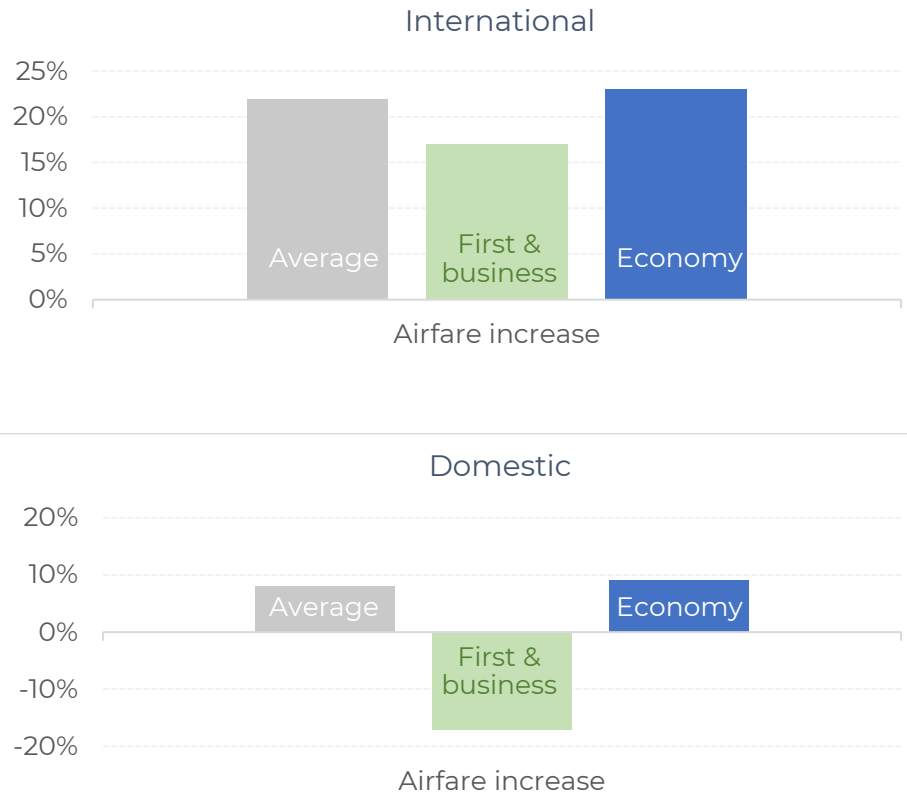
Source: SRS Cirium; Flare analysis

Business vs. Economy| Economy classes suffered higher increases of airfares as the share of business class pax decreased during the pandemic (specially in the int'l market)

Share of First & Business class passengers vs. Total passengers
Q4 2019 & Q4 2022



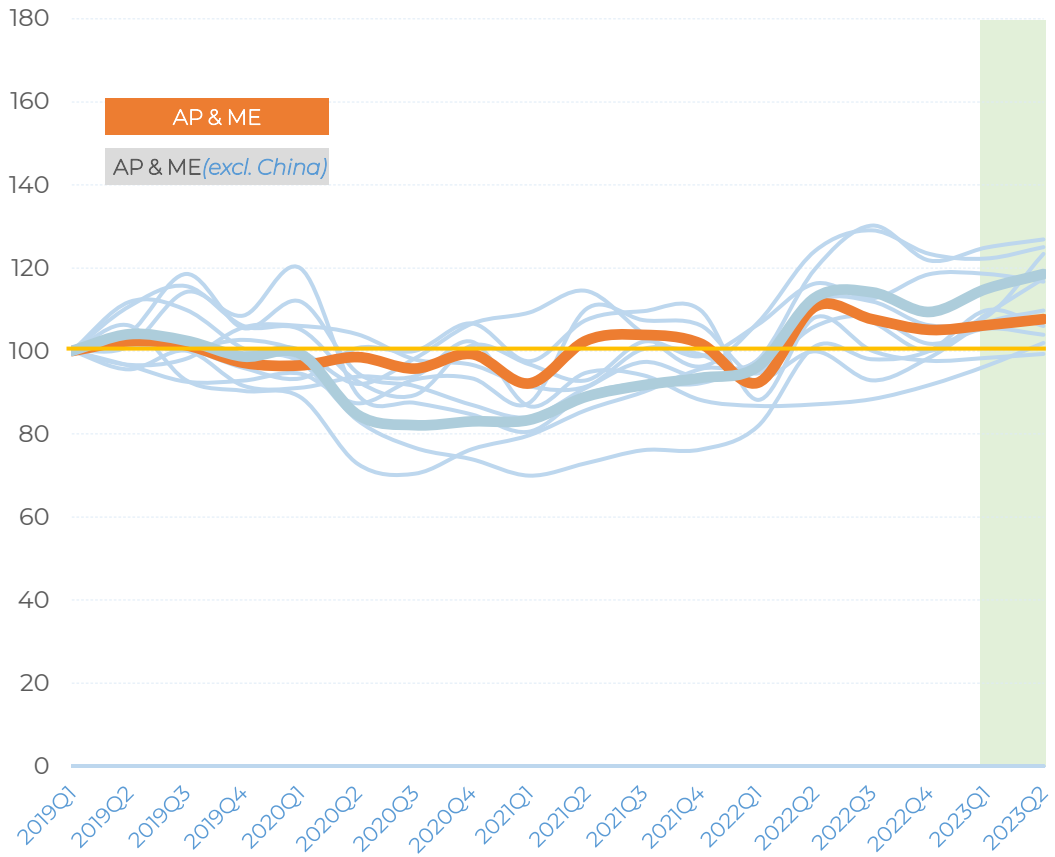
Air fare growth by cabin type
Q4 2022 vs. Q4 2019, nominal terms



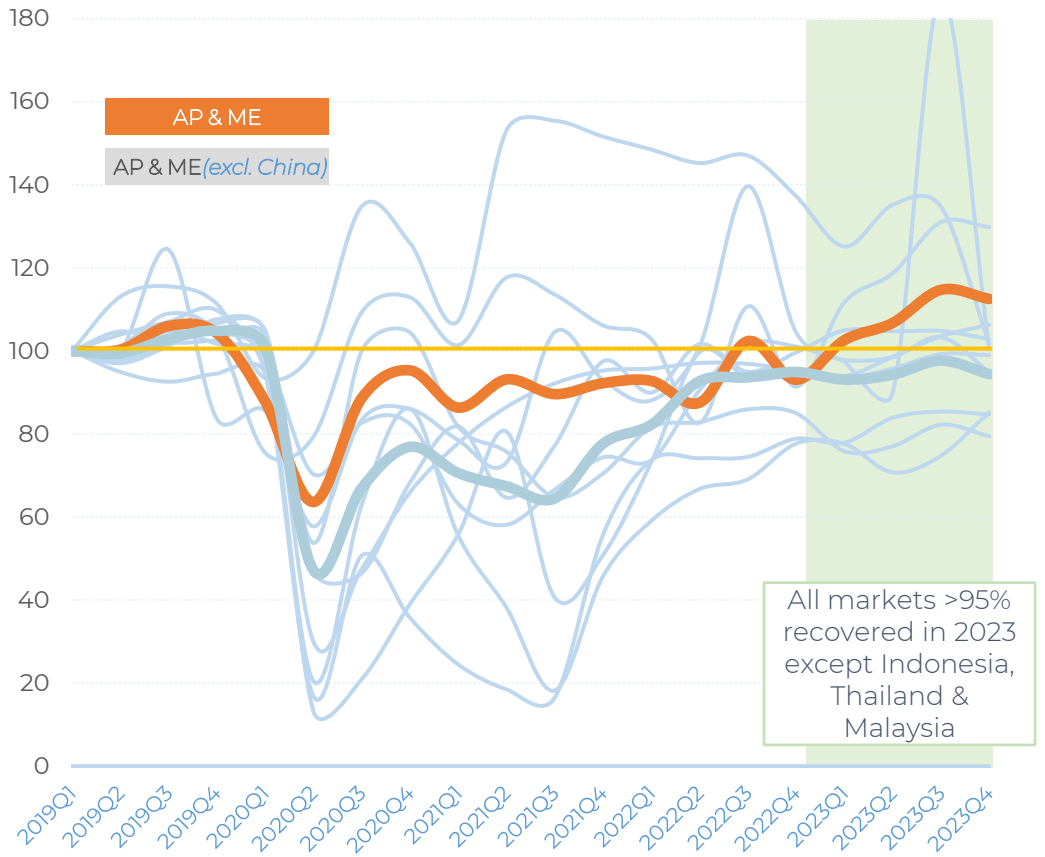
Source: SRS Cirium, Flare analysis

2023 Domestic markets | In 2023 airfare increases reported in most domestic markets, supply volumes are almost recovered with increases due to inflation & fuel price (1/2)

Domestic weighted air fare by market 2019-2023
Base 100 = Q1 2019

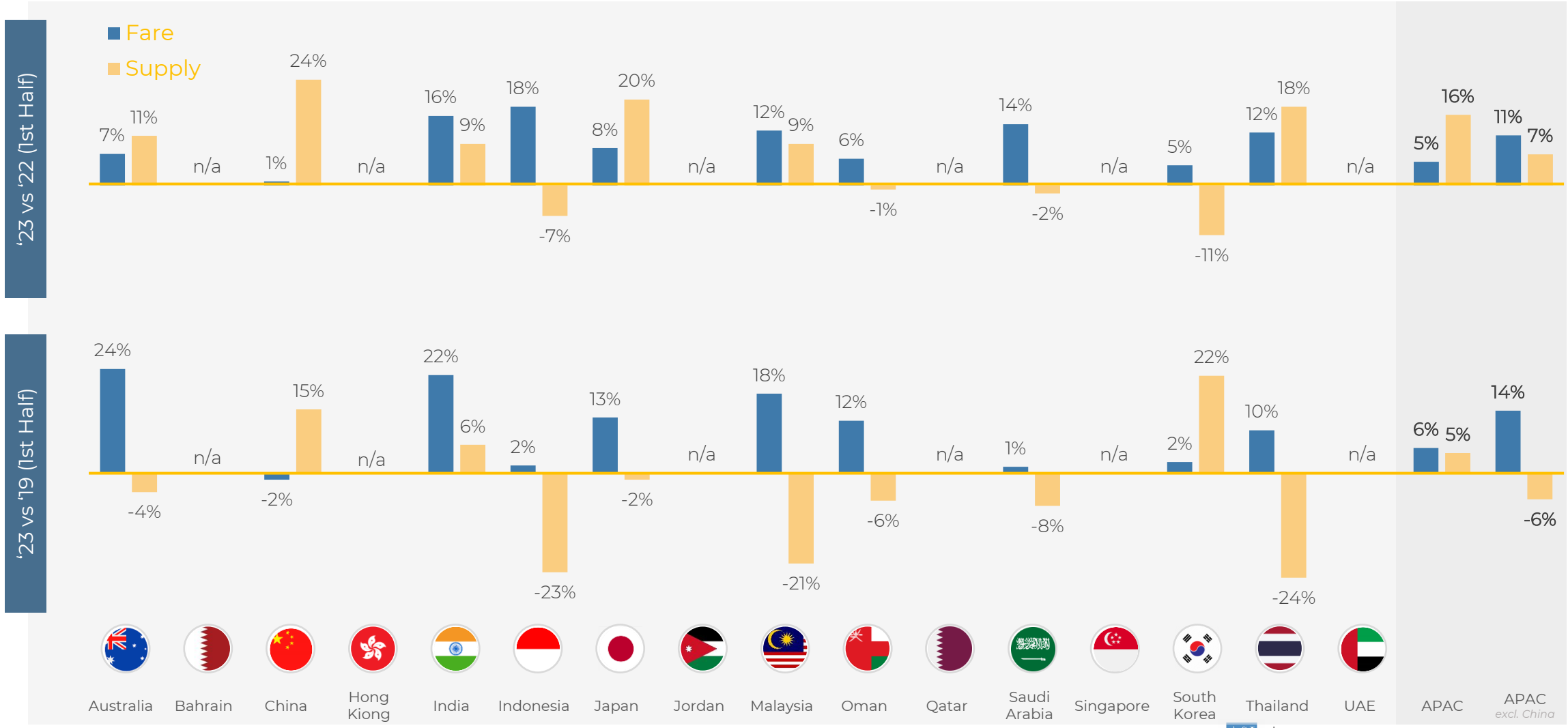


Domestic seat supply up to Q3 2023 (seats)
Base 100 = Q1 2019



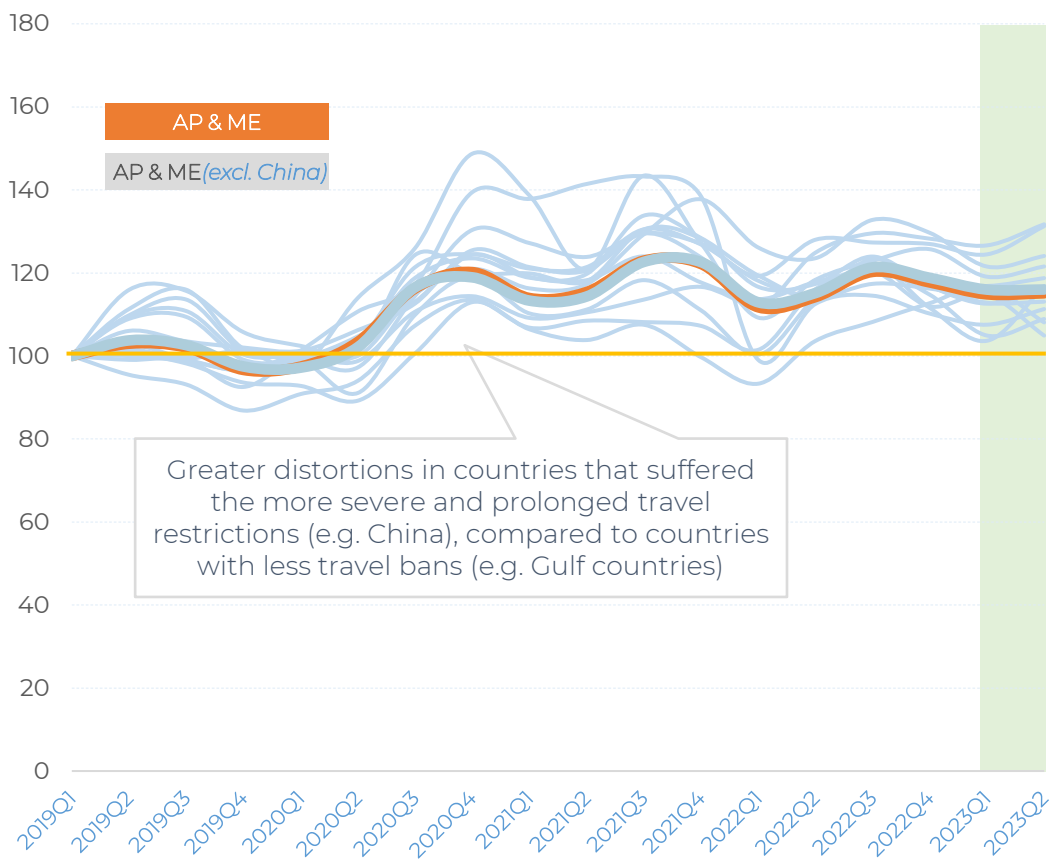
Source: SRS Cirium

2023 Domestic markets | In 2023 airfare increases reported in most domestic markets, supply volumes are almost recovered with increases due to inflation & fuel price (2/2)

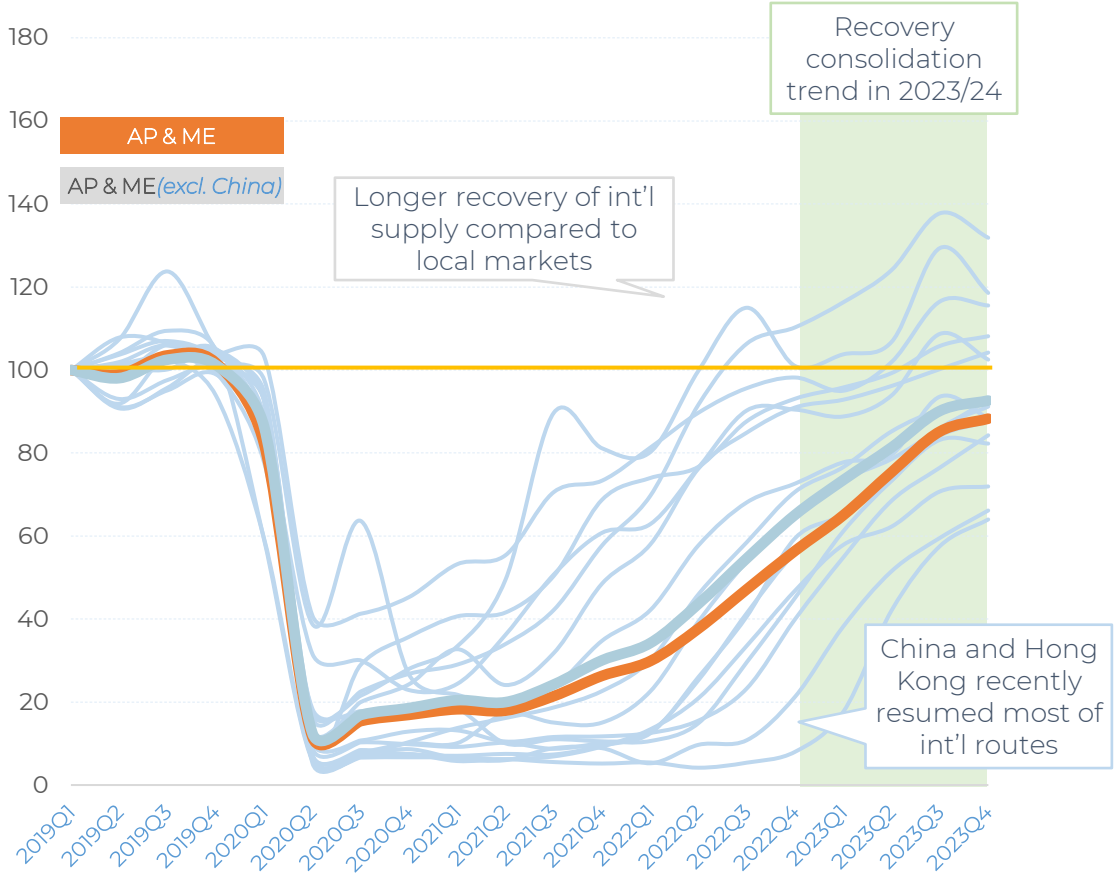


2023 International markets | Airfares in 2023 are relatively flat compared to 2022, as supply levels are still recovering to pre-pandemic levels (1/2)

International weighted air fare by market 2019-2023
Base 100 = Q1 2019

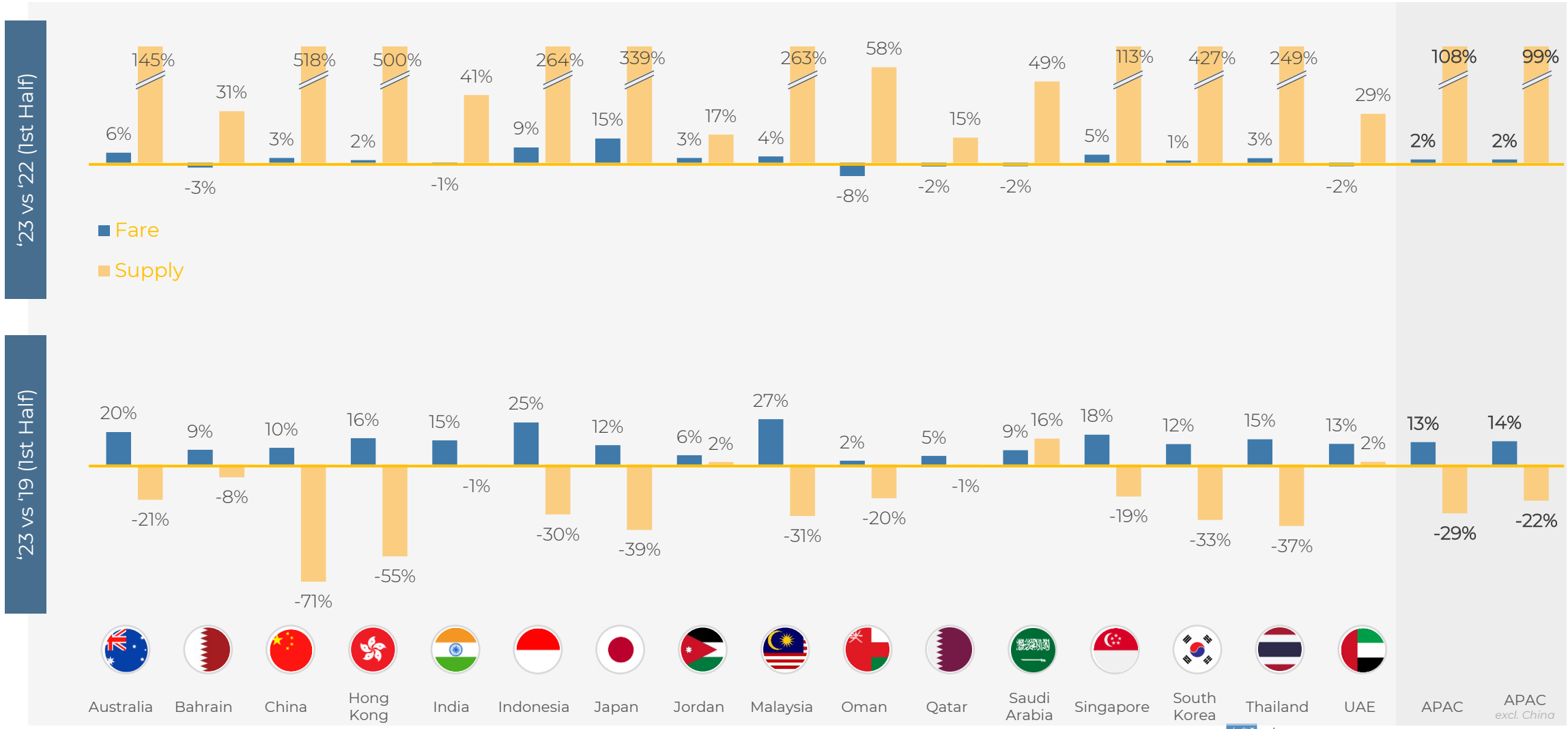


International seat supply up to Q3 2023 (seats)
Base 100 = Q1 2019



Source: SRS Cirium

2023 International markets | Airfares in 2023 are relatively flat compared to 2022, as supply levels are still recovering to pre-pandemic levels (2/2)



03 | Drivers of increase in airfares

Drivers | What were the specific causes of air fares variations in the region? They are grouped in global, airline-related, COVID-related and airport-related causes

Macroeconomic & global causes

- Economy and purchasing power increases usually create an organic growth of fares
- Inflation has an impact on fares to cover airlines' increased costs
- Currency fluctuations have an impact as some airline costs may be paid in USD
- Fuel price is linked to oil price and has an impact on fares as it represents an important share of airlines' cost structure

CPI, Fuel price

Airline-related causes

- Competitive environment in one route is always the key factor to define the yield profile
- The existence and/or entry of airlines with different business models can introduce different pricing strategies in a market
- Increases of airlines' operating costs can trigger air fares increases

HHI index

COVID-related causes

- Travel restrictions created severe distortions in terms of offering and pricing
- Limited capacity created an imbalance between demand and offer making air fares rise as airlines need to cover fixed costs
- Health and safety measures represented additional costs for airlines

Recovery rates

Other causes (airport, Government)

- Airport & infrastructure charges are usually a very small portion compared to base airfares. However, charges updates may cause changes in airfares if they were significant enough
- Government taxes such as VAT and/or other regulations could also affect air fares if significant changes are introduced

Turnaround costs
(airport charges, Government taxes)

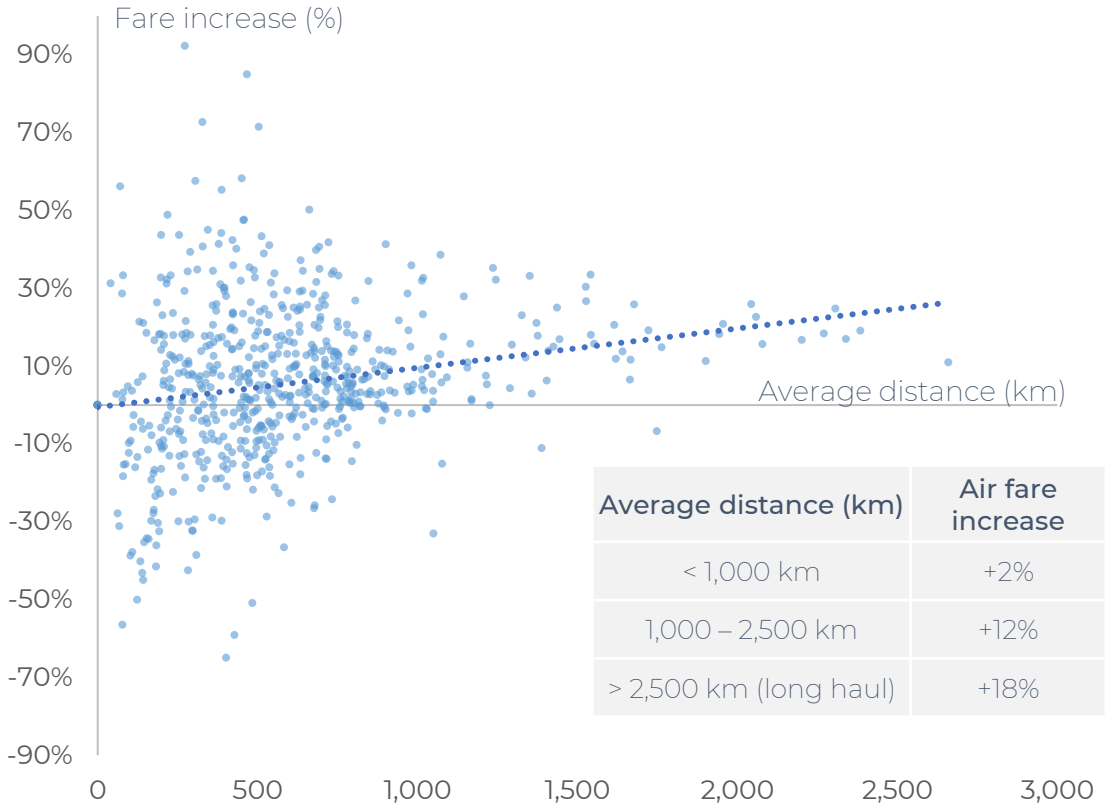
Source: Flare analysis

Fuel price | A significant part of air fare increases are due to the fuel cost spike; the larger the distance, the higher increase due to airlines' variable costs

Fuel price evolution
Jet fuel USD per gallon

Airfare increase vs. average distance by airport
Airfare increase vs. km (2022 vs. 2019)

Note: each point represents an airport

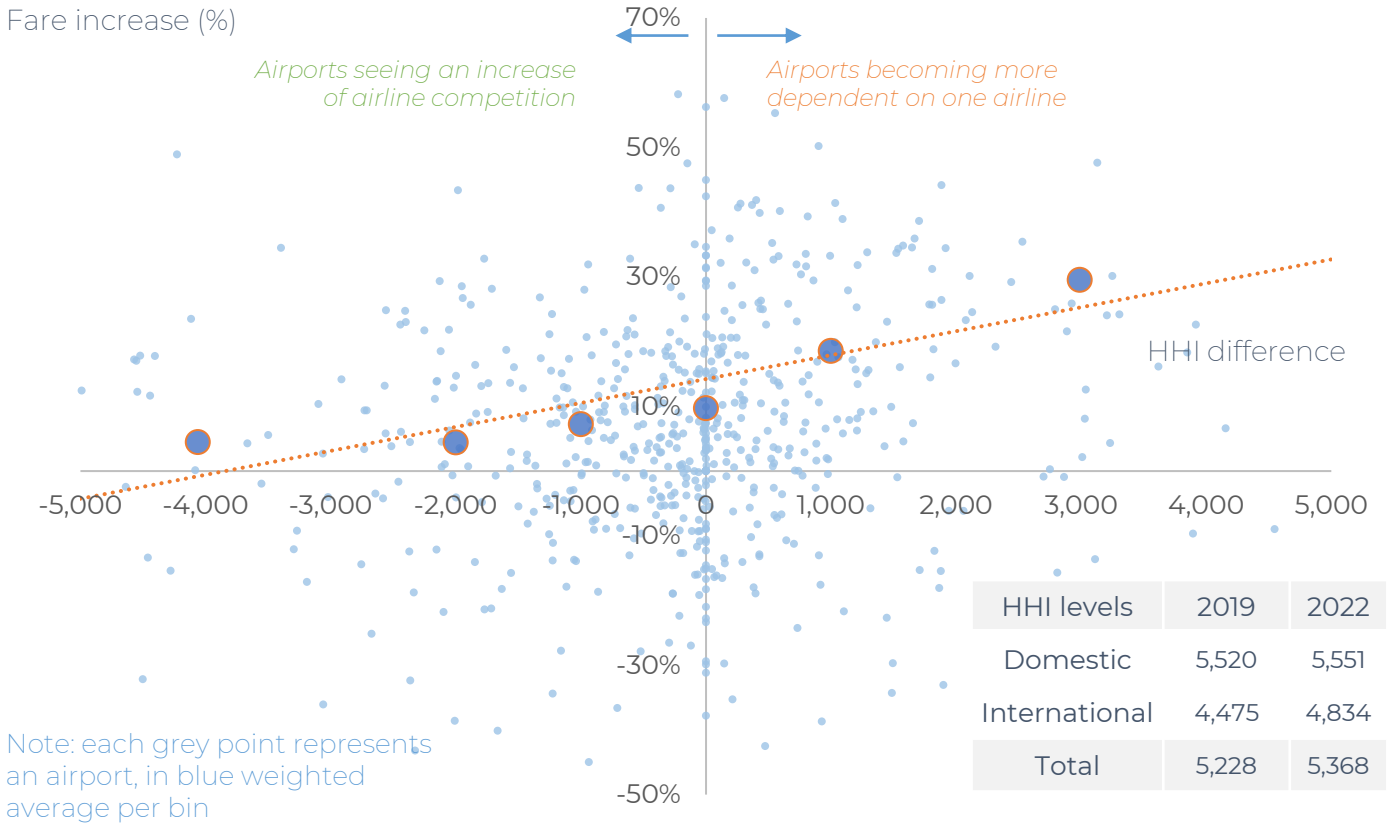


Average distance (km)	Air fare increase
< 1,000 km	+2%
1,000 – 2,500 km	+12%
> 2,500 km (long haul)	+18%

Source: Oxford economics, SRS Cirium, Flare analysis

Level of competition | Competitive landscape of a route is always a key factor to define the yield profile, air fares increased as markets became more concentrated

Airfares evolution vs. competition
Airfares increase vs. HHI difference (2022 vs. 2019)



Note: each grey point represents an airport, in blue weighted average per bin

HHI levels	2019	2022
Domestic	5,520	5,551
International	4,475	4,834
Total	5,228	5,368

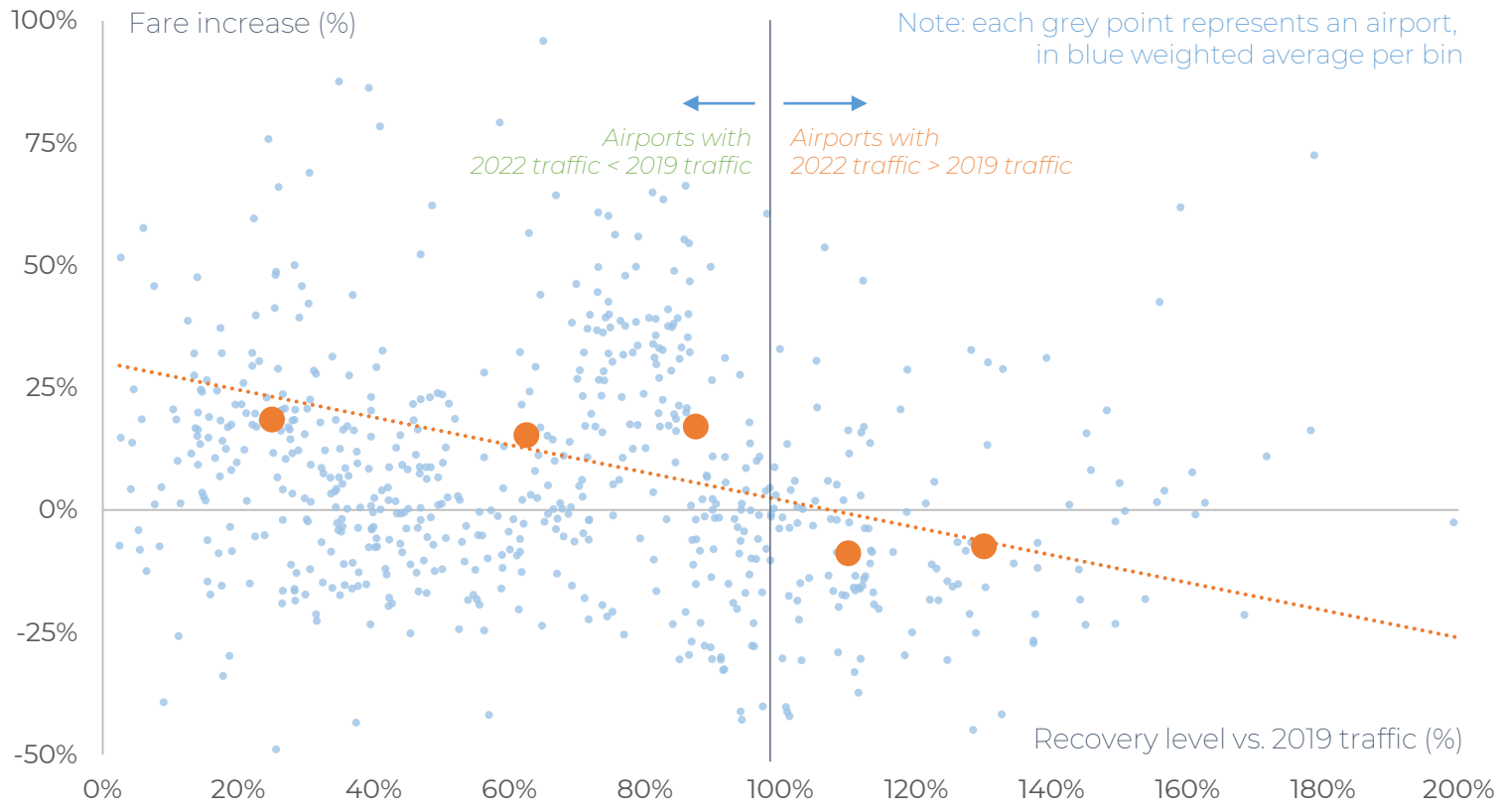
- After COVID outbreak, most of the routes saw an increase of HHI index as competition decreased.
  - HHI index indicates the level of concentration (10,000 = one airline having 100% market share)
- Routes that suffered high increases of HHI index saw the highest air fares increases, while moderate or negative HHI differences led to moderate increases of air fares (below 10%).

HHI difference (index base 10,000)	Air fare increase
Minimum to -2,500	+4%
-2,500 & -1,500	+4%
-1,500 & -500	+7%
-500 & +500	+10%
500 & 1,500	+19%
1,500 to maximum	+30%

Source: SRS Cirium, Flare analysis

Traffic recovery | The real struggle of certain routes to recover 2019 volumes forced airlines to increase airfares to cover fixed costs

Airfares evolution vs. traffic recovery
Airfares increase vs. traffic recovery (2022 vs. 2019)



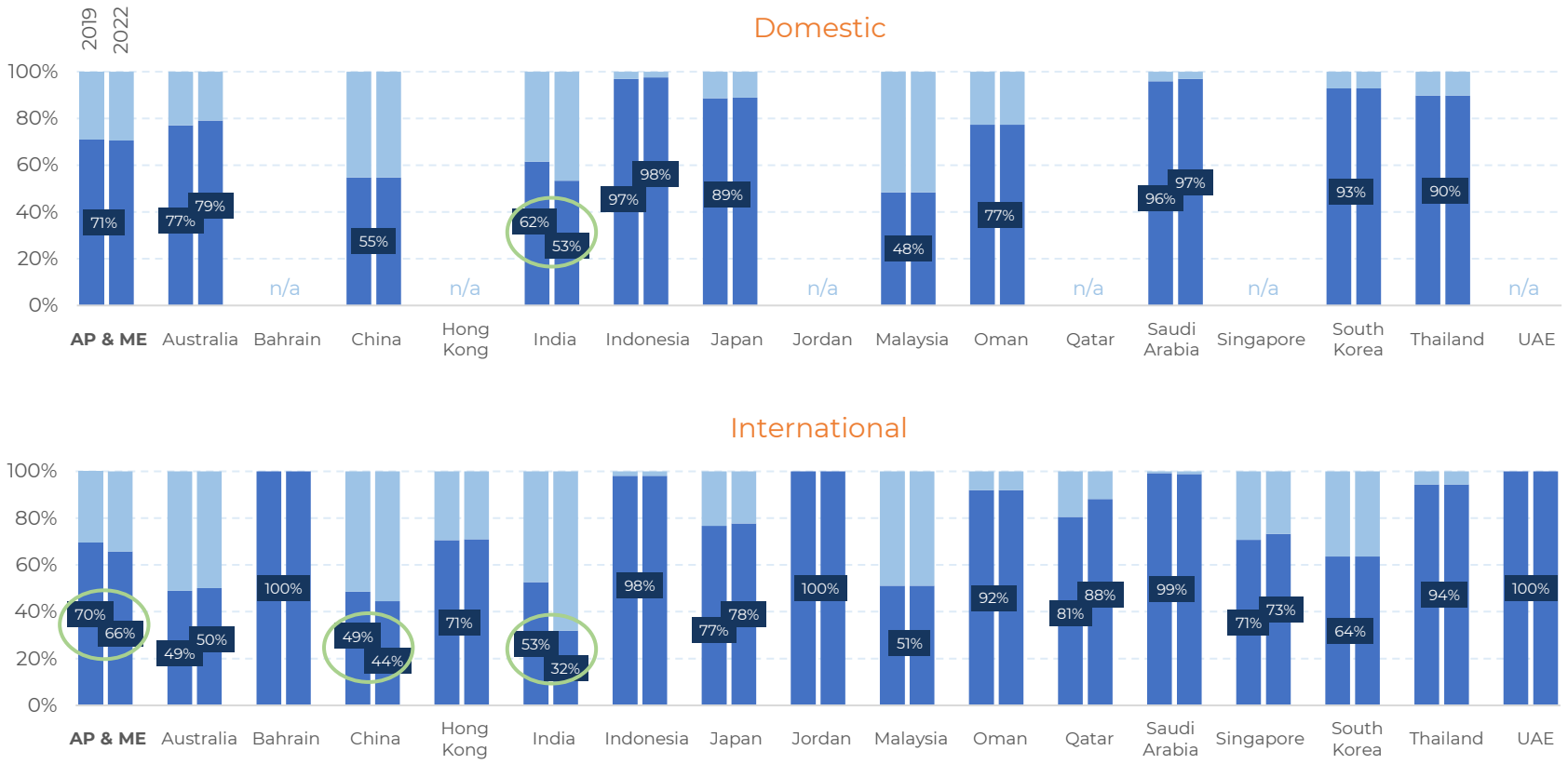
- Most of the airports in APAC handled lower traffic volumes in 2022 compared to 2019 (recovery < 100%).
- The analysis reveals that as routes (and airports) recover pre-pandemic traffic volumes, air fares also become closer to pre-pandemic prices.
- Airlines needed to increase air fares to cover fixed costs during the pandemic period.
- Thus, as traffic in the region recovers organically, it should be expected that air fares stabilize.

Recovery level (vs. 2019 traffic)	Air fare increase
Less than 50%	+19%
50% – 75%	+15%
75% – 100%	+17%
100% – 120%	-8%
>120%	-8%

Source: SRS Cirium, Flare analysis

Turnaround costs | Turnaround costs typically include airport charges, Government taxes and air navigation fees

Turnaround cost breakdown
Share by category



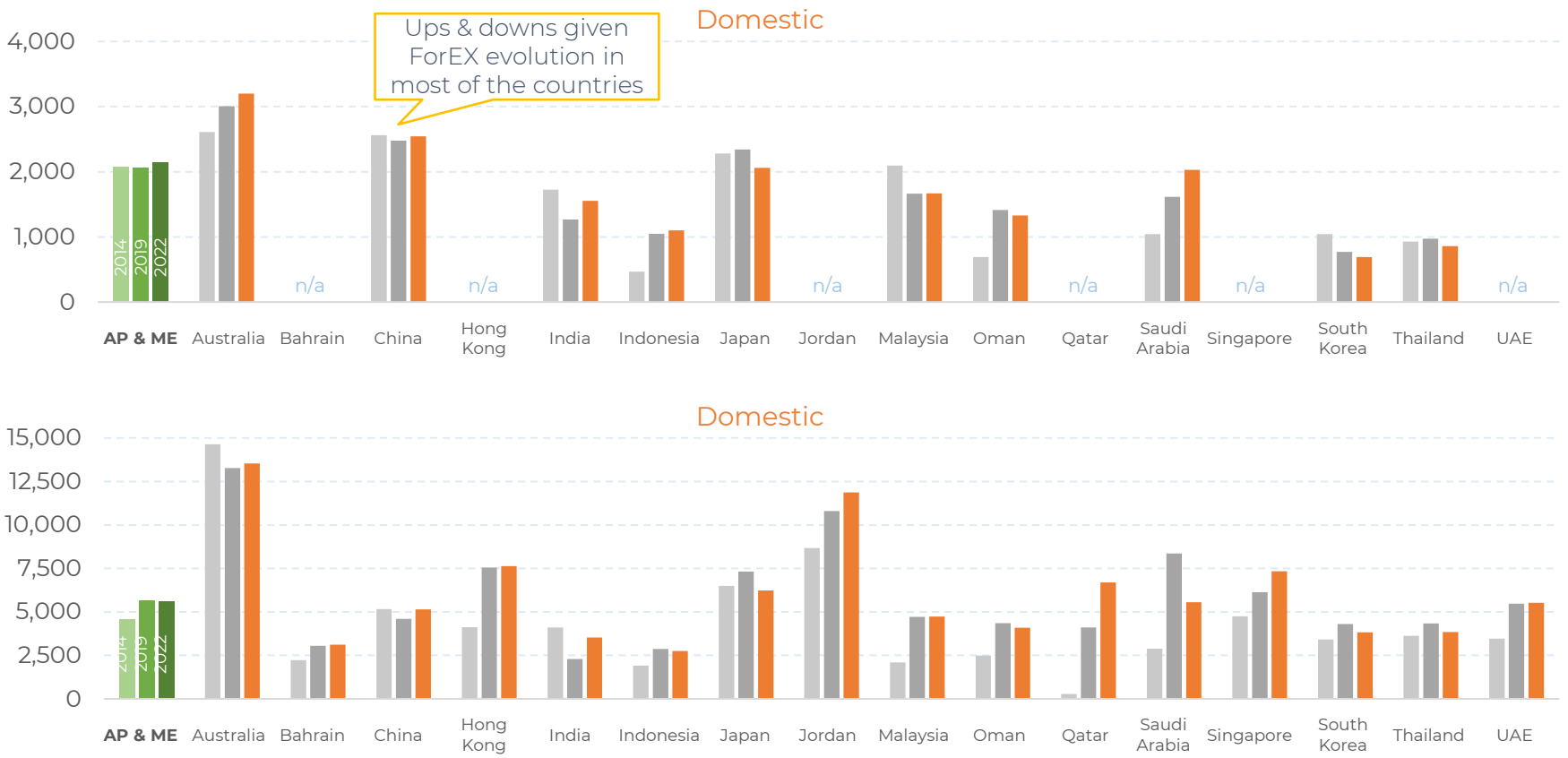
- Turnaround cost breakdown varies among countries based on each applicable regulation, but typically include:
  - Airport charges: landing and parking, passenger, security, infrastructure charges, etc.
  - Other fees & charges: Air navigation fees and/or Government-related charges and taxes (e.g. tourism fees, development fees)
- India increased significantly Government charges (Dom & Int passengers), also China for Int passengers

Note: average cost per turnaround considers all charges and taxes for an A320 aircraft doing a 1h turnaround (50 airports analyzed, covering >60% of the country's market volumes)

Source: ACI; Oxford Economics; Flare analysis

Turnaround costs | Airport charges increased below CPI after COVID in both domestic and international markets

Turnaround cost evolution
USD per turnaround, 2014, 2019 & 2022



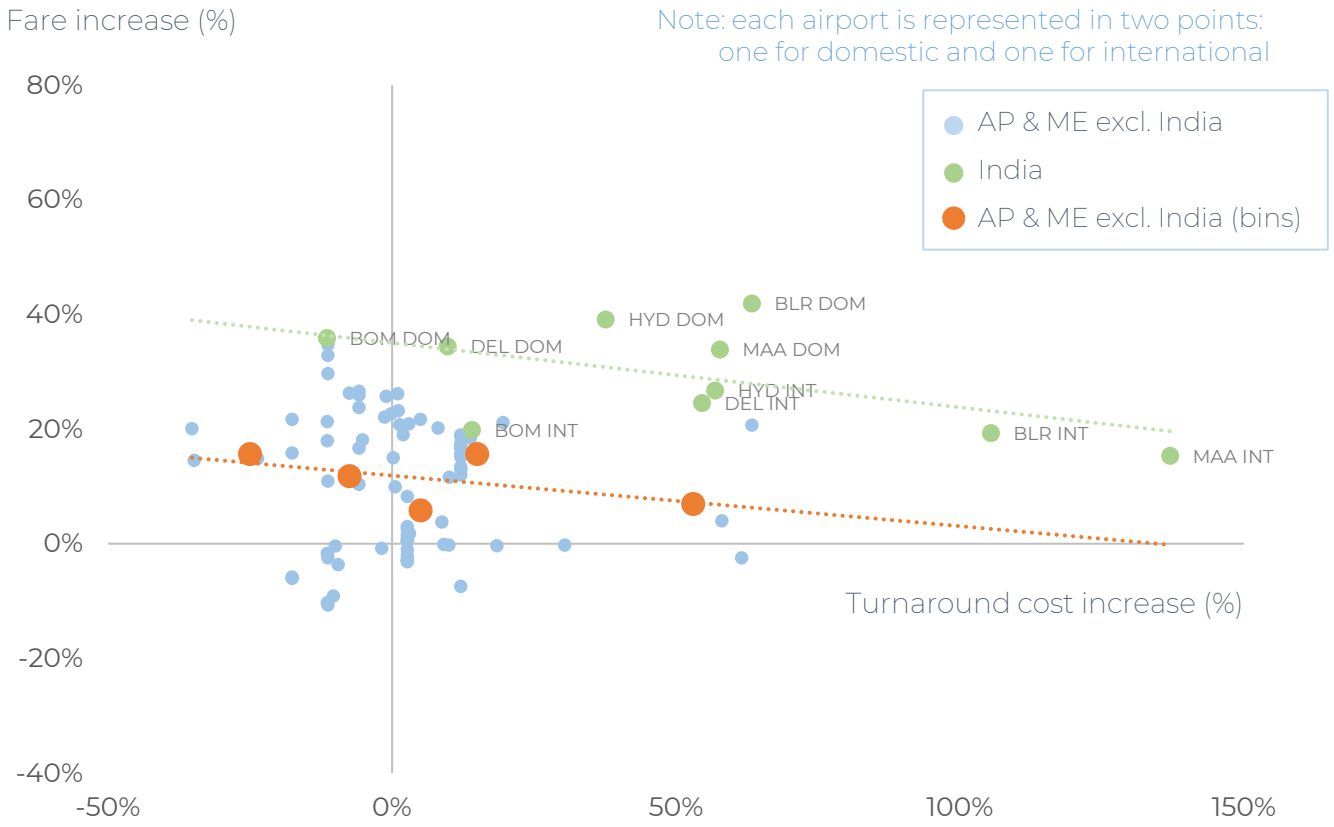
Growth	2014-2019	2019-2022
Domestic Turnaround	**-1%**	**4%**
Airport charges	**9%**	**3%**
Other costs	**-13%**	**6%**
International Turnaround	**23%**	**-1%**
Airport charges	**26%**	**-4%**
Other costs	**16%**	**7%**
Inflation (CPI)	**11%**	**10%**

Note: average cost per turnaround considers all charges and taxes for an A320 aircraft doing a 1h turnaround (40 airports analyzed, covering >60% of the country's market volumes)

Source: ACI; Oxford Economics; Flare analysis

Turnaround costs | The increase of air fares is not directly related to the change in airport charges. The airports that had higher increases of turnaround costs did not suffer airfare increases than were higher average

Airfares evolution vs. turnaround – Domestic and International
Airfares increase vs. turnaround costs (2022 vs. 2019)



- The airports that saw higher increases of turnaround costs did not cause air fare increases that were higher than average.
- Indian airports are an exception and are separated of the analysis turnaround costs increased >25% in average, mainly given the increase of Government taxes. Even there the same rules is applicable: the airports that saw higher increases (BLR, MAA) were not the airports suffering the highest increases of air fares.

Turnaround cost difference (%)	Air fare increase AP & ME	Air fare increase (excl. India)	Air fare increase India
Decreased more than 15%	+16%	+16%	n/a
Decreased 0% –15%	+14%	+12%	+36%
Increased 0% – 10%	+8%	+6%	+34%
Increased 10% – 20%	+30%	+16%	+20%
Increased more than20%	+34%	+7%	+33%

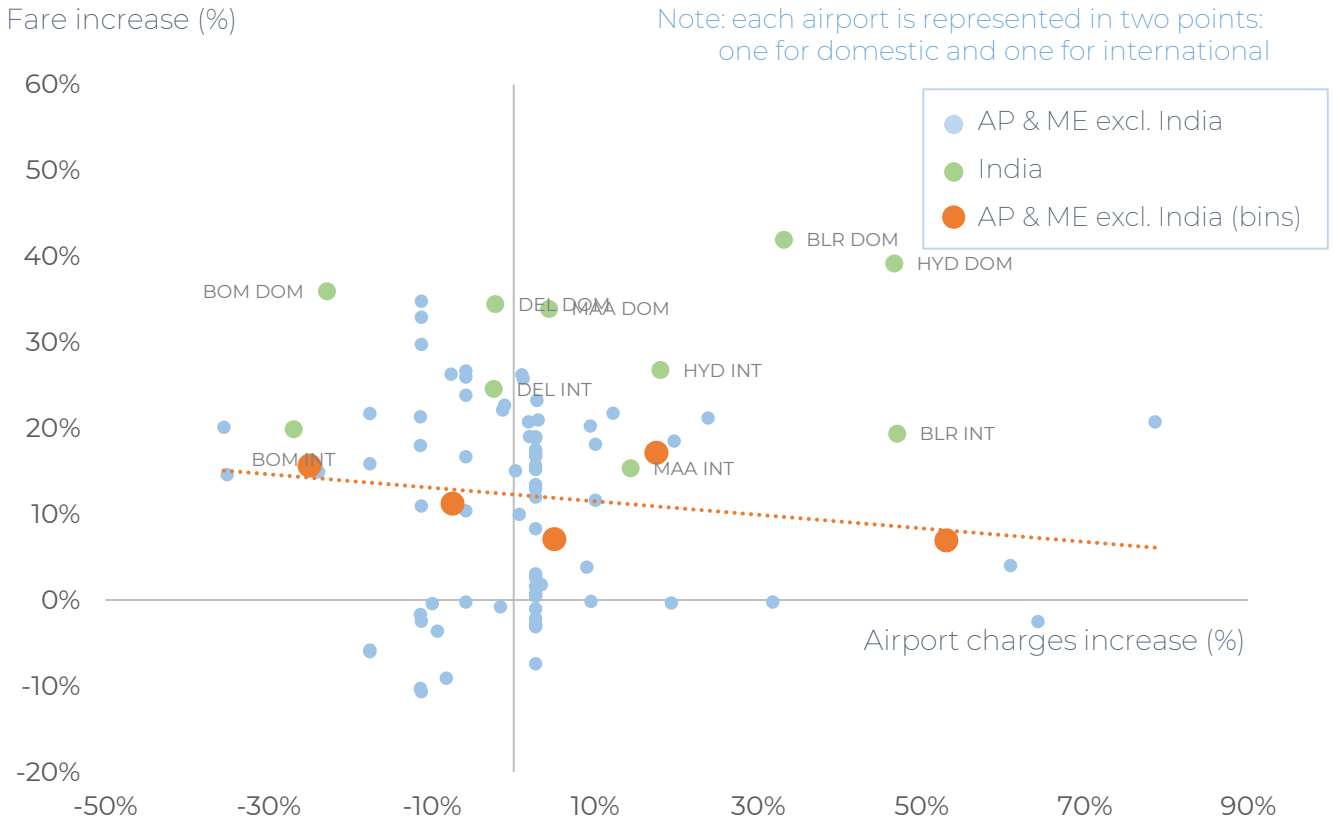
Note: cost per turnaround considers all charges and taxes for an A320 aircraft doing a 1h turnaround, Domestic and International analysis separately

Source: SRS Cirium, ACI, Flare analysis

Airport charges | The increase of airfares in the region is not caused by increases of airport charges, no correlation factor is found between these two variables

Airport charges

Airfares evolution in APAC – Domestic and International
Airfares increase vs. airport charges (2022 vs. 2019)



- In general, the airports that saw higher increases of airport charges (DOH, Saudi Arabia airports) did not have air fare increases that were higher than average.
- The exception are Indian airports and they are considered outliers: airport charges increased significantly in some airports (BLR, HYD, MAA). Also Government charges increased even more. Airfares have increased >20% in all the main airports regardless of airport charges increase (BOM vs. BLR similar increase in air fares, while there are airport charges increases in BLR and decreases in BOM).

Airport charges difference (%)	Air fare increase AP & ME	Air fare increase (excl. India)	Air fare increase India
Decreased more than 15%	+21%	+16%	+32%
Decreased 0% –15%	+14%	+11%	+32%
Increased 0% – 10%	+8%	+7%	+34%
Increased 10% – 20%	+14%	+17%	+20%
Increased more than20%	+24%	+7%	+39%

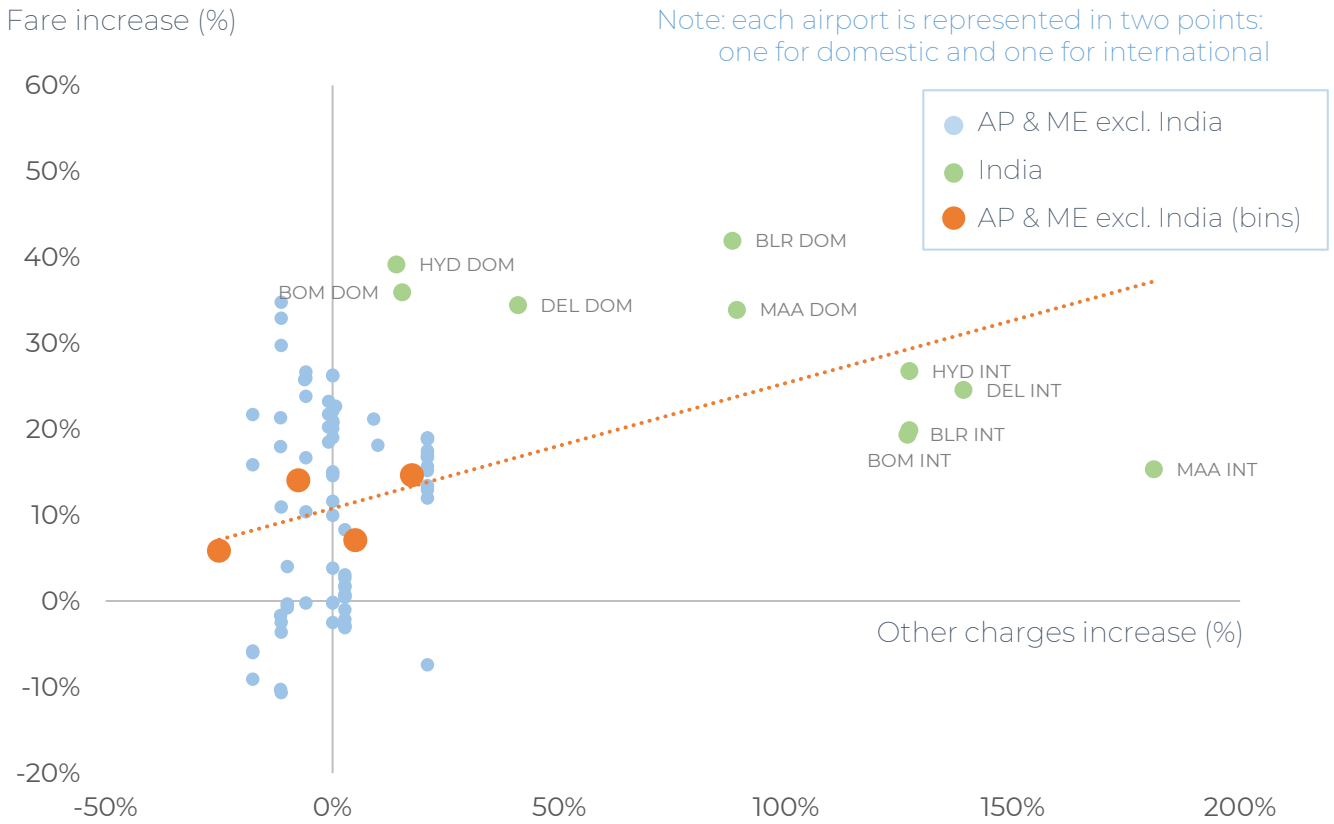
Note: airport charges simulate an A320 aircraft doing a 1h turnaround, Domestic and International analysis separately

Source: SRS Cirium, ACI, Flare analysis

Other charges | The increase of airfares has some correlation with the increase of Government taxes, but it is considered a minor effect compared to other drivers

Airfares evolution in APAC – Domestic and International
Airfares increase vs. other charges (2022 vs. 2019)

Other charges (Gov & Air nav)



- In general, the countries that saw higher increases of Government charges (Chinese and Indian airports) did have air fare increases that were higher than average.
- However, looking specifically into airports, the trend is not clear: Indian domestic markets saw airfare increases 35-45% regardless of Government charges increases, Indian international market 20-30% increases regardless of Government charges increases.

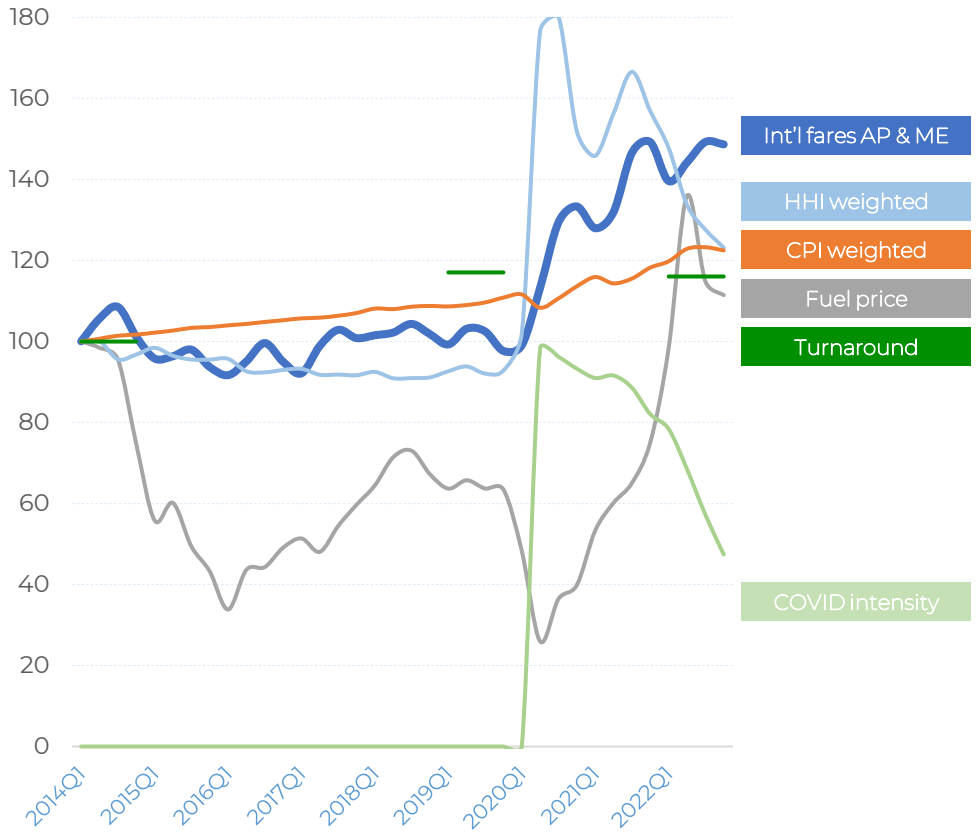
Turnaround cost difference (%)	Air fare increase AP & ME	Air fare increase (excl. India)	Air fare increase India
Decreased more than 15%	+6%	+6%	n/a
Decreased 0% –15%	+14%	+14%	n/a
Increased 0% – 10%	+7%	+7%	n/a
Increased 10% – 20%	+37%	+15%	+37%
Increased more than 20%	+25%	n/a	+33%

Note: other charges include Government & Air Navigation fees and charges, simulate an A320 aircraft doing a 1h turnaround, Domestic and International analysis separately

Source: SRS Cirium, ACI, Flare analysis

International market | The increase of international air fares is mainly due to the increase of CPI, fuel price, airline concentration and the traffic recovery trend

International air fares evolution in Asia-Pacific and Middle East
Air fares vs. selected variables, base 100 (2014-2022 quarterly)



Correlation factor of air fares vs. variables	R^2	Coefficient sign
Fuel price	24% (58% from 2020)	Positive (+)
Competition (HHI weighted)	63%	Positive (+)
Intensity of COVID restrictions (100 - traffic recovery)	72%	Positive (+)
Inflation (CPI)	75%	Positive (+)
Best-fit multivariate regression model	93.4%	→ 63% explained by inflation → 15% explained by fuel price → 11% explained by airline competition → 10% explained by COVID restrictions

Note: The multivariable regression model shall not be used for forecasting purposes as some statistical parameters are not optimal, it is only used to understand the historical trend

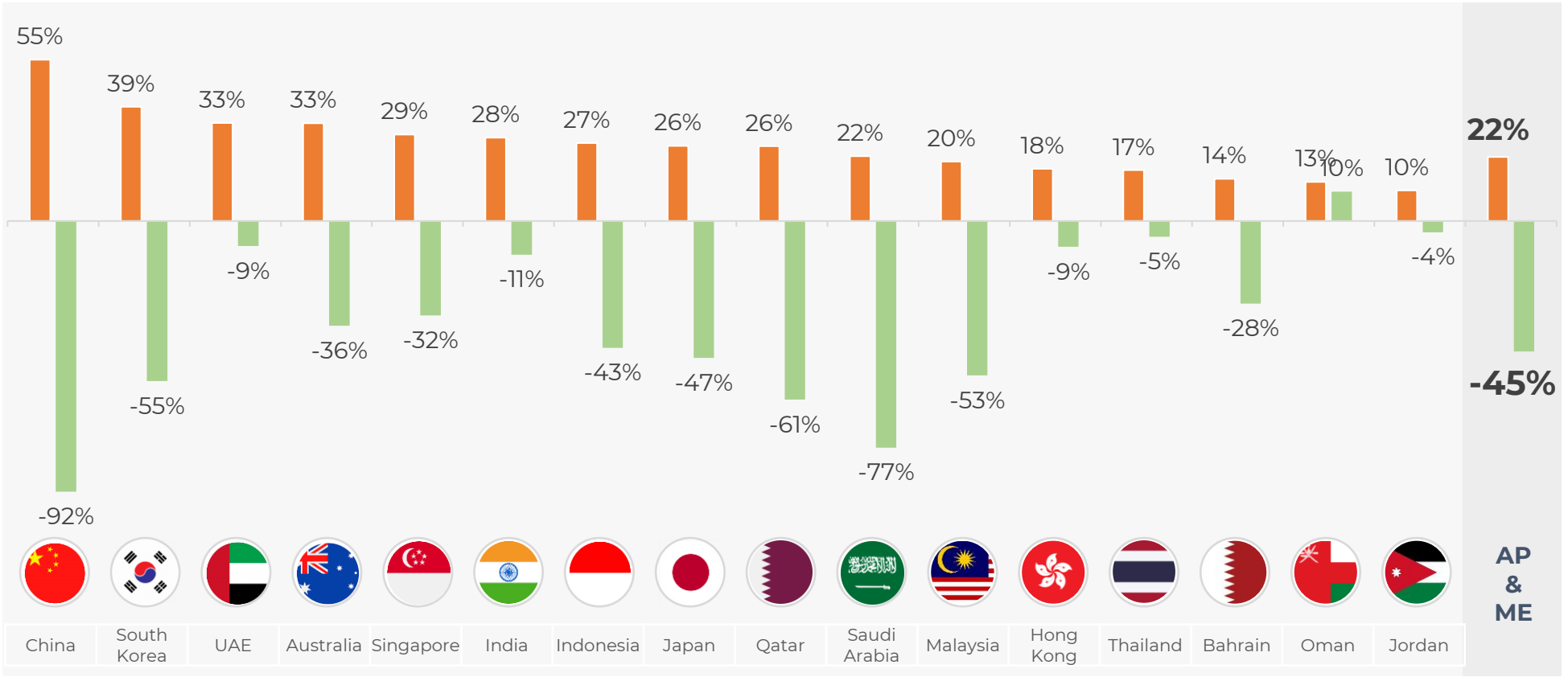
Source: Flare analysis

04 Conclusions

>20% raise in airfares | International markets in Asia Pacific and Middle East suffered significant disruptions of fares given the severe travel imposed during the pandemic

International airfares increase
Q4 2022 vs. Q4 2019

International seat supply increase
Q4 2022 vs. Q4 2019



International markets suffered increases of >20% in airfares; while increases in domestic markets were moderate (below 10%).

A mixed trend of fares is observed in 2023 Q1 (with some countries still with increasing airfares, especially in domestic markets)

Source: SRS Cirium, Flare analysis

What are the causes? | Inflation, fuel price spike, reduction of competition & COVID restrictions

Inflation

Airlines' costs increased due to inflation (CPI saw an average increase of 10% in the region since COVID started). Airfares were adjusted upwards by airlines to cover the increase of costs.

Fuel price

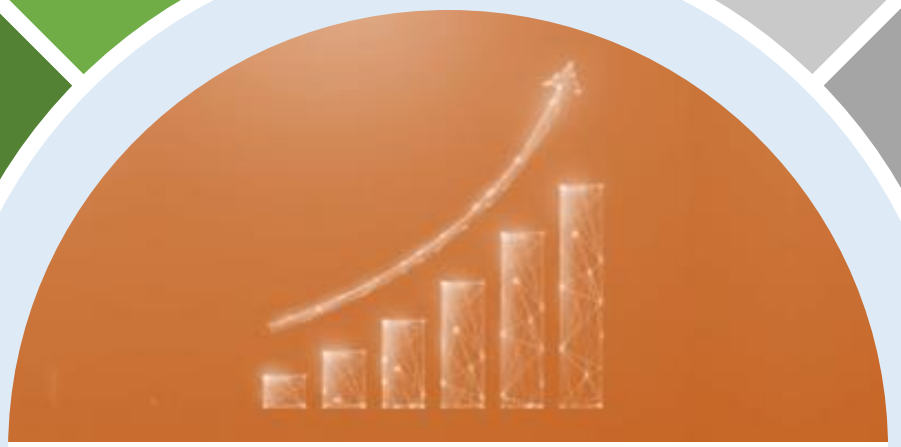
A significant part of air fare increases is due to the fuel cost spike (+76% 2022 vs. 2019). Long haul routes suffered increases of ~20% compared to short haul markets (<10%). The larger the distance, higher increases due to higher share of variable costs.

Airline competition

The reduction of competition due to supply-demand imbalances made it possible for the leading airlines to increase fares. Routes that became more concentrated (dependent on one airline) suffered increases of >25% in fares, whereas routes that remained with a constant concentration only increased fares by ~10%.

COVID restrictions

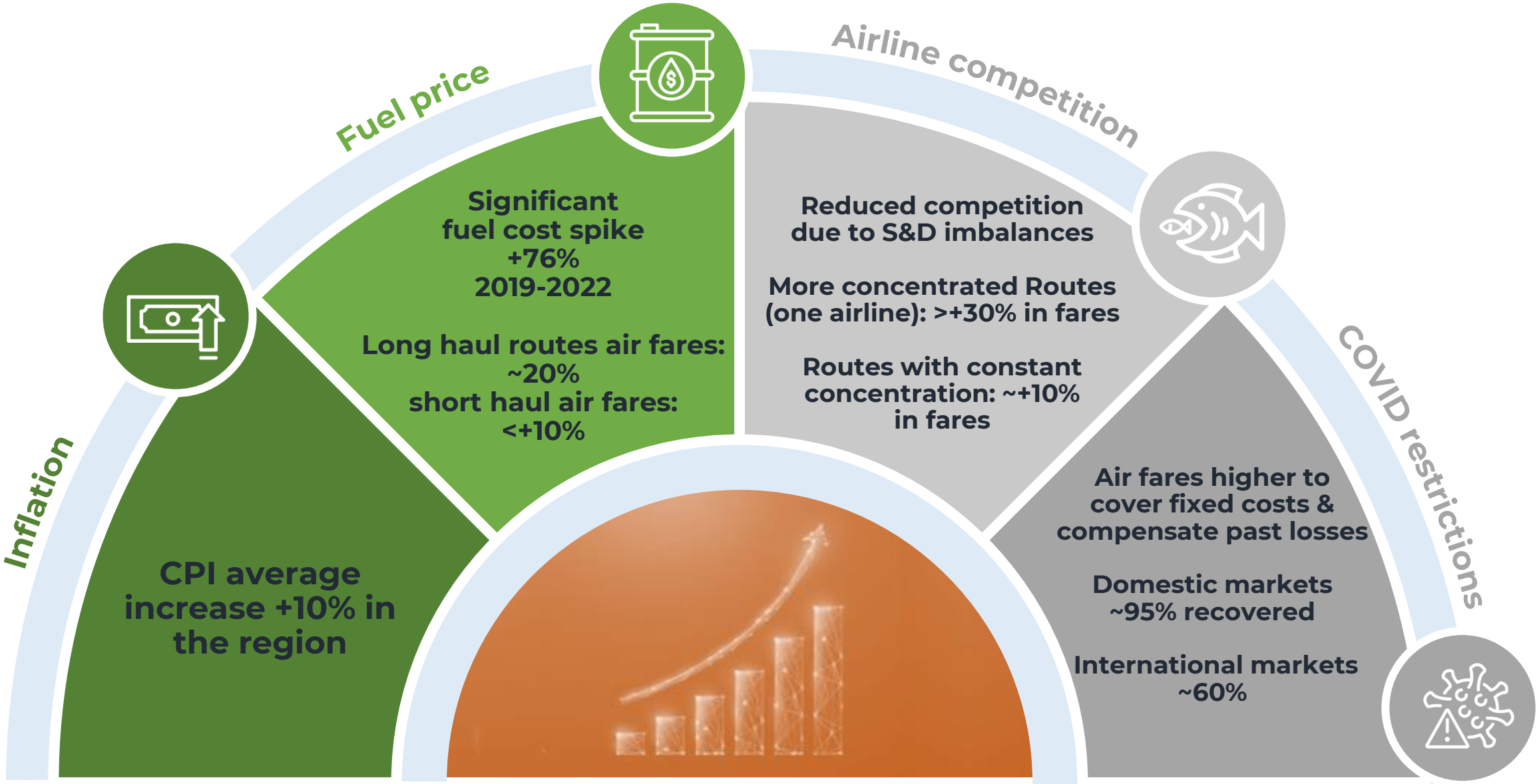
While pre-pandemic traffic volumes are not fully recovered, airlines may struggle and may remain forced to keep air fares higher to cover fixed costs. Domestic markets are ~95% recovered, international markets only ~60%.



Airport charges

Meanwhile, airport charges remained stable in nominal terms.
-4% international charges
+3% domestic charges
The increase of airfares is not related to airport charges. The airports that saw the highest increases of airport charges did not suffer airfare increases above the average.

Source: SRS Cirium, Oxford Economics, Flare analysis



Source: SRS Cirium, Oxford Economics, Flare analysis

Airport charges

Airport charges in 2019-2022 remained stable or decreased in nominal terms in Asia & Middle East

-4% international charges

+3% domestic charges

The few airports that increased charges did it below CPI levels after COVID in both domestic and international markets

The increase in airfares is NOT related to airport charges

Conclusions | Air fares evolution in Asia-Pacific and Middle East, with focus on COVID-19 period

- Air fares have increased in Asia-Pacific and Middle East since COVID outbreak started, breaking with the decreasing trend seen the previous 5 years. The highest increases have been reported in 2022 vs. 2019.
- In the majority of the countries sampled, airfares in the first half of 2023 have continued to rise compared to pre-COVID levels, albeit to a lesser extent than in 2022. This trend is incongruent with the increased capacity provided by airlines, which would ordinarily lead to a reduction in airfares.
- International markets suffered greater disruptions of fares as severe travel bans were imposed during the pandemic (>20% increase in fares), while domestic markets suffered an average increase below 10%.
- While pre-pandemic traffic volumes are not fully recovered, airlines may struggle and may remain forced to keep air fares higher to cover fixed costs. most domestic markets have recovered 2019 traffic volumes (~95%) whereas the international market is expected to recover pre-pandemic volumes by 2023/2024 (60% recovery in Q4 2022).
- Fuel cost spike was also one of the main causes of air fare increase in Asia-Pacific during 2020-2022 period.
- Long haul routes suffered higher increases of fares between ~20% (higher share of variable costs such as fuel cost compared to short haul), whereas short routes only suffered moderate increases (below 10%).
- India and Indonesia domestic markets have shown to be more sensitive to fuel price than other countries, attributable to the fact that these countries have inexpensive labor (thus lower fixed costs vs. higher variable costs).
- The reduction of airline competition during the pandemic caused that some markets became more concentrated (dependent on one airline), which made it possible for the airlines to increase air fares. Specially LCC, taking advantage of their leading position.
- Also, inflation was an important factor for air fare increases: airlines' costs increased due to CPI (+10% average of countries 2022 vs. 2019) and air fares were adjusted upwards to cover the increases.
- However, the increase of air fares is not directly related to the change in airport charges, as no correlation of factors is found between these two variables. The airports that saw the highest increases of airport charges did not suffer airfare increases above the average.

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