



Quarterly Air Transport Chartbook

IATA Economics

Q4 2022





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Glossary

ACTKs – Available Cargo Tonne-Kilometers

ASKs – Available Seat-Kilometers

ASPAC – Asia Pacific

ATKs – Available Tonne-Kilometers

BLF – Breakeven Load Factor

CLF – Cargo Load Factor

CTKs – Cargo Tonne-Kilometers

FRT – Freight Tonnes

GDP – Gross Domestic Product

LF – Load Factor

MoM – Month-on-month

OPEC – Organization of the Petroleum Exporting Countries

Passenger Traffic O-D – Passenger Traffic Origin-Destination

PAX – Revenue Passengers

PLF – Passenger Load Factor

RPKs – Revenue Passenger-Kilometers

RTKs – Revenue Tonne-Kilometers

SA – Seasonally adjusted

USD – United States Dollar

WLF – Weight Load Factor

YoY – Year-on-year

I. The Business Cycle

- We enter 2023 in a state that is characterized by the ramifications of the COVID-19-induced economic crisis. This was the deepest economic recession the world has suffered since the Great Depression, and it came on the heels of the 2008 Global Financial Crisis – itself then the most severe recession since the Great Depression.
- Deep economic crises are disruptive, not only in economic terms but also in their effects on beliefs, attitudes, and perceptions. Today, as in the interwar period, democracy is under pressure and globalization is in retreat. Attention is turning inwards and the geopolitical system grapples with war in Europe and nationalist ambitions. Technological innovation is extending the realm of possibilities, but politics define the extent to which this can be leveraged upon – a crucial issue in the face of climate change. At the current junction, these evolutions are likely to have a dampening effect on economic growth.
- Several, even as many as a third of the world's countries, could suffer recessions in 2023. It is much more unlikely that we will experience yet another global recession. However, global GDP growth slowed sharply from the strong rebound of 6% in 2021 to close to 3.5% in 2022 and is likely to dip below 3% in 2023. Such a sharp slowdown undoubtedly feels recessionary to many people. China PR arguably holds the key to the outcome for the world economy in 2023. If China PR's end to its zero-COVID policy and related lockdowns can overcome the resulting adverse health implications and lead to increased economic activity, it could compensate for much of the economic deceleration anticipated elsewhere.
- Exceptional labor market strength is a major factor in terms of reducing the risk of severe recessions. Many countries have record-low unemployment rates, notably in advanced economies. The US created 517,000 in January 2023, following a stunning average monthly gain of 401,000 in 2022, and the unemployment rate edged down to 3.4%, the lowest since 1969. It is difficult to imagine a recession in the US unless monthly job creation falls below 100'000.
- Inflation, on the other hand, is a threat to the business cycle. With the decades' high inflation seen in 2022, the general price level has increased, even if the pace of further price increases is set to slow in 2023. Purchasing power will be curtailed, dampening consumption and global trade. This is further exacerbated by currency depreciations versus the US dollar that range from significant to dramatic, in turn leading to higher imported inflation in a vicious cycle. Countries with currencies pegged to the US dollar will be constrained to conduct tighter monetary policies than their economies strictly speaking might warrant, and the scope for fiscal stimulus is limited as the world has accumulated the highest debt levels in history across sovereigns, corporates, and households. Structural reform would be the preferred action though this requires political clout, which is often absent. Attempts at reform might instead lead to protests and social unrest, and we witness, for example, the resistance to much needed pension reform in France.
- We provide an overview of our assessment of the risks we will likely face in 2023 in the risk matrix below. The knowable risk that would have the highest impact is that the US could default on its debt. The US has a fiscal rule which limits the amount of debt that the country can issue. Once that limit has been reached, the government can still function for a period of time thanks to cash on hand and extraordinary measures. However, when the money runs out, the government risks defaulting on its debt obligations unless the debt ceiling is lifted. While there is a degree of habitual drama around this issue on an annual basis, it led to important crises in 2011 and 2013. The risk of another crisis in 2023 is greater than usual given the sharply divided Congress. The risk of an outright default, however, is still low, though were it to occur it would have cataclysmic consequences for the US and for global financial markets.

- The risk with the highest likelihood is that of high oil price volatility. Further oil price volatility is to be expected in 2023, notably as a result of the EU having prohibited EU vessels from transporting Russian crude oil (from 5 December 2022) and petroleum products (from 5 February 2023) to third countries. Moreover, limited refining capacity will in all likelihood mean that the historically elevated crack spread between crude and jet fuel prices will be a feature of the market also in 2023. Nevertheless, the slowing global economy should have a dampening effect on average oil prices.
- In sum, most of the headwinds from 2022 are likely to remain with us also in 2023, though on the whole they may be unlikely to intensify. This nevertheless implies that airlines will face elevated costs on virtually all fronts, arguably putting a floor under ticket prices. Passenger price sensitivity has been low so far since travel has again been possible, though it can be expected to rise as economies slow and unemployment rates climb again. The upside potential in our forecasts therefore looks capped, and the balance of risks remains tilted to the downside. The main positive surprises which could produce significant upside in economic activity and air transportation would be an end to the war in Ukraine, and an end to all travel restrictions.

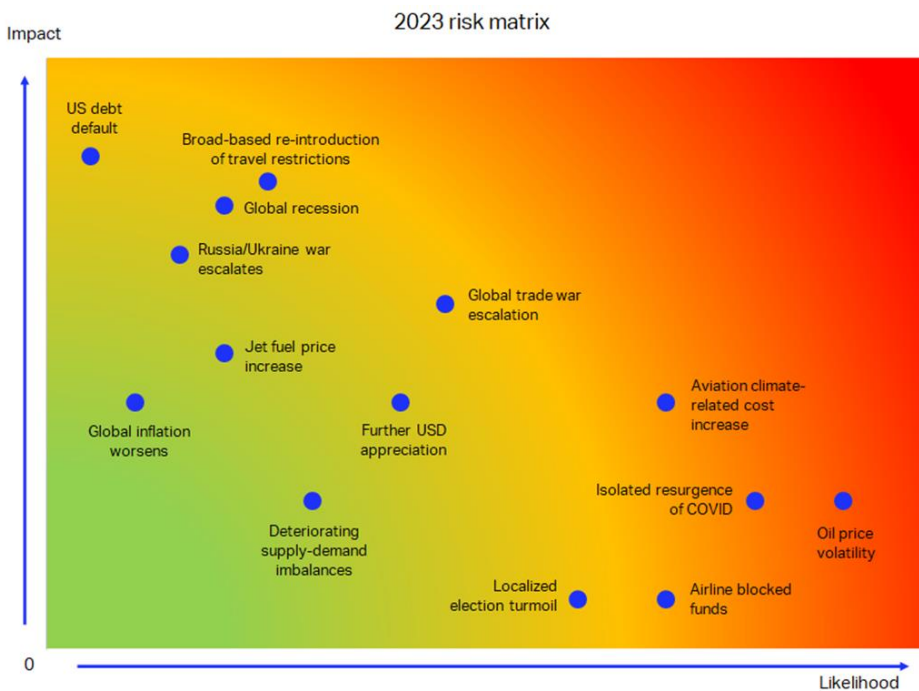
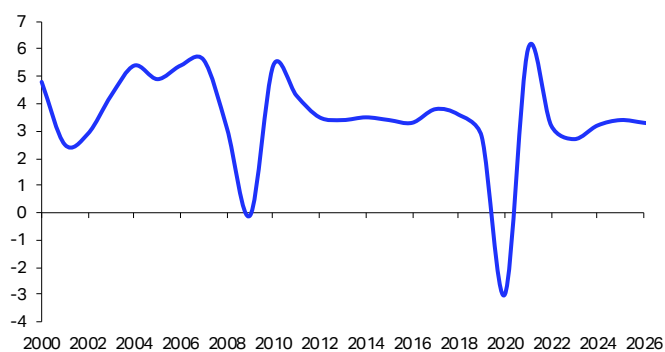
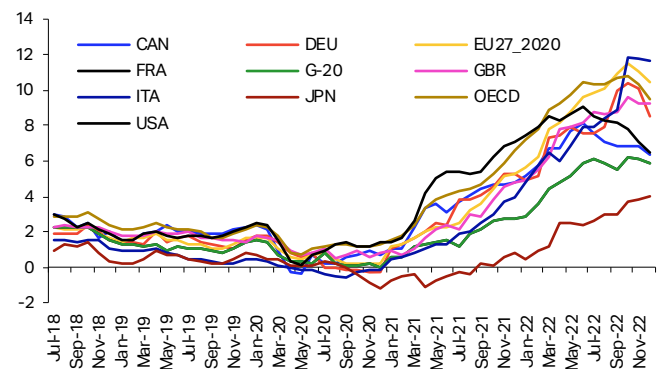


Chart 1: % Growth rate of Gross domestic product (in constant prices)



Source: IMF (October 2022 update)

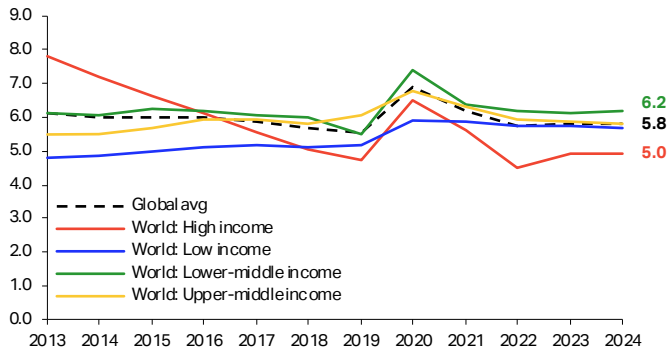
Chart 2: Inflation as Consumer Price Index (CPI), annual growth rate (%)



Source: OECD

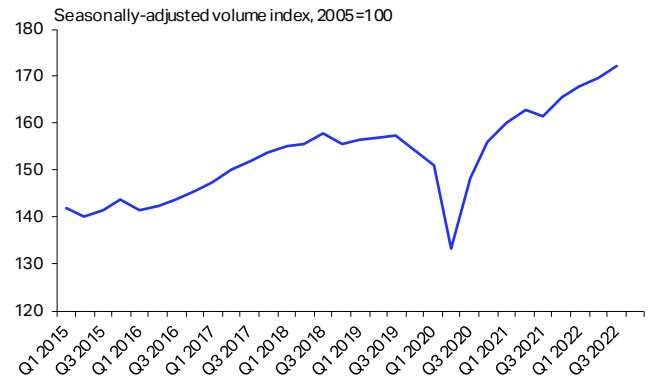


Chart 3: Unemployment rate between 2013 and 2024 (% of Labor Force)



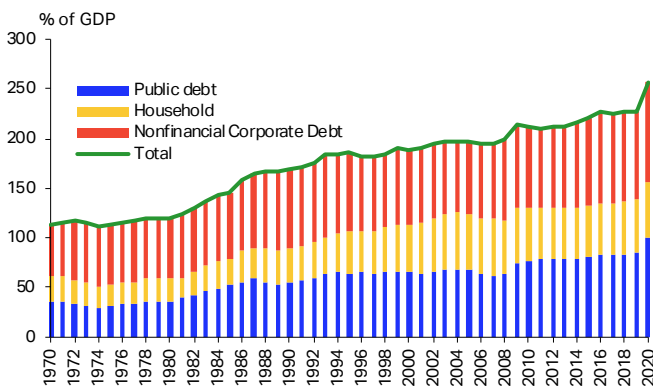
Source: ILO Statistics November 2022

Chart 4: Volume of world merchandise trade, 2015-2022



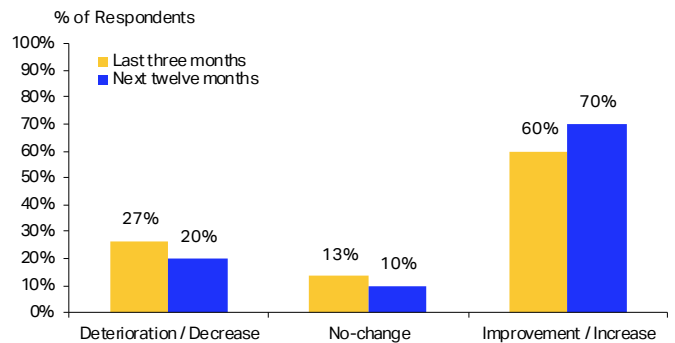
Source: WTO

Chart 5: Global debt as a percent of GDP



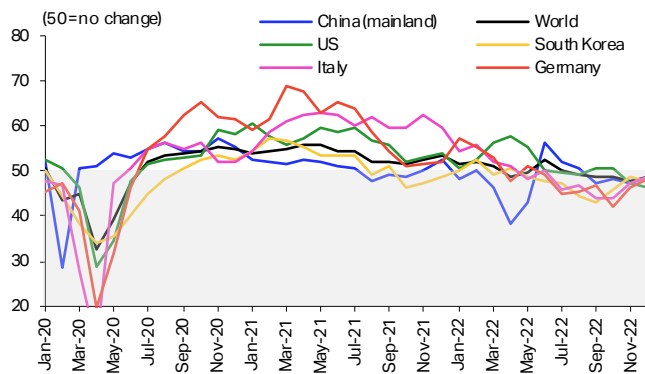
Source: IMF Global Debt Database

Chart 6: How does your profitability performance in the last 3 and the next 12 months compare with the same period last year?



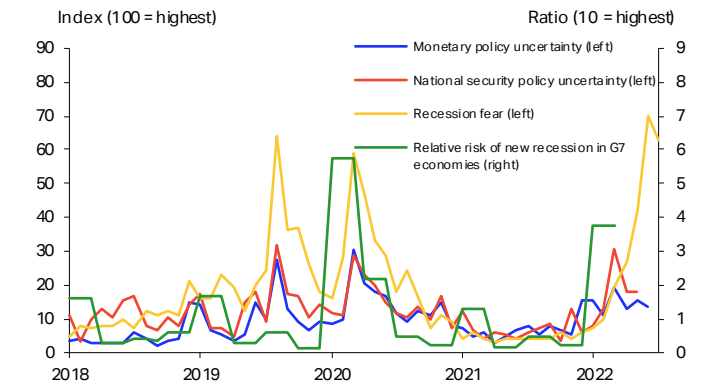
Source: IATA Business Confidence Survey (October 2022)

Chart 7: Manufacturing output PMI



Source: Markit

Chart 8: Monetary, national security and recession uncertainties index and relative probability ratios



Source: MF World Economic Outlook



II. Passenger and Cargo Traffic

Passenger Traffic

- Industry-wide air passenger traffic, measured in revenue passenger-kilometers (RPKs), continued its steady recovery in December 2022 and for the full year. Over the course of 2022, global air passenger travel gained momentum and recovered substantially as travel restrictions were removed and passengers expressed a strong willingness to fly. Passenger traffic recovered from 41.7% of 2019 volumes in 2021 to 68.5% in 2022 (Chart 9, Chart 10).
- Propelled by pent-up demand and the reopening of air travel markets globally, route areas between Europe and various regions recovered swiftly in 2022 (Chart 11). The recovery in Europe's air passenger traffic was challenged early in 2022 by the surge in Omicron cases and later by the start of the war in Ukraine. Despite these headwinds, passenger travel between Europe and Central America recovered quickly, reflecting the surge in European holiday travelers that responded to the lifting of restrictions in the region. Strong pent-up demand also drove the increase in passengers between Europe and North America. On the other hand, owing to remaining and new travel restrictions, passenger traffic on routes connecting various regions to Asia have been the slowest to recover.
- Globally, domestic RPKs increased 10.9% in 2022 compared to the prior year, while total international RPKs climbed 152.7% versus 2021. Despite the setbacks caused by lingering travel restrictions, international traffic took off significantly in 2022 wherever these restrictions were lifted. As a result, international RPKs surged from 26.8% of 2019 levels in 2021 to 62.2% in 2022. For December 2022, international RPKs tracked 24.9% under the same month in 2019 and conserved momentum with steady performance from all regions (Chart 12).
- Over the past year, re-openings in many economies of the Asia Pacific region have allowed for passengers and airlines to return to the skies, greatly accelerating traffic growth in both domestic and international markets. While international RPKs in December 2022 were 48.1% below their 2019 levels for this region's airlines, the recent relaxations of China PR's zero-COVID policies, and the reopening of air travel markets, support a positive outlook for the region in the months to come (Chart 12, Chart 14).
- At the industry level, passenger demand was met by offered seat capacity in 2022, as available seat-kilometers (ASKs) recovered to 71.9% of their 2019 levels (Chart 15), while maintaining industry-wide passenger load factors of 78.1%. Passenger load factors for 2022 were only 3.9 percentage points (ppts) below the load factors achieved before the pandemic in 2019. Load factors reached 81% in December 2022 globally, climbing nearly 10 ppts from the same month in the previous year. The highest YoY increases in regional load factors for the month of December were recorded in the Asia Pacific, Middle East, and Europe regions, increasing approximately 16, 14 and 12 ppts, respectively (Chart 16).



Chart 9: Industry RPKs (monthly)

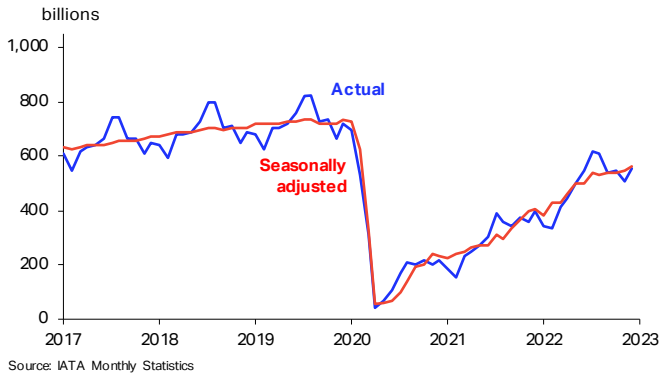


Chart 10: Global RPKs from Jan 2020 to December 2022

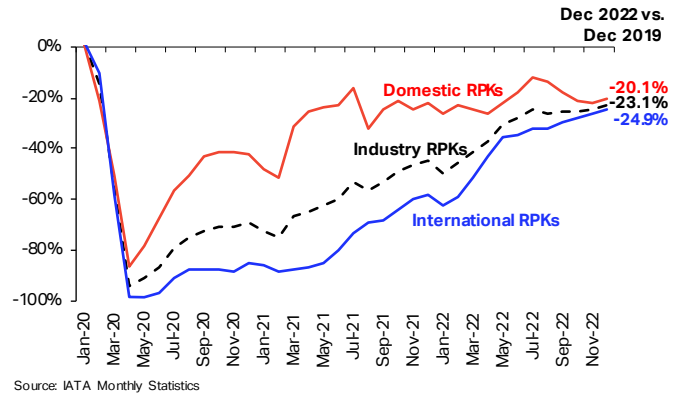


Chart 11: Seasonally adjusted RPKs by Route Area

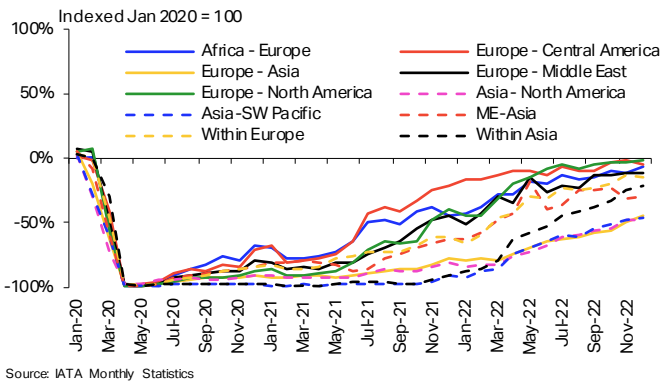


Chart 12: International RPKs by region

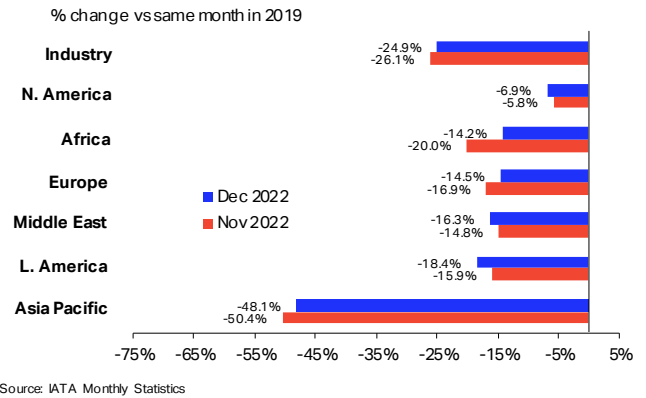


Chart 13: International RPKs by class type

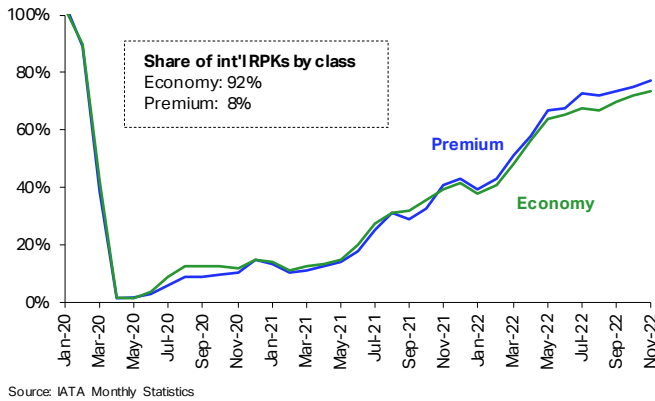


Chart 14: Seasonally adjusted domestic RPKs

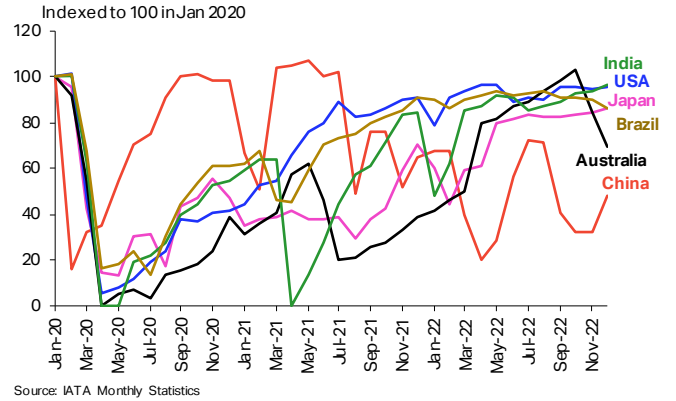


Chart 15: Industry ASKs (monthly)

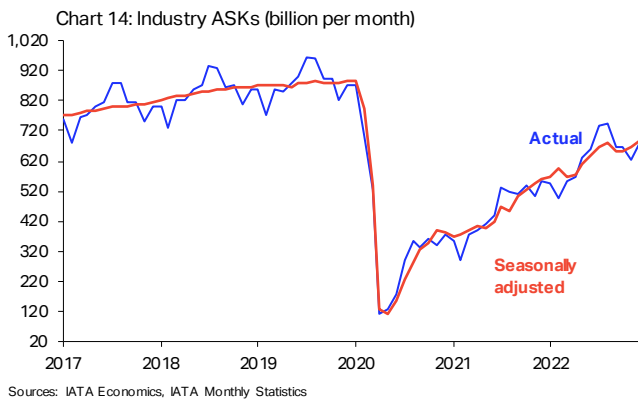
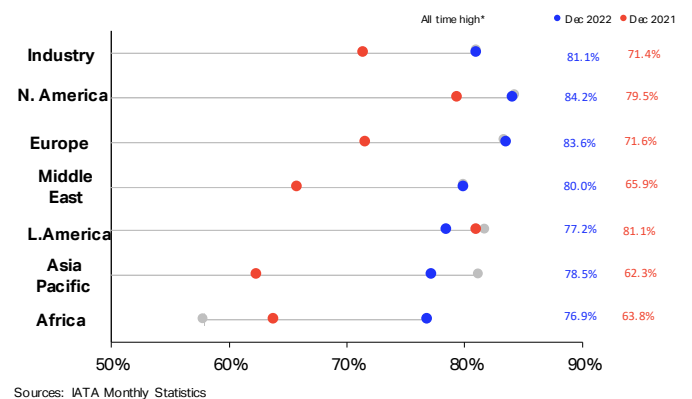


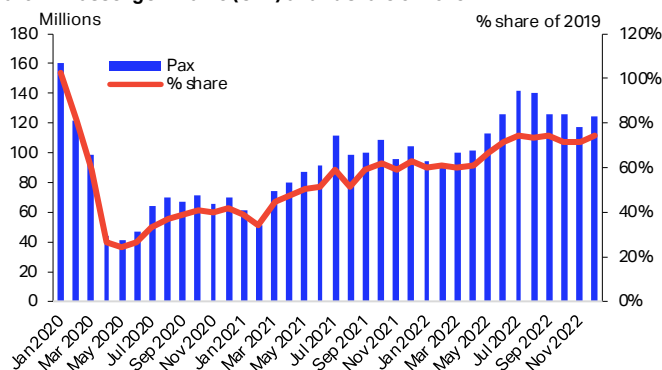
Chart 16: Passenger Load Factor (% of available seat kms, SA)





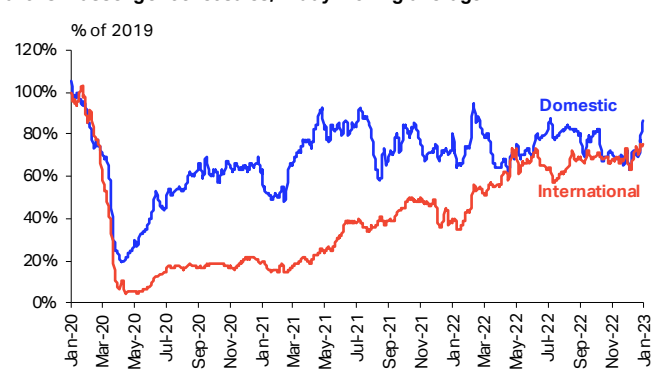
- Global Origin-Destination (O-D) passenger traffic increased to 75% of pre-pandemic levels in July 2022 (Chart 17). Although O-D passengers increased 31.6% YoY over the course of 2022, their share of 2019 traffic levels has mostly trended sideways since July.
- International ticket sales gradually caught up to domestic sales in 2022, owing to positive developments in international travel demand and the easing of travel restrictions in China PR (Chart 18). It is noteworthy that international ticket sales improved also in July despite high energy prices, traffic disruptions, and other economic headwinds. The latest trends in both domestic and international ticket sales point to sustained activity levels over this winter period.
- Most air ticket sales are for travel in the near future, as passengers still perceive some degree of uncertainty when making travel arrangements. In 2022, 88% of all tickets sold in the last quarter were for travel within four months, while 12% of ticket sales were for periods beyond four months from the purchase date (Chart 19). These results are more in line with what we saw in 2019, when 90% of all tickets sold in Q4 2019 were for travel within four months and only 10% of ticket sales were for travel beyond four months.
- Globally, we expect industry-wide passenger traffic to recover to their 2019 levels in 2024, and then grow at an annual average rate of around 3% over our forecast horizon. However, our forecast risks are skewed to the downside due to various headwinds in the near term. These risks include a prolonged war in Europe, high jet fuel prices, elevated general price levels, and slowing growth in the global economy (Chart 20).
- Airlines faced uneven outcomes in 2022. North American carriers led the industry recovery by achieving close-to pre-pandemic passenger traffic levels, with total RPKs 11.3% below their 2019 volumes, followed by Latin American and European carriers at 14.2% and 22.2%, respectively. We also anticipate the recovery and near-term growth of passenger traffic will vary across regions. North America's traffic is forecast to recover to 2019 levels in 2023, followed by Latin America, the Middle East and Europe in 2024, and by Africa and Asia Pacific in 2025 (Chart 21).

Chart 17: Passenger Traffic (O-D) and % share of 2019



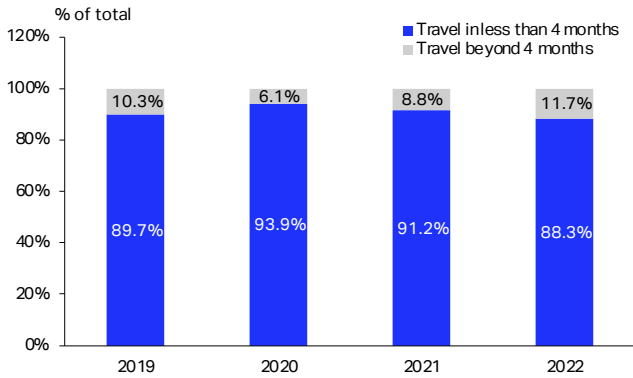
Source: IATA Economics based on DDS data

Chart 18: Passenger ticket sales, 7-day moving average



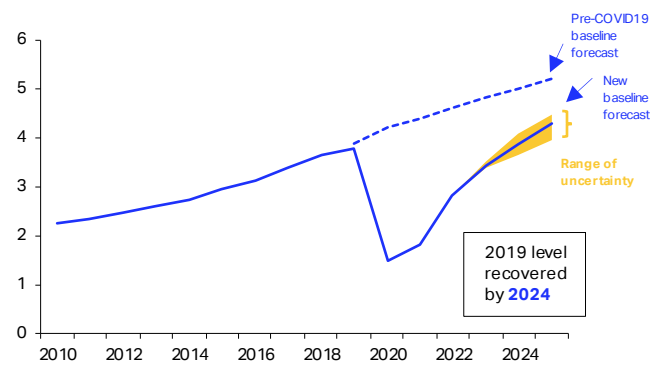
Source: IATA Economics based on data from DDS

Chart 19: Ticket sales in Q4 each year for forward travel



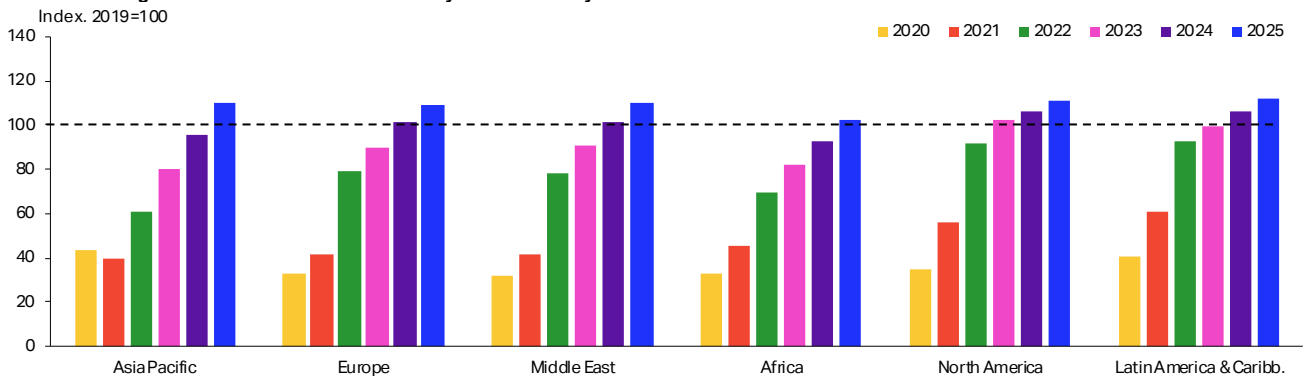
Source: IATA Economics based on data from DDS

Chart 20: Global passengers, billions



Source: IATA/Tourism Economics

Chart 21: Passenger traffic forecast and estimated year of recovery to 2019 levels



Source: IATA/Tourism Economics

Estimated year of recovery to 2019 passenger traffic levels

Africa	Asia Pacific	Europe	Latin America & Caribbean	Middle East	North America	World
2025	2025	2024	2024	2024	2023	2024

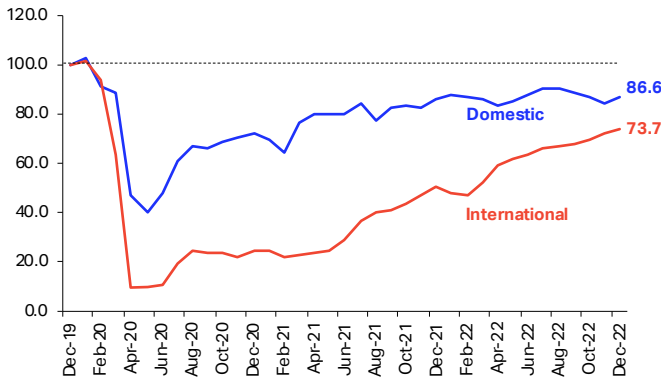
Global Air Connectivity

- Air transport is vital for the modern economy. It provides the city-pair connections that serve as virtual bridges supporting the flows of goods and people between markets. As the only rapid global transportation network, air transport facilitates links between businesses, governments and people – enabling world trade, investment, tourism and travel among other key economic activities. Increased connectivity drives improved economic outcomes for countries and communities.
- By December 2022, IATA's [Global Air Connectivity Index](#), which measures connectivity as scheduled passenger capacity weighed by the relative economic scale of destinations served, had recovered to 74% of pre-pandemic levels for international connectivity and 87% for domestic connectivity (Chart 22).
- While the number of domestic airport pairs served has returned to pre-pandemic levels, only 85% of international airport pairs have been restored (Chart 23) and the recovery in international flight frequency, which is particularly important for business travellers, lags further behind at 77% of pre-pandemic levels.
- Travel restrictions have lingered longer in the Asia Pacific region, notably in China PR, dampening the recovery in international connectivity for that region to 52% of 2019 levels. This recovery lags significantly behind that seen in all other regions, which ranged from 82% in Europe and 84% in North America to 102% in Latin America & Caribbean (Chart 25).



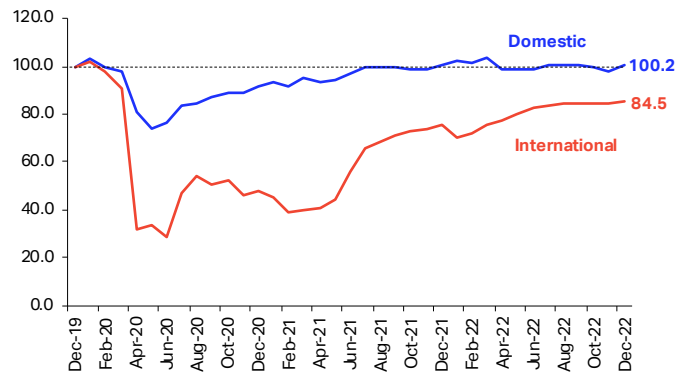
- Further restoration of international air connectivity will help support the recovery of economic benefits associated with air transport for countries heavily affected by the pandemic. It is particularly vital for regions that are highly dependent on international tourism receipts and trade.

Chart 22: IATA Global Air Connectivity Index, Jan 2020-Dec 2022



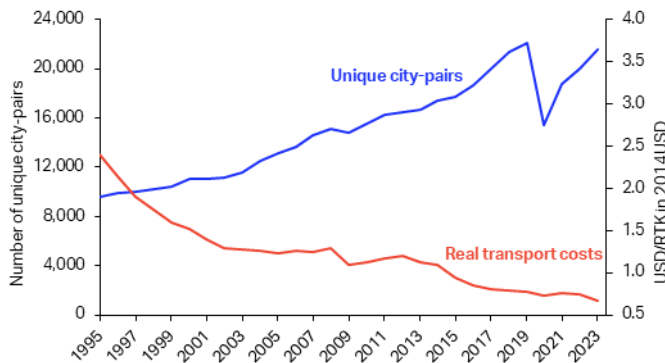
Source: IATA Connectivity Index using data from DDS

Chart 23: Global airport pairs, monthly Jan 2020-Dec 2022



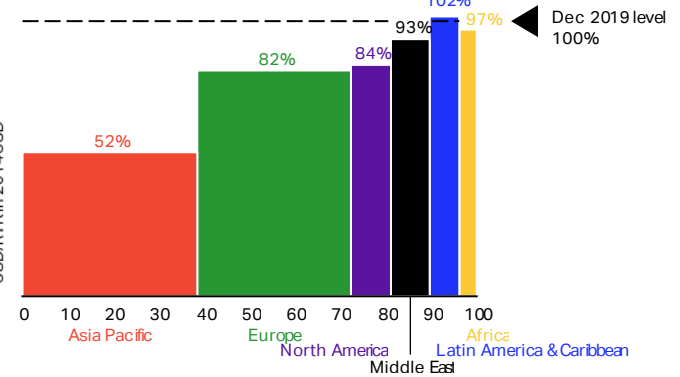
Source: IATA Connectivity Index using data from DDS

Chart 24: City pairs and real transport cost



Source: IATA Economics based on data from OAG

Chart 25: Recovery in international connectivity by region in Dec 2022



Proportion of global international connectivity contributed by each region

Source: IATA Economics based on data from OAG

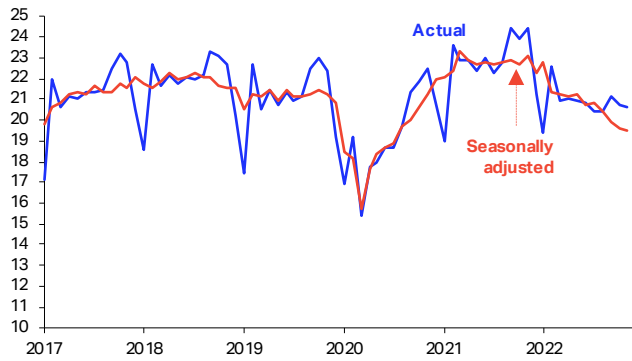


Cargo Traffic

- Global air cargo demand, measured by cargo tonne-kilometers (CTKs), continued to decline year-on-year (YoY) in the fourth quarter of 2022, falling 15.3% YoY in December. This was the tenth YoY contraction in a row in industry CTKs since March 2022. Over the course of 2022, global air cargo demand was 8.0% below the outstanding performance in 2021 but still tracked close to the pre-COVID level in 2019, with only a 1.6% contraction. Industry-wide international CTKs fell by 15.8% YoY in December, contracting further from the previous month's 14.2% YoY decline.
- In the last quarter of 2022, the air cargo industry did not perform as well as expected in a traditional peak season for cargo due to multiple headwinds in the current global economy (Chart 26, Chart 27). Inflation remains high, curtailing the spending capacity of households. The ongoing war in Ukraine disrupts trade flows, and the unusual strength of the US dollar makes commodities traded in US dollars more expensive in local currency terms.
- Industry air cargo capacity, measured in available cargo tonne-kilometers (ACTKs), also contracted by 2.2% YoY in December, marking the third month in a row of YoY contraction. Similarly, seasonally-adjusted ACTKs in December were 2.1% lower than the same month in 2021 (Chart 28). However, for the full year of 2022, global ACTKs were 3.0% above levels in 2021, but 8.2% below 2019 levels. Airlines reduced air cargo capacity to respond to the supply imbalance that has emerged as demand has fallen YoY since March 2022.
- With the strong recovery of passenger air transport, international belly cargo capacity from passenger carriers maintained its consecutive monthly growth since April 2021. In contrast, international cargo capacity provided by dedicated freighters experienced slight YoY contractions in the fourth quarter of 2022 (Chart 29).
- With respect to regional cargo activities, North America and Africa remained the only two regions that have achieved higher air cargo demand, both in terms of total CTKs and international CTKs (seasonally adjusted), compared to pre-pandemic levels (Charts 30 and 32). Latin America sustained its lead in the YoY growth of annual total CTKs among all regions in 2022 (Chart 31) and achieved a 2.3% YoY growth in its international CTKs in December (Chart 33). All other regions saw negative YoY growth in international air cargo activity in December, contrasting their outstanding performance in 2021 (Chart 33).
- The industry cargo load factor (CLF) in 2022 was 50.1%, dropping 6 percentage points (ppts) compared with the level in 2021 but still 3.3 ppts higher than the pre-COVID level in 2019. International CLF declined by 7.8 ppts YoY in 2022, falling from 63.9% to 56.1%. Europe saw the highest international CLF (SA) of 57% in December, while Latin America had the lowest CLF at 41% (Chart 34).
- Global new export orders – a component of the purchasing managers index (PMI) and a leading indicator for air cargo shipments – remained below the critical 50 (no change) line for major economies (Chart 36). Global export orders have stayed at the same level since October, suggesting sustained deceleration on average. Germany's export orders continued to improve in December, signaling a degree of normalization after the months-long impact of the war in Ukraine. Other major economies that showed slight improvements in their export orders in December were the US and Japan, while South Korea and China PR registered lower new export orders in December compared to November.

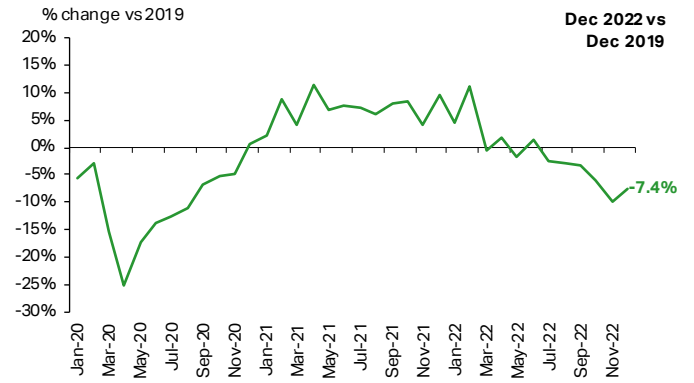


Chart 26: Industry CTKs (billions per month)



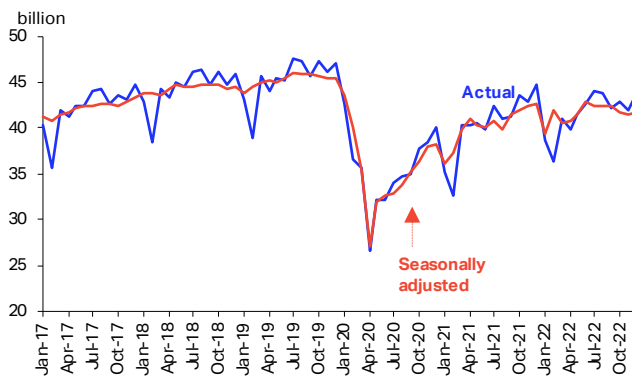
Sources: IATA Monthly Statistics

Chart 27: Global CTKs from Jan 2020 to Dec 2022



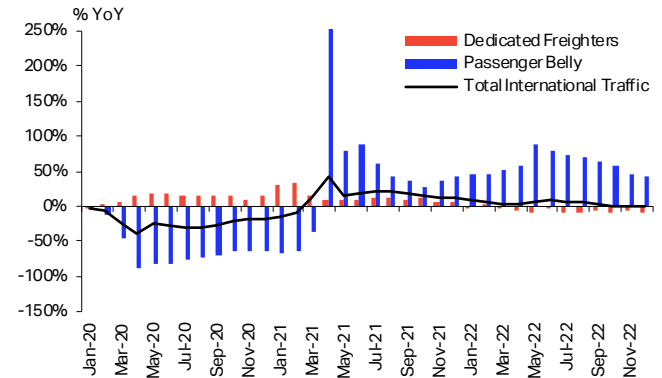
Source: IATA Monthly Statistics

Chart 28: Industry ACTKs (billions)



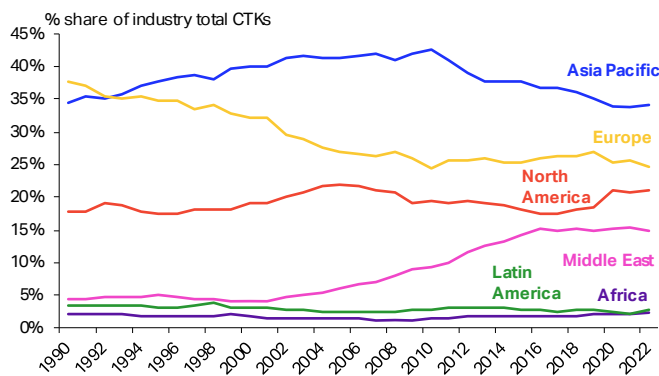
Sources: IATA Monthly Statistics

Chart 29: Growth of international ACTKs by cargo type



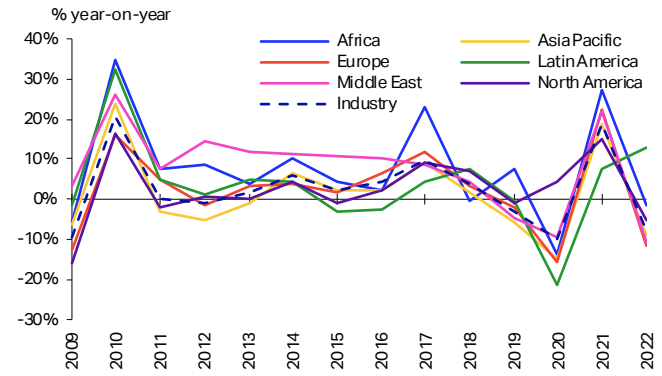
Source: IATA Economics

Chart 30: Annual total CTKs by region



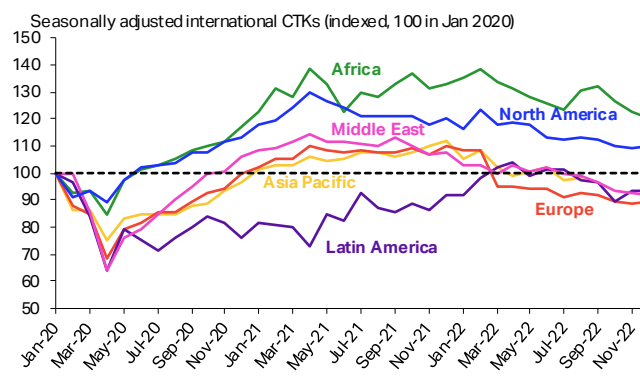
Source: IATA Monthly Statistics

Chart 31: % Year-on-year growth in annual total CTKs by region



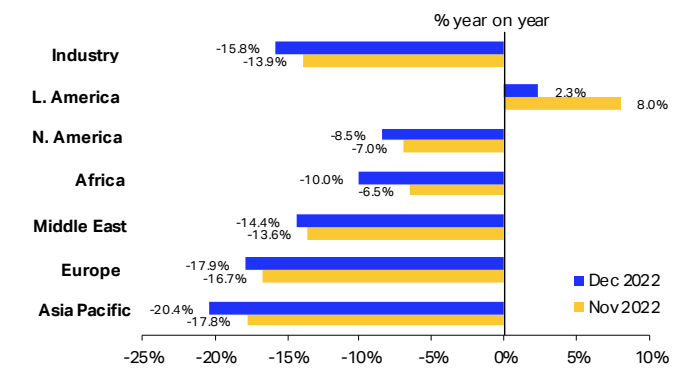
Source: IATA Monthly Statistics

Chart 32: Seasonally adjusted monthly international CTKs



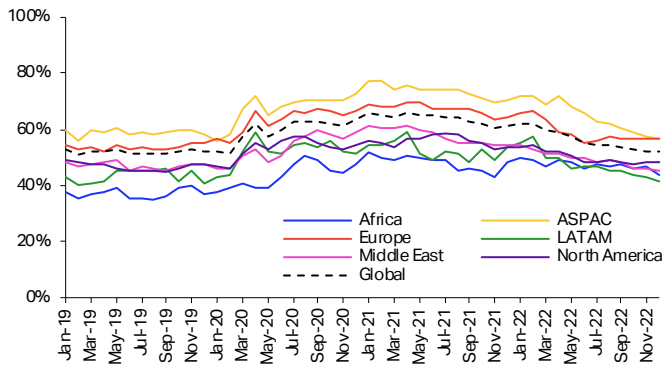
Source: IATA Monthly Statistics

Chart 33: International CTKs by airline region of registration



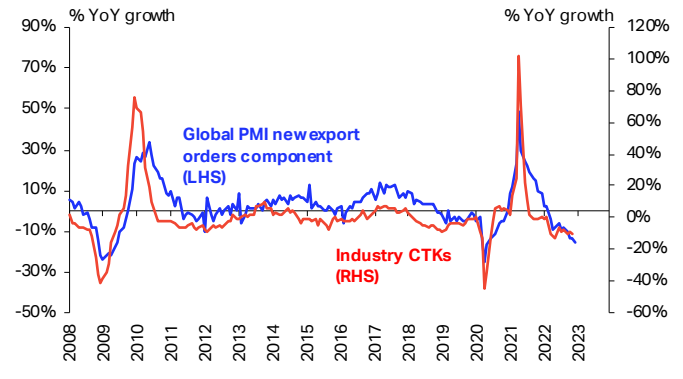
Sources: IATA Economics, IATA Monthly Statistics

Chart 34: International air cargo load factors (SA)



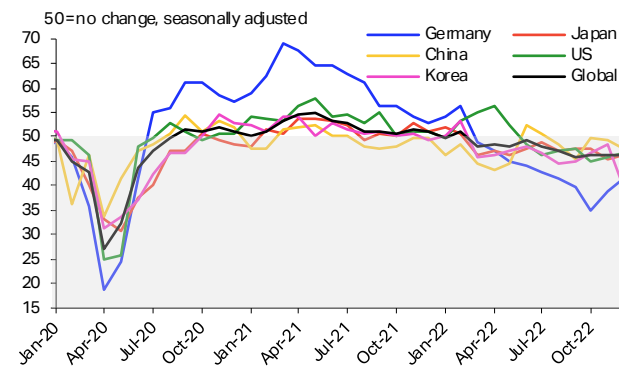
Sources: IATA Monthly Statistics

Chart 35: CTK growth versus global new export orders



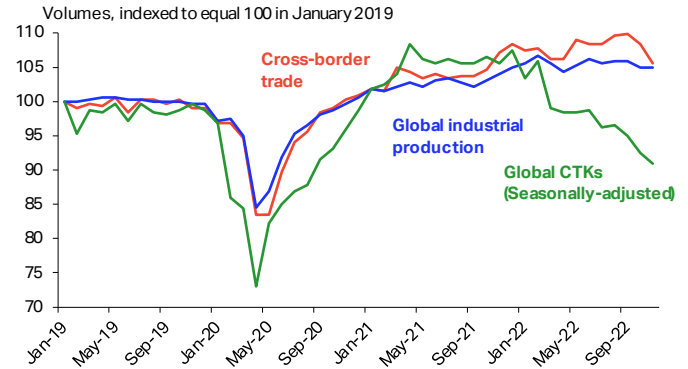
Sources: IATA Monthly Statistics, Markit

Chart 36: Country specific PMI new export orders



Source: Markit

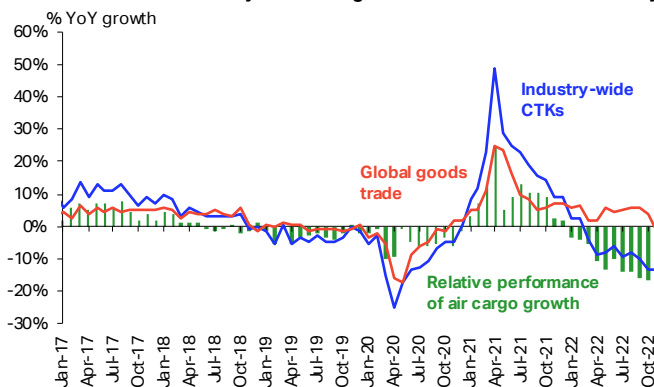
Chart 37: Global trade, industrial production and CTKs



Source: IATA Economics using data from Netherlands CPB, IATA Monthly Statistics

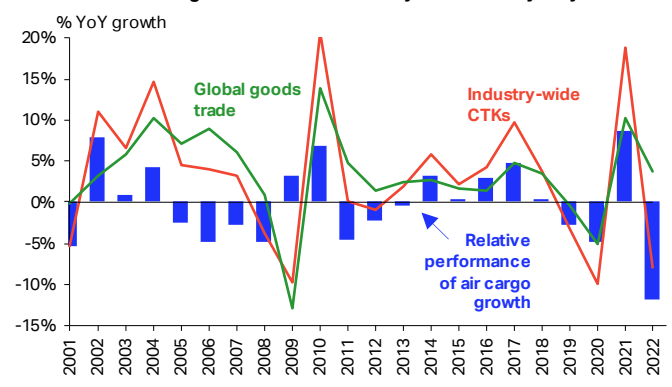
- Volumes of global industrial production and cross-border trade remained above their pre-COVID levels, although cross-border trade has been declining since September 2022. In contrast, global CTKs have decoupled from their historically close connections with industrial production and trade, marked by their steeper decline in the fourth quarter of 2022 (Chart 37). Both the monthly and yearly YoY growth rates suggest that air cargo is affected by the shrinking global trade more severely than maritime transport, with air cargo’s relative performance compared with maritime down to -12% in 2022 (Chart 38, Chart 39).
- Our Business Confidence Survey of airline Heads of Cargo shows that the industry’s outlook remains positive for the next twelve months, with 58% of respondents expecting an improvement in cargo operations, and only 31% expecting a decrease (Chart 40). The weighted score of business confidence for the next three months reads 57.7 and slightly higher for the next twelve months at 63.5 (Chart 41).

Chart 38: Growth in industry CTKs and global merchandise trade, monthly



Sources: IATA Statistics, Netherlands CPB

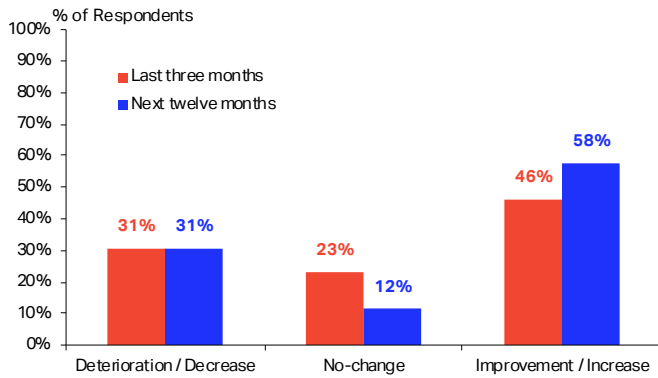
Chart 39: Growth in global trade and industry-wide CTKs, yearly



Sources: IATA Monthly Statistics, Netherlands CPB *average of monthly data. 2021 excludes Nov-Dec

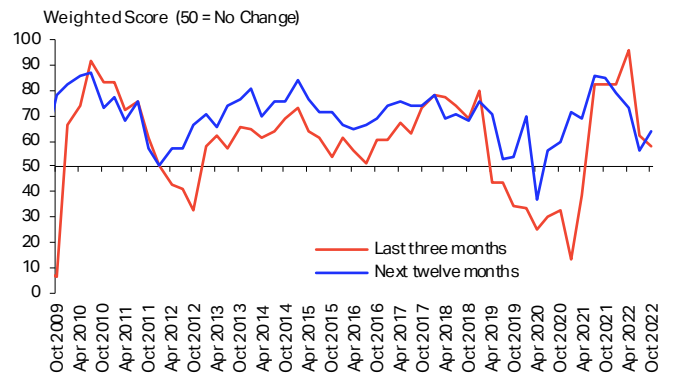


Chart 40: How does cargo operations in the last three months compare with the same period last year and how do you expect them to change over the next twelve months?



Source : IATA Business Confidence Survey (October 2022)

Chart 41: How did your cargo operations in the last three months compare with the same period last year and how do you expect them to change over the next 12 months?



Source : IATA Business Confidence Survey (October 2022)



III. Airline Financial Performance

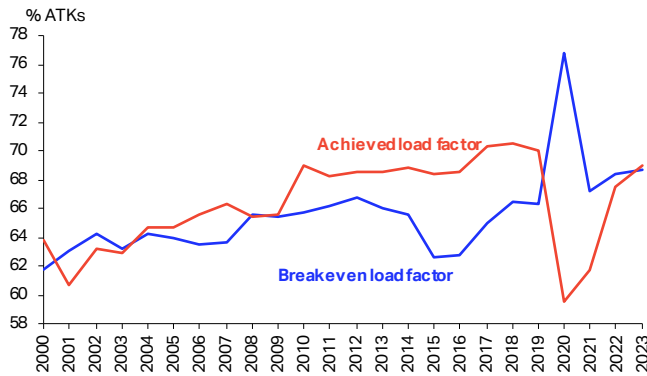
- Airline financial performance continues to recover from the massive losses recorded in 2020 and our latest forecast suggests that profitability will return to the industry overall this year. However, this profitability is not likely to be shared evenly across regions, with only North America, Europe and Middle East carriers expected to post a net post-tax profit in 2023.
- The broadly positive industry outlook is supported by our latest Business Confidence survey where 70% of respondents indicated that they expect year-ahead profitability to exceed current levels.

Revenue

- Over the course of 2022, the mixed performance of the passenger and cargo markets is reflected in the respective revenue performance. The decline in cargo volumes is expected to have resulted in a modest decline in cargo revenue in 2022, albeit from the COVID-driven high. This comes despite a further increase in cargo yields over the year. With the recovery in passenger volumes – particularly the international markets – continuing apace in 2022, passenger revenue has increased sharply, rising by an estimated 80%. This revenue performance has been supported by higher passenger yields, although much of the yield increase has to do with the significant increase in airlines costs (see further below) over the year.
- Looking ahead, we expect passenger revenue to increase further in 2023, albeit to remain considerably below its pre-COVID level, at around 85% versus 2019. Cargo revenue on the other hand, is likely to continue to retreat from its COVID-induced highs. Cargo yields are likely to fall substantially from their current highs, partly driven by the increase in belly capacity which accompanies the recovery in passenger volumes. Even so, cargo revenue is currently forecast to be around 50% higher than the level of 2019.
- Overall, airline revenue is forecast to rise to around 93% of its 2019 level in 2023. The cargo share of total revenue will ease further to around 20%. Having peaked at an historical high share of 40% in 2021, this moderation will nonetheless leave the cargo share considerably above the pre-COVID share of 10-12%. As such, air cargo is expected to continue to play an important role in bolstering airline revenue and financial performance over the period ahead.
- IATA's airline business confidence survey confirms that passenger fares have been rising, however, the evolution over the past 3 months is seen to have been more positive than the outlook over the coming 12 months (Chart 44, 45). On the cargo side, the picture is less optimistic. A sizeable 43% of respondents expect cargo rates will decline over the year ahead, with a further 39% expecting no change (Chart 46, 47).

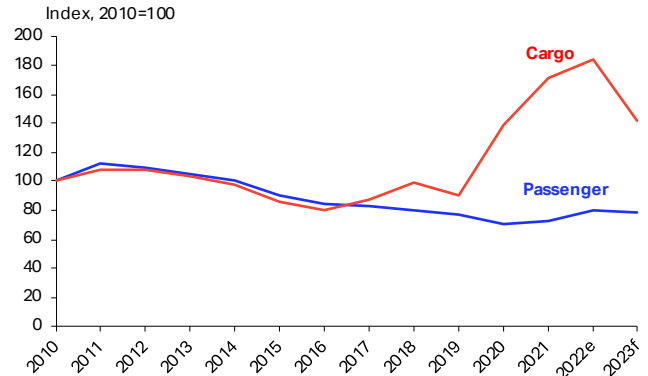


Chart 42: Breakeven and achieved cargo and passenger LF



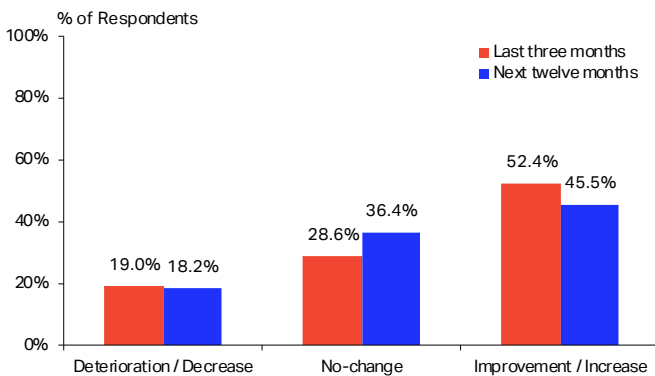
Source: IATA Financial Monitor

Chart 43: Passenger and cargo yields



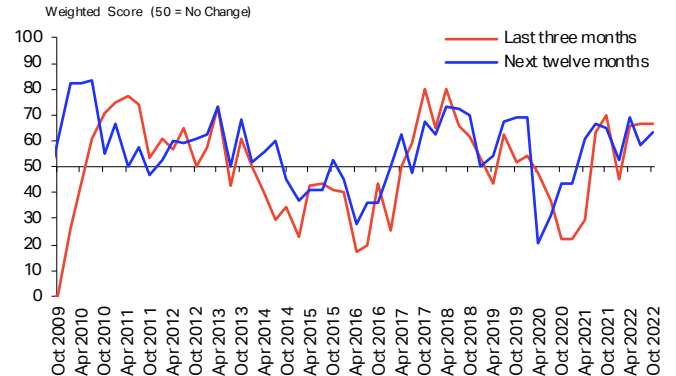
Source: IATA Financial Forecast (December 2022)

Chart 44: How do your pax operations fares perform in the last 3 months and next 12 months compare with the same period last year?



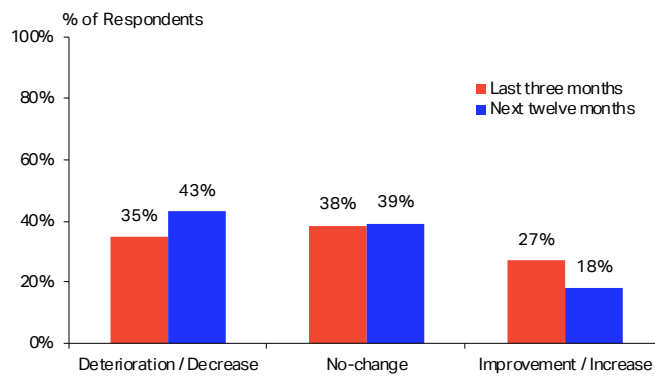
Source: IATA Business Confidence Survey (October 2022)

Chart 45: How do your cargo operations fares perform in the last 3 months and next 12 months compare with the same period last year?



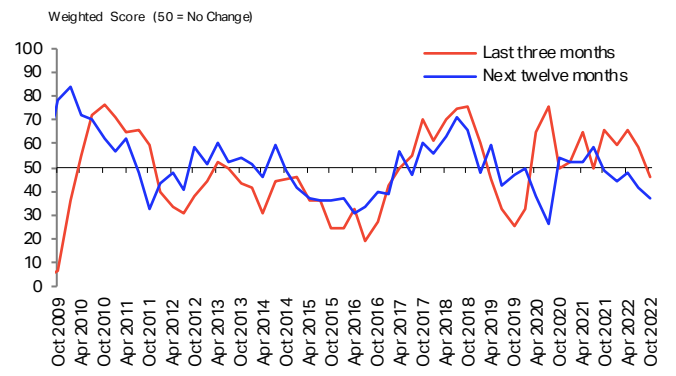
Source: IATA Business Confidence Survey (October 2022)

Chart 46: How do your cargo operations fares perform in the last 3 months and next 12 months compare with the same period last year?



Source: IATA Business Confidence Survey (October 2022)

Chart 47: How do your cargo operations fares perform in the last 3 months and next 12 months compare with the same period last year?



Source: IATA Business Confidence Survey (October 2022)

Cost

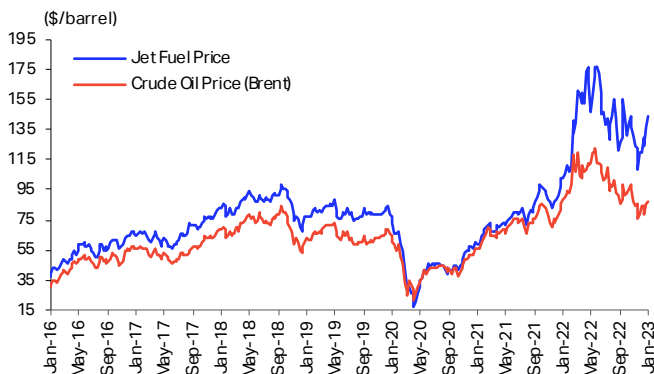
- Airline costs have risen substantially over 2022. An important driver of this has been the conflict between Russia and Ukraine which delivered a sharp lift in global commodity prices. The Brent crude oil price increased by around 40% in 2022 compared with 2021, averaging almost USD 100 per barrel. In addition, a lack of refining capacity resulted in a widening in the jet crack spread (the difference between the crude oil and jet fuel price). The jet fuel price increased from USD 78 in 2021 to USD 139 in 2022 – an increase of almost 80% (Chart 48). With fuel currently accounting for around 25-30% of airline operating costs, this has been a key driver of the increase in airfares and passenger yields over the course of the year. Higher



fuel prices, however, also focus airline attention on improving fuel efficiency – both via operational decisions and investing in fleet renewal (Chart 49).

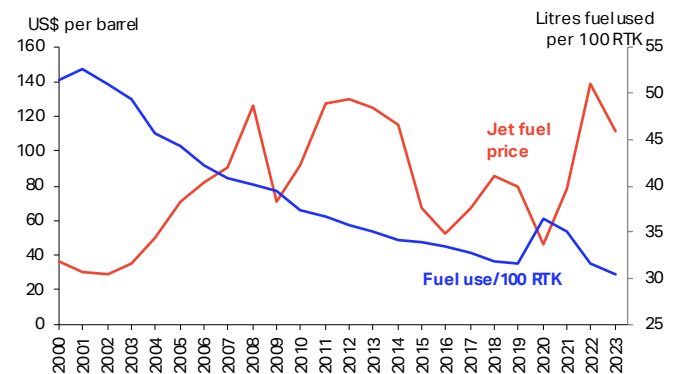
- For many airlines, the appreciation of the US dollar, reflecting safe-haven capital flows in response to the geopolitical uncertainty, has added to US dollar denominated costs, including fuel. Higher interest rates and in some markets the rise in labor and other input costs represent additional headwinds for the industry as it strives to return to profitability.
- Costs are expected to remain a challenge for airlines over the year ahead. Although oil prices and the crack spread are likely to ease from their 2022 level, we anticipate that they will remain elevated in 2023. This appears to be a view shared by airlines – fully 70% of respondents to our latest Business Confidence survey have experienced an increase in input costs over the past three months and 60% expect further increases over the year ahead (Chart 50, 51). Clearly, cost-vigilance will remain a focus for the industry over this period.

Chart 48: Jet Fuel & Crude Oil Price



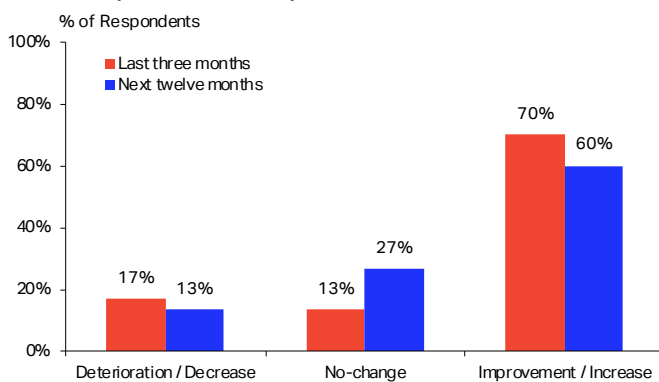
Source: S&P Global, Refinitiv Eikon

Chart 49: Fuel efficiency and the price of jet fuel



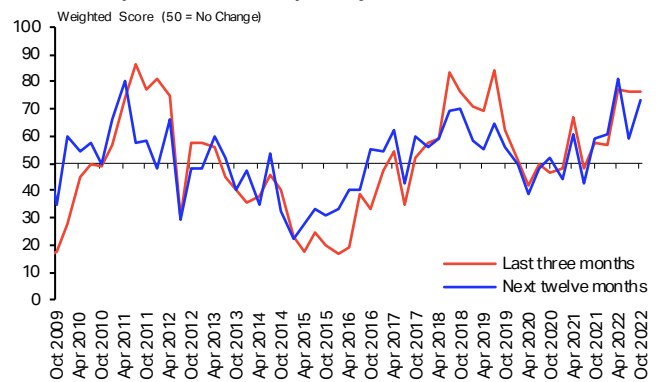
Source: S&P Global, Refinitiv Eikon, IEA

Chart 50: How does your unit costs perform in the last 3 and the next 12 months compare with the same period



Source: IATA Business Confidence Survey (October 2022)

Chart 51: How does your unit costs perform in the last 3 and the next 12 months compare with the same period year?



Source: IATA Business Confidence Survey (October 2022)

Industry financial results

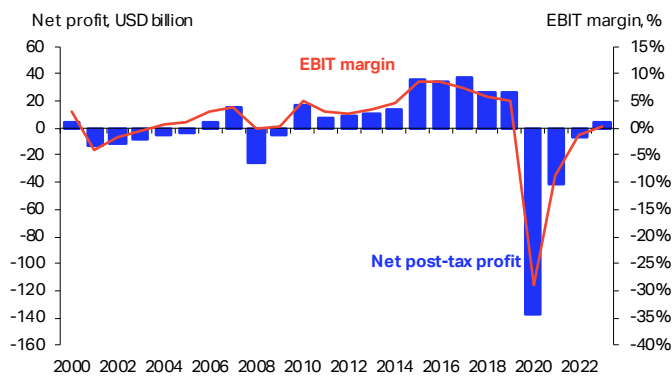
- At the global level, the strong industry financial recovery remains underway, notwithstanding the various challenges and headwinds. Following the massive net loss of almost USD 140 billion in 2020, the industry loss narrowed to around USD 40 billion in 2021. The recovery has continued in 2022, with the net losses shrinking further to an estimated USD 7 billion. In 2023 we expect the industry to post a net profit, albeit



only just, at USD 4.7 billion (Chart 52). On total revenue of around USD 780 billion this represents a slender margin of just 0.6%, or just one dollar per passenger (Chart 53).

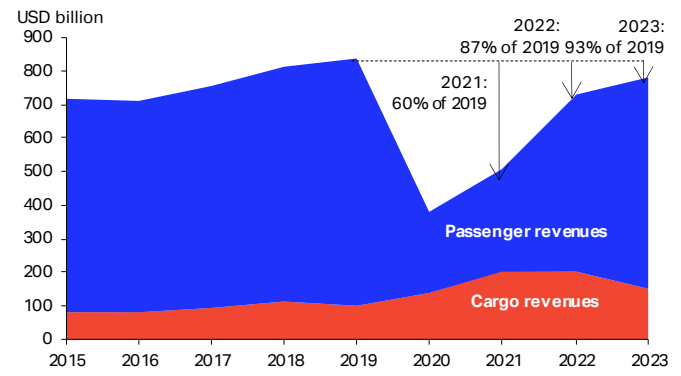
- Airlines' financial performance is improving across all regions in 2022 and 2023, led by the North American carriers. However, only North American airlines are estimated to have generated a net profit in 2022. For 2023, European and Middle East carriers are forecast to join their North American counterparts in a net profit position (Chart 54).
- Despite the concerns regarding the industry's cost pressures, airlines are relatively upbeat regarding their own profit outlooks; 60% have seen an improved financial performance over the past three months and a significant 70% expect their profitability to improve over the coming 12 months (Chart 58, 59). This rather positive outlook is expected to be driven by the passenger segment, where optimism for stronger performance over the year ahead is much higher than for cargo. The industry recovery over 2022 has helped to support investor confidence in the sector - although airline share prices fell by almost 12% in 2022, they have outperformed the overall global share price index which by lost almost 20% (Table 1).

Chart 52: Airline industry net profits and EBIT margin



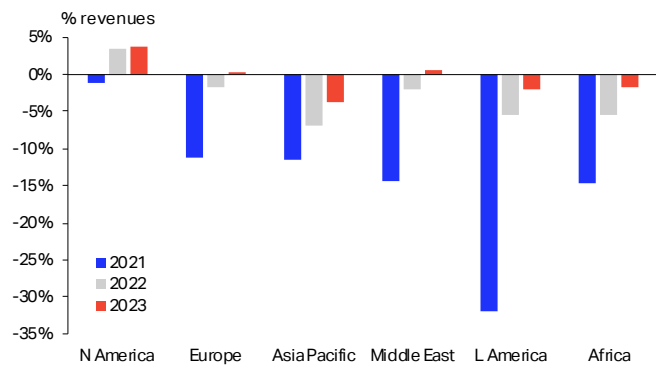
Source: IATA Economic Performance of the Airline Industry

Chart 53: Global airlines revenue, by type



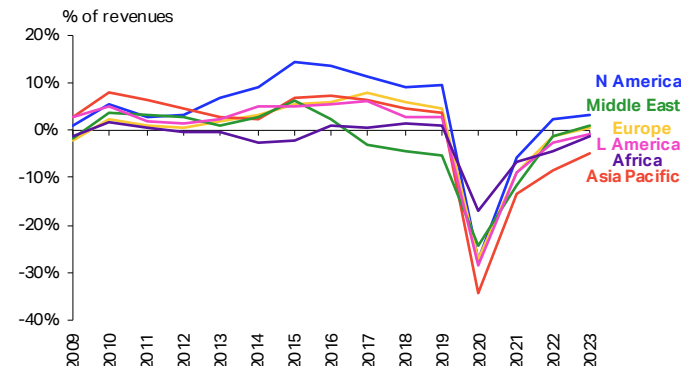
Source: IATA Financial Forecast (December 2022)

Chart 54: Airline region operating margin, % revenue



Source: IATA Financial Forecast (December 2022)

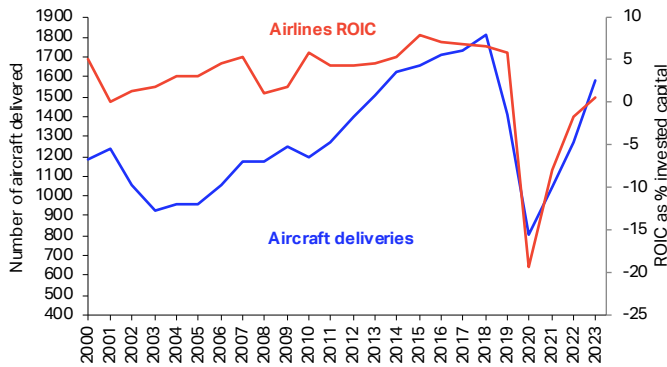
Chart 55: EBIT margins by region



Source: IATA Financial Forecast (December 2022)

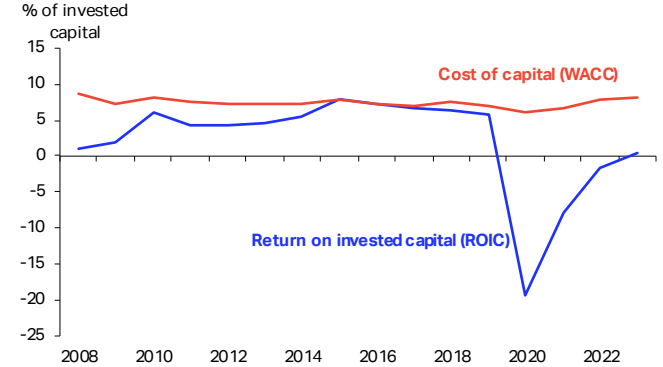


Chart 56: Aircraft deliveries and airline industry ROIC



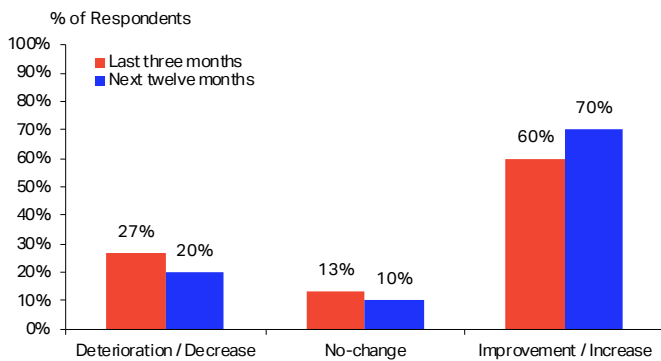
Source: IATA Financial Forecast (December 2022)

Chart 57: Return on invested capital vs industry-average WACC



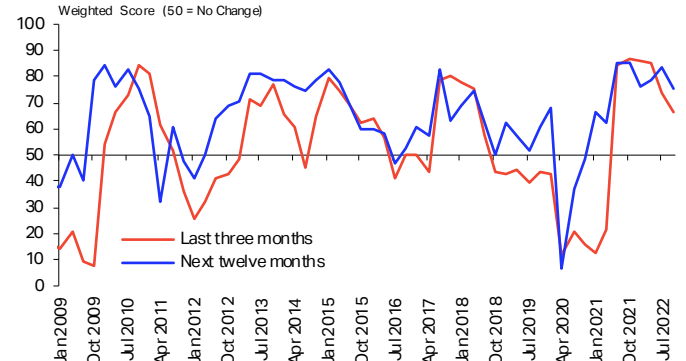
Source: IATA Financial Forecast (December 2022)

Chart 58: How does your profitability in the last three months compare with the same period last year?



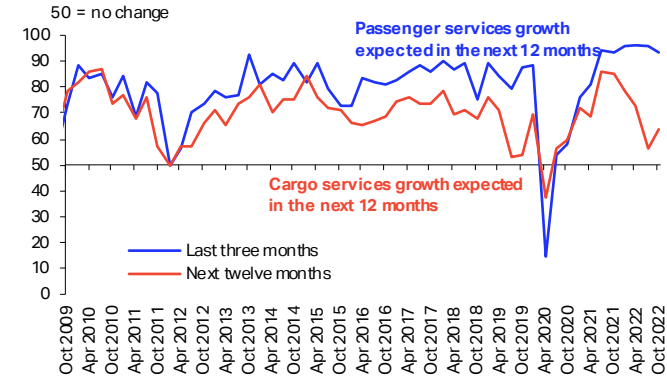
Source: IATA Business Confidence Survey (October 2022)

Chart 59: How does your profitability in the last three months compare with the same period last year?



Source: IATA Business Confidence Survey (October 2022)

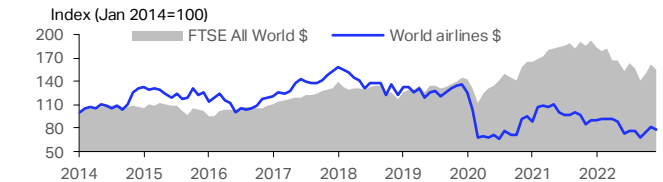
Chart 60: IATA survey of airline CFOS and Heads of cargo



Source: IATA Business Confidence Survey (October 2022)

Table 1: Airline Share Prices

US\$ indices (Jan 2014=100)	Index Dec 30th	one month	% change on one year	% change on start of year
World airlines	79.0	-2.4%	-11.7%	-35.6%
Asia Pacific airlines	73.6	3.1%	-4.3%	-33.7%
European airlines	66.5	1.4%	-7.3%	-35.2%
North American	90.7	-12.0%	-19.3%	-40.7%
FTSE All World \$	155.0	-3.9%	-19.5%	32.9%



Source: Thomson Reuters Datastream

Table 2: Key forecasts and assumptions

	ROIC	EBIT margin	Net post-tax profits	Spend on air transport	Passengers	RPK	CTK	World GDP	World trade
	% invested capital	% revenue	USD billion	USD billion	Billion	Billion	Billion	% YoY	% YoY
2019	5.8%	5.2%	26.4	876	4543	8688	254	2.5%	0.3%
2020	-19.3%	-29%	-137.7	394	1807	2974	229	-3.5%	-5.1%
2021	-0.8%	-8.9%	-42	521	2185	3623	272	5.8%	9.8%
2022e	-1.7%	-1.3%	-6.9	754	3424	6136	250	2.9%	3.5%
2023f	0.6%	0.4%	4.7	812	4189	7430	240	1.3%	1.0%

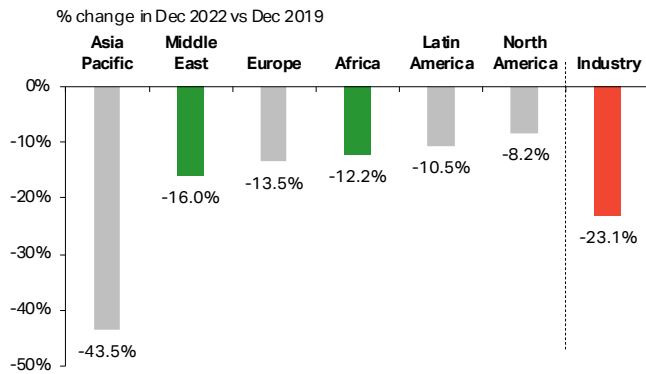
IV. Regional Outlook

Africa and the Middle East

- Passenger traffic carried by African and Middle Eastern airlines increased rapidly through the end of 2022. With year-on-year (YoY) RPK growth rates of 108% and 65%, respectively, the Africa and the Middle East regions recovered their passenger volumes faster than all other regions of the world. As of December, airlines in the two regions have recovered 88% and 84% of their 2019 passenger traffic levels, respectively (Chart 61).
- The strong traffic recovery in the regions can be attributed mostly to international passenger travel on African carriers, whose RPKs grew by 24% from November to December, and more than doubled from December 2021 levels (Chart 62). Airlines in the Middle East registered a 70% YoY growth in international passenger traffic in December.
- Air cargo traffic carried by African and Middle Eastern airlines led the recovery to pre-pandemic levels at the beginning of 2021. The momentum slowed in 2022, and cargo traffic for the two region's carriers ended at 94% and 89% of their 2019 levels in December, respectively (Chart 63).
- Ticket sales in the Middle East stabilized during the last quarter of 2022, hovering around 80% of pre-pandemic levels and slightly above the global average, partially boosted by the World Cup that was hosted in Qatar. Ticket sales in Africa have also caught up to the global average, closing the gap between the two regions (Chart 64).
- In Q4 2022, Egypt and Nigeria both saw their passenger traffic perform more than 20% above pre-pandemic levels. Qatar's traffic increased nearly 40% YoY over the same period, boosted by travelers attending the first World Cup hosted in the Arab world. However, passenger volumes in South Africa, Iran and Kuwait are still more than 10% below their pre-pandemic levels as of Q4 2022 (Chart 65).
- Reflecting strong growth in December, airlines in Africa and the Middle East recorded the highest YoY change in terms of passenger capacity, growing 73% and 36%, respectively, over their December 2021 capacity, and achieving more than 80% of their pre-pandemic capacity. Passenger load factors have also been improving in the regions. In 2022, load factors reached 77% and 80% for Africa and Middle East airlines, respectively, up more than 10 percentage points compared to 2021 load factors.
- Aircraft deliveries in the Middle East maintained their steady growth in 2022, reflecting the region's optimism for passenger demand recovery. In Africa, deliveries stabilized by the end of 2022, after declining in 2021 (Chart 66).

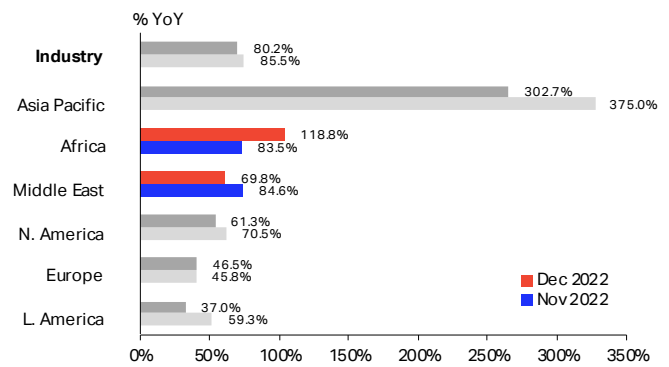


Chart 61: Growth in RPKs by region



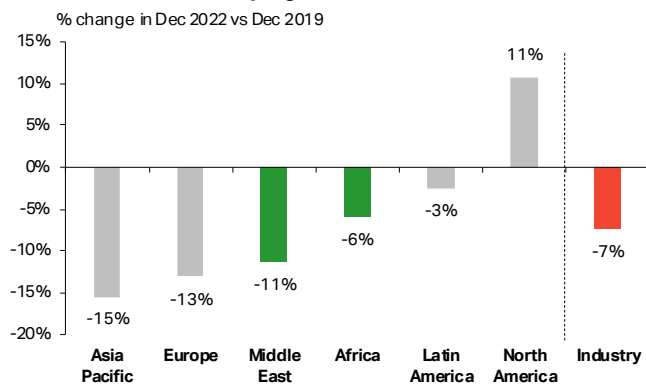
Source: IATA Monthly Statistics

Chart 62: Growth in international RPKs (% YoY)



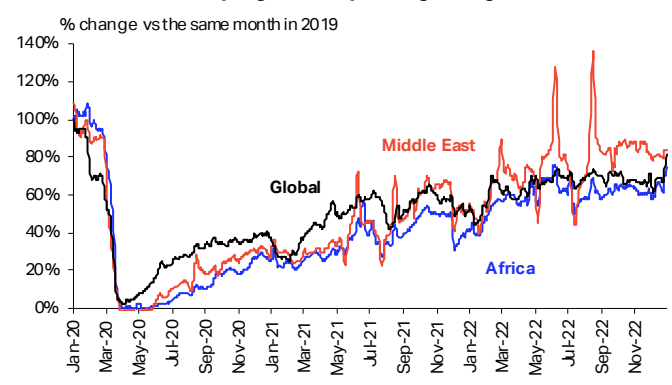
Sources: IATA Monthly Statistics

Chart 63: Growth in CTKs by region



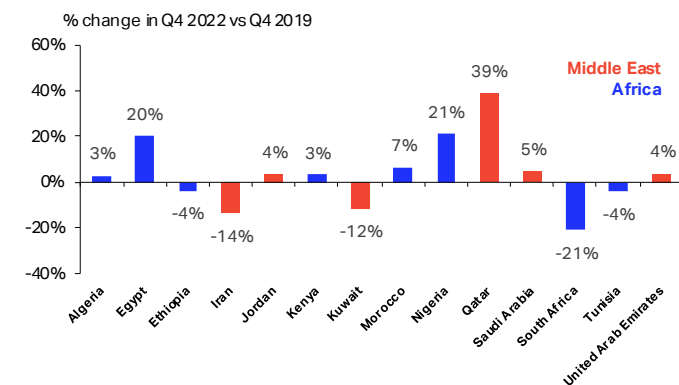
Source: IATA Monthly Statistics

Chart 64: Ticket sales by region (7-day moving average)



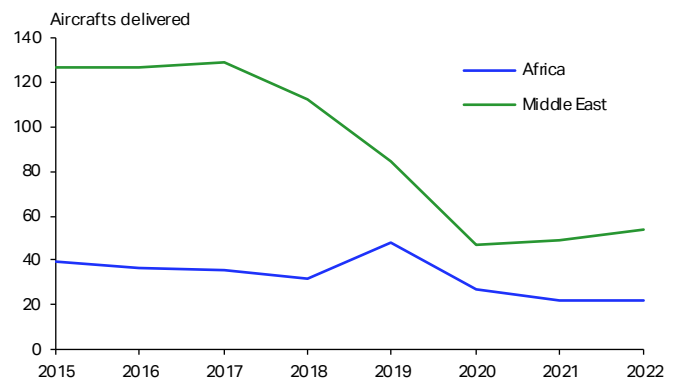
Source: IATA Economics based on data from DDS

Chart 65: Passenger traffic (O-D) by country in Q4 2022



Source: IATA Economics based on DDS data

Chart 66: Aircraft deliveries in 2018-22



Source: IATA Economics using data from Cirium Fleet

	World share ¹	December 2022 (% ch vs the same month in 2019)				December 2022 (% year-on-year)			
		RPK	ASK	PLF (%-pt) ²	PLF (level) ³	RPK	ASK	PLF (%-pt) ²	PLF (level) ³
TOTAL MARKET	100.0%	-23.1%	-22.1%	-1.1%	81.1%	39.7%	23.0%	9.7%	81.1%
Africa	1.9%	-12.2%	-17.4%	4.6%	76.9%	108.0%	72.5%	13.1%	76.9%
Middle East	6.6%	-16.0%	-18.9%	2.7%	80.0%	65.1%	35.9%	14.1%	80.0%



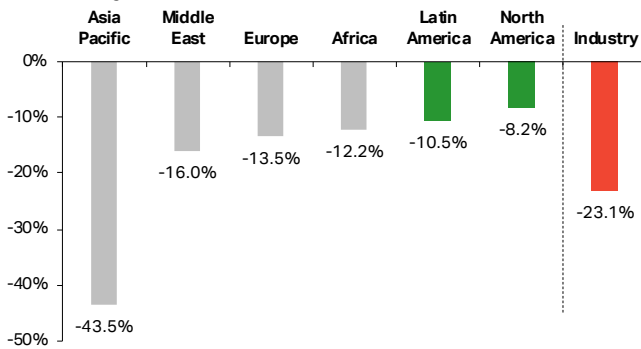
Americas

- North America and Latin America continued showing a strong recovery pattern among all regions globally. For December 2022, RPKs in North America recovered to 91.8% of their 2019 levels and Latin America followed shortly behind, recovering to 89.5% of their 2019 RPKs (Chart 67).
- Passenger traffic in North America increased by 1.8% in the last quarter of 2022, compared with the previous quarter, led by the continued traffic recovery in the United States (US). Total RPKs in the US climbed 5 percentage points in Q4 2022, reaching 97% of pre-COVID levels in November 2022. Canada's passenger traffic recovery has also been strong since the Q2 2022, growing 9 percentage points in the fourth quarter and achieving nearly 96% of pre-pandemic RPKs in November 2022. Forward-looking ticket sales also indicate continued growth in passenger numbers for December, surpassing 2019 levels for the same month by around 2% (Chart 70).
- The Latin American markets too saw passenger traffic grow through the end of 2022, achieving nearly 90% of their pre-pandemic RPKs. Both domestic and international markets in the region have maintained their passenger traffic growth. Some countries, including Colombia, Mexico, and Ecuador, have exceeded their 2019 traffic levels. In the case of Colombia, the country's tourism policies, depreciated currency, and limited travel restrictions have allowed this market to outperform 2019 traffic levels in 2022. Ecuador has also seen a remarkable recovery in 2022, in part thanks to the government reducing taxes (ISD, EcoDelta and Potencia Turistica), which supported the aviation industry and created a more competitive market. As a result, traffic stood 9% above 2019 levels in Q4 2022 (Chart 71).
- On the other hand, the larger aviation markets in the region (Brazil, Chile, and Argentina) have been heavily impacted by inflation, currency depreciation, and slow economic recovery. Nevertheless, in Argentina, for example, inbound tourism has been boosted by the cheaper currency, partly offsetting the industry's latest headwinds.
- Some Caribbean states have also seen notable recoveries of their passenger traffic. Flexible operating conditions enabled the Dominican Republic, Colombia, Mexico, and Ecuador to exceed their pre-pandemic passenger traffic levels in Q4 2022. The Dominican Republic recorded the largest increase in passenger traffic in the region, surpassing pre-pandemic levels by 26% in the 4th quarter. These recovery trends can be attributed to the strong performance of the Canadian and US markets, as well as the birth and expansion of Arajet, the new airline operation from Santo Domingo mainly to Latin America. However, passenger flows to/from Cuba are still lagging in the recovery (Chart 71).
- Cargo traffic transported by the region's carriers was less affected by the pandemic and has stayed close to or above its pre-pandemic levels. In December 2022, CTGs in Northern America stood 11% above the same month in 2019. This outcome may be attributed to the consolidation of the cargo processes in the United States for cargo flights to the Caribbean, Central, and South America, which were active markets during the pandemic (Chart 69). As the cargo business evolved during the pandemic, the possibility of retrofitting passenger aircraft for cargo operations, and the high revenue generated in the air cargo market, drove many airlines in the region (LATAM Airlines, Air Canada, and Wingo) to increase their cargo capacity, showing a strong recovery also over the past few months. As of December 2022, Latin American airlines' CTGs were only 3% below their pre-pandemic levels.
- Aircraft deliveries in the Americas have been improving, especially for North American carriers which increased their deliveries by 40% compared to 2021 (Chart 72). Also, during 2022, Latin American carriers saw aircraft deliveries rise by 30% versus 2021. Confidence in this part of the industry and in this region is strong, and countries such as the Dominican Republic and Colombia have seen new airlines (e.g., Arajet and Ultra Air) entering the market, all of which contributed to the positive evolution of the recovery.



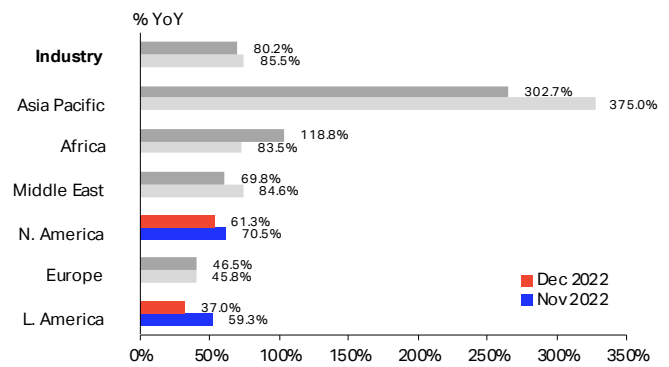
Chart 67: Growth in RPKs by region

% change in Dec 2022 vs Dec 2019



Source: IATA Monthly Statistics

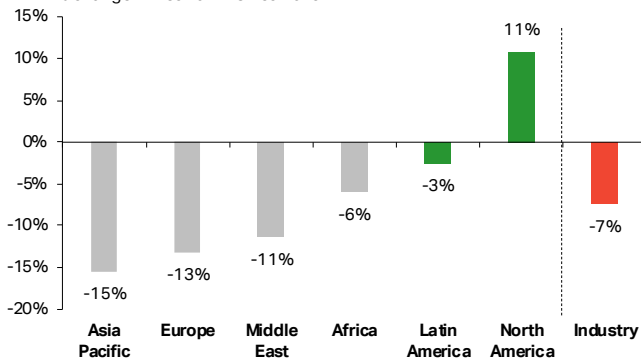
Chart 68: Growth in international RPKs (% YoY)



Sources: IATA Monthly Statistics

Chart 69: Growth in CTKs by region

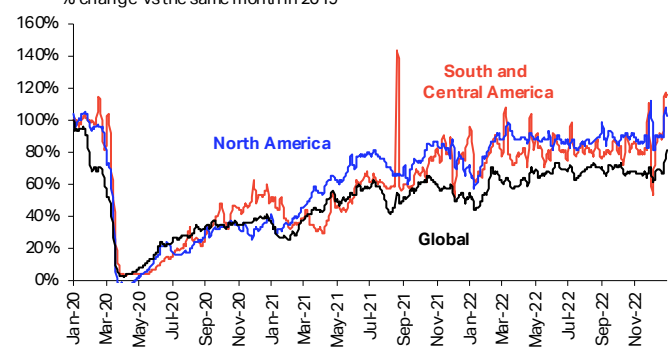
% change in Dec 2022 vs Dec 2019



Source: IATA Monthly Statistics

Chart 70: Ticket sales by regions (7-day moving average)

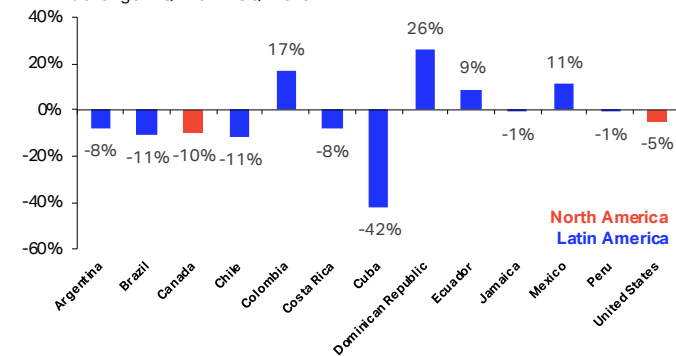
% change vs the same month in 2019



Source: IATA Economics based on DDS data

Chart 71: Passenger traffic (O-D) by country in Q4 2022

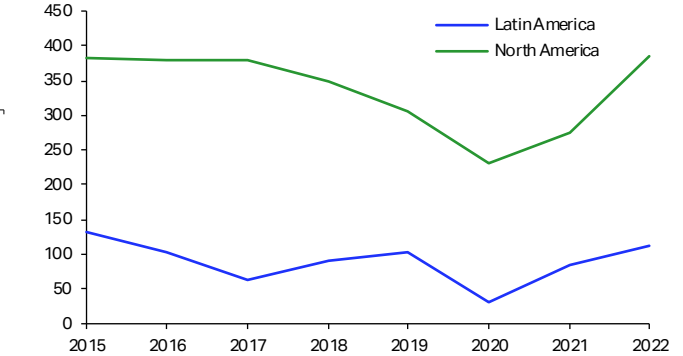
% change in Q4 2022 vs Q4 2019



Source: IATA Economics based on DDS data

Chart 72: Aircraft deliveries in 2018-22

Aircrafts delivered



Source: IATA Economics using data from Cirium Fleet

	World share ¹	December 2022 (% ch vs the same month in 2019)				December 2022 (% year-on-year)			
		RPK	ASK	PLF (%-pt) ²	PLF (level) ³	RPK	ASK	PLF (%-pt) ²	PLF (level) ³
TOTAL MARKET	100.0%	-23.1%	-22.1%	-1.1%	81.1%	39.7%	23.0%	9.7%	81.1%
Latin America	6.5%	-10.5%	-6.2%	-3.8%	78.5%	16.2%	20.0%	-2.6%	78.5%
North America	32.6%	-8.2%	-6.9%	-1.3%	84.2%	18.4%	11.8%	4.7%	84.2%



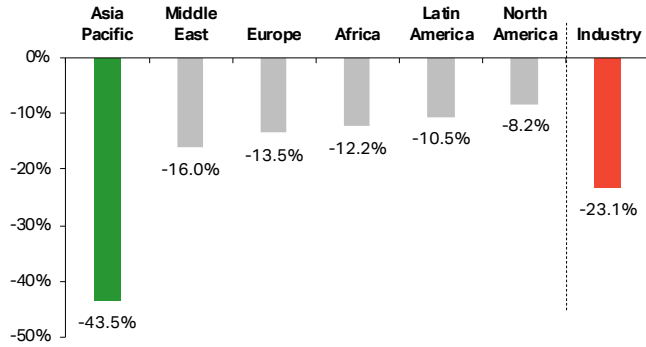
Asia Pacific

- The recovery in passenger traffic in the Asia Pacific region is significantly behind all other regions. In December 2022, RPKs of airlines in the region were down 43.5% compared to December 2019 levels (Chart 73), mostly as a result of China PR's remaining international and domestic travel restrictions. While the country has since opened its borders, restrictions imposed by other countries on travelers from China PR could delay the region's traffic recovery further.
- International RPKs in the region grew by more than 300% in November and December 2022, compared to the same months in 2021 (Chart 74). However, this recovery is from the very low traffic base seen in 2021, and the region's international RPKs remained far behind other regions in 2022, at only 51.9% of 2019 levels.
- Cargo traffic in the Asia Pacific region saw a 21% YoY decrease in December 2022 and is now 15% below its pre-pandemic level (Chart 75), putting the region behind other regions also in this respect. Airlines in the region continue to be impacted by disruptions to trade, manufacturing, and supply chains due to pandemic-related challenges in China PR.
- Ticket sales in the region have been below the global average since the second half of 2021, reflecting the slower reopening of borders in the region (Chart 76).
- Looking at the traffic levels by country, the Greater China region lags behind other economies in the Asia Pacific region as a result of restrictive travel policies. This is particularly the case for Hong Kong (SAR), which has no domestic traffic of its own. Japan, the last economy in region to open its borders outside of Greater China, has seen a remarkable recovery with traffic levels in Q4 2022 at 77% of 2019 levels (Chart 77). We expect that passenger traffic growth in Greater China and in economies that are heavily reliant on Chinese tourists, such as Malaysia, Singapore, South Korea, and Thailand, will improve going forward. The lifting of any residual travel restrictions to/from China PR will also help the Asia Pacific region catch up with other regions in terms of passenger traffic recovery.
- The relatively lower number of aircraft expected to be delivered in the region reflect the slow recovery of the region as a whole (Chart 78).
- Total ASKs for airlines in the region grew by 30% YoY in 2022, reaching 60% of the pre-pandemic level. In the meantime, the passenger load factor (PLF) also improved for the region's airlines, climbing 15 percentage points, and reaching 77% by the end of December. These developments in the total ASK and PLF support the improving air travel demand conditions for the region.



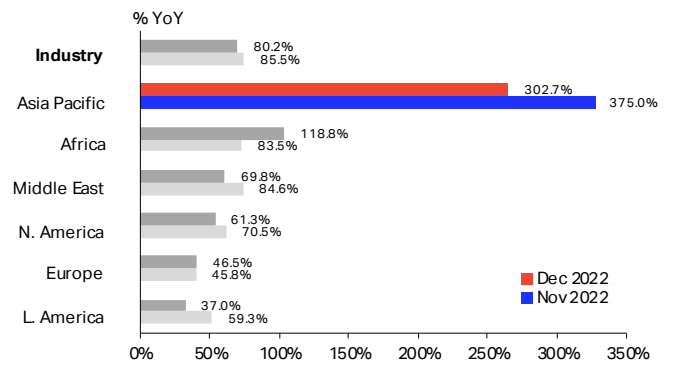
Chart 73: Growth in RPKs by region

% change in Dec 2022 vs Dec 2019



Source: IATA Monthly Statistics

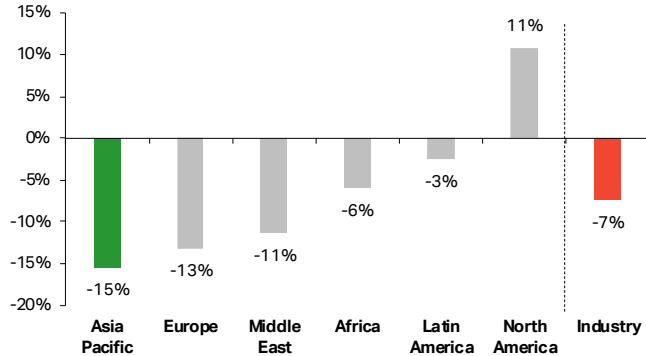
Chart 74: Growth in international RPKs (% YoY)



Sources: IATA Monthly Statistics

Chart 75: Growth in CTKs by region

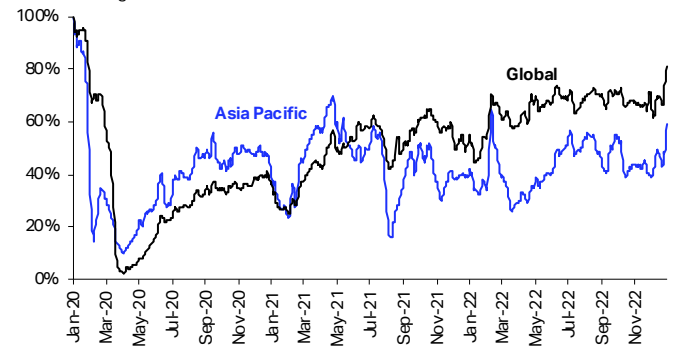
% change in Dec 2022 vs Dec 2019



Source: IATA Monthly Statistics

Chart 76: Ticket sales by regions (7-day moving average)

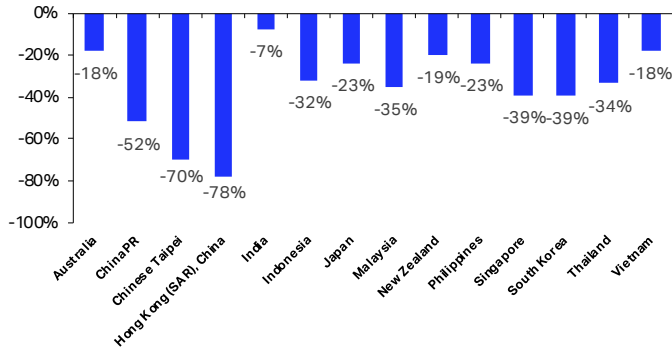
% change vs the same month in 2019



Source: IATA Economics based on data from DDS

Chart 77: Passenger traffic (O-D) by country in Q4 2022

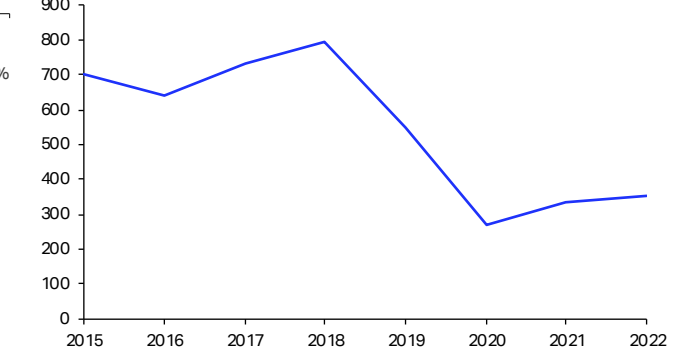
% change in Q4 2022 vs Q4 2019



Source: IATA Economics based on DDS data

Chart 78: Aircraft deliveries in 2018-22

Aircrafts delivered



Source: IATA Economics using data from Cirium Fleet

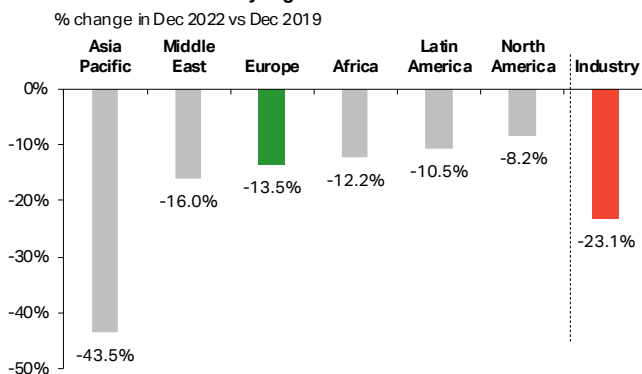
	World share ¹	December 2022 (% ch vs the same month in 2019)				December 2022 (% year-on-year)			
		RPK	ASK	PLF (%-pt) ²	PLF (level) ³	RPK	ASK	PLF (%-pt) ²	PLF (level) ³
TOTAL MARKET	100.0%	-23.1%	-22.1%	-1.1%	81.1%	39.7%	23.0%	9.7%	81.1%
Asia Pacific	27.5%	-43.5%	-40.2%	-4.4%	77.2%	63.3%	31.9%	14.8%	77.2%



Europe

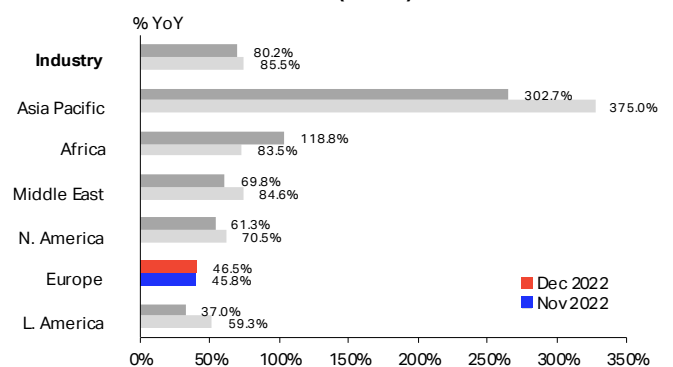
- Air passenger traffic by European carriers has been on a path of steady recovery since the depth of the pandemic. On a monthly basis, total RPKs reached 86.5% of the pre-pandemic level as of December 2022, which is higher than the industry average (Chart 79). On an annual basis, European airlines doubled total RPKs in 2022 from 2021 levels and recovered 78% of their 2019 RPKs.
- Europe's international passenger recovery faced significant challenges early in 2022. Beginning with Covid-related restrictions due to the Omicron wave, the start of the Russia-Ukraine war in February led to airspace closures and a period of rising energy prices and inflation. Despite these obstacles, Europe's international passenger traffic has made a strong recovery through the end of the year. Growing by 46% and 47% YoY in November and December, respectively, international RPKs for the region have returned to 85% of their pre-pandemic level (Chart 80).
- After a drop in February due to the Russia-Ukraine war, air ticket sales in Europe resumed their momentum and continued to out-perform the rest of the world, reaching almost 90% of pre-pandemic levels by the end of December (Chart 82). In terms of Origin-Destination (O-D) passenger traffic, Portugal's traffic rose 11% above pre-pandemic levels as of Q4 2022, one of Europe's best performances. Greece's O-D passengers also eclipsed 2019 levels in Q4 2022. Traffic in Germany remained 29% below their pre-pandemic levels (Chart 83).
- On the cargo side, following the trend in global air cargo traffic, European airline CTGs also declined YoY in December 2022, and fell 13.5% below their pre-pandemic level (Chart 81). However, over the course of the full year 2022, total air cargo traffic flown by the region's airlines remained at 91% of their 2019 level.
- Passenger load factors for European carriers reached 83.6% in December 2022, 2.5 percentage points higher than the industry average, and 4 percentage points lower than load factors achieved in December 2019. Cargo load factors improved slightly during Q4 2022 and reached 56% in December 2022, 9 percentage points higher than the industry average.
- The outlook is positive for Europe. Aircraft deliveries are continuing to increase in the region, which should accommodate the expected growth in demand and facilitate a return to 2019 traffic levels (Chart 84).

Chart 79: Growth in RPKs by region



Source: IATA Monthly Statistics

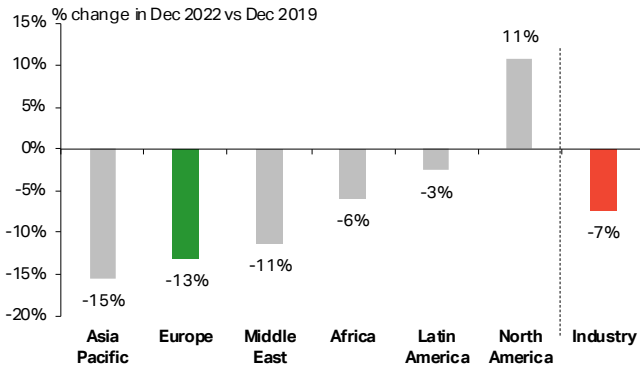
Chart 80: Growth in international RPKs (% YoY)



Sources: IATA Monthly Statistics

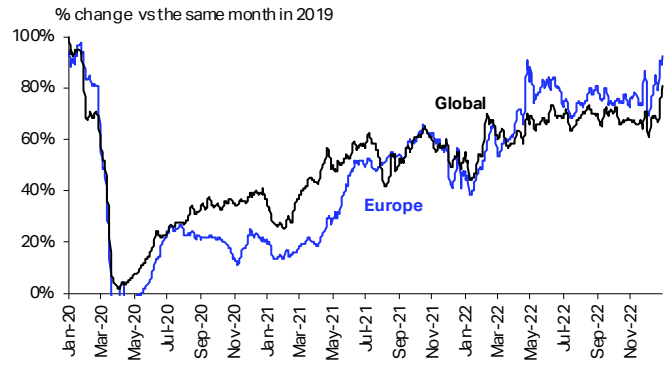


Chart 81: Growth in CTKs by region



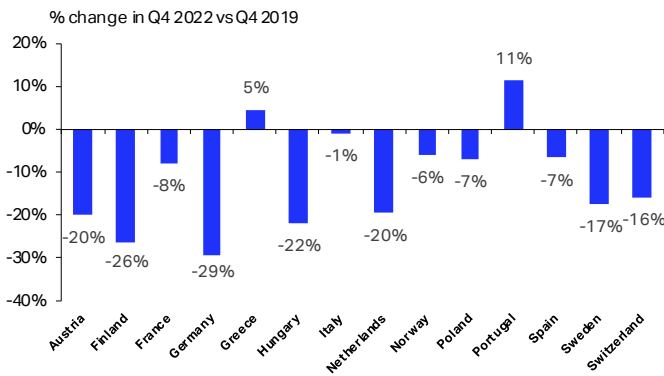
Source: IATA Monthly Statistics

Chart 82: Ticket sales by regions (7-day moving average)



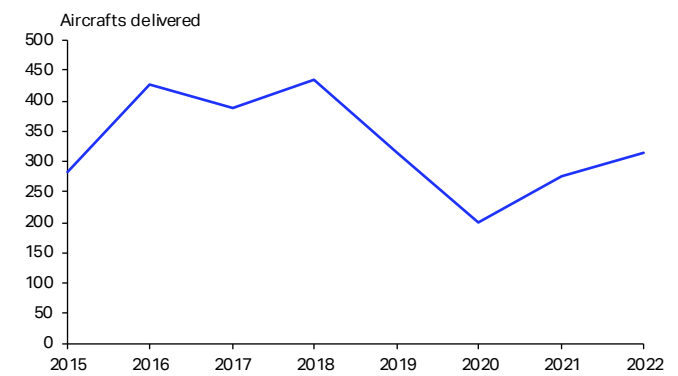
Source: IATA Economics based on data from DDS

Chart 83: Passenger traffic (O-D) by country in Q4 2022



Source: IATA Economics based on DDS data

Chart 84: Aircraft deliveries in 2018-22



Source: IATA Economics using data from Cirium Fleet

	World share ¹	December 2022 (% ch vs the same month in 2019)				December 2022 (% year-on-year)			
		RPK	ASK	PLF (%-pt) ²	PLF (level) ³	RPK	ASK	PLF (%-pt) ²	PLF (level) ³
TOTAL MARKET	100.0%	-23.1%	-22.1%	-1.1%	81.1%	39.7%	23.0%	9.7%	81.1%
Europe	25.0%	-13.5%	-14.0%	0.6%	83.6%	38.8%	18.9%	11.9%	83.6%



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