Quarterly Air Transport Chartbook

IATA Sustainability & Economics

Q3 2023

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Note to readers: *The Airline Financial Performance section is included in the Quarterly Air Transport Chartbook for Q2 and Q4 of each year. It is excluded from the Q1 and Q3 reports as the airline financial performance review and forecast are released alongside the June and December Global Outlook reports, respectively.*

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

MoUs – Memoranda of understanding

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

SAF – Sustainable Aviation Fuel

QoQ – Quarter-on-quarter

USD – United States Dollar

WLF – Weight Load Factor

YoY – Year-on-year

Table of Charts

I. The Business Cycle

- The global business cycle is holding up surprisingly well, in the face of war in both Europe and the Middle East, and aggressive monetary policy tightening in major economies. The global economy is expected to grow in the vicinity of 3% over the coming years, in line with the average growth rate since the 1970s (Chart 1).

- The main drivers of global GDP growth are the US and China, shown in blue and red respectively in Chart 2. The US economy exceeded expectations in the third quarter of 2023, growing by 4.9% on an annualized basis (quarter-on-quarter growth multiplied by 4), and 2.9% year-on-year (YoY, from the same quarter in 2022). The goods and services sectors expanded at the same pace of 2.4% YoY, but since the service sector is the larger, it contributed 1.6 percentage points (ppts) to the 4.9% total growth in the third quarter, compared to 1 ppt for the goods sector. Nevertheless, this represents an acceleration in growth for the goods sector from early 2022, while the service sector is seeing a relative deceleration. This points to a degree of normalization in consumption patterns in the wake of the Covid pandemic.

- China's economy also beat expectations in the third quarter of 2023, growing by 4.9% YoY. Over the first three quarters in 2023, the services sector grew by 6%, compared to 4% growth in the goods sector, YoY. The average annual GDP growth rate between January and September 2023 stands at 5.2%, above the target of "around 5%" set by the government at the beginning of the year. This target now looks achievable, though there are still concerns regarding the property sector. Real estate development investment fell by 9.1% YoY over the first three quarters. Foreign trade is also contracting, suffering from decreased demand in overseas markets and from the Covid pandemic and diplomatic developments which have perturbed supply chains. At its peak, China's residential property sector was estimated to contribute 25%-30% of the country's GDP. More than half of China's top 50 property developers have gone into default, according to the Financial Times.[1] This negatively impacts banks and credit, while unfinished housing projects are devastating households who paid upfront. Fewer land sales spell lower tax revenues for local governments. China is on the brink of deflation, with consumer prices flat (0% YoY) in September. The policy interest rate, at 3.4%, could be cut further. A general government debt-to-GDP ratio of 77% (versus 122% in the US, for example), leaves some room for fiscal stimulus though this is capped by the tax system's overreliance on property taxes. As such, developments in this domain pose a significant risk to the global business cycle.

- Globally, inflation still exceeds most central banks' target of 2%, though the situation has certainly improved from 2022. In the US, consumer price inflation stood at 3.7% in September 2023 YoY, while the euro area recorded 4.3%. Globally, the IMF forecasts a 6.9% inflation for 2023 (Chart 3). Barring any surprise price developments in particular areas, the observed muted impact of monetary policy on inflation suggests that policy interest rates will remain relatively high for longer.

- One reason for the persistently high inflation rates is the low unemployment rates that are benefiting most countries (Chart 4). Low unemployment is "recession-proofing" the global economy to a certain extent, allowing for decent levels of consumption while simultaneously lifting (nominal) wages – both of which likely explain part of why prices are so sticky.

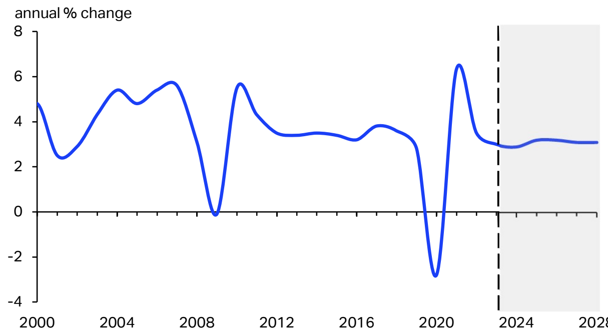
- With the US policy interest rate at 5.5%, and a relatively high degree of global economic policy uncertainty (Chart 5), there is every reason to expect that the US dollar will continue to benefit from its safe-haven status and remain strong versus most other currencies (Chart 6). A strong US dollar tends to have a growth-dampening effect on the global economy. Of course, countries and regions exporting to the US

[1] Hale et. al., "How China's property crisis has unfolded, from Evergrande to Country Garden", FT, 23 October 2023

can benefit, such as Europe, but all paying bills in US dollars while not earning in that currency will be negatively impacted. This is also the case for all USD-denominated debt held by foreigners.

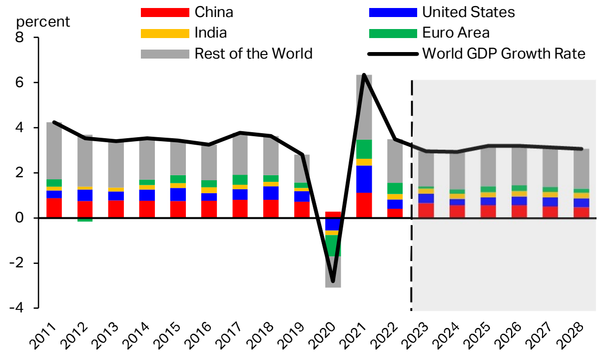
- Hence, overall, the global business cycle remains in what can be described as lukewarm territory, with the risks skewed to the downside. Upside potential could materialize in particular if the conflicts in Europe and the Middle East were to end, and if more growth-promoting economic policies were put in place, including more effective support for the energy transition.

Chart 1: Global gross domestic product (constant USD), annual % change



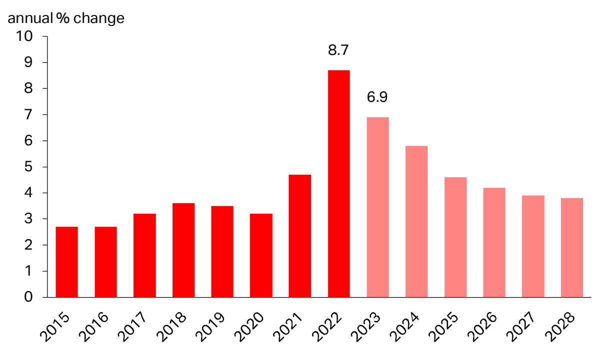
Source: International Monetary Fund (IMF), October 2023 update

Chart 2: Contribution from large economies to world GDP growth (%)



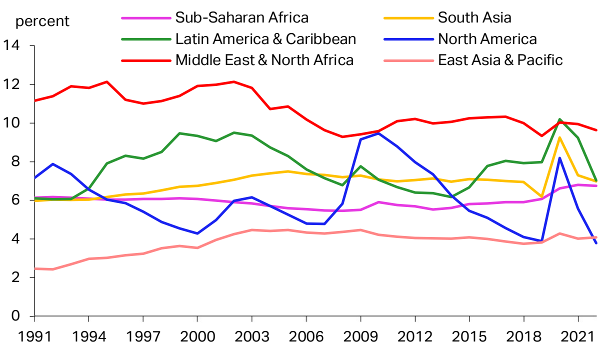
Source: IATA Sustainability & Economics, IMF World Economic Outlook

Chart 3: Global inflation as Consumer Price Index (CPI), annual % change



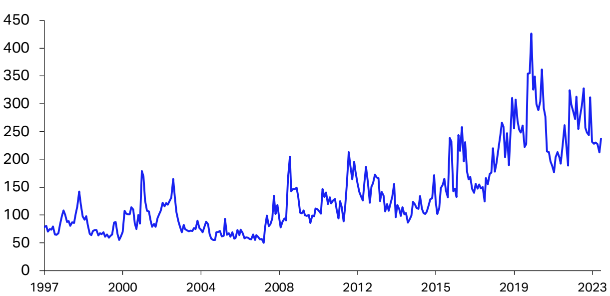
Source: IATA Sustainability & Economics, IMF World Economic Outlook

Chart 4: Unemployment, total by country group (% of total labor force)



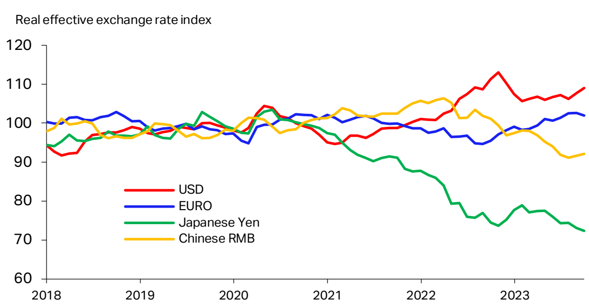
Source: World Bank, World Bank Development Indicators

Chart 5: Global Economic Policy Uncertainty Index



Source: Federal Reserve Economic Data

Chart 6: Foreign exchange rates



Source: Bank for International Settlements (BIS)

II. Sustainable Investments

- Investors who seek to invest sustainably often do so by allocating money to investment funds that are labeled ‘sustainable’. Such labels typically reflect the application of sustainability criteria in the investment decisions made for the fund. In Europe, the Sustainable Finance Disclosure Regulation classifies investment funds according to how stringently the fund applies sustainability criteria in the asset allocation decisions. Funds that do not have any sustainability drivers are called Article 6 funds, those that promote environmental or social characteristics fall in the Article 8 category, and Article 9 funds have sustainable investment as their prime objective. Commonly, Article 8 and 9 funds and their equivalents in other jurisdictions are referred to as ESG funds.

- Europe dominates the sustainable investment landscape. However, European investors withdrew EUR 20.5 billion from Article 8 funds in the third quarter, and Article 9 funds saw the lowest inflows since 2021, at EUR 1.4 billion. The number of ESG funds launched in the third quarter in Europe dropped by 31% from the second quarter.

- In the US, sustainable funds just recorded their fourth consecutive quarter of outflows. Investors withdrew USD 2.7 billion from sustainable funds in the third quarter, and a total of USD 14.2 billion of outflows have been seen over the past year, according to Morningstar (Chart 7). The organic growth rate (representing the difference between net inflows and net outflows, as a percent of total assets) shows the relative decline in sustainable funds (blue line), compared to the broader fund market (yellow line). Also of note is that the total number of ESG funds fell in the US in the third quarter, as more funds closed than the number of new funds opened – a first since 2020.

- Turning to the performance of ESG funds in terms of total returns, they tend to follow the broader market as many of the constituent assets are common to both. However, regarding funds that invest in small and medium-sized companies, notably in the renewable energy domain, there is a clear divergence in performance compared to that of non-ESG funds. Since January 2022, ETFs (exchange-traded funds) focused on solar, wind, and other green sources of energy underperformed the traditional energy sector which is mostly made up of oil and gas companies (Chart 8).

- These outflows as well as the relative performance of energy ESG funds show that investment decisions are first and foremost based on fundamentals such as commodity prices, profitability, and cash flows. Only when the fundamentals make sense do ESG criteria enter the equation. Higher interest rates, geopolitical uncertainty, high oil prices, recession fears, and the buzz around artificial intelligence are all among the factors that have influenced investors’ priorities and relative preferences over the third quarter. Indeed, money market funds, bond funds, and traditional energy funds have all seen more inflows in the current market context – a context that is likely to continue to weigh on ESG funds going forward.

Energy Transition Highlights

Airlines committed to net zero carbon dioxide emissions by 2050 at the 77th International Air Transport Association (IATA) Annual General Meeting in 2021. In 2022, member states of the International Civil Aviation Organization (ICAO) agreed to a long-term aspirational goal (LTAG) of net zero carbon dioxide emissions from aviation by 2050. According to the baseline scenario used in the IATA Net Zero Roadmaps[2], the anticipated traffic of the industry in 2050 would likely generate 1.8 billion tonnes of carbon emissions if fueled by traditional jet kerosene. As a drop-in solution, with equivalent combustion properties but reduced life cycle carbon emissions, Sustainable Aviation Fuel (SAF) will be one of the key levers to reach net-zero carbon emissions in aviation.

[2] Read more on IATA Net Zero Roadmaps: https://www.iata.org/en/programs/environment/roadmaps/

Sustainable Aviation Fuel

- Airlines have continued to announce SAF offtake agreements, reaching 46 SAF offtake agreements and 22 non-binding agreements since 2022, including both memoranda of understanding (MoUs) and letters of intent (Chart 9).

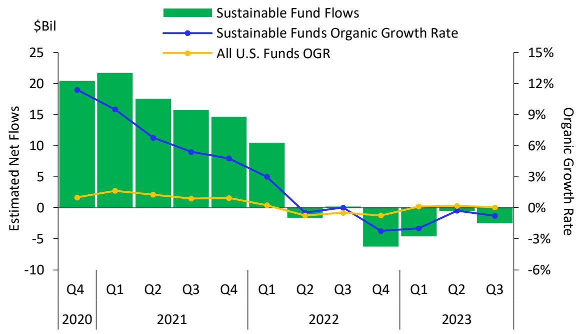
- 58 out of the total 68 SAF offtake agreements are based on biofuel SAFs from four pathways, namely Hydro-processed Esters and Fatty Acids (HEFA), HEFA Co-Processing, Syngas Fischer-Tropsch (Syngas-FT), and Alcohol to Jet (AtJ). The remaining ten offtake agreements are associated with e-fuel SAF, derived from various Power-to-Liquid (PtL) projects. HEFA is the most common SAF production pathway in the SAF offtake agreements, as it is the most mature technology currently (Chart 10).

- However, in the third quarter of 2023, the HEFA SAF accounted for a smaller share of the total estimated SAF offtake volume, compared to the AtJ or the PtL pathways, despite fewer agreements pertaining to the latter. Particularly, the PtL SAF agreements tend to concern longer periods compared to other pathways and, therefore, involve larger offtake volumes of SAF.

- Based on IATA's data sources, over 150 renewable fuel projects have been identified with commitments to including SAF in their product slate, spanning more than 110 producers in 35 countries. With new projects announced in the third quarter of 2023, these projects represent an estimated total renewable fuel capacity of 59 million tonnes by 2029. Further capacity announcements for 2026 and beyond can be expected (Chart 11). There is typically a lag of between 3- to 6-years between project announcement and commercialization.

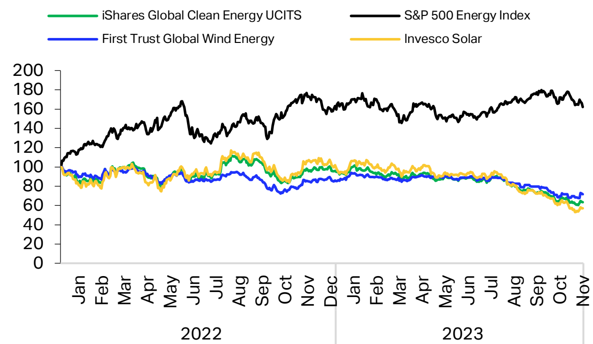
- Over the same period, the HEFA pathway is expected to contribute more than 80% of the total global renewable fuel capacity, followed by around 8% of AtJ, on the 2029 horizon (Chart 12). The share of HEFA co-processing has increased to 5%, while the other pathways remain unchanged.

Chart 7: US Funds Flows: Sustainable versus all US funds



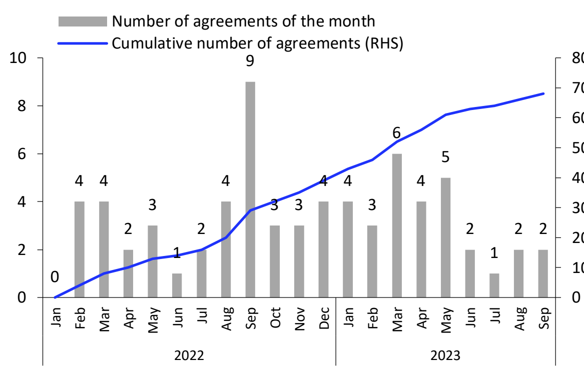
Source: Morningstar.

Chart 8: Relative total return of selected green energy ETFs vs S&P500 Energy Index Index, January 2022=100



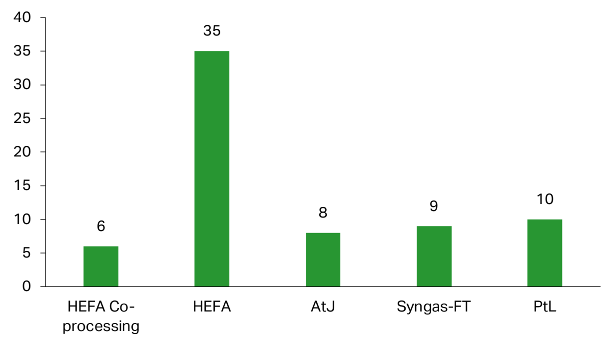
Source: IATA Sustainability & Economics, Macrobond

Chart 9: Number of SAF offtake agreements (as of Sep 2023)



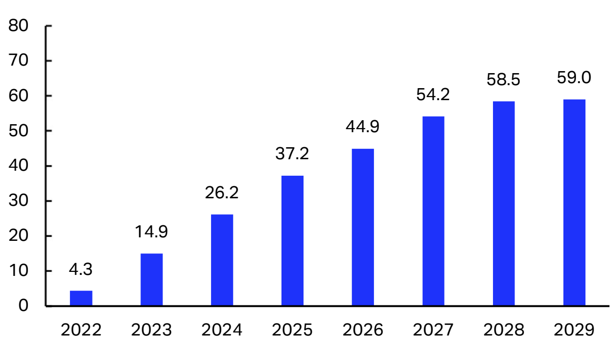
Source: IATA Sustainability and Economics

Chart 10: Total number of SAF offtake agreements per pathway (as of Sep 2023)



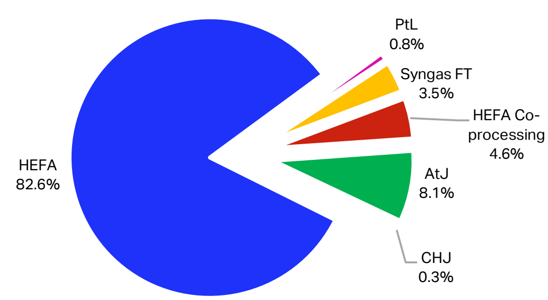
Source: IATA Sustainability and Economics

Chart 11: Cumulative renewable fuel capacity (Mt)



Source: IATA Sustainability & Economics

Chart 12: Total renewable fuel capacity, % share by pathway



Source: IATA Sustainability and Economics

III. Passenger and Cargo Traffic

Passenger Traffic

- In the third quarter of 2023 (Q3 2023), global air passenger traffic, measured in revenue passenger-kilometers (RPKs), increased by 28.4% over the past year. This takes RPKs to 96.3% of their level in Q3 2019, a significant improvement from the 75.0% level recorded a year ago (Chart 13).

- In terms of available seat kilometers (ASKs), capacity increased at a slower pace than passenger traffic in Q3 2023, gaining 25.8% from the previous year, and falling 3.4% short of its pre-pandemic level (Chart 14).

- The industry-wide passenger load factor (PLF) rose by 1.7 ppts in Q3 2023 compared to the same quarter last year. European and North American airlines reported the highest load factors at 87.2% and 85.8%, respectively, with the latter experiencing a marginal decrease from the previous year. Reflecting the strong demand recovery, Asia Pacific carriers saw the largest increase in load factors, reaching 81.4%, a 6.6 ppt jump from last year. All remaining regions increased their PLFs in the third quarter, bringing the industry-wide figure to within 0.3% of 2019 its level (Chart 15).

- Global domestic RPKs sustained a robust expansion in 2023, growing by 24.7% YoY in Q3 2023, and now exceeding the pre-pandemic level by 7.4%. Major domestic markets, including the US, China, India, and Brazil, all now surpass their 2019 domestic RPK figures. Thanks to strong growth in domestic tourism, China has seen a doubling of domestic traffic over the past year and a 17.4% increase over the same quarter in 2019. India and the US followed with 20.5% and 8.1% YoY growth in their Q3 2022 domestic traffic, respectively. Despite the impact of major typhoons, Japan saw its domestic passenger traffic rise 13.5% over the previous year but remained below the 2019 level by 6.4% (Chart 16).

- In Q3 2023, July broke records for domestic RPKs, surpassing the previous all-time high set in July 2019. Although July is typically a record-setting month for passenger traffic, this year was exceptional, as seasonally adjusted domestic RPKs also outperformed their December 2019 peak.

- International passenger demand approached the pre-pandemic level, recovering to 90.3% of Q3 2019 traffic levels. This marks a 2.0 ppt improvement over the level of last quarter (88.3% of 2019 levels). North American carriers have surpassed their pre-pandemic international traffic volumes, achieving 102.6% of Q3 2019 international RPKs (Chart 17). Carriers in the Middle East and Latin America were close to full recovery in the third quarter of 2023, and they exceeded 2019 traffic levels in the month of September 2023 by 5.3% and 2.0%, respectively.

- For Q3, global premium international traffic recovered to 95.8% of its 2019 levels, and international traffic in the economy cabin class followed at 89.9%. North American airlines lead the way across both cabin classes, surpassing 2019 levels by 7.5% in premium and 2.0% in economy. In the economy category, Latin American carriers ranked second, with 1.5% more international passenger traffic compared with 2019. Airlines from other regions, including Asia Pacific, Africa, and Europe, were well below their 2019 levels, falling short by 24.4%, 9.8%, and 8.0%, respectively. The Middle East airlines were only 1.0% below pre-pandemic levels. In the premium cabin category, only North American and the Middle East carriers saw international traffic surpass their 2019 levels, by 7.5% and 0.9%, respectively (Chart 18).

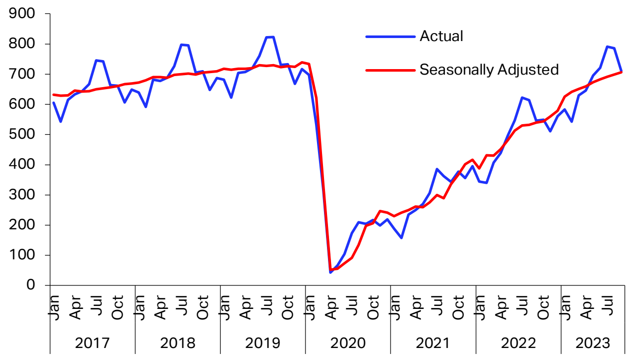
- The recovery in global passenger traffic continued to face headwinds in the third quarter of 2023. Jet fuel prices rose again, surpassing historical averages and exacerbating the input and operational cost challenges faced by airlines (Chart 19).

- Ticket sales provide a useful indicator of near-term trends in passenger demand. Since the pandemic, domestic ticket sales have generally outpaced international ticket sales. In Q3 2023, domestic ticket sales plateaued, and international sales increased at a moderate pace (Chart 20). Recent data indicates that total domestic passenger traffic growth could remain flat or decline as pent-up tourism in China cools, potentially affecting industry-wide and regional figures. Despite the slowdown in domestic sales, the number of origin-destination (O-D) passengers could remain resilient in the coming months, sustaining their current growth trend through the end of the year (Chart 21).

- Looking forward, our latest passenger forecast anticipates a return to pre-pandemic O-D passenger volumes by early 2024, with the long-term outlook showing a doubling of passenger numbers by 2040. However, despite this growth trajectory, macroeconomic challenges pose increased risks to our short-term outlook (Chart 22). Inflation, which peaked in late 2022, remains elevated, diminishing the purchasing power of consumers. While the robust labor market has mitigated the impact of inflation, a potential increase in unemployment would likely negatively impact future air travel demand. Overall, the balance of risks around our forecasts remains tilted to the downside.

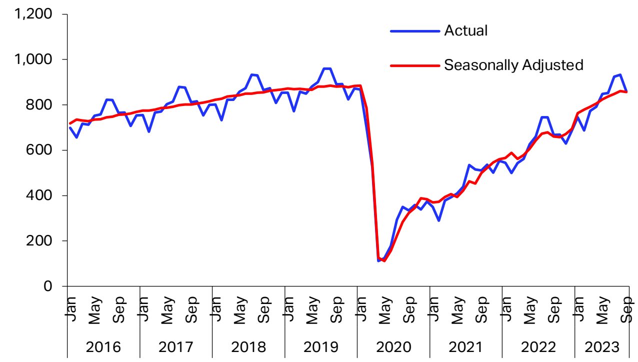
- Strong passenger demand is driving the airline industry toward full recovery, and our current forecast remains positive, anticipating that most regions will reach pre-pandemic passenger levels in 2023. The Asia Pacific region is expected to catch up in 2024 as international connections are restored. Global O-D passenger traffic is projected to reach the same level as the full-year passenger numbers observed in 2019 by 2024. However, this level will remain below the level projected for global passengers before the pandemic (Chart 22, Chart 23).

Chart 13: Industry monthly RPKs in billions



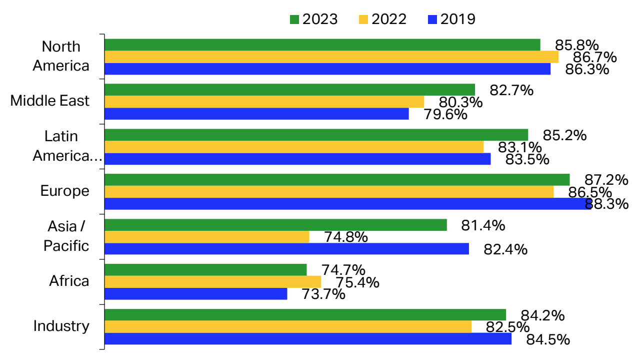
Source: IATA Sustainability and Economics, IATA Monthly Statistics

Chart 14: Industry monthly ASKs in billions



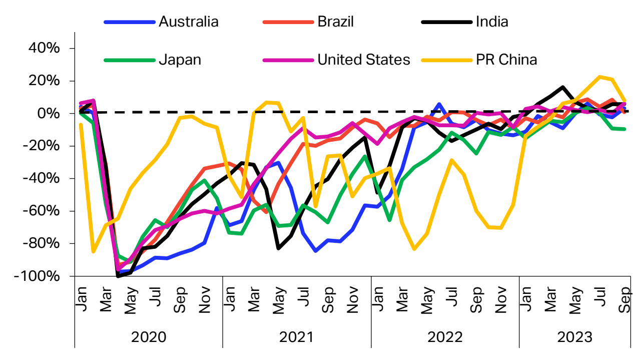
Source: IATA Sustainability and Economics, IATA Monthly Statistics

Chart 15: Passenger load factor (PLF), % share of ASKs (Q3)



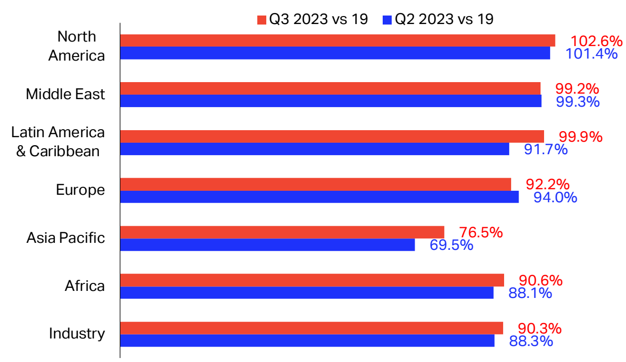
Source: IATA Sustainability and Economics, IATA Monthly Statistics

Chart 16: Domestic RPKs by country market, % change versus the same month in 2019



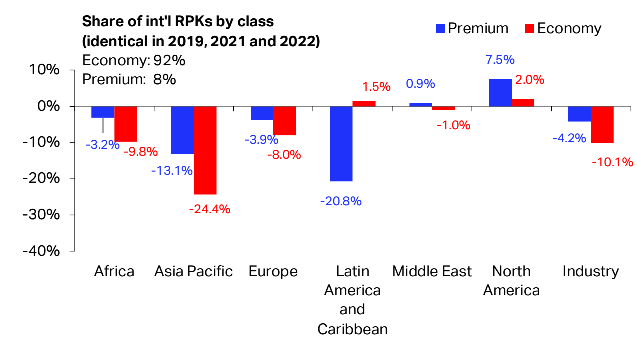
Source: IATA Monthly Statistics

Chart 17: International RPKs by airline region of registration, % share of the same period in 2019



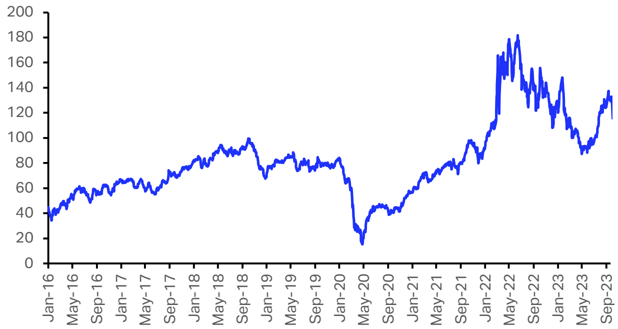
Source: IATA Sustainability and Economics, IATA Monthly Statistics

Chart 18: International RPKs by cabin class, % change vs the same period in 2019 (Q3)



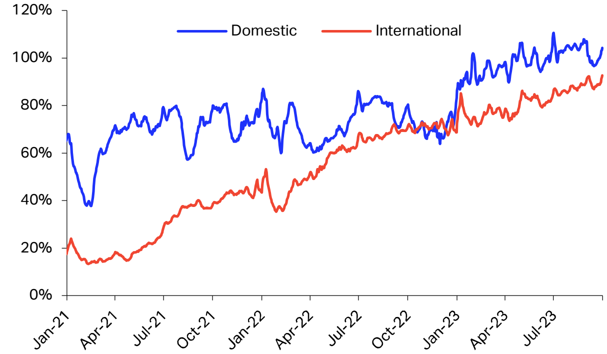
Source: IATA Sustainability and Economics, IATA Monthly Statistics

Chart 19: Jet fuel price, USD/bbl



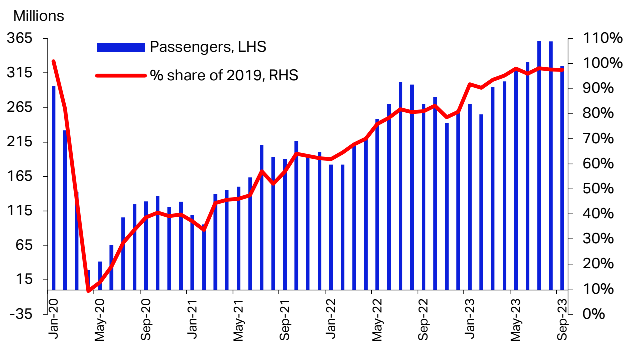
Source: IATA Sustainability and Economics, S&P Global Commodity Insights

Chart 20: Passenger ticket sales, 7-day moving average, % share of the same period in 2019



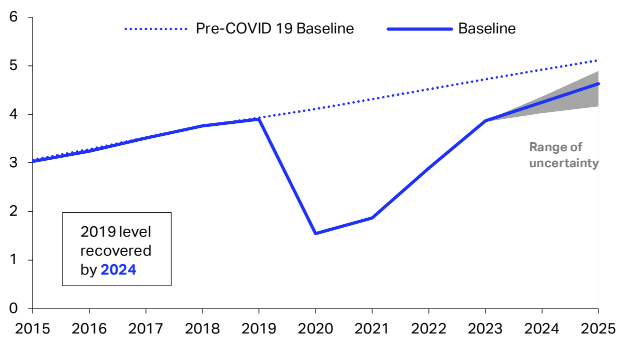
Sources: IATA Sustainability and Economics, DDS

Chart 21: Passenger traffic (O-D) and % share of 2019 levels



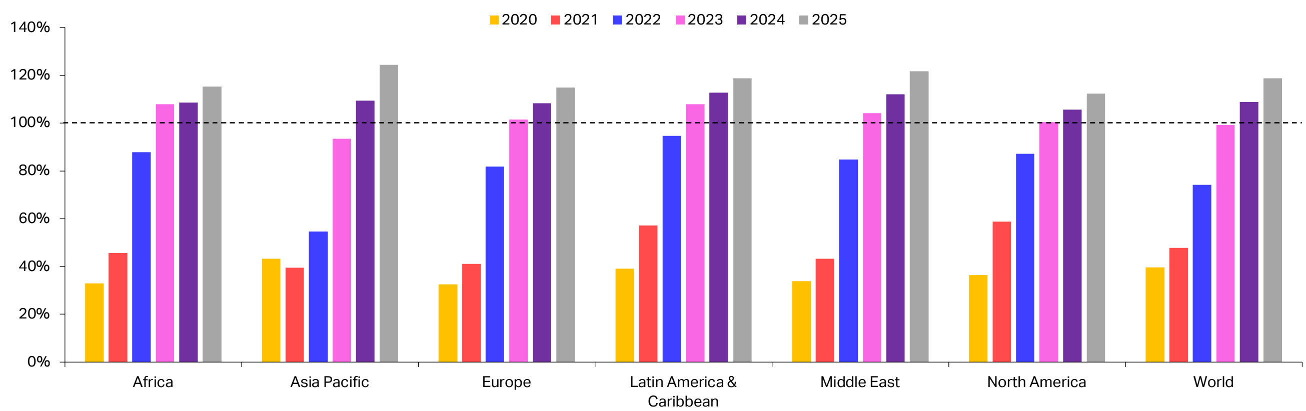
Source: IATASustainability and Economics, DDS

Chart 22: Global O-D passengers in billions



Source: IATA Sustainability and Economics/Tourism Economics

Chart 23: Passenger traffic forecast by region, % share of 2019 levels



Source: IATA Sustainability and Economics/Tourism Economics

Estimated year of recovery to 2019 passenger traffic levels

Africa	Asia Pacific	Europe	Latin America and the Caribbean	Middle East	North America	World
2023	2024	2023	2023	2023	2023	2024

Global Air Connectivity

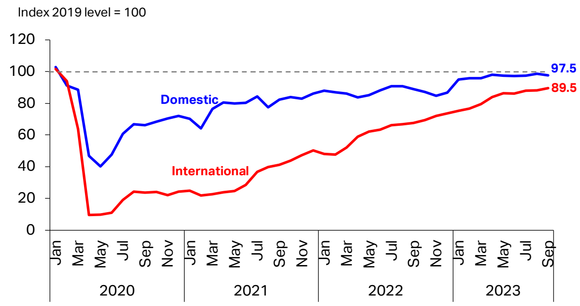
- Increased connectivity drives improved economic outcomes for all countries and communities. Air transport is a vital form of connectivity in the modern economy. It provides the city-pair connections that serve as virtual bridges supporting the flows of goods and people between markets. As the only rapid global transportation network, air transport facilitates links between businesses, governments, and people – enabling world trade, investment, tourism and travel, innovation, and the spreading of ideas, among other key economic activities.

- The ongoing recovery in air traffic volumes is accompanied by network growth and increases in connectivity. As of September 2023, IATA's Global Air Connectivity Index, which measures connectivity as scheduled passenger capacity weighted by the relative economic size of destinations served, had recovered to 90% of its pre-pandemic level for international connectivity, up 21.8 ppts over the past year. Domestic connectivity is currently at 97.5% of its 2019 level, having increased by a more modest 8.7 ppts over the past 12 months (Chart 24).

- Digging deeper, the number of domestic airport pairs served currently exceeds the 2019 level by 2.0%. The number of international airport pairs has also risen, although at 92.7% it is yet to recover fully (Chart 25). Flight frequency for international routes reached 89.8% of the 2019 level, lagging that of domestic flight frequency at 93.0%.

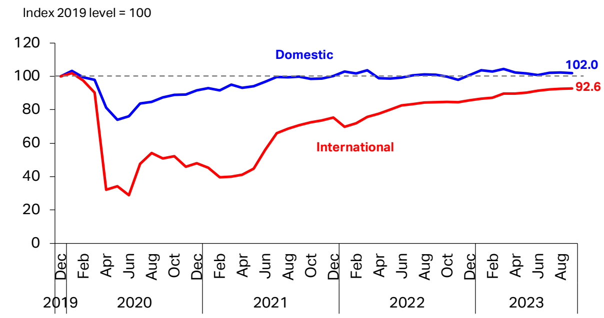
- The recovery in connectivity is broad-based across regions. Latin America & the Caribbean is the strongest performer currently; in September 2023 international air connectivity in the region reached 106.9% of the level in 2019. The Middle East region and Africa follow closely with 104.6% and 104.2% of their respective pre-Covid levels. North America and Europe have yet to reach their 2019 level of connectivity, at 93.8% and 91.0%, respectively. Asia Pacific, currently at 79.1% of the 2019 level, continues to lag the other regions (Chart 26). However, with important regional markets such as China now fully open, Asia Pacific has seen a strong increase of 39 ppts in international air connectivity over the past year, closing the gap to the other regions from 37 ppts in January 2022 to 12 ppts in September 2023.

Chart 24: IATA Global Air Connectivity Index, Jan 2020-Sep 2023



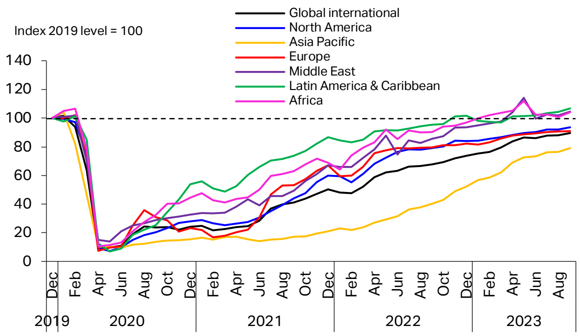
Source: IATA Connectivity Index using data from OAG

Chart 25: Global airport pairs, Jan 2020-Sep 2023



Source: IATA Connectivity Index using data from OAG

Chart 26: Recovery in international connectivity by region through Sep 2023



Source: IATA Connectivity Index using data from OAG

Cargo Traffic

- The annual growth in world merchandise trade is anticipated to slow to 0.8% in 2023, a significant decrease from the 3.0% growth observed in 2022 (Chart 27). This decline can be attributed to persistent inflation, conflict in Europe and the Middle East, further geopolitical tensions, and troubled supply chains. Despite these challenging circumstances for global trade, the air cargo sector shows some positive signs.

- Global air cargo traffic, as measured by cargo tonne-kilometers (CTKs), posted its first positive annual rate of growth in August 2023, following a series of YoY declines since February 2022. Industry-wide CTKs saw a modest uptick of 0.6% YoY in Q3 2023, marking a notable improvement from the previous quarter's 5.1% annual decrease in cargo traffic (Chart 28). Year-to-date (YTD), CTKs reached 177.8 billion as of September, narrowing the gap with the 2022 YTD levels.

- Available cargo tonne-kilometers (ACTKs), measuring air cargo capacity, maintained double-digit growth throughout Q3 2023, leading to 12.8% YoY growth for the quarter overall. ACTKs stood 3.3% above the pre-pandemic 2019 level (Chart 29). Through September, YTD ACTKs reached 410.0 billion, a 10.4% increase from YTD levels for the same period in 2022 (Chart 30). The rapid growth in industry-wide ACTKs largely reflects the restoration of belly cargo capacity across various markets.

- In the third quarter of 2023, international air cargo capacity increased by 10.9% YoY. The growth was primarily driven by the returning passenger belly-hold capacity on international routes, which was up 31.1% YoY. However, international capacity on dedicated freighters fell slightly by 0.14% in Q3 (Chart 31). As a result, the share of total international ACTKs provided by dedicated freighters continued to normalise, easing to 46.2% in Q3 2023 and approaching their pre-pandemic share of around 40% (Chart 32).

- In the third quarter of 2023, international air cargo demand registered its first annual growth since the close of 2021. By the end of Q3 2023, airlines registered in Asia Pacific, the Middle East, and Latin America emerged as top performers with the highest annual growth in international CTKs. Asia Pacific and Middle East carriers gained 4.2% and 2.5% YoY respectively in September (from 2.5% and 1.3% in August). Latin American carriers outperformed the remaining regions, even with a slight dip to 1.5% YoY growth in September. North American carriers ended the quarter with 0.9% annual growth, while traffic for airlines registered in Africa and Europe contracted by 0.3% and 1.7%, respectively (Chart 33).

- Air cargo load factors (CLF) across major trade lanes showed an upward trend by the end of Q3 2023 (Chart 34). The industry CLF reached 49.0% by the quarter's end, up from 48.6% in June. The largest trade lanes, such as Asia Pacific to Europe and North America to Asia Pacific, maintained CLFs of 67.6% and 63.5% respectively in September. Within Asia, the CLF ended the quarter above the industry average, despite a slight decrease in August. In comparison, smaller trade lanes such as Europe to the Middle East, and the Middle East to the Asia Pacific concluded the quarter below the industry average, with CLFs of 48.7% and 42.9% respectively.

- Turning to the Purchasing Managers' Index (PMI), a key indicator of air cargo demand (Chart 35), both new export orders PMI and the manufacturing output PMI in Q3 remained below the critical 50-mark, at 49.7 and 47.7, respectively. A PMI below 50 is the result of a majority of respondents expecting worsening conditions compared to the previous month and above 50 the majority expect an improvement. These figures were nevertheless an improvement from the end of Q2 2023. The upward trend in both PMI components throughout Q3 2023 signals a positive outlook for air cargo demand into the fourth quarter.

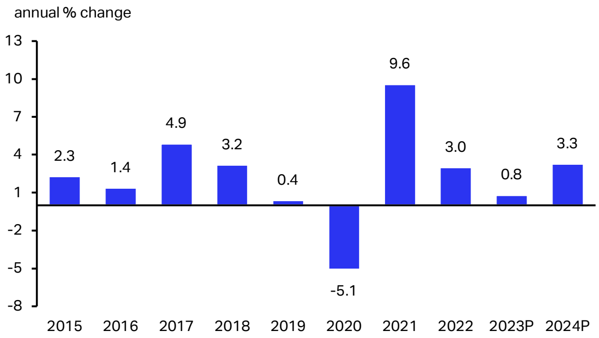
- Looking at the new export orders PMI for major economies (Chart 36), China stood at 49.1 in September, up from 46.0 in July. The US was virtually unchanged at 48.7 in September. The European PMI, though the lowest among the major economies, improved from 40.5 in July to 42.0 in September. Japan also showed a slight improvement in Q3, ending at 47.1 in September.

- Regarding the manufacturing output PMI of the world's major economies during Q3 (Chart 37), the trends mirror those observed in the new export orders PMI. China maintained its manufacturing PMI above the 50 mark in the last two months of Q3 (51.6 in August and 51.8 in September), though it began the quarter at 49.2. The US experienced a mid-quarter decline but recovered by the quarter's end to 50.8. Europe's manufacturing PMI showed a slight increase over Q3 but remained the weakest performer among the major economies at about 44.0, and Japan saw a slight decline from 48.9 in July to 48.7 in September.

- The inventory-to-sales ratio, also historically correlated with industry CTK growth rates, provides more perspective on the soft demand for air cargo (Chart 38). A higher inventory-to-sales ratio indicates either excess stock or insufficient demand. In Q3 2023, the annual growth in the US inventory-to-sales ratio (inverted in the chart) increased by 1.2 ppts and 1.1 ppts in August and September, respectively, compared to July.

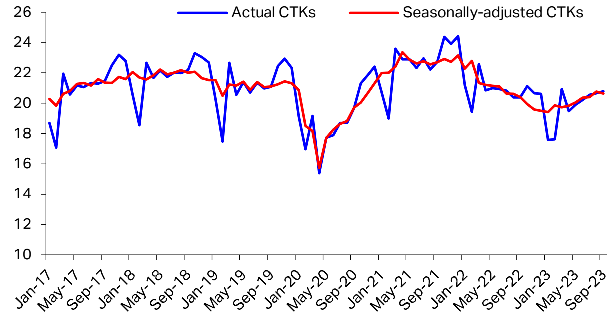
- Global goods trade sustained YoY contractions over Q3 2023 (Chart 39), mirroring the evolution in the inventory-to-sales ratio and confirming the cooling market demand. However, air cargo demand growth surpassed that in global goods trade in Q3 for the first time since December 2021. While the annual decline in global goods trade occurred from a high base in 2022, the annual growth in air cargo is from a low base in that year. These base-year effects are important when comparing the relative performance of air cargo and global trade.

Chart 27: Merchandise export volume change - annual (annual % change)



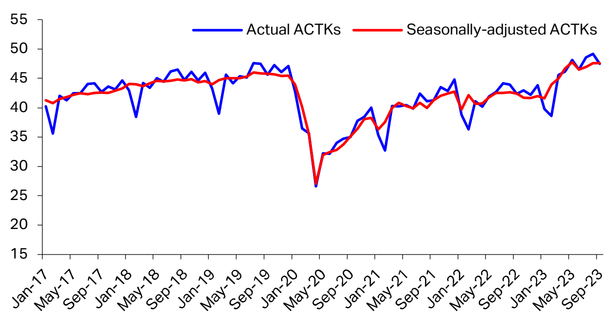
Source: IATA Sustainability and Economics, World Trade

Chart 28: Industry monthly CTKs in billions



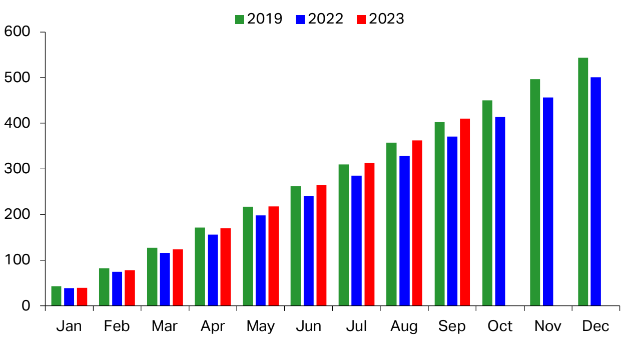
Source: IATA Sustainability and Economics, IATA Monthly Statistics

Chart 29: Industry monthly ACTKs in billions



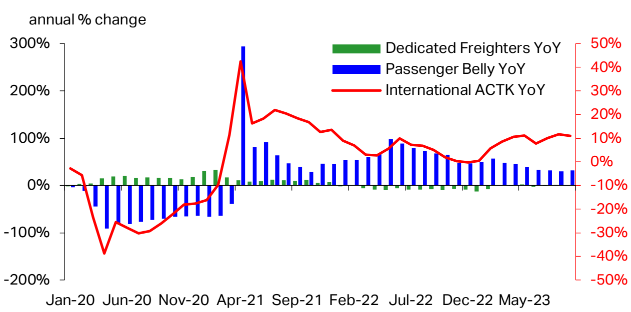
Sources: IATA Sustainability and Economics, IATA Monthly Statistics

Chart 30: Year-to-date monthly industry ACTKs in billions



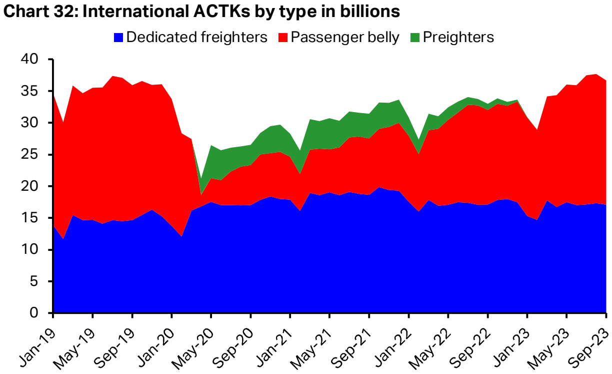
Sources: IATA Sustainability and Economics, IATA Monthly Statistics

Chart 31: Growth of international ACTKs by type, annual % change



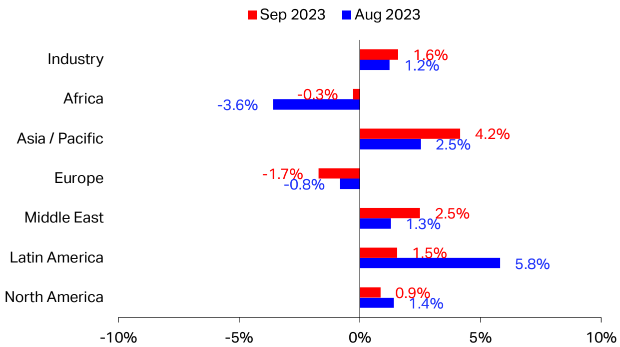
Sources: IATA Sustainability and Economics, IATA Monthly Statistics

Chart 32: International ACTKs by type in billions



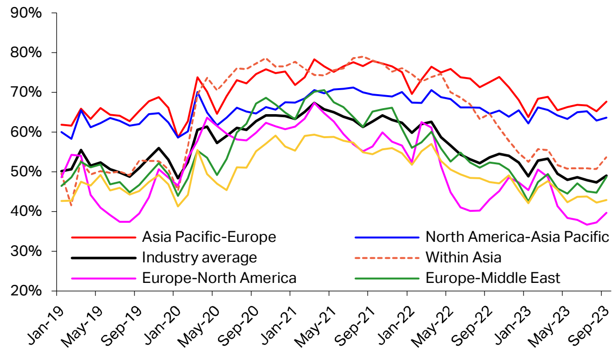
Sources: IATA Sustainability and Economics, IATA Monthly Statistics

Chart 33: International CTK growth by airline region of registration, annual % change



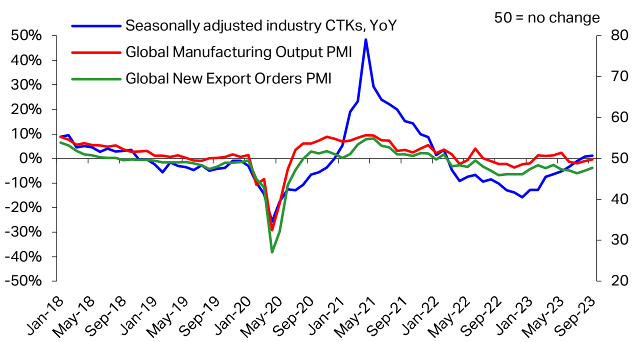
Source: IATA Sustainability and Economics, IATA Monthly Statistics

Chart 34: Cargo load factors in major route areas, % share of ACTKs



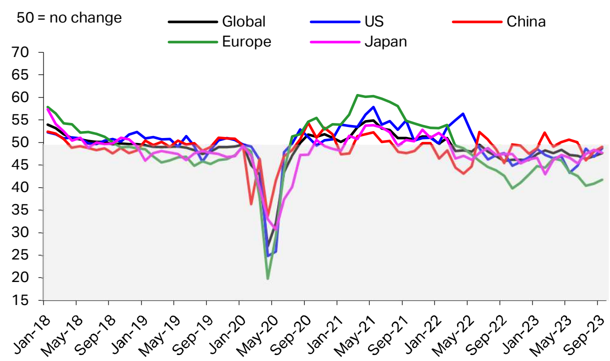
Source: IATA Sustainability and Economics, IATA Monthly Statistics

Chart 35: Global manufacturing PMIs and industry CTK growth



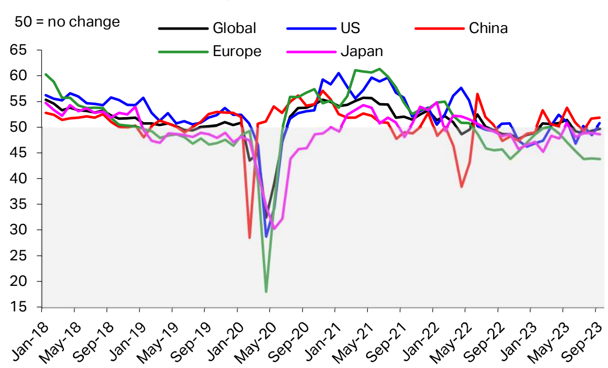
Source: IATA Sustainability and Economics, IATA Monthly Statistics, S&P Global

Chart 36: PMI new export orders in major economies



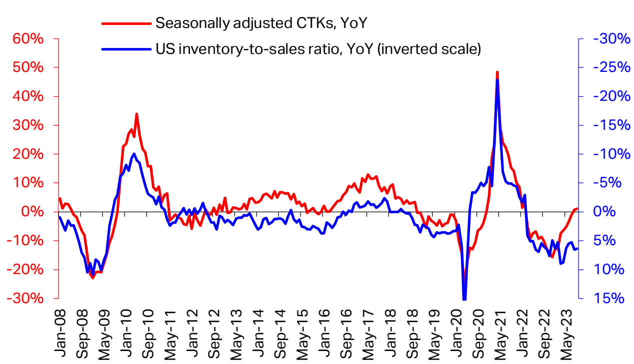
Source: IATA Sustainability and Economics, S&P Global Markit

Chart 37: PMI manufacturing output in major economies



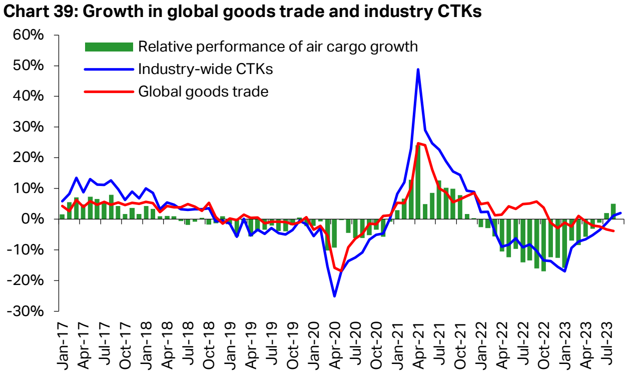
Sources: IATA Sustainability and Economics, S&P Global Markit

Chart 38: Growth in inventory-to-sales ratio and industry CTKs



Source: IATA Sustainability and Economics, IATA monthly statistics, Macrobond

Chart 39: Growth in global goods trade and industry CTKs



Source: IATA Sustainability and Economics, IATA Monthly Statistics, Macrobond

IV. Regional Outlook

Africa

- In Q3 2023, African carriers achieved a 25.1% annual increase in total air passenger traffic (RPKs) compared to the same quarter last year. This placed African airlines in third place globally, behind Asia Pacific and the Middle East, which experienced annual growth rates of 75.6% and 25.6%, respectively. However, the region's total RPKs were 6.3% lower compared to Q3 2019, in other words showing a recovery to 93.1% of the pre-pandemic traffic (Chart 40).

- Seat capacity of African carriers, measured as available seat-kilometers, grew by 26.3% YoY in Q3 2023. This increase outpaced RPK growth and resulted in a small reduction in the passenger load factor. Although the PLF for African carriers remained slightly above the 2019 level, it significantly lagged the industry average. This highlights ongoing challenges for airlines in the region, particularly in the face of economic difficulties impacting air travel affordability.

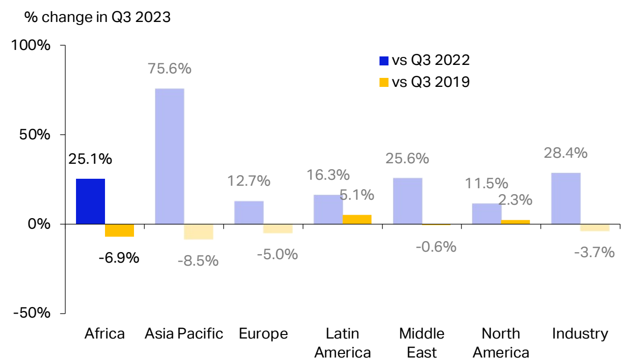
- International traffic of African carriers grew by 27.0% in Q3 2023 compared to the same period last year, marking the second-strongest performance globally, behind Asia Pacific. However, international RPKs of Africa's airlines remained 9.4% below their pre-pandemic level. Despite this, the region's annual growth and recovery in international air traffic closely followed the industry-wide performance in the third quarter of 2023 (Chart 41).

- Air cargo traffic of African airlines, measured in CTKs, showed a slight dip of 0.5% below their 2022 level. Nevertheless, the region's carriers outperformed their pre-pandemic level by 7.8%, ranking second globally, just after the North American carriers (Chart 42). The growth rate in trade lanes connecting Africa to Asia played a pivotal role in driving the region's airline performance in Q3 2023, posting the fastest annual growth in September at 12.8%.

- Ticket sales growth for the Africa region trended below the global average for most of Q3, but saw a positive upswing, peaking at 13.5% in mid-August, surpassing the global average (Chart 44). The number of projected airline deliveries for the year has also increased from last quarter's projections, now standing at 33 (Chart 46).

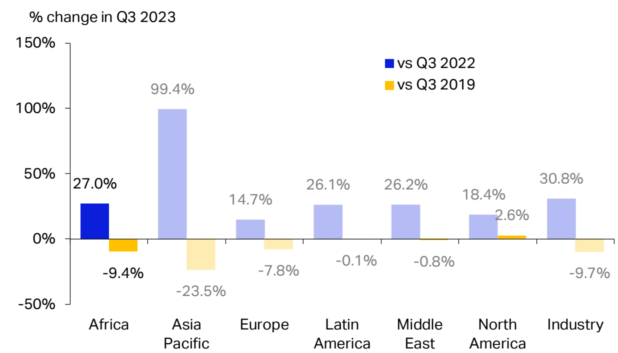
- Major country markets in the region continued to exceed their Q3 2019 origin-destination (O-D) passenger levels. Ethiopia led the way, up 31% vs 2019, followed by Egypt at 28% and Nigeria at 22%. South Africa's O-D passengers remained 10% below the 2019 level, reflecting economic and industry structural challenges in restoring air service. Rcovery continued across the Northern African countries, including Morocco, Algeria, and Tunisia, which recorded passenger numbers above the Q3 2019 levels of 17%, 4%, and 1%, respectively (Chart 44).

Chart 40: Growth in RPKs by airline region of registration, Africa



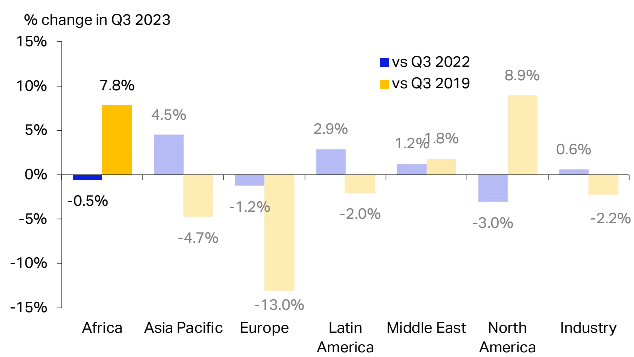
Source: IATA Sustainability and Economics, Monthly Statistics

Chart 41: Growth in international RPKs by airline region of registration, Africa



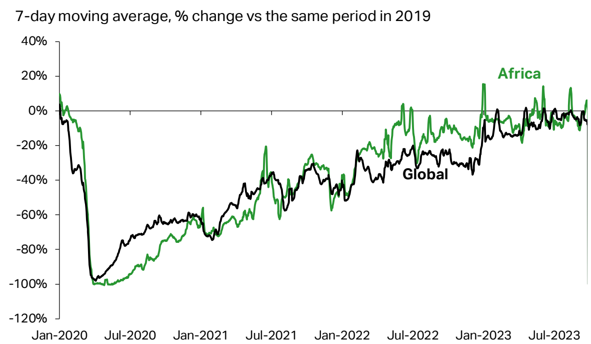
Source: IATA Sustainability and Economics, Monthly Statistics

Chart 42: Growth in CTKs by airline region of registration, Africa



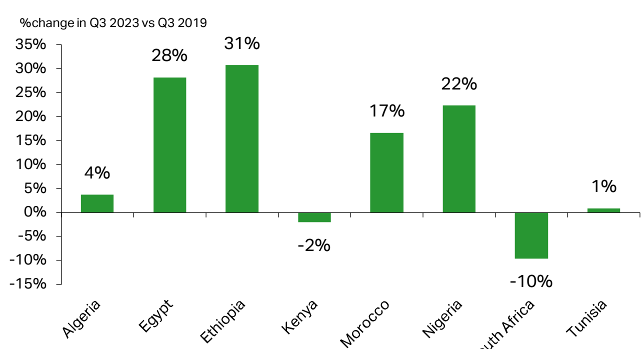
Source: IATA Sustainability and Economics, Monthly Statistics

Chart 43: Ticket sales by region (7-day moving average), Africa



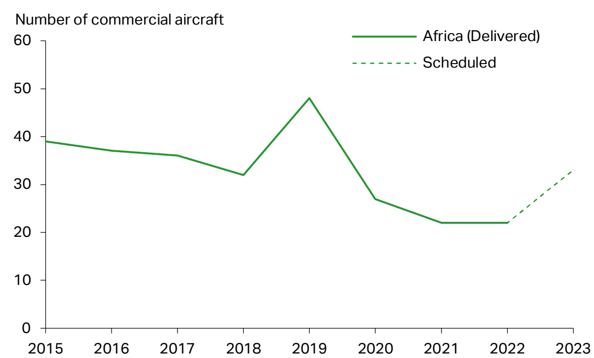
Source: IATA Sustainability and Economics, DDS

Chart 44: Passenger traffic (O-D) growth by country in Q3 2023, Africa



Source: IATA Sustainability and Economics, DDS

Chart 45: Aircraft deliveries in 2015-2023 (scheduled), Africa



Source: IATA Sustainanbility and Economics using Cirium

	World share[1]	% year-on-year vs Q3 2022 RPK	ASK	PLF (%-pt)	% year-on-year vs Q3 2019 RPK	ASK	PLF (%-pt)	PLF (level)
TOTAL MARKET	***100.0%***	**28.4%**	**25.8%**	**1.7%**	**-3.7%**	**-3.4%**	**-0.3%**	**84.2%**
Africa	*2.1%*	25.1%	26.3%	-0.7%	-6.9%	-8.1%	0.9%	74.7%

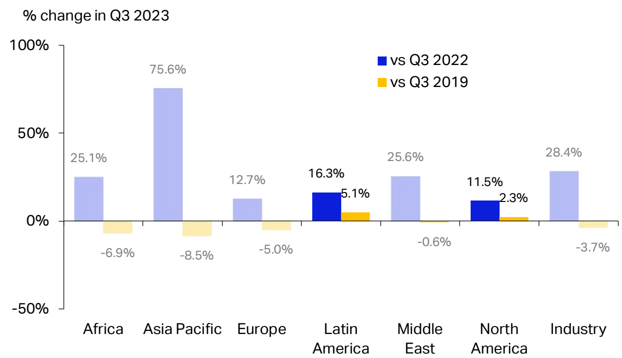
[1]% of industry RPKs in 2022

Note: The total industry and regional growth rates are based on a constant sample of airlines combining reported data and estimates for missing observations. Airline traffic is allocated according to the region in which the carrier is registrated; it should not be considered as regional traffic.

Americas

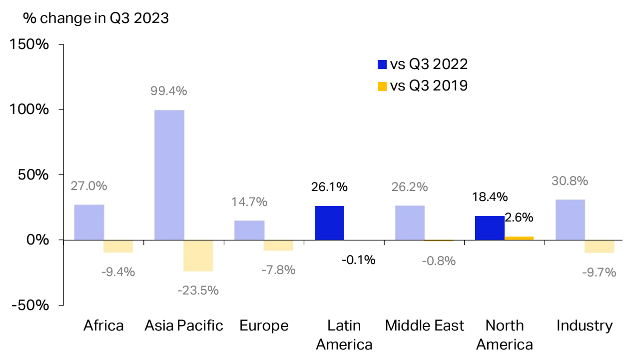
- In Q3 2023, North American and Latin American airlines exhibited continued growth in total RPKs, recording increases of 11.5% and 16.3% YoY, respectively. This sustained performance positions the Americas as leaders in surpassing pre-pandemic passenger traffic levels. Latin American airlines outpaced Q3 2019 levels by 5.1%, with their North American counterparup 2.3% (Chart 46).
- Despite being the region with the second-lowest international passenger traffic growth, Latin America saw a 26.1% YoY increase in international RPKs, while North America reported the lowest growth rate among all regions, with an 18.4% YoY increase. Both regions, however, are seeing slower growth as they have fully recovered and surpassed 2019 levels, unlike other regions such as Asia-Pacific, which continue to exhibit higher growth rates (Chart 47).
- On the North American side, both Canada and the US have exceeded 2019 levels in the domestic market, with Canada driving the international segment's rapid recovery. In Latin America, most countries surpassed 2019 levels in domestic markets, but a slower recovery in critical regional markets, including Argentina, Peru, Chile, and Brazil, resulted in a 6-20 ppt lag in international RPKs compared with 2019.
- Colombia, Mexico, Ecuador, Costa Rica, and the Dominican Republic led the region's international performance, each surpassing 2019 levels by more than 11 ppts. Notably, Colombia demonstrated exceptional performance, with a 20% growth rate compared to Q3 2019, making it the top market performer. In the post-pandemic period, Colombia not only recovered connectivity but expanded the number of served routes, contributing to a favorable environment for tourism, where air transport represents nearly 90% of international tourists arriving in the country.
- Ticket sales in the third quarter reflected a positive trend, aligning with the summer season. Airlines in the region are now preparing for North America's winter season, which triggers the high season in the Caribbean beach destinations. Although ticket sales in the region slightly outperformed the global average trend, the gap narrowed in Q3 as global ticket sales gathered momentum and recovered to their pre-crisis volume (Chart 49).
- Cargo traffic for North American carriers continued to trend downwards in the third quarter, to be 3% below Q3 2022, but 8.9% above Q3 2019 levels. The decline in North America's air cargo demand can be partly explained by the rebound in the maritime industry and the return to the new "normal" after the pandemic. Latin American carriers, in contrast, saw a 2.9% growth in CTKs above Q3 2022 levels but remained 2% below 2019 levels. This divergence reflects strong demand for goods from Latin America, with key exports such as flowers, salmon, and cross-border commerce with the US contributing to the region's resilience (Chart 48).
- Several Latin American countries sustained O-D passenger traffic above 2019 levels. The Dominican Republic, for example, demonstrated resilience with a remarkable 36.4% growth. Conversely, challenges emerged in Colombia due to macroeconomic factors, including the return of VAT to 19% on tickets, and in Argentina, where uncertainty surrounding the December 2023 presidential elections intensified macroeconomic turmoil and currency devaluation (Chart 50).
- Around one-third of global aircraft deliveries in 2023 will be destined for North America, primarily the US. After surpassing 2019 levels last year, North American deliveries are expected to increase by an additional 95 units in 2023, aligning with the region's anticipated full recovery in passenger traffic. In Latin America, deliveries to airlines rebounded to pre-pandemic levels in 2022, with increased capacity by regional carriers during 2023, in line with rising demand for air travel in the region (Chart 51).

Chart 46: Growth in RPKs by airline region of registration, Americas



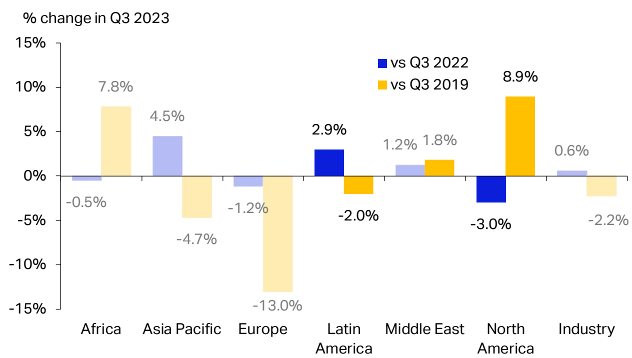
Source: IATA Sustainability and Economics, Monthly Statistics

Chart 47: Growth in international RPKs by airline region of registration, Americas



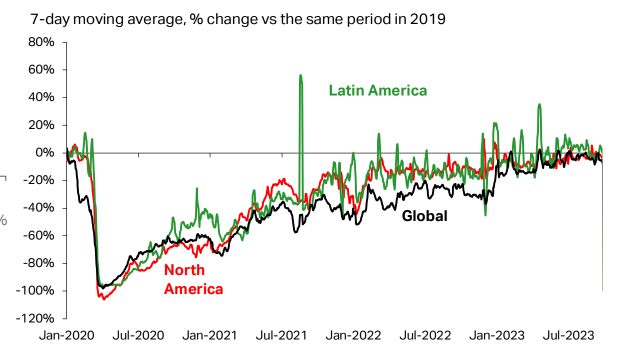
Source: IATA Sustainability and Economics, Monthly Statistics

Chart 48: Growth in CTKs by airline region of registration, Americas



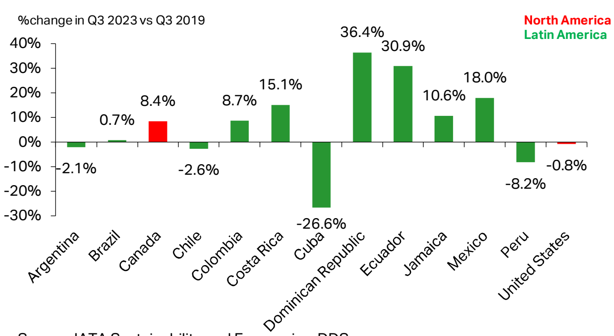
Source: IATA Sustainability and Economics, Monthly Statistics

Chart 49: Ticket sales by region (7-day moving average), Americas



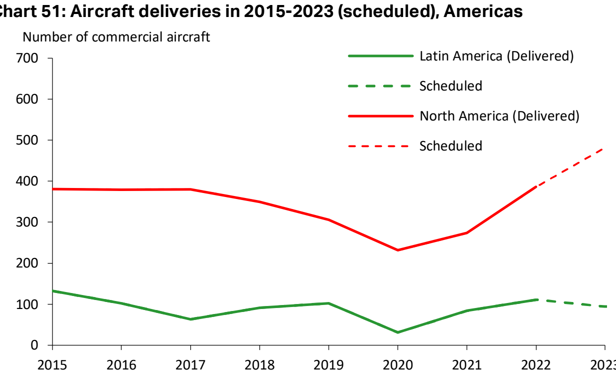
Source: IATA Sustainability and Economics, DDS

Chart 50: Passenger traffic (O-D) growth by country in Q3 2023, Americas



Source: IATA Sustainability and Economics, DDS

Chart 51: Aircraft deliveries in 2015-2023 (scheduled), Americas



Source: IATA Sustainanbility and Economics using Cirium

	World	% year-on-year vs Q3 2022			% year-on-year vs Q3 2019			
	share [1]	RPK	ASK	PLF (%-pt)	RPK	ASK	PLF (%-pt)	PLF (level)
TOTAL MARKET	***100.0%***	**28.4%**	**25.8%**	**1.7%**	**-3.7%**	**-3.4%**	**-0.3%**	**84.2%**
Latin America	*6.4%*	16.3%	13.4%	83.1%	5.1%	2.9%	1.8%	85.2%
North America	*28.8%*	11.5%	12.6%	85.8%	2.3%	2.9%	-0.5%	85.8%

[1] % of industry RPKs in 2022

Note: The total industry and regional growth rates are based on a constant sample of airlines combining reported data and estimates for missing observations. Airline traffic is allocated according to the region in which the carrier is registrated; it should not be considered as regional traffic.

Asia Pacific

- In Q3 2023, airlines in the Asia Pacific region sustained a robust traffic recovery, with RPKs increasing by 75.6% compared to the same period last year, marking the fastest growth among global regions (Chart 52). While Q3 traffic was at 91.5% compared to the 2019 level – the lowest among regions – it demonstrated substantial improvement from Q1 (74.2%) and Q2 (84.9%) of 2023.

- Total ASKs of airlines in the region grew by 61.5% YoY in Q3 2023, reaching 92.7% of pre-pandemic levels, which is a marked improvement from the 87.8% seen in the second quarter. Passenger load factors for the region's airlines also rose, with a YoY increase of 6.6 ppts, reaching 81.4% of the pre-pandemic level, reflecting the strong demand for air travel in the region.

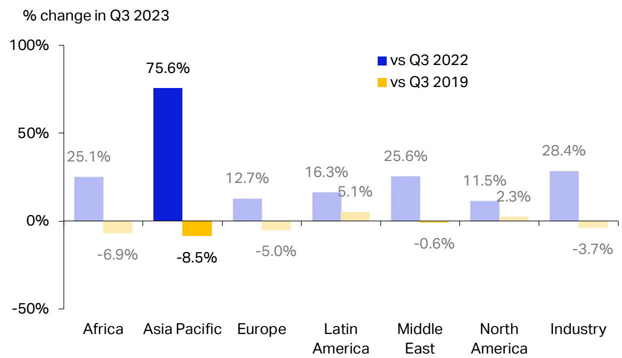
- For international RPKs in the region, Q3 2023 saw notable growth of 99.4% YoY, yet the recovery compared to 2019 levels remains behind other regions, at 76.5% (Chart 53). The relatively slower restoration of international traffic, attributed to delayed border reopening, is gaining momentum – Q2 2023 traffic levels were at 68.5%, and Q1 recorded only 59.7%. This highlights a closing gap in international traffic recovery compared to other regions.

- Cargo traffic for Asia Pacific airlines improved by 4.5% in Q3 2023 compared to Q3 2022, reversing negative YoY growth trends seen in Q2 (-2.2%) and Q1 (-11.0%) (Chart 54). However, when measured against pre-pandemic levels, Q3 cargo traffic displayed negative growth of 4.7%, reflecting weak demand attributed to economic slowdowns in key markets.

- In the Asia-Pacific region, the recovery in O-D passenger traffic showed progress, particularly in PR China, where Q3 2023 traffic rose 1.2% above 2019 levels. Domestic demand, fueled by increased tourism, primarily drove this growth. Some countries experienced flat or declining recoveries. India's O-D passenger recovery dipped below 2019 levels, from 6.1% above in Q2, and Japan saw a weaker outturn due to significant typhoons impacting air service operations in August. Overall, Q3 2023 continued the trend of ticket sales aligning with the global average, signaling consistent strong demand since the lifting of most border restrictions (Chart 56).

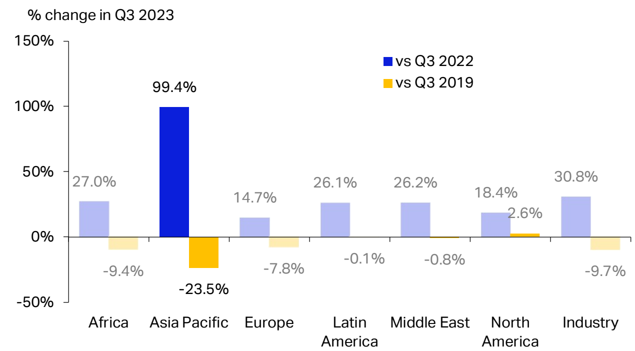
- Although new aircraft deliveries have increased since the height of the Covid pandemic in 2020, they remain relatively low in 2023 because demand and traffic in the region has yet to recover to 2019 levels (Chart 57). Deliveries are expected to pick up when the region recovers to and above pre-pandemic levels.

Chart 52: Growth in RPKs by airline region of registration, Asia Pacific



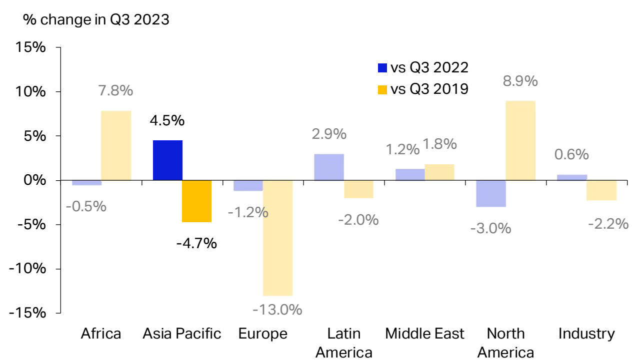
Source: IATA Sustainability and Economics, Monthly Statistics

Chart 53: Growth in international RPKs by airline region of registration, Asia Pacific



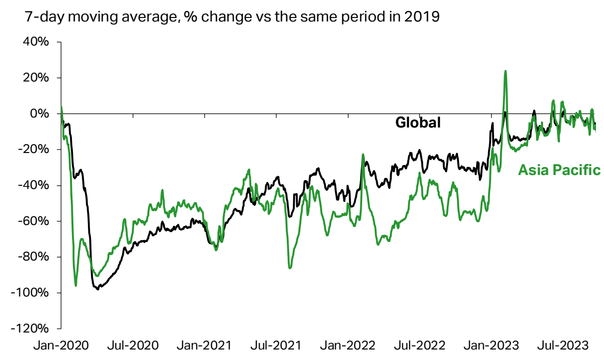
Source: IATA Sustainability and Economics, Monthly Statistics

Chart 54: Growth in CTKs by airline region of registration, Asia Pacific



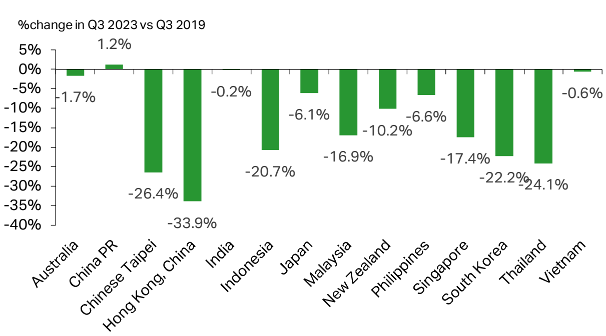
Source: IATA Sustainability and Economics, Monthly Statistics

Chart 55: Ticket sales by region (7-day moving average), Asia Pacific



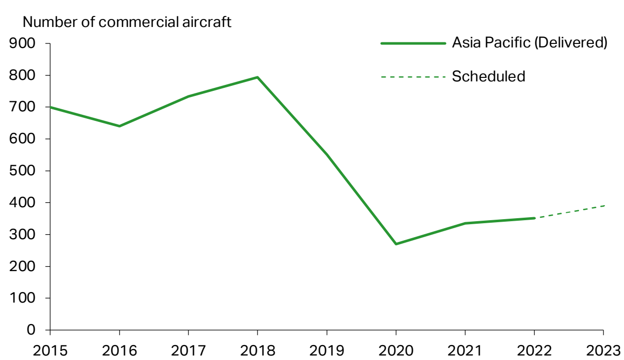
Source: IATA Sustainability and Economics, DDS

Chart 56:: Passenger traffic (O-D) growth by country in Q3 2023, Asia Pacific



Source: IATA Sustainability and Economics, DDS

Chart 57: Aircraft deliveries in 2015-2023 (scheduled), Asia Pacific



Source: IATA Sustainanbility and Economics using Cirium

	World	% year-on-year vs Q3 2022			% year-on-year vs Q3 2019			
	share [1]	RPK	ASK	PLF (%-pt)	RPK	ASK	PLF (%-pt)	PLF (level)
TOTAL MARKET	***100.0%***	**28.4%**	**25.8%**	**1.7%**	**-3.7%**	**-3.4%**	**-0.3%**	**84.2%**
Asia Pacific	*22.1%*	75.6%	61.5%	6.6%	-8.5%	-7.3%	-1.1%	81.4%

[1]% of industry RPKs in 2022

Note: The total industry and regional growth rates are based on a constant sample of airlines combining reported data and estimates for missing observations. Airline traffic is allocated according to the region in which the carrier is registrated; it should not be considered as regional traffic.

Europe

- European airlines experienced continued growth in passenger traffic throughout the third quarter. Total air passenger traffic (RPKs) increased by 12.7% compared to the same period last year. Although still not fully recovered to pre-pandemic levels yet, the gap has been narrowing gradually, averaging at 5.0% below the traffic achieved in the third quarter of 2019 (Chart 58).

- European airlines are the largest contributors to the international air passenger market, accounting for more than 40% of global international RPKs. International passenger traffic for the European carriers grew by 14.7% in Q3 compared to the previous year, short of pre-pandemic levels in 2019 by 6.0% on a monthly basis as of September, and averaging at 7.8% compared to international traffic achieved during the third quarter of 2019 (Chart 59). Despite maintaining positive trends, the recovery in international RPKs for the region's carriers has been slowing since May 2023, and August 2023 saw lower passenger traffic than in July. This unusual pattern, deviating from historical seasonal trends, is compounded by a broader range of capacity constraints that may further impede traffic recovery.

- In terms of airline capacity, ASKs of the European carriers grew by 11.7% YoY, recovering to 96.1% of the 2019 level in Q3 2023, slightly below the industry-wide recovery. The faster recovery in RPKs (vs ASKs) contributed to lifting the European passenger load factor by 0.8 ppts over the past year, leaving them just 1 ppt lower than the pre-pandemic 2019 level for the third quarter.

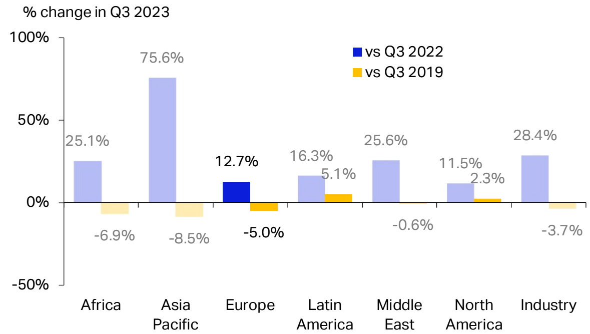
- Cargo traffic for European airlines, which declined through most of 2022 and early 2023 after a strong performance in 2021, stabilized in Q2 and Q3 2023. However, it remains significantly lower (down 13%) compared to the same quarter in 2019. European airlines had the weakest performance among all regions in terms of recovery to 2019 levels, as was the case also in Q2 2023. In a YoY comparison, Europe only surpassed the North American airlines in CTK growth performance (Chart 60).

- Despite the challenges of the Russia-Ukraine war and the Omicron outbreak in early 2022, ticket sales in Europe recovered rapidly in 2022, reaching pre-pandemic levels in terms of average daily ticket sales in early January this year. Ticket sales in the region maintained a positive trend throughout Q3 2023, despite being below the global average. They surpassed the 2019 levels twice, in mid-July and from late-July to mid-August. The upward trend in European tiket sales has slowed recently, in line with the global average (Chart 61).

- O-D passenger recovery trends varied across the major country markets in the European region. In Q3 2023, leading tourist destinations including Greece and Portugal stood out with ticket sales more than 10% higher than their pre-pandemic levels. However, the number of O-D passengers in Finland and Germany remained significantly below their 2019 levels during the same period (Chart 62).

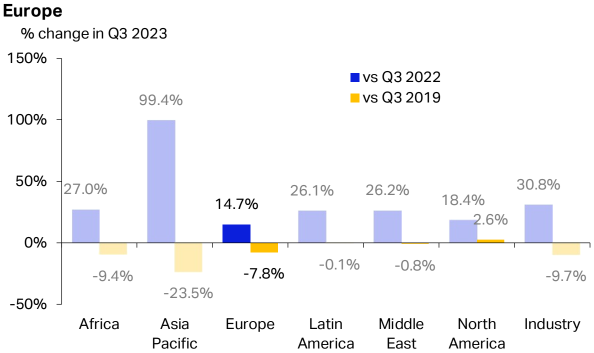
- European airlines displayed confidence in their traffic growth by continuing to acquire new aircraft in 2023. Maintaining steady growth in deliveries since 2020, these are projected to increase by 22% (68 aircraft) this year (Chart 63).

Chart 58: Growth in RPKs by airline region of registration, Europe



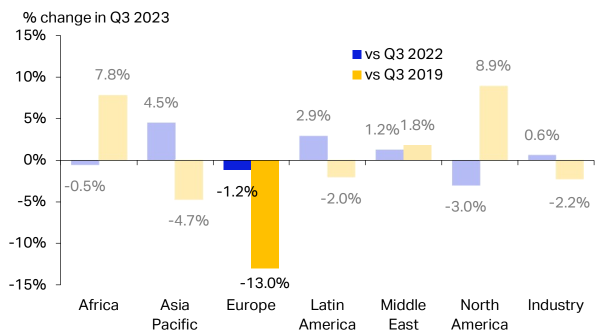
Source: IATA Sustainability and Economics, Monthly Statistics

Chart 59: Growth in international RPKs by airline region of registration, Europe



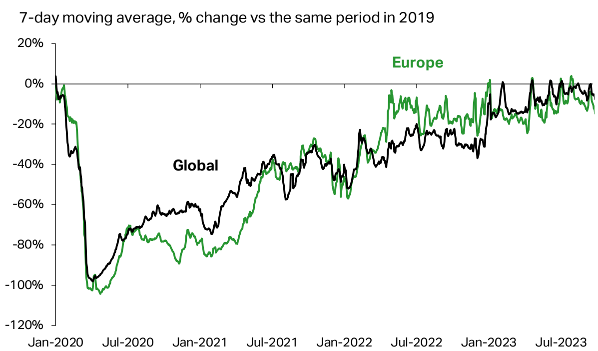
Source: IATA Sustainability and Economics, Monthly Statistics

Chart 60: Growth in CTKs by airline region of registration, Europe



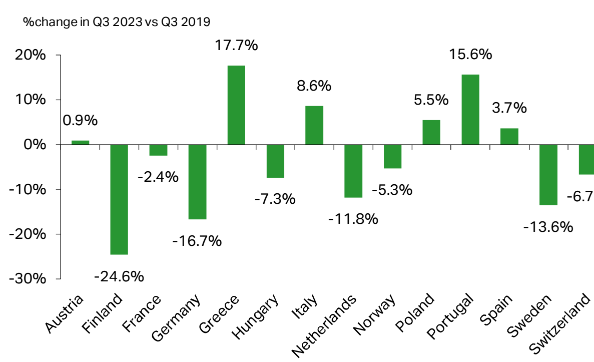
Source: IATA Sustainability and Economics, Monthly Statistics

Chart 61: Ticket sales by region (7-day moving average), Europe



Source: IATA Sustainability and Economics, DDS

Chart 62: Passenger traffic (O-D) growth by country in Q3 2023, Europe



Source: IATA Sustainability and Economics, DDS

Chart 63: Aircraft deliveries in 2015-2023 (scheduled), Europe

Source: IATA Sustainanbility and Economics using Cirium

	World	% year-on-year vs Q3 2022			% year-on-year vs Q3 2019			
	share [1]	RPK	ASK	PLF (%-pt)	RPK	ASK	PLF (%-pt)	PLF (level)
TOTAL MARKET	***100.0%***	**28.4%**	**25.8%**	**1.7%**	**-3.7%**	**-3.4%**	**-0.3%**	**84.2%**
Europe	*30.8%*	12.7%	11.7%	0.8%	-5.0%	-3.9%	-1.0%	87.2%

[1]% of industry RPKs in 2022

Note: The total industry and regional growth rates are based on a constant sample of airlines combining reported data and estimates for missing observations. Airline traffic is allocated according to the region in which the carrier is registrated; it should not be considered as regional traffic.

Middle East

- Middle East carriers continued their strong performance with a 25.6% YoY improvement in RPKs in the third quarter of 2023. The region's airlines are now just 0.6% short of their Q3 2019 levels compared to a deficit of 3.7% for the industry, indicating a faster recovery for the region compared to the global average (Chart 64). Given the region's relatively small domestic market, international RPKs for Middle East carriers showed a similar performance to the total with Q3 YoY growth at 26.2% and Q3 2023 growth at -0.8% over 2019 levels (Chart 65).

- Ticket sales for the region continued to outperform the global average, indicating sustained passenger demand (Chart 67). The summer has been exceptionally strong for Middle East carriers as many airlines opened new routes and added capacity to existing routes.

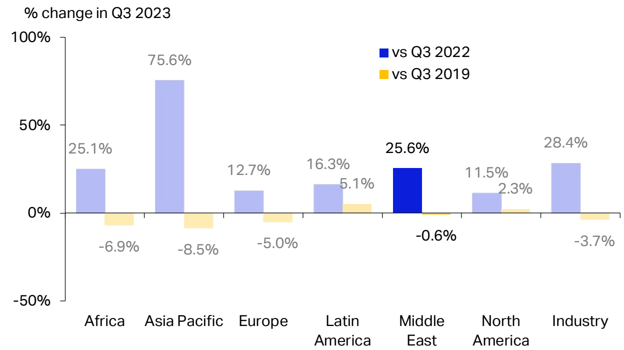
- The Middle East O-D passenger traffic recovery continued to be robust in the third quarter of 2023. There was some variation in recovery rates by country, but the UAE continued to lead the way with passenger traffic 18.8% higher in Q3 2023 than it was inQ3 2019. Saudi Arabia and Jordan followed closely, up 10.6% and 12.3%, respectively. The heightened travel demand during the summer was fueled by strong wages and economic conditions, especially in Gulf countries with a significant expatriate population (Chart 68).

- Middle East carriers grew capacity by a robust 21.9% YoY in Q3 2023. YoY ASK growth in the Middle East was slightly lower than the industry rate of 25.8% for Q3 2023. RPK growth outpaced that of ASKs, increasing by 25.6% YoY in Q3 2023. Again, this was below the industry growth rate of 28.4% YoY. As a result of the stronger RPK (versus ASK) growth, the passenger load factor for the region increased by 2.4 ppts compared to the same period last year. The PLF improvement was a little less than the global industry improvement of 2.8% YoY.

- Cargo activity for Middle East airlines improved in the third quarter of 2023 by 1.2% compared to the same period last year, and by 1.8% compared to the same period in 2019. This marked a turnaround from the previous quarter's 3.1% YoY decline. Globally, cargo activity for Q3 2023 was 0.6% higher than the same period last year but down 2.2% compared to 2019. Middle East carriers recorded stronger cargo activity in the third quarter compared to the global total (Chart 70), primarily driven by strong economic activity and increased government spending especially in the Gulf countries (Chart 66).

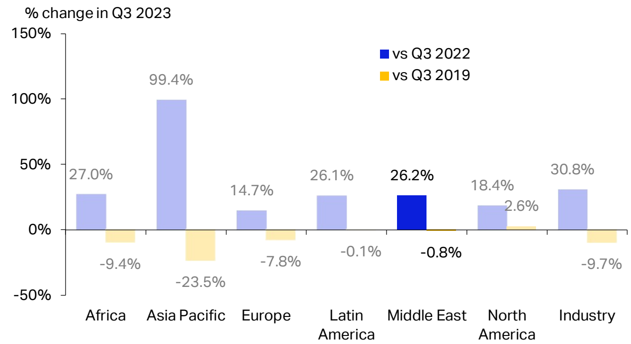
- Aircraft deliveries in the Middle East have maintained an upward trend since the lows of 2020. In total, 95 new aircraft will be delivered by the end of 2023, representing a 73% increase compared to 2022 and surpassing the 85 deliveries in 2019. The region has also seen a shift in deliveries from predominantly widebody jets in 2019 to narrowbodies since 2020. The scheduled deliveries for 2023 indicate an increase in the number of both types of jet aircraft, although narrowbodies still account for the majority (Chart 69).

Chart 64: Growth in RPKs by airline region of registration, Middle East



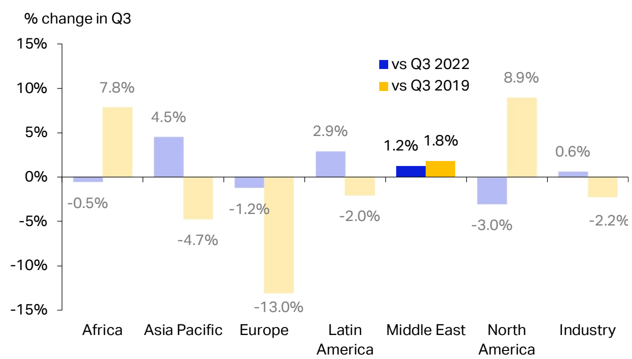
Source: IATA Sustainability and Economics, Monthly Statistics

Chart 65: Growth in international RPKs by airline region of registration, Middle East



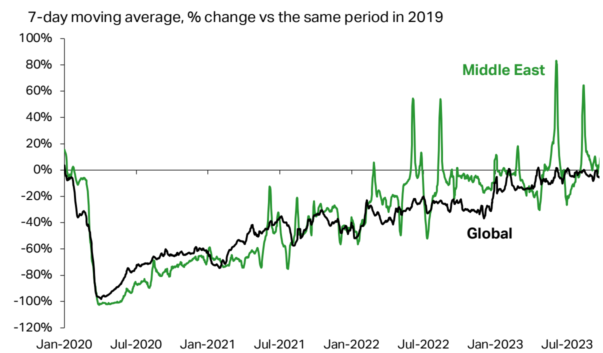
Source: IATA Sustainability and Economics, Monthly Statistics

Chart 66: Growth in CTKs by airline region of registration, Middle East



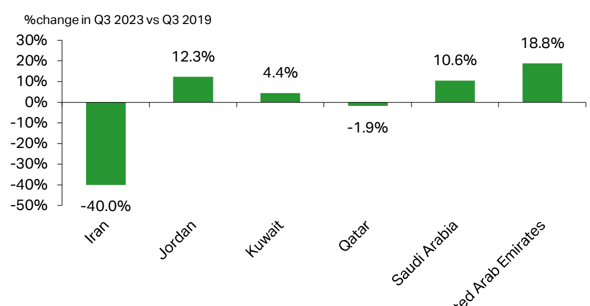
Source: IATA Sustainability and Economics, Monthly Statistics

Chart 67: Ticket sales by region (7-day moving average), Middle East



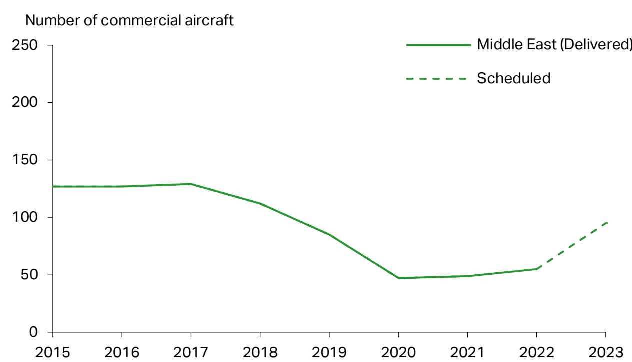
Source: IATA Sustainability and Economics, DDS

Chart 68: Passenger traffic (O-D) growth by country in Q3 2023, Middle East



Source: IATA Sustainability and Economics, DDS

Chart 69: Aircraft deliveries in 2015-2023 (scheduled), Middle East



Source: IATA Sustainanbility and Economics using Cirium

	World	% year-on-year vs Q3 2022			% year-on-year vs Q3 2019			
	share [1]	RPK	ASK	PLF (%-pt)	RPK	ASK	PLF (%-pt)	PLF (level)
TOTAL MARKET	***100.0%***	**28.4%**	**25.8%**	**2.8%**	**-3.7%**	**-3.4%**	**-0.3%**	**84.2%**
Middle East	*9.8%*	25.6%	21.9%	2.4%	-0.6%	-4.4%	3.2%	82.7%

[1] % of industry RPKs in 2022

Note: The total industry and regional growth rates are based on a constant sample of airlines combining reported data and estimates for missing observations. Airline traffic is allocated according to the region in which the carrier is registrated; it should not be considered as regional traffic.

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