

Sirius Aviation Capital

Air Transport Industry Update Q1 2024

Special Topic – Traffic Growth Outlook

- Downward Revisions of OEM Forecasts since 2019
- Was 2019 Traffic Ahead of Trend?
- Where is Industry Versus Trend in 2024?

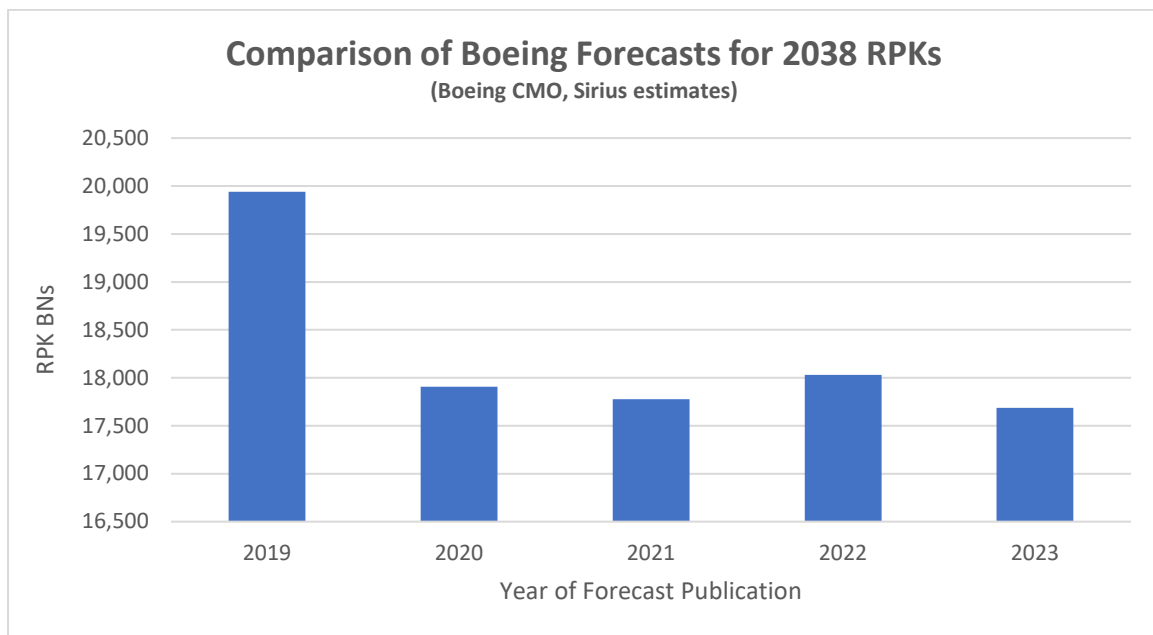
Regulars

- Macro-Economic Background
- Traffic and Aircraft Demand
- New Aircraft Supply
- Airline Industry Financial Performance

Traffic Growth Outlook

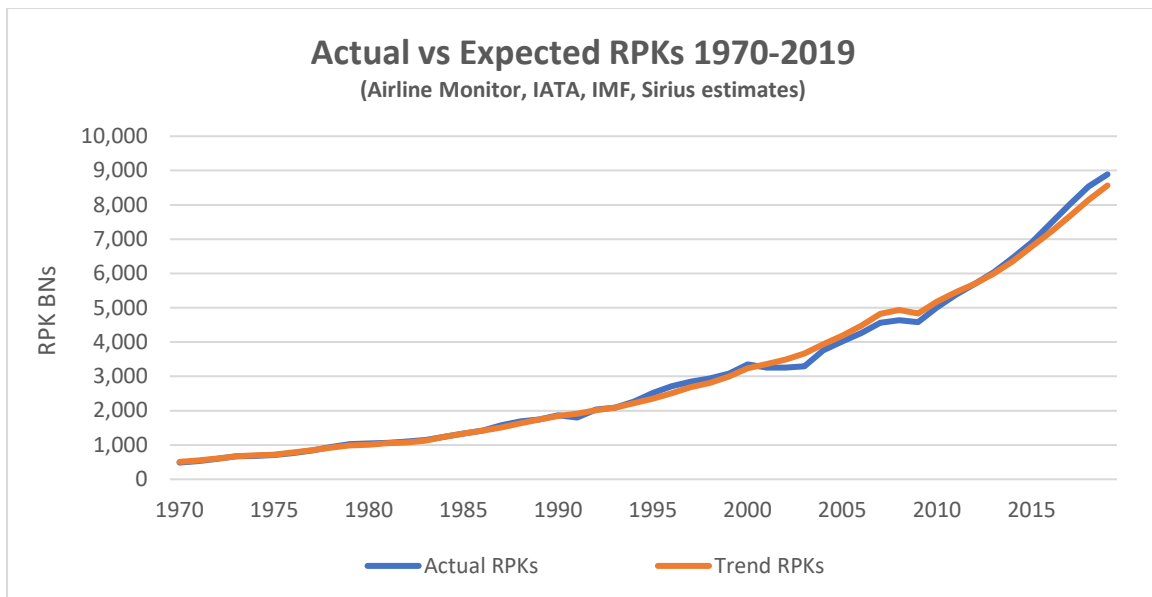
As discussed below the industry has recovered, if we are happy to define recovery as traffic exceeding 2019 levels. However, this does beg the question of whether 2019 traffic is the appropriate benchmark for recovery.

When the pandemic hit both Airbus and Boeing made significant adjustments to their annual 20-year industry forecasts. In the chart below we compare Boeing’s forecast of global RPKs¹ in 2038 published in 2019 with our estimates of the comparable number for forecasts published in subsequent years (we estimate the figures for the following years by interpolating between Boeing’s 10 and 20 RPK forecasts). Boeing’s forecast effectively reduced by 10% after the onset of the pandemic and has stayed there since. Our analysis of the comparable Airbus forecasts suggest they did something very similar, but presenting this would require a lot more estimates on our part and we prefer not to go there.

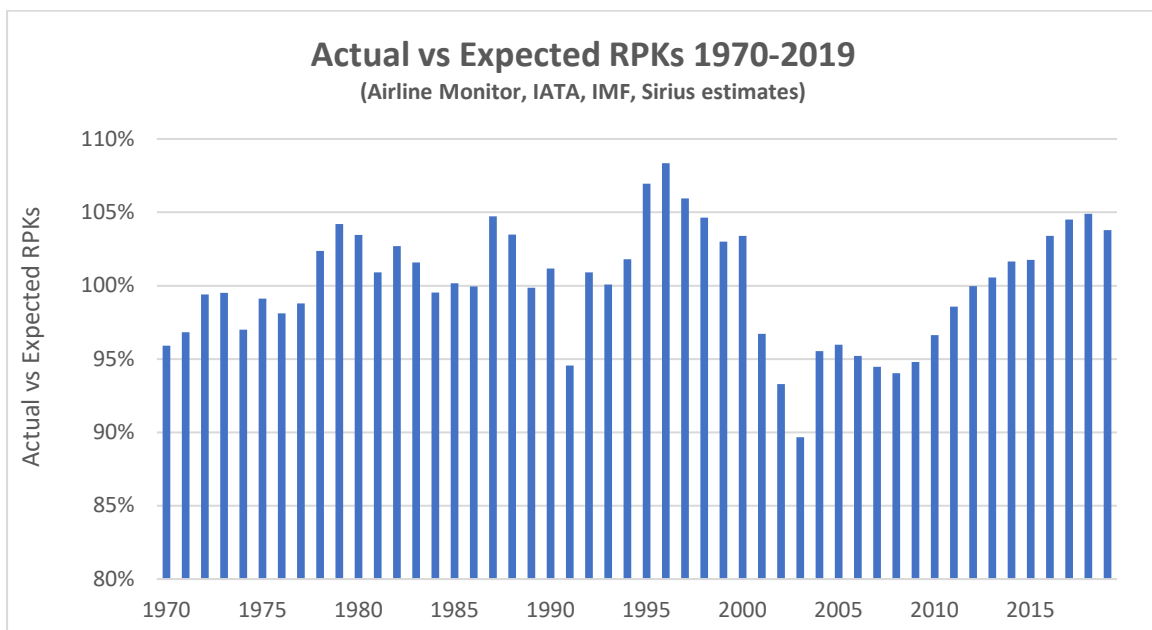


A 10% reduction in long-term RPK growth is a lot more than would be justified by the 2.0-2.5% reduction in world GDP growth caused by the pandemic as the historic RPK/GDP growth multiple is less than 2X. One possible justification for a more conservative approach is that traffic growth was very strong in the latter years of the 2010s so that basing a forecast on cyclical high point would be biased upwards. However, this would not necessarily be correct if this high growth period was partly or wholly offsetting an earlier period of low growth.

A more systematic approach is to create a model of RPK growth which can compare actual with expected RPKs. An analysis of historic traffic data in “normal” times shows that world GDP growth and changes in the real cost of air travel, as measured by constant \$ yield², provide a very strong explanation of growth in RPKs (a regression analysis on this data for the period 1970-2019 gives an adjusted R-squared of 0.998).

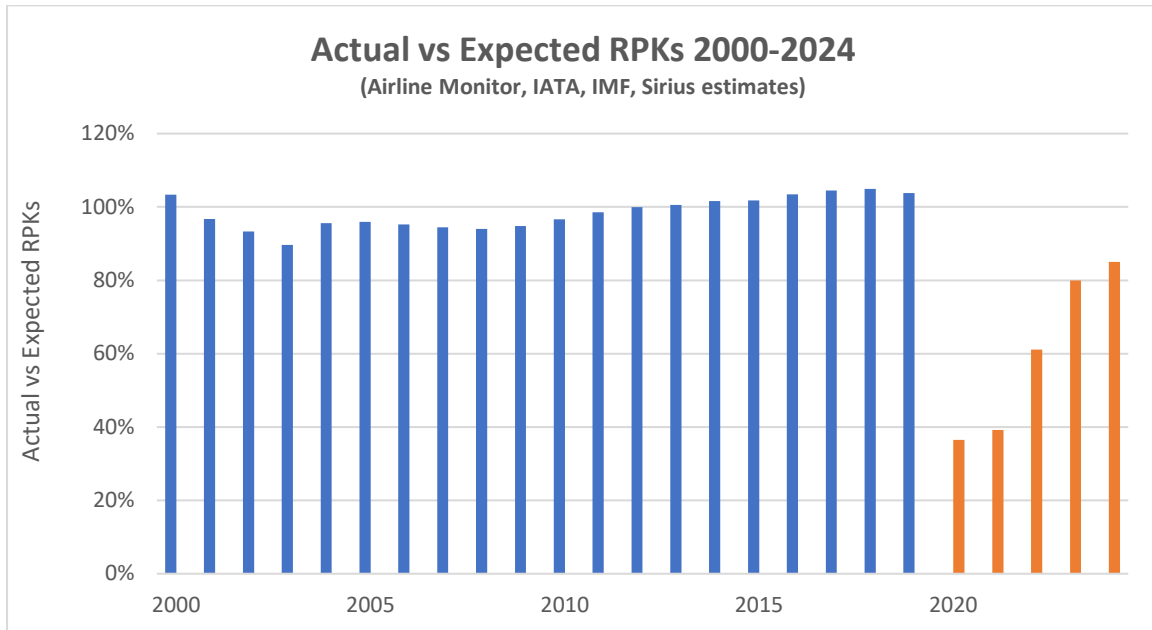


This analysis shows that RPKs were indeed above trend in the 2010s. This was not unprecedented as there was a similar phenomenon in the late 1990s, and it is also striking to note the prolonged period of weak growth in the 2000s.



Another way of looking at same data is to chart the ratio of actual to expected RPKs as in the chart below. This demonstrates that the strong traffic levels of the 2010s were in line with previous up-cycles. Based on this analysis the reduction in the OEMs RPK forecasts is reasonable. In 2019 actual RPKs were 4% above trend and there is a case for a 4-5% reduction based on “lost” GDP growth.

It’s also interesting to consider what this analysis suggests about where the market is right now. We have rolled the model forward to 2024 based on IATA’s traffic and yield forecasts and the IMF’s world GDP forecast.



Based on this approach actual 2024 RPKs will only be 85% of expected, compared to 93% in 2002 (in the aftermath of 9/11). Obviously, the world may have permanently changed, but based on history there is scope for significant further traffic recovery in 2025 and beyond.

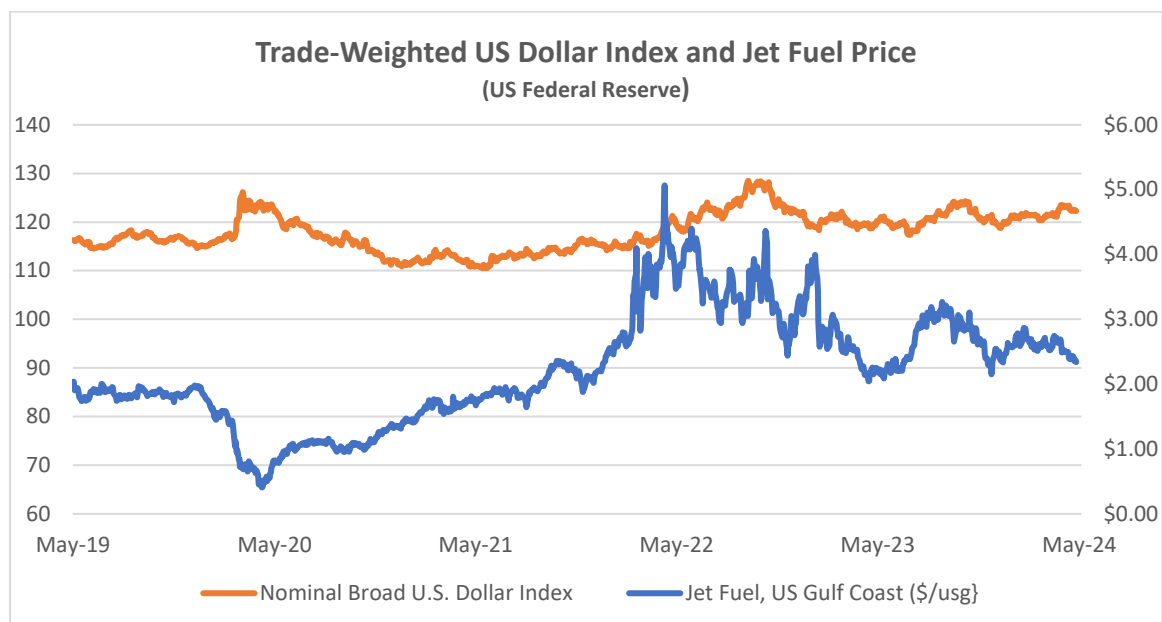
One factor that may obstruct this is a shortage of new aircraft. This may also have been part of the weak traffic performance in the 2000s, when new passenger aircraft deliveries did not surpass their previous peak of 1,191 in 2001 until 2012. If this happens then pent-up demand may find an outlet in higher ticket prices.

Macro-Economic Background

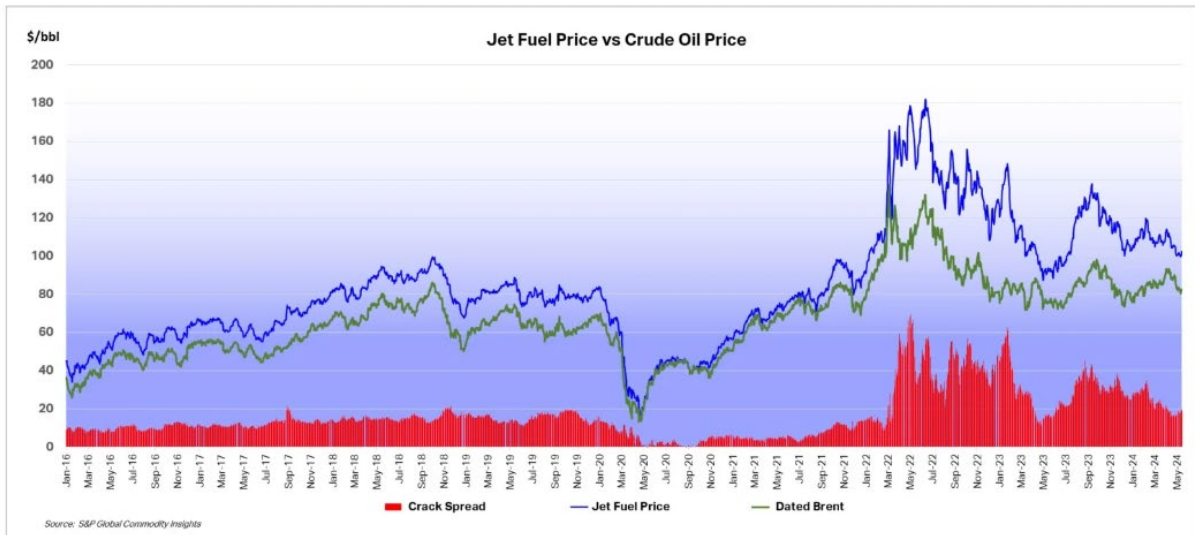
Having said in our last market update that we would focus more on the outlook for GDP the IMF confounded this goal by publishing a significant revision to their numbers for 2020 and 2021. These changes mean that the “permanent” loss of GDP growth which we estimated at 2.5-3.0% should be revised down to 2.0-2.5%.

IMF World GDP Forecasts (Constant Prices, Market Exchange Rates)					
Forecast Date	2020	2021	2022	2023	4 Year CAGR
July 2023	-3.2%	6.0%	3.0%	2.5%	2.0%
October 2023	-3.2%	6.1%	3.0%	2.5%	2.1%
January 2024	-3.2%	6.1%	3.0%	2.7%	2.1%
April 2024	-3.0%	6.2%	3.0%	2.7%	2.2%

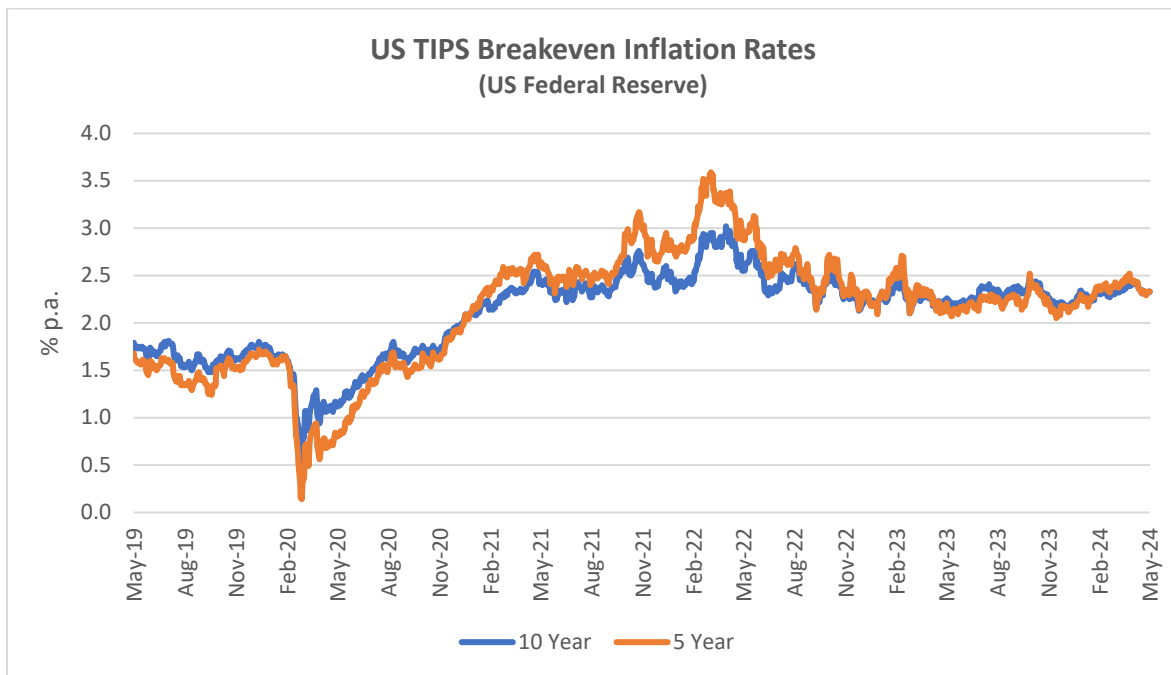
Economic growth is a key driver of long-term growth of air travel. However, since early 2022 its impact has been overshadowed by the fall and recovery in traffic associated with the pandemic. As recovery is largely complete the influence of overall economic conditions on air travel is likely to reassert itself.



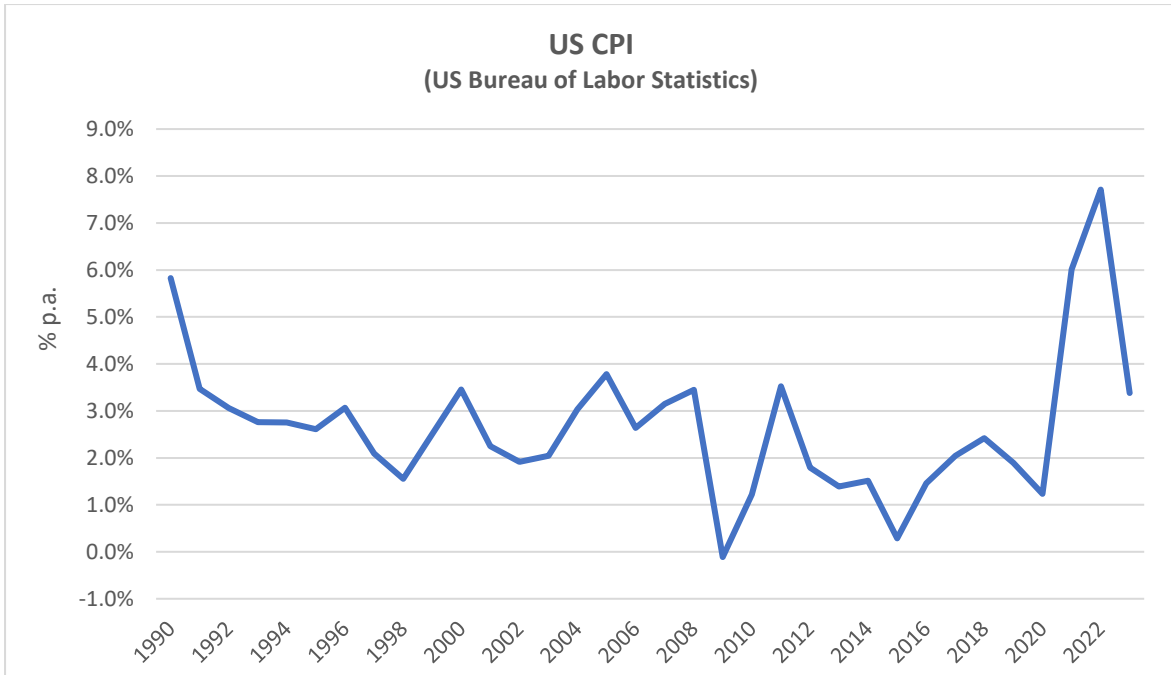
The US Dollar has weakened since its recent peak in September 2022, providing relief for airlines outside the US for dollar-denominated costs such as fuel, aircraft rents and aircraft spares. The price of jet fuel has remained volatile, but it has moderated since February 2024. This reduction has mainly been driven by a \$10 reduction in the “crack spread” from c.\$30 to c.\$20.



Another indicator that is potentially important to aircraft investors is the breakeven inflation rate on US Treasury Inflation-Protected Securities (TIPS). This indicator measures inflation expectations and it matters because used aircraft values are strongly influenced by the cost of new aircraft and over time this cost is linked to US Dollar inflation. In the short term this linkage is driven by escalation clauses in aircraft purchase contracts and in the long term by the general input cost environment for the aircraft manufacturers. The chart below compares the breakeven rate for 10-year and 5-year TIPS.

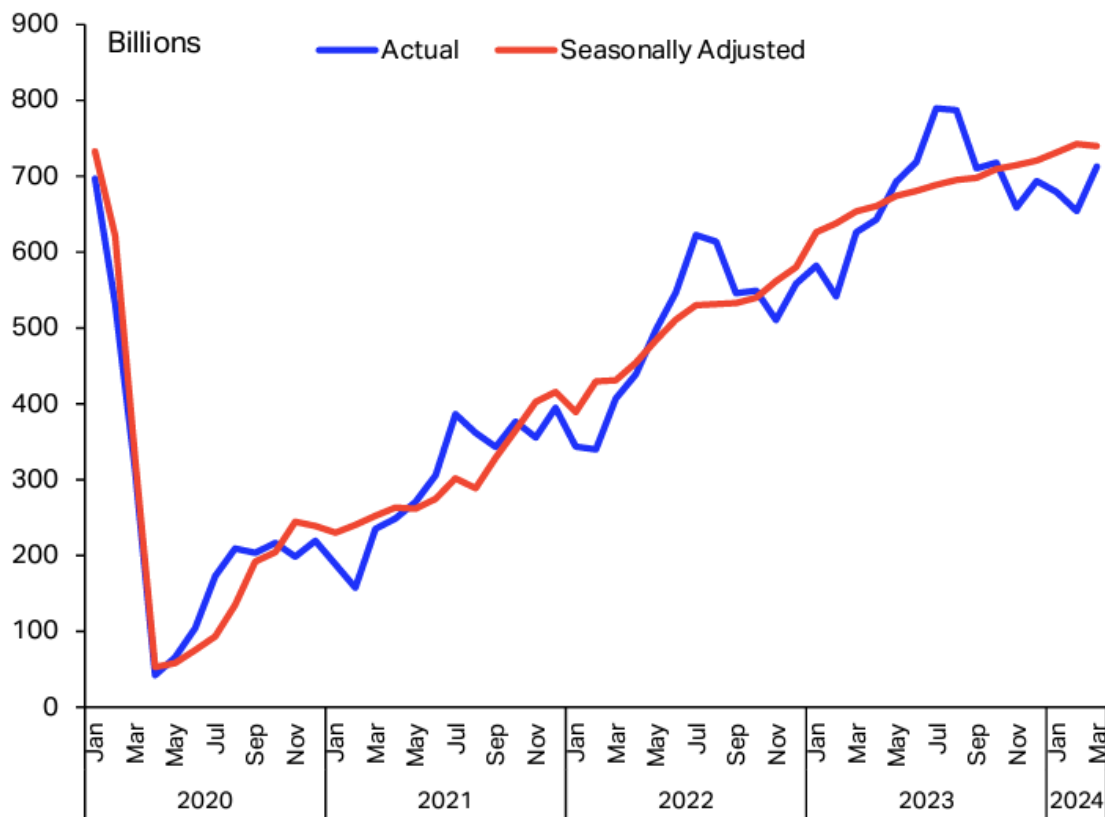


Although medium or long-term inflation expectations have never gone higher than 3.5%, actual inflation experience has been much higher in the last few years. This has led to higher appraised values for new aircraft.



Traffic and Aircraft Demand

Global Air Passengers, RPK Billions per Month



Sources: IATA Sustainability and Economics, IATA Monthly Statistics

March 2024 RPKs were 0.1% higher than in March 2019, so recovery is official! Also, no region was more than 5% higher or lower than in 2019 so most of the extreme disparities in terms of recovery have worked their way out of the system.

Total Market 2024 vs 2023 and 2019 – IATA Data (all figures in %)						
	March 2024 vs March 2023			March 2024 vs March 2019		
	RPK Change	Load Factor Change	Load Factor Level (2024)	RPK Change	Load Factor Change	Load Factor Level (2019)
World	13.8	1.0	82.0	0.1	0.3	81.7
Africa	10.0	-1.5	72.1	-1.7	-0.1	72.0
Asia-Pacific	24.2	4.3	83.5	-2.6	2.3	81.2
Europe	10.6	0.3	80.9	-1.7	-2.8	83.7
Latin America	10.9	1.5	83.1	4.9	1.6	81.5
Middle East	10.5	-2.1	77.5	2.3	3.6	73.9
North America	6.3	-1.0	83.7	4.3	-1.3	85.0

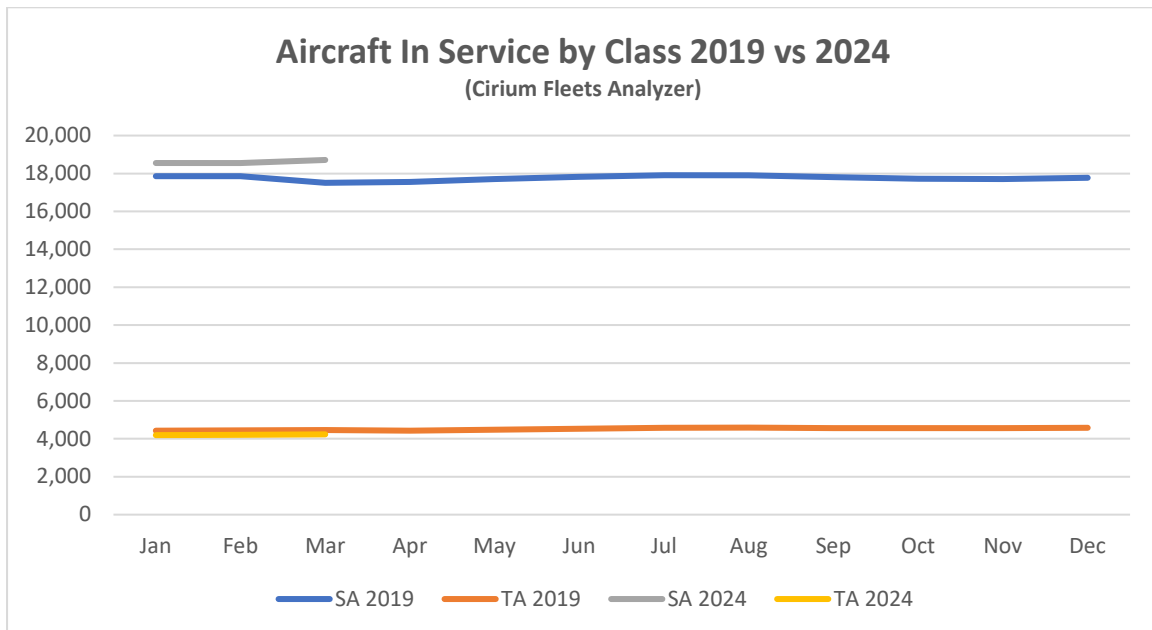
International traffic recovery still lags domestic and shows greater variation by region, with Asia-Pacific conspicuously weaker than in 2019 and North America much stronger. It is striking that North American international RPKs are 11.0% higher than in 2019 vs only a 1.5% increase for domestic US RPKs: domestic traffic across the Americas was the quickest major market to recover after 2020 so it is tempting to assume that all is well, but markets such as the US are relatively mature limiting long-term growth potential.

International Markets 2024 vs 2023 and 2019 – IATA Data (all figures in %)						
	March 2024 vs March 2023			March 2024 vs March 2019		
	RPK Change	Load Factor Change	Load Factor Level (2024)	RPK Change	Load Factor Change	Load Factor Level (2019)
World	18.9	0.1	81.6	-3.0	0.8	80.8
Africa	8.1	-1.9	70.3	-4.0	-1.1	71.4
Asia-Pacific	38.5	0.7	85.6	-10.8	5.5	80.1
Europe	11.6	0.1	79.9	-3.7	-4.3	84.2
Latin America	19.7	0.9	84.3	0.9	2.4	81.9
Middle East	10.8	-2.1	77.5	2.5	3.7	73.8
North America	14.5	-0.2	84.7	11.0	1.0	83.7

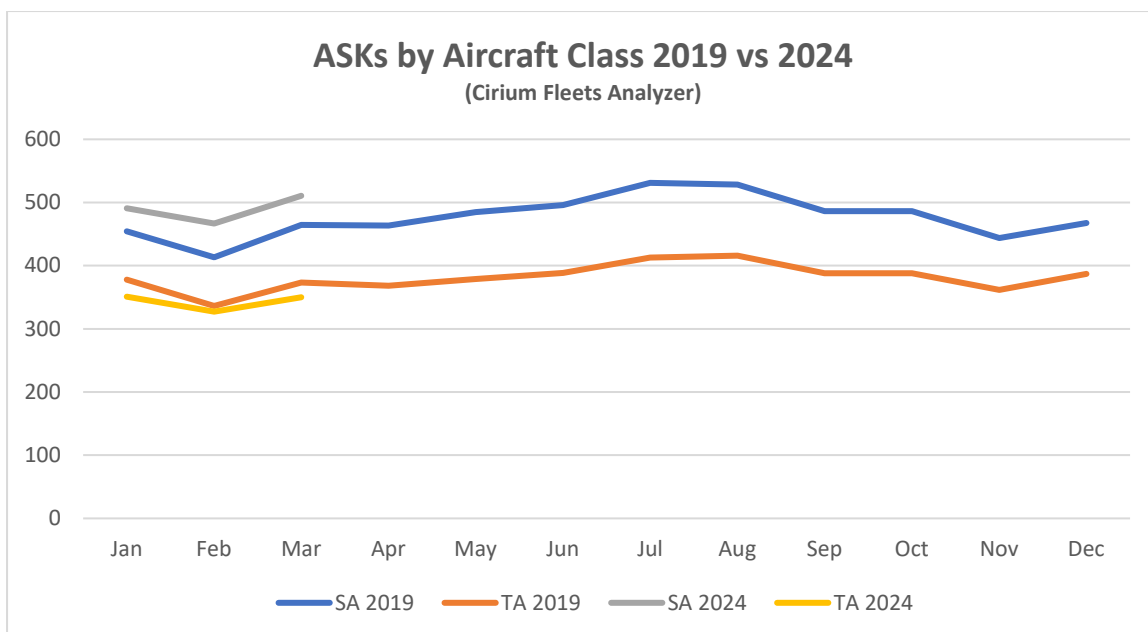
The key markets driving domestic traffic volumes growth are China and India which as emerging markets with very large populations are vital to the aviation industry long-run fortunes.

Select Domestic Markets 2024 vs 2023 and 2019 – IATA Data (all figures in %)						
	March 2024 vs March 2023			March 2024 vs March 2019		
	RPK Change	Load Factor Change	Load Factor Level (2024)	RPK Change	Load Factor Change	Load Factor Level (2019)
World	6.6	2.5	82.6	5.4	-0.8	83.4
Australia	1.8	-1.7	79.8	-3.1	0.5	79.3
Brazil	1.6	1.3	79.9	1.4	-1.0	80.9
China	17.6	8.5	80.7	13.7	-3.5	84.2
India	3.8	0.2	85.8	14.2	-0.8	86.6
Japan	3.3	4.0	82.5	-1.7	8.0	74.5
US	2.3	-1.5	82.9	1.5	-2.9	85.8

Although some short-haul aircraft serve international routes nearly all long-haul aircraft do so, and this is reflected in the relative demand for single-aisle (narrowbody) and twin-aisle (widebody) aircraft. Aircraft demand can be measured in terms of aircraft in service and ASKs³, the standard measure of aircraft capacity deployed by airlines which indicates how intensively aircraft are being flown. Single aisle aircraft demand on both metrics is higher so far in 2024 than in 2019 whereas twin-aisle aircraft are marginally weaker by aircraft in service and lagging more in terms of ASKs. The difference between the two metrics may be down to the gradual move away from very large aircraft such as the B747 and A380 towards the smaller B787 and nA350, resulting in fewer ASKs per aircraft unit.



It is hard to see the TA 2024 data series because it is only very marginally lower than TA 2019.



New Aircraft Supply

Airbus Deliveries		First Quarter					
Aircraft Family	2018	2019	2020	2021	2022	2023	2024
A220	5	8	8	9	11	10	12
A320	95	126	96	105	109	106	116
A330	8	5	4	1	6	6	7
A350	17	22	14	10	16	5	7
A380	1	1	-	-	-	-	-
Total	126	162	122	125	142	127	142

IN contrast to 2022 Airbus exceeded its delivery guidance of 720 aircraft in 2023. Management is guiding total deliveries of 800 aircraft for 2024 with most of the increase likely to come from the A320 family. The latest status of Airbus's production plans is:

Aircraft Family	Current Announced Monthly Rate ⁴	Actual 2023 Monthly Rate	Target Rate	Target Timeframe
A220	6	5.9	14	2025
A320	50	49.7	65	Late 2024
A330	3	2.8	4	2024
A350	6	5.8	10	2026

The only significant production target not captured in the table above is the objective to raise A320 family production to 75 per month by 2026.

Boeing Deliveries		First Quarter					
Aircraft Family	2018	2019	2020	2021	2022	2023	2024
B737	132	89	5	63	86	113	67
B747	2	2	-	1	1	1	-
B767	4	12	10	5	5	1	3
B777	12	10	6	6	3	4	-
B787	34	36	29	2	-	11	13
Total	184	149	50	77	95	130	83

The latest status of Boeing's production plans is:

Aircraft Family	Current Announced Monthly Rate	Actual 2023 Monthly Rate	Target Rate	Target Timeframe
B737	38	26.8 (est.)	50	2025/2026
B767	3	1.9	-	-
B777	4	1.9	4	2025/2026
B787	5	2.8 (est.)	10	2025/2026

The Alaska Airlines B737-9 incident in January has once again created significant uncertainty around Boeing's ability to increase production of the Max. The FAA is investigating Boeing's quality control systems and other related matters and has announced that it will not approve any increases in production until it is satisfied with Boeing's level of compliance. Boeing has also announced that it will not seek certification of the B737-7 and -10 variants until it has engineering solutions for the engine inlet overheating issue resulting from extended engine anti-ice operation in dry air. There is no definite timeframe to resolve this issue.

B737 inventory decreased from 175 at the end of 2023 to 110 at the end of Q1 2024, including 70 B737-8 aircraft due to be delivered to Chinese airlines which must be approved and accepted by the Chinese aviation regulator the CAAC. The 110 number above only includes aircraft manufactured before the start of 2024, suggesting that nearly all the B737s delivered in Q1 2024 were from inventory as the reduction of 65 compares to 67 aircraft delivered in the quarter. (Currently, China's 13 domestic carriers operate 97 B737 MAX planes in their fleet. China Southern, Air China and Hainan Airlines have 24, 16 and 11 aircraft, respectively. Shanghai Airlines, Xiamen Airlines and Shandong Airlines are also B737 MAX operators.

As with the Max Boeing holds a significant inventory of undelivered B787 aircraft, c.40 at the end of Q1 vs c.50 at the end of 2023. Boeing has said it expects to deliver most of them in 2024. The inventory reduction of 10 aircraft compares with 13 total deliveries, suggesting that both B737 and B787 production is being severely disrupted. Boeing has not provided any delivery guidance for 2024.

COMAC of China achieved a significant increase in ARJ 21 deliveries and Embraer was in line with 2023.

Other Jet Deliveries		First Quarter					
Aircraft Type	2018	2019	2020	2021	2022	2023	2024
ARJ 21	1	2	1	2	-	1	8
C919	-	-	-	-	-	-	2
CRJ 700/900/1000	6	3	5	3	-	-	-
E-Jet/ E-Jet E2	14	11	6	9	6	7	7
Superjet 100	8	2	5	-	2	2	-
Total	29	16	17	14	8	10	17

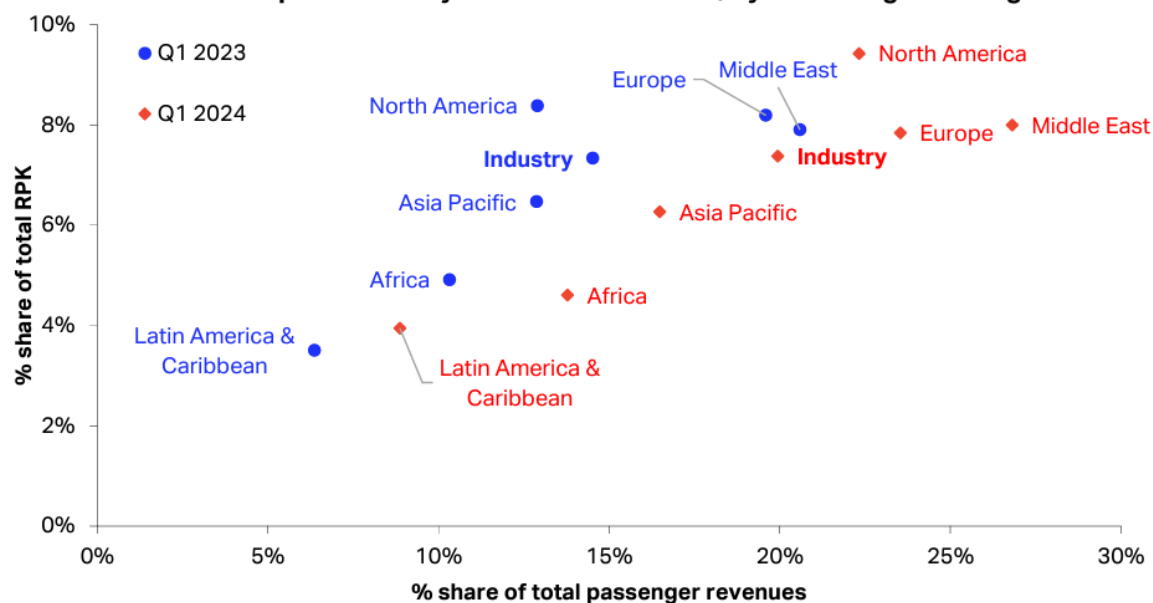
Airline Industry Financial Performance

IATA released a new airline industry financial forecast in June 2024 as part of its semi-annual Global Outlook for Air Transport. The table below compares key forecast outputs for 2024 with IATA's previous forecast published in December 2023.

Forecast Date	December 2023	June 2024
RPKs (BN)	9,082	9,108
RPK Growth	9.8%	11.6%
Passenger Load Factor	82.6%	82.5%
Airline Industry Revenue (\$BN)	964	996
Change in Passenger Yield	1.8%	3.2%
Jet Fuel Price \$/b	113.8	113.8
Operating Profit (\$BN)	49.8	59.9
Net Profit (\$BN)	25.7	30.5

The new forecast does not show a big change in RPKs or key costs such as jet fuel, but the yield, revenue and profitability outlook is significantly better.

Premium total traffic performed by full-service carriers, by airline region of registration



Source: IATA Sustainability and Economics, DDS

One development with a potentially important impact on 2024 airline profits is a recovery in the price of business and first-class travel. Although Q1 2024 share of RPKs was in line with typical historic levels at around 7% share of revenues increased from a historically low 15% to a more “normal” 20%. This will help the bottom line of the network airlines rather than low-cost airlines with very limited, if any, premium cabin offering.

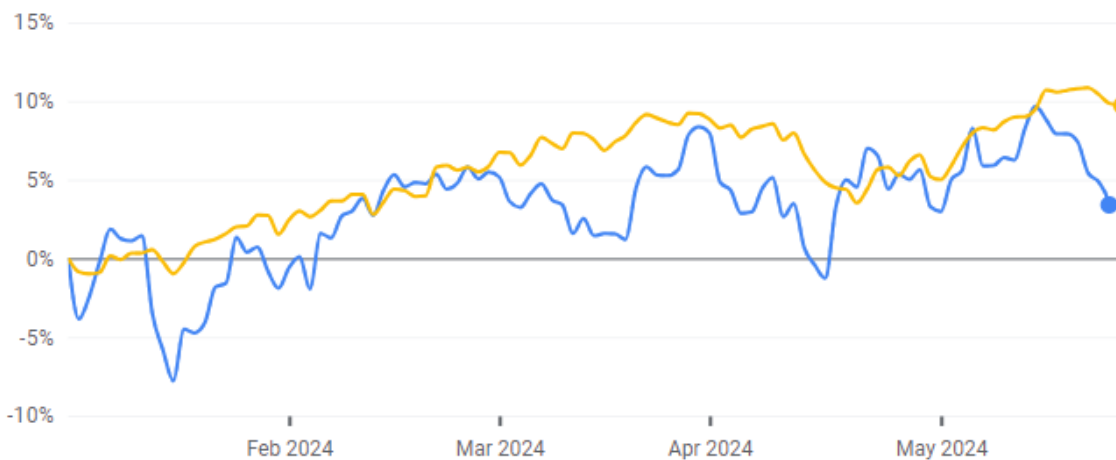
Since the start of 2024 airline share prices have shown persistent, albeit limited, downside volatility relative to the overall stock market.

NYSE Arca Global Airline Index vs S&P Global 1200 Index

(Google Finance)

May 23, 8:32:15 PM UTC-4 · INDEXNYSEGIS · Disclaimer

1D 5D 1M 6M YTD 1Y 5Y MAX



NYSE Arca Global ...	1,392.11	+45.73	↑ 3.40%
S&P Global 1200	3,793.04	+335.78	↑ 9.71%

GOL of Brazil files for US bankruptcy protection in January. This was not a major surprise as GOL’s major competitors Aviance and LATAM had already done so during the pandemic and GOL had engaged in significant financial restructuring in the same timeframe.

The second largest airline by equipment value to fail is Lynx Air of Canada with a fleet including 9 X B373-8s. Lynx filed for bankruptcy protection in February, citing rising operating costs, high fuel prices, increasing airport charges, and a difficult economic and regulatory environment. Lynx was a low-cost airline that started operations in 2022 and some or all its problems are shared by most low-cost North American carriers up to and including Southwest Airlines, which have not benefitted from the strength of North American international traffic in the same way as the network airlines.

Airline Failures in 2024 (various sources)				
Airline	Country	Month	Aircraft Types	# Aircraft ⁵
GOL	Brazil	January	B737-700, B737-800/800F, B737-8	143
Fly Arna	Armenia	January	A320-200	1
LIAT	Antigua & Barbuda	January	ATR42-600	3
Humo Air	Uzbekistan	February	A320-200	2
Lynx Air	Canada	February	B737-8, DHC-6-300	10
Pacific Airlines	Vietnam	March	A320-200	11
Bonza	Australia	April	B737-8	5
Bluebird Nordic	Iceland	April	B737-400F, B737-800F, B777-300ER	11
Air Vanuatu	Vanuatu	May	B737-800, ATR72, DHC-6-300, BN-2 B	6

Sometimes airline financial distress comes in shades of grey rather than black and white. Although Pacific Airlines has ceased operations it has declared its intention to restart, and SpiceJet of India (43 aircraft) has suffered several adverse court judgments although it remains in business.

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¹ RPKs is the acronym for revenue passenger kilometres, which is the product of the number of paying passengers times distance flown.

² Yield is total passenger revenue divided by total industry RPKs.

³ ASKs is the acronym for available seat kilometres, which is the product of the number of available seats flown times distance flown.

⁴ Airbus normally quotes its production rates based on an 11.5-month year for single-aisle aircraft.

⁵ Fleet numbers are as of December 31st, 2023.