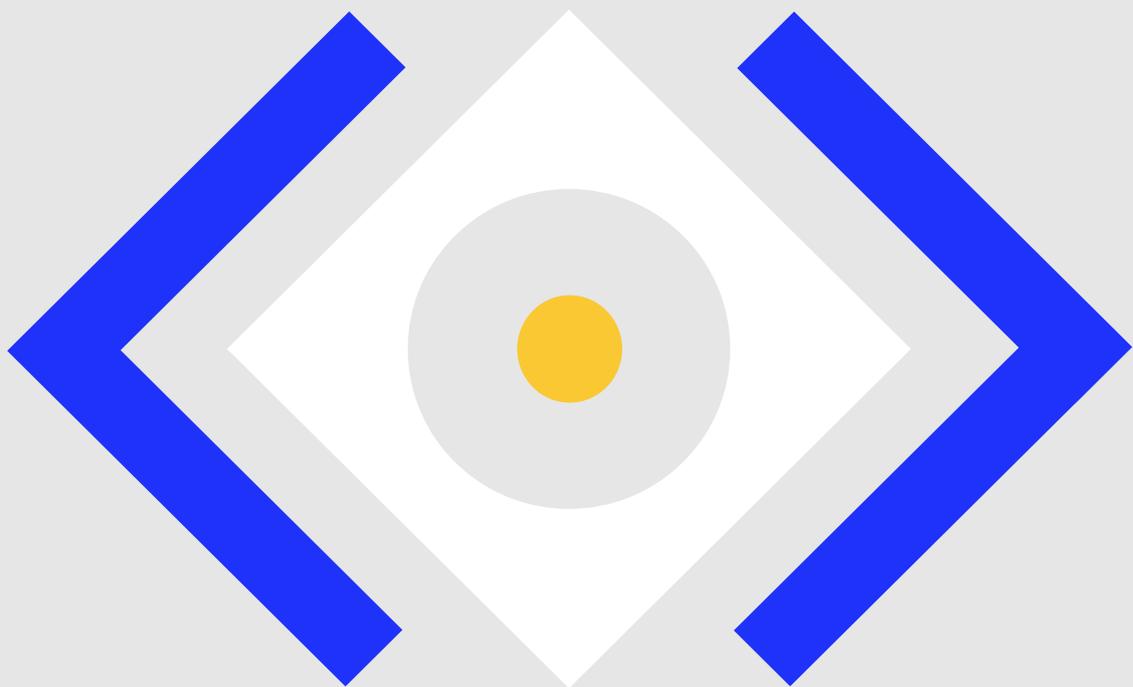


June 2023

Global Outlook for Air Transport

Highly Resilient, Less Robust



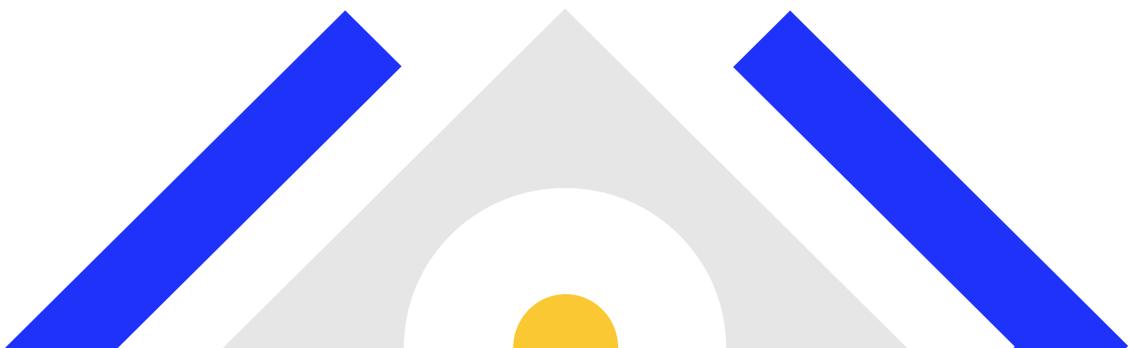
Global Outlook for Air Transport

Highly Resilient, Less Robust

This semi-annual report takes a broad look at developments in the airline industry, the context in which it is operating, and the challenges it is facing.

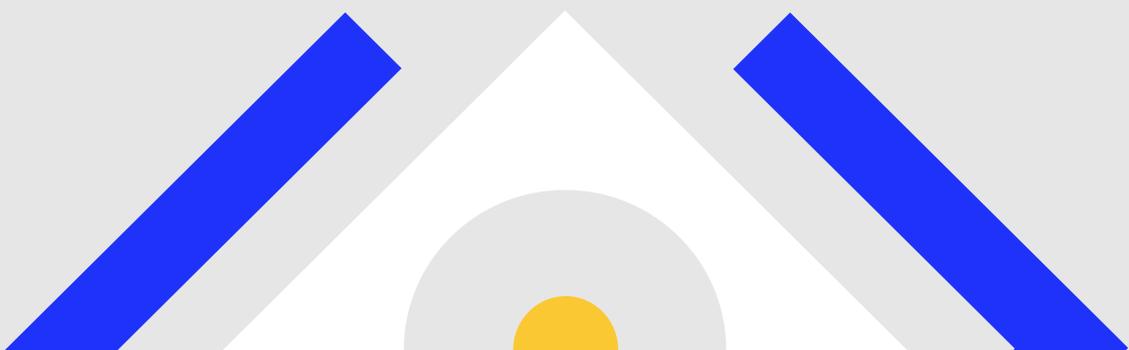
Key Points

- As was the case throughout 2022, early 2023 saw a series of macro-economic challenges: labor markets remained exceptionally tight, inflation levels elevated, and global supply chains disrupted. Global GDP growth has slowed sharply from over 6% in 2021 to just below 3% in 2023. This nevertheless leaves global GDP not far off the average seen since the 1970s, providing a decent, if unspectacular, backdrop for aviation.
- A further challenge facing both the global economy and aviation is climate change. Airlines need the support of policy makers and all participants in the value chain to achieve the transition, because airlines do not make its own fuel, nor aircraft. The industry is committed to achieve net zero emissions by 2050, as is the UN's ICAO (International Civil Aviation Organization) and its Member States.
- Industry-wide revenue passenger-kilometers (RPKs) are likely to be at 87.8% of the 2019 level for 2023 as a whole. This strong performance greatly benefits from pent-up demand which remains buoyant in spite of the economic headwinds.
- Looking forward, the demand for air travel is expected to double by 2040, growing at an annual average rate of 3.4%. Origin-destination passengers are projected to increase from around 4 billion in 2019 to just over 8 billion at the end of the forecast horizon.
- Cargo was the industry's star performer in 2021, but has since pulled back to somewhat below 2019 levels. Its share of total airline revenue, however, is around 20% and double the pre-pandemic average.
- The industry is returning to profitability in 2023, only three years after the historic loss of USD 140 billion in 2020. Total airline revenue is expected to recover to around 93% of the 2019 figure, with operating profits reaching USD 22.4 billion. The net profit forecast for this year is USD 9.8 billion, and the net margin a slim 1.2%. This equates to USD 2.25 per passenger.
- Overall, this performance shows how resilient the industry is, being able to bounce back so rapidly from a near total halt. It does, however, also show that robustness could be improved, in the interest of stronger balance sheets and safer profit margins.



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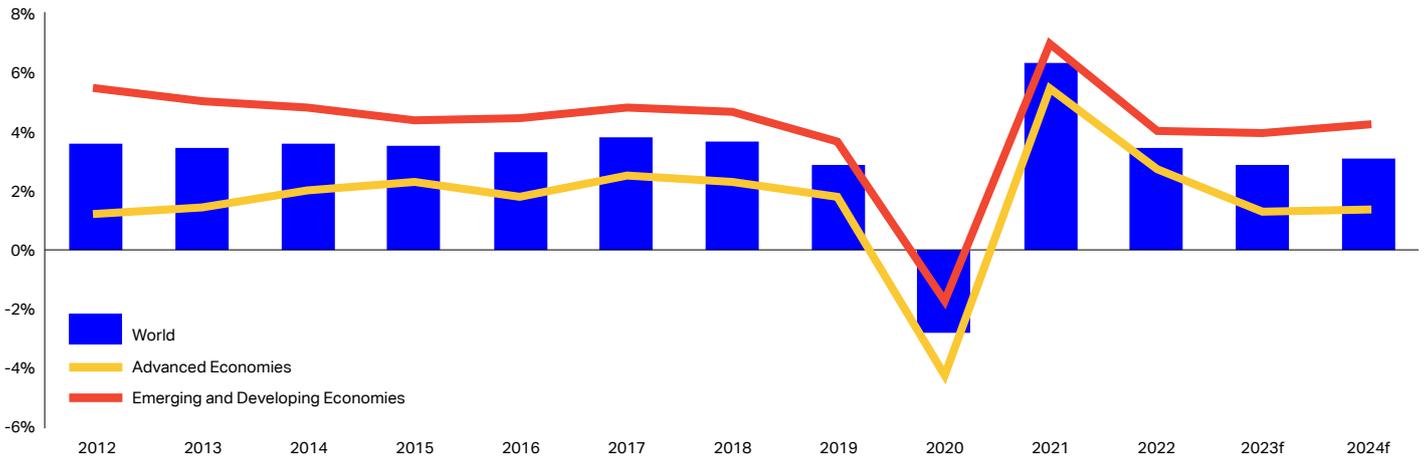


1. The Big Picture: The global economy delivers average growth amid important structural shifts

The global economy is likely to grow in the vicinity of 3% in 2023, down from 3.4% in 2022, and 6.3% in 2021. Since the 1970s, the average global GDP growth rate is around 3%. Hence, we find ourselves in a rather favorable situation – not great, not bad, but close to average, despite the sharp slowdown since 2021 (Chart 1). This global aggregate masks a wide range of economic activity rates across regions. Advanced economies are likely to see the lowest growth rates in 2023, around 1.3%, being heavily impacted by tighter monetary policies, war in Ukraine, and financial

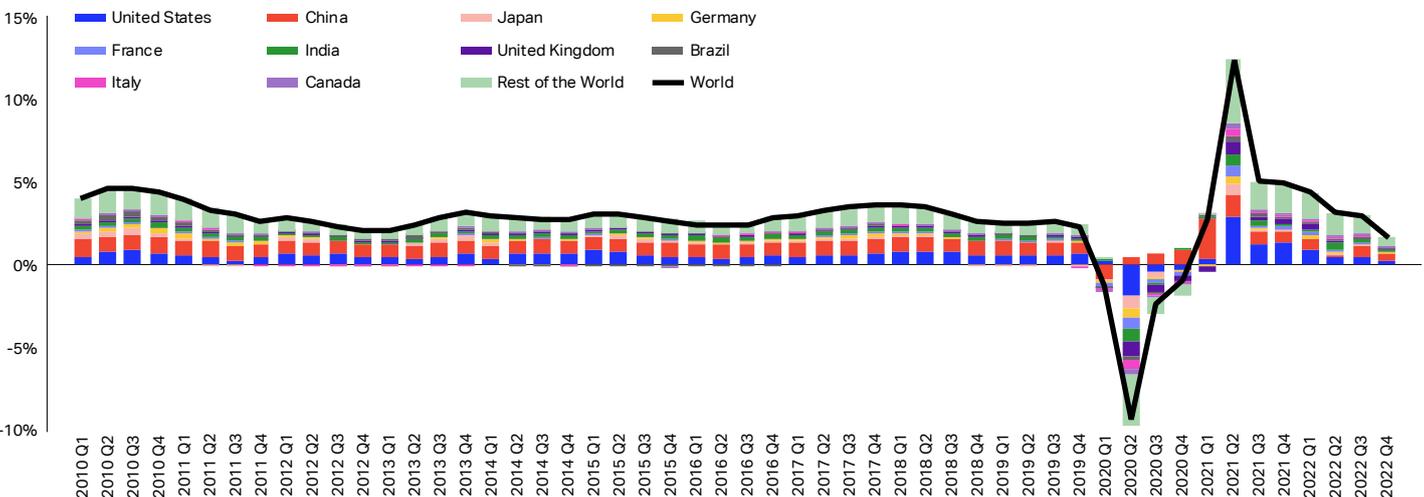
sector vulnerabilities. Emerging economies as a group could reach growth in GDP of 3.9%, though 56% of low-income developing countries find themselves in debt distress or at risk of becoming distressed¹. China's GDP growth might climb back to 5.2% in 2023, from 3.0% in 2022. This sets China up for making the lowest contribution to the growth of global GDP since 2010 – an important shift in the workings of the global economy, although China is still making the largest contribution to the growth of global GDP of all individual countries during the second half of 2022 (Chart 2)².

Chart 1: Global GDP, year-on-year %



Sources: IATA Sustainability and Economics, IMF World Economic Outlook, April 2023

Chart 2: Contribution from the largest economies to world GDP growth

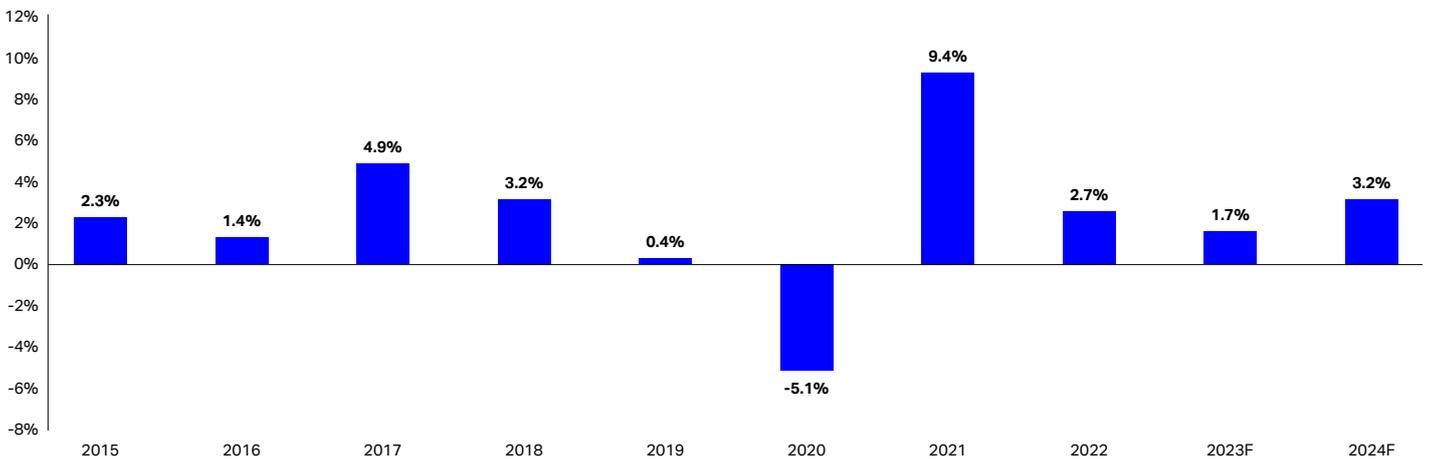


Sources: IATA Sustainability and Economics, World Bank Global Economic Monitor

1 IMF, World Economic Outlook, April 2023.
 2 A country's contribution to world GDP growth is its share of the global economy multiplied by its country growth rate, the result being expressed in percentage points.

Growth in world merchandise trade is expected to slow to 1.7% this year, down from 2.7% in 2022 (Chart 3). Trade volumes nevertheless set a record in 2022, following the contraction seen in 2020 and now exceed 2019 levels. It should be noted though, that the number of tariff and non-tariff trade restrictions is on the rise. The advent of Covid amplified the protectionist trend seen since 2016. According to the World Trade Organization, as of mid-October 2022, 79.2% of the restrictions on trade that had been introduced because of Covid had been repealed, leaving 27 export restrictions and 14 import restrictions in place. Although this is a positive development since Covid, trade is still more restricted than pre-Covid, affecting an additional USD 134.6 billion worth of trade.

Chart 3: World merchandise trade volume, % change year-on-year



Source: World Trade Organization

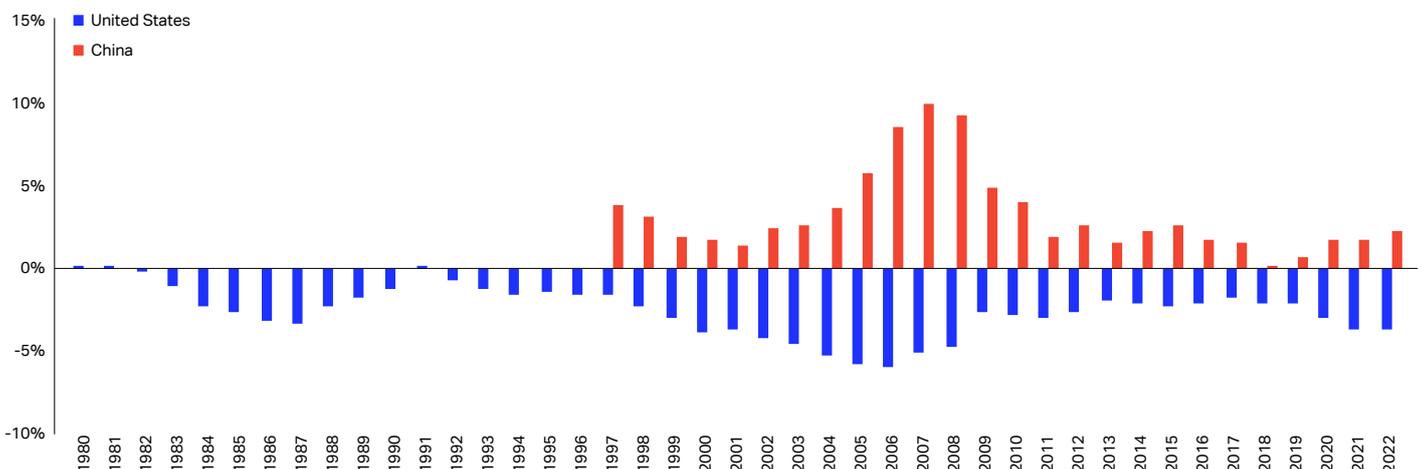
The shrinking savings glut

Part of why interest rates have been so low for so long is related to the global savings glut, which is when the supply of money (savings) exceeds demand (investments), pushing the price of money (interest rates) lower. We can look at current account balances for indications of countries' excess or shortfall of savings. Current account surpluses indicate an excess of savings, and deficits need to be financed by borrowing from abroad. China has been an important creditor to the global economy thanks to its role as the world's manufacturing hub. In 2007, China posted a surplus of 10% of GDP on its current account (Chart 4). This, however, dropped to less than 1% before the pandemic, from where it has since recovered to a surplus of 2.3%. It is a likely structural shift as a result of China's efforts to transition towards a domestic consumption driven economy as a way to achieve more sustainable and balanced growth.

This evolution is positive in the sense that the excessive imbalance has been reduced, thereby reinforcing the global economy – both surpluses and deficits can become worrisome for global financial stability when they grow too large, say beyond 3% of GDP. However, seen against the persistent current account deficit of the US, it can spell a shift in global financial flows. The US has not posted a meaningful surplus on its current account since the late 1970s and it has been negative since the early 1990s. This means that the US must borrow money from abroad, and foreigners own about a quarter of the total US debt. Japan is the largest holder of US debt, followed by China, and these two countries own more than 25% of foreign-owned treasury securities. Between 2002 and 2012, China's holdings of US debt rose from USD 100 billion to a record USD 1.3 trillion. Since 2018, its holdings have declined by 30% to USD 867 billion³.

These developments are important in the context of global debt levels near the record high at 338% of GDP in 2022⁴, down by 12% from 2021 but still higher than the 2019 record. Countries could find themselves having to compete more for international investors' funds, contributing to higher interest rates. As the cost of servicing that debt rises, governments almost everywhere will have limited space for fiscal stimulus and a tendency to raise taxes.

Chart 4: US and China current account balances, % GDP



Sources: International Monetary Fund, World Economic Outlook, April 2023

3 US Department of the Treasury, December 2022 data.

4 Institute of International Finance, Global Debt Monitor: A Many-faceted Crisis, February 2023.

Tight labor markets

A further likely structural shift is related to the exceptionally tight labor markets. This is the most pronounced in advanced economies. The US unemployment rate in March 2023 stood at 3.5%. This rate averaged 5.7% from 1948 to 2023 and hit a record low in May 1953 at 2.5%. Hence, it remains historically low during a slowing business cycle when it would otherwise be expected to climb. In the European Union, the unemployment rate was 6% in March 2023, a historic low. In the OECD countries, the average unemployment rate was 4.8% in March 2023, the 3rd consecutive month at this record low. While we would expect unemployment rates to rise again in the latter part of this year, it is difficult to anticipate a recession at the current junction given the fact that record numbers of persons are earning a regular income.

Covid plays a part in why the world is experiencing labor shortages, both through deaths and through early retirements and with signs that manual labor in particular is in short supply. While some of the Covid-related evolutions can be expected to reverse, there nevertheless appears to be a long-term demographic evolution that points to structurally tighter labor markets than in the past. While the United Nation's (UN) Population Division expects the global population to grow until 2100 and peak then at around 10.4 billion persons, the Institute of Health Metrics and Evaluation at the University of Washington projects that global population will peak already in 2064 at 9.7 billion and then fall steadily to 8.9 billion in 2100. The UN also notes that the global population growth rate fell below 1% in 2020 for the first time since 1950. China's population declined in 2022 for the first time since 1961.

There are solutions to address the labor shortages, current and future, though most are politically unpopular. People can work longer hours, retire later, become more productive (through technology and investments), and more immigrants can be invited to join the workforce. Without pro-active policies in these areas, labor scarcity will impede output and raise costs.

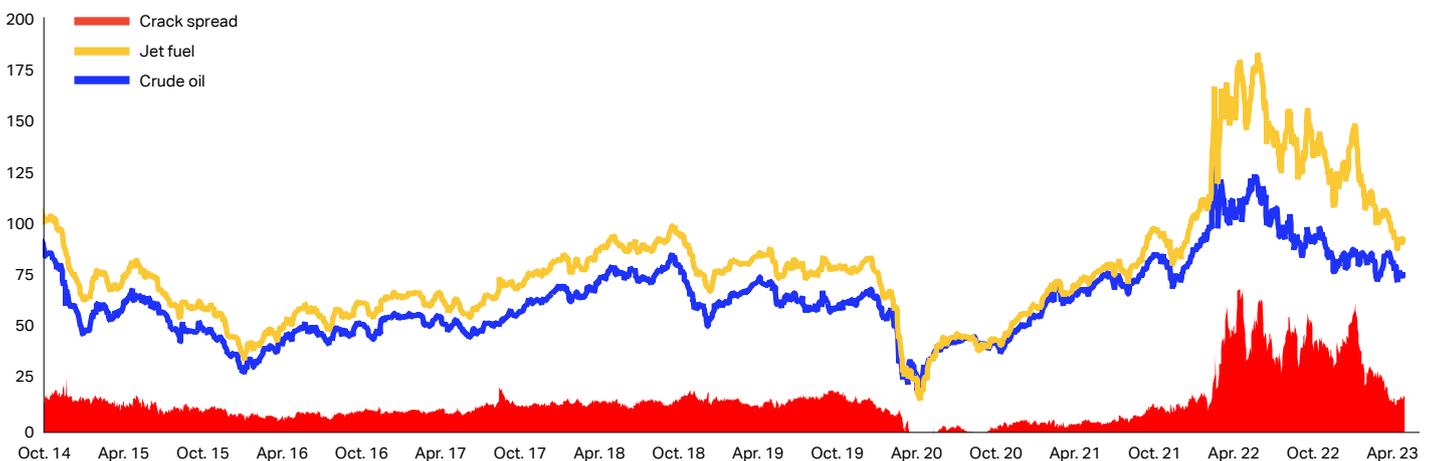
Energy supply

The world has set itself the target of shifting our energy supply from being 80% reliant on fossil energy in 2019 to between 55% and 20% by 2050. Over the same period, the share of renewable energy is set to grow from 10% to between 35% and 65%. This will necessitate a profound change in how we perform most human activities across the globe and all industries.

Aviation has been a leader in the quest for decarbonization. It committed to offsetting CO₂ emissions in 2016, airlines committed to achieving net-zero emissions in 2021, and ICAO's UN member nations did the same in 2022, unmatched by any other industry at this stage. This nevertheless leaves the sector with formidable challenges ahead in terms of reducing air transportation's 2.5% share of global CO₂ emissions and tackling the industry's non-CO₂ emissions. This is particularly challenging since the lion's share of existing and future solutions lie outside of the direct sphere of influence of the airlines themselves. Notably, only 0.1% of the fuel consumption in air transport can be met by sustainable aviation fuel (SAF) today. The annual supply of SAF must rise from a few hundred million liters to over 400 billion liters between now and 2050. Today the price of SAF is between 2 and 4 times higher than that of jet fuel. While the relative price evolution of SAF and jet fuel is hard to predict, it is unlikely that the share of fuel in airlines' total costs will decline materially in the future.

Until the world manages to produce SAF at scale, airlines depend on conventional jet fuel, the price of which has been heavily impacted by the war in Ukraine. A particular challenge for the airline industry in this context is the high and persistent spread between the price of jet fuel and Brent crude oil (Chart 5). This occurrence is connected to a strong rebound in air travel during a period when refining capacity is constrained, resulting in a limited supply of jet fuel and leading to an increase in its price. Net global refining capacity declined in 2021 for the first time in 30 years, according to the International Energy Agency's (IEA) June 2022 Oil Market Report. The Agency does, however, project an increase in net global refining capacity in 2022 and in 2023. This should at least mean that the crack spread has likely peaked, though it might remain elevated also through 2023 and beyond. For airlines this implies a reduced benefit from any crude oil-price decline compared to other industries, as the price of jet fuel will in all probability decline by less.

Chart 5: Brent and Jet Fuel Price, USD per barrel, and the crack spread⁵



Sources: IATA Sustainability and Economics, S&P Global

⁵ The difference between the price of crude oil and the prices of refined products – gasoline and distillates (diesel and jet fuel), is referred to as a crack spread. It is referenced as a crack spread due to the refining process that “cracks” crude oil into its major refined products.

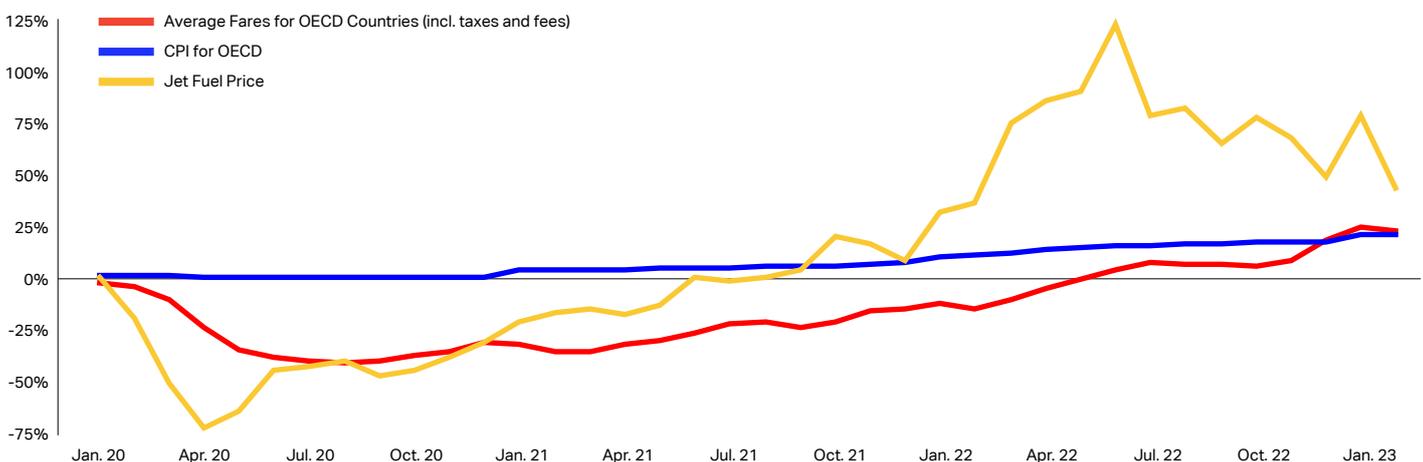
Inflation

Covid-related demand for goods pushed inflation higher in 2021, and the trend was exacerbated by the start of the war in Ukraine in February 2022. This development put a sudden stop to the general disinflation trend that had been in place since the 1980s. Global inflation rose to 8.7% in 2022 and is likely to pull back to 7% in 2023. This nevertheless leaves the price level higher and still rising, albeit at a somewhat slower pace – somewhat because inflation is proving rather sticky in the sense that it is falling only moderately in response to some quite aggressive monetary policy tightening. At its latest meeting on 3 May, the US Federal Reserve lifted the target range for its policy rate to 5.0 – 5.25%. Consumer price inflation stood at 5% year-on-year in March, meaning that the real rate of interest on this basis has turned positive, after having been negative since the Global Financial Crisis 2008-2009. The price of money is going up (although it is still low), and this will impact all debt holders.

Why inflation is proving sticky is related to two structural developments: the persistent demand and supply imbalances as evidenced by ailing supply chains, and the relative shift of pricing power in favor of labor. Moreover, inflation is prone to evolve dynamically as it rises, especially if the price-wage upward cycle takes hold and alters inflation expectations. This is not to say that we think we will enter a new high-inflation era, but rather that it might take longer for inflation to revert to target, and it might require a stronger and more sustained policy response from central banks.

Airlines face an outsized inflation rate because the price of jet fuel exceeds that of household energy sources, and the share of jet fuel in airlines' operating costs is considerably high, between 25% to 30%. Average industry airfares have, in part, risen in response to the sharp increase in jet fuel prices. For OECD travelers however, airfares caught up to their pre-pandemic levels in May 2022. In that month, OECD CPI increased 15% compared to May 2019, while the inflation in global price of jet fuel reached 92% on the same basis – a near doubling of its price (Chart 6). Around nine months later, air ticket prices caught up with average consumer price inflation (CPI) in the OECD in February 2023.

Chart 6: Airfares, jet fuel prices, and CPI



Sources: IATA Sustainability and Economics, OECD Stat, S&P Global, and DDS

Supply chains

Supply chain disruptions emerged during Covid fundamentally because of excess demand compared with supply. Demand for goods increased as people were confined to their homes, and supply was curtailed by closures and labor shortages. The result had a negative impact on global industrial production and trade, while pushing prices and thus inflation higher. While much of these imbalances are likely to work themselves out over time, there are reasons to believe that some structural impairments might linger.

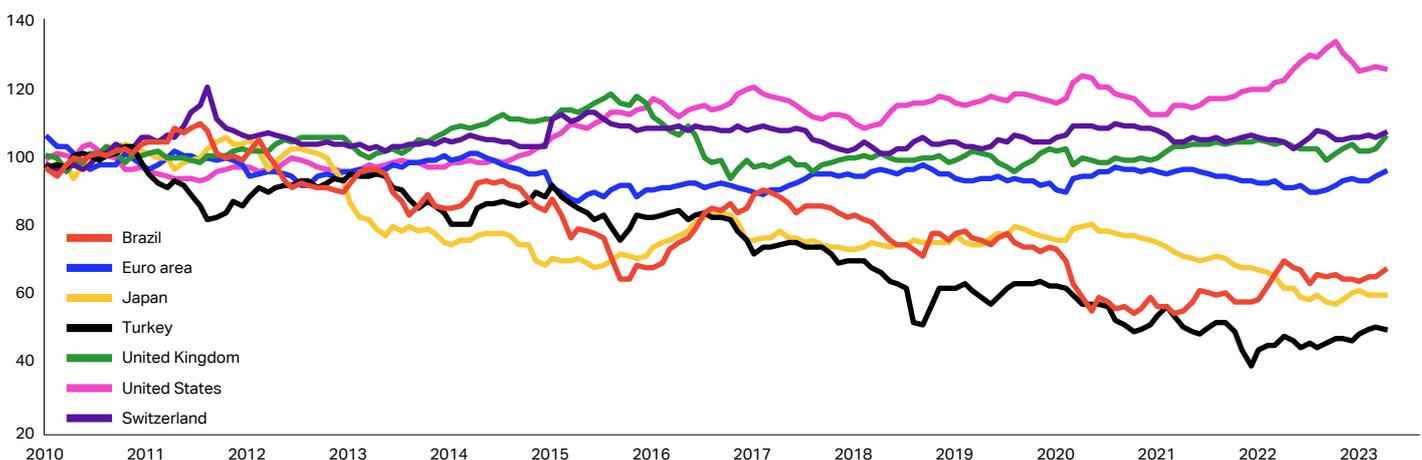
The financial sector

The financial sector has been impacted by the swift monetary policy tightening we have seen in many economies. How much further central banks will need to go depends, as stated above, on the degree to which the inflation we are experiencing is cyclical, and thus responsive to policy, or more structural in that policy is having a more delayed or more limited impact on the super-charged global labor markets. So far, the response to the policy tightening has been limited in both areas, and this could mean that interest rates might go higher and remain high for longer than what is commonly expected.

The tightening of monetary policy has exposed vulnerabilities in the financial sector. Banks and other investors with significant holdings of bonds (the price of which falls when interest rates rise) have been hurt and this played a part in the recent bank failures in the US. While any major contagion looks unlikely, the events provoked strong and exceptional responses from policy makers which, although welcome, illustrate the severity of the threat to the financial system. These events will limit access to credit over and beyond the slower credit growth which is a desired outcome of the tighter monetary policy. The risk of a policy mistake in this area would be to provoke a credit crunch, which in turn could lead to a recession.

Higher interest rates in the US, and the safe-haven appeal of the US dollar as the war in Europe is still ongoing, has pushed the US dollar higher against the currencies of most of its trading partners (Chart 7). While there has been some recent reversal of this trend, the dollar is still 34% up from a year ago, and more than 9% higher than two years ago. A strong US dollar tends to dampen GDP growth by making goods and borrowing denominated in US dollar more expensive. Europe, however, often benefits from a strong US dollar through higher exports and more inbound American tourists.

Chart 7: Real Effective Exchange Rates (2010=100)



Sources: IATA Sustainability and Economics, BIS, Macrobond

Note: Real effective exchange rate is the nominal effective exchange rate (a measure of the value of a currency against a weighted average of several foreign currencies) divided by a price deflator or index of costs

Geopolitical fragmentation

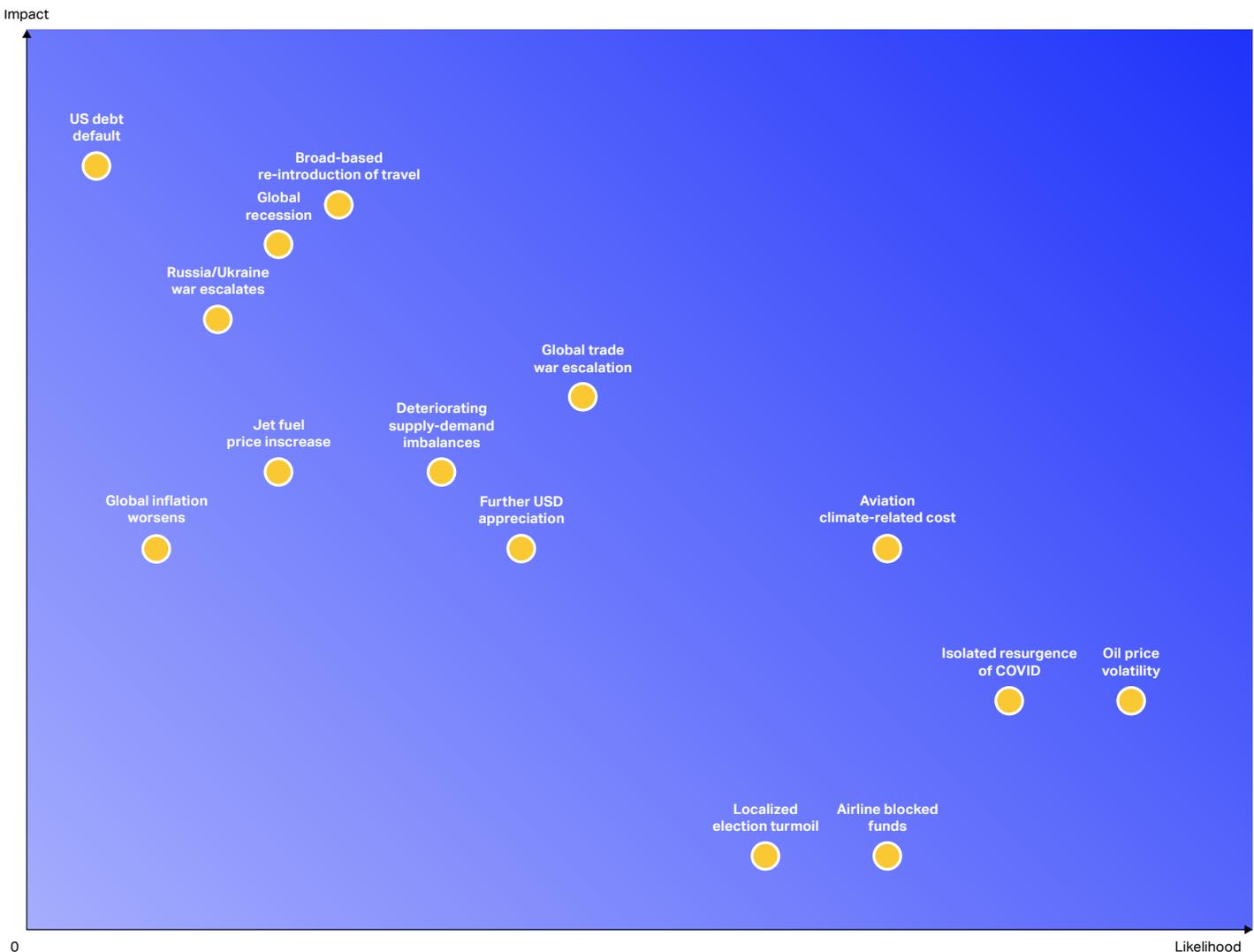
The global multilateral world order is weakened, as evidenced by the declining role played today by several of its emblematic post-WW2 institutions and by the rise in unilateral policy making. The most notable exception to this observation is the exceptional unity of NATO and its allies in the face of the Russian invasion of Ukraine. Nevertheless, on the whole, the world’s shift away from multilateral treaties and agreements towards more voluntary forms of collaborations, such as the Paris Agreement, while promising in and of itself, has largely fallen short of delivering coordinated global responses to global challenges.

Climate change is of course a case in point, but so is global financial and political stability. Global aviation is uniquely vulnerable to fragmentation. As the Chicago Convention laid out, a global civil aviation sector requires a level playing field and globally harmonized rules and regulation to be able to deliver the greatest possible contribution to economic development. All and any departures from this principle will distort competition and reduce the economic welfare that connectivity can provide.

In sum, while the current stage in the business cycle is slowing but still holding up close to the average, the world is facing high levels of uncertainty on multiple fronts, many of which might be rather structural in nature. This skews the risks to the overall outlook decidedly to the downside, both in the near and in the longer term.

We provide an overview of the risks we see dominating the outlook at the current junction in the risk matrix below (Chart 8). Upside surprises could come in the form of China’s economy rebounding more strongly than expected, and if the war in Ukraine were to end.

Chart 8: 2023 Risk matrix



Source: IATA Sustainability and Economics

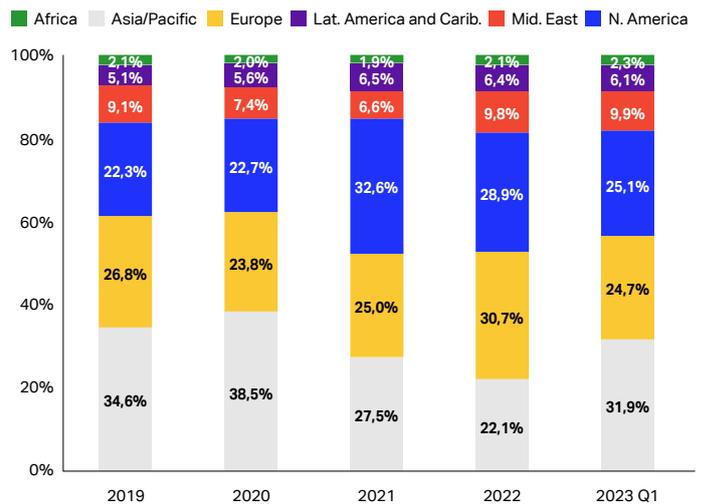
2. Recent Trends in Air Transport

Passenger traffic

The recovery in air passenger traffic observed in 2022 maintained its momentum in the first quarter of 2023, with industry-wide revenue passenger-kilometers (RPKs) reaching 88% of pre-pandemic levels by March, marking a strong start to this year. All regions showed improvements demonstrating the resilience of the broad-based gradual recovery (Chart 9). Most of the momentum seen early 2023, was driven by developments in the Asia Pacific region, thanks to the Chinese government’s move to lift the remaining travel restrictions related to the Covid pandemic and reopen its borders for international air travel in January. The reopening of China came earlier than expected, and resulted in a surge in domestic traffic, propelled by pent up demand and the Lunar New Year seasonal travel period. This resulted in a significant increase in RPKs performed by Chinese carriers. Coupled with the ongoing recovery in the broader region, passenger traffic rose to 74.2% in Q1 2023 for the Asia Pacific region (Chart 9).

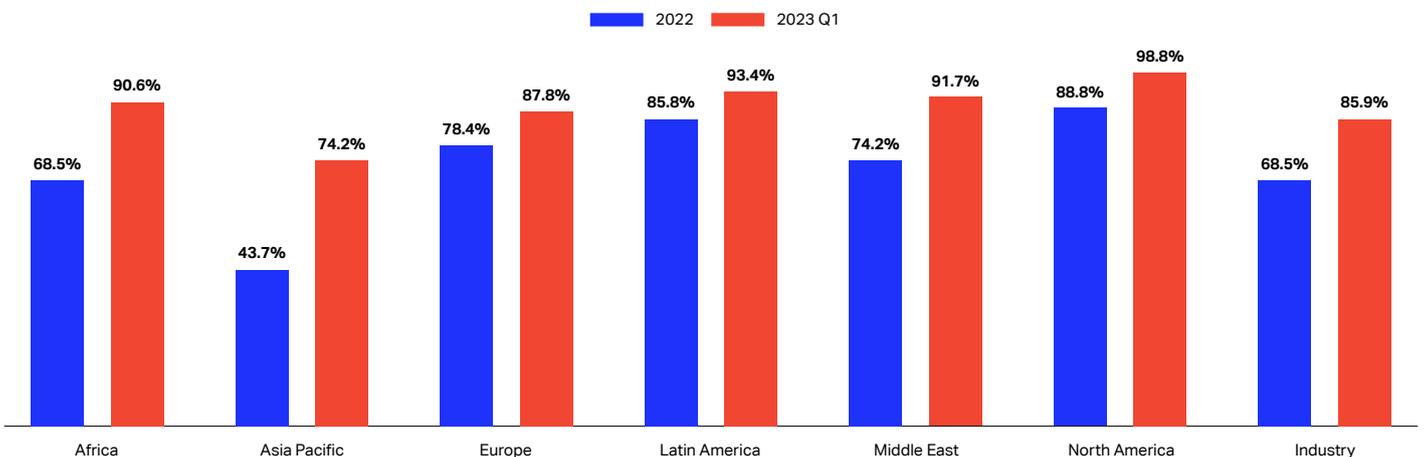
Prior to the relaxation of Covid-related policies in China, carriers in the Asia Pacific region were considerably behind in the recovery, at 43.7% of pre-pandemic traffic levels in 2022. The regional composition of performed total RPKs in 2022 thus looked significantly different compared to 2019, when Asia Pacific carriers held the leading position with 34.6% of global RPKs (Chart 10). With the reopening of China and the strong traffic recovery of the region, Asia Pacific carriers have regained their dominant position in Q1 2023, accounting for 31.9% of global RPKs. Airlines operating in parts of the world where travel restrictions were lifted early, such as Europe and the Americas, saw a quicker recovery and higher shares of total traffic in 2022. North American carriers accounted for 28.9% of industry RPKs in 2022 versus 22.3% in 2019, while European carriers saw their share of traffic increase to 30.7% from 26.8% over the same period. In 2023, the first quarter shares of global RPK for European and North American carriers were 24.7% and 25.1%, respectively.

Chart 10: Regional shares in global RPKs, 2019 to Q1-2023, % share of total



Sources: IATA Sustainability and Economics, IATA Monthly Statistics

Chart 9: Share of pre-pandemic RPKs by airline region, % of the same period in 2019



Sources: IATA Sustainability and Economics, IATA Monthly Statistics

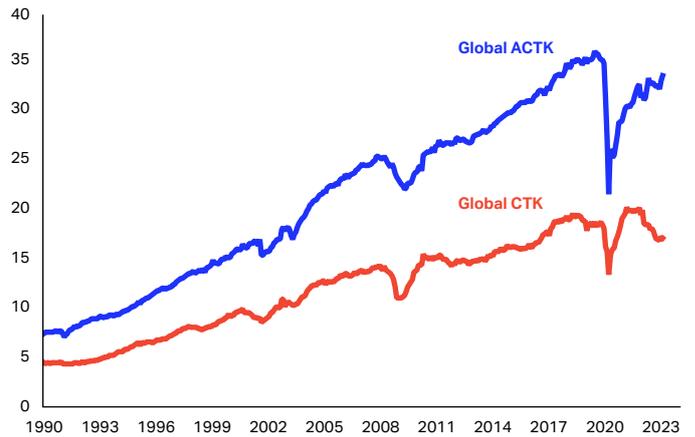
Globally, domestic traffic has recovered faster than international. This is especially the case in the Asia Pacific region, where international traffic has been slow to recover due to lingering travel restrictions. Route areas between Asia Pacific markets and the rest of the world remain behind in the recovery while other route areas between Europe and the Americas have nearly fully restored or even surpassed 2019 traffic levels (Chart 11). We expect international traffic to rebound strongly in the Asia Pacific region, on the back of the recent developments in China.



Cargo traffic

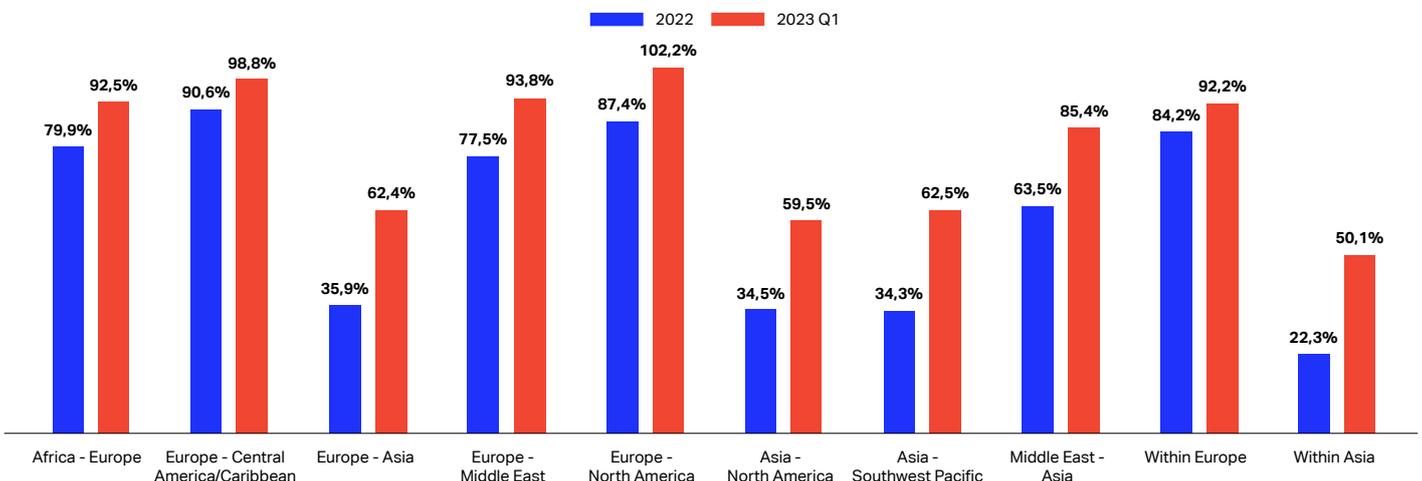
Air cargo performed exceptionally well in 2021, continuing to demonstrate its strategic importance to the industry during the global pandemic. Faced with multiple headwinds, notably from the slowing macro-economic and trade conditions, however, industry-wide air cargo demand weakened in 2022. This relative lack of buoyancy in air cargo continued into early 2023, with industry cargo tonne kilometers (CTKs) experiencing 13 months of consecutive year-on-year (YoY) declines since March 2022. Seasonally adjusted CTKs in the first quarter of 2023 were 7.5% lower than the same period in 2019 (Chart 12). On the other hand, capacity, measured in available cargo tonne kilometers (ACTKs), maintained a steady increase in 2022 and through the first quarter of 2023. One of the main drivers behind the growth in ACTKs has been the recovery in belly-hold capacity as passenger aircraft return to service in various markets. Nevertheless, global capacity has still not returned to its pre-Covid levels. In the first quarter of 2023, seasonally adjusted ACTKs were 6.4% lower than in Q1 2019 (Chart 12).

Chart 12: Seasonally adjusted global available cargo tonne kilometers (ACTKs) and global cargo tonne kilometers (CTKs), billions



Sources: IATA Sustainability and Economics, IATA Monthly Statistics

Chart 11: International RPKs by route area – top 10 route areas in 2019, % the same period in 2019



Sources: IATA Sustainability and Economics, IATA Monthly Statistics

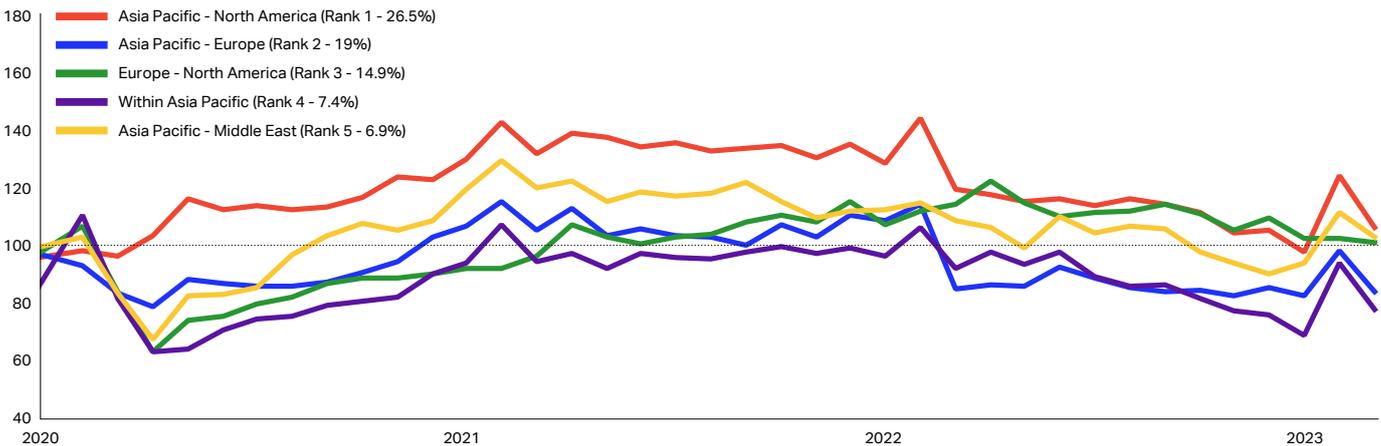
Taking a closer look at CTKs on the world’s major trade lanes, the headwinds have affected some markets more than others. Out of the top five route areas which together accounted for 75% of international CTKs globally in 2019, three closed Q1 2023 with CTKs above 2019 levels (Chart 13), namely Asia Pacific-North America (26.5% of the international CTKs in 2019), Europe-North America, and Asia Pacific-Middle East. In comparison, international air cargo demand in markets between Asia Pacific and Europe and within Asia Pacific reached 84% and 78% of their 2019 levels, respectively. The Asia Pacific-Europe trade lane was mainly affected by the war in Ukraine, and the within Asia Pacific market was weakened largely due to the residual effects of Covid restrictions in China.

Despite more belly-hold capacity coming online from the return of passenger aircraft in 2022 and Q1 2023, the shares of international air cargo traffic and capacity provided by passenger aircraft have not recovered to their pre-Covid levels yet (Chart 14). On the demand side, international CTKs carried by dedicated freighters and passenger aircraft were balanced in 2019. As many passenger aircraft were grounded during the pandemic, the share of international CTKs transported as

belly cargo dropped to 20% in 2020 and remained low through 2021, before gradually recovering to 30% in 2022 and 36% in Q1 2023.

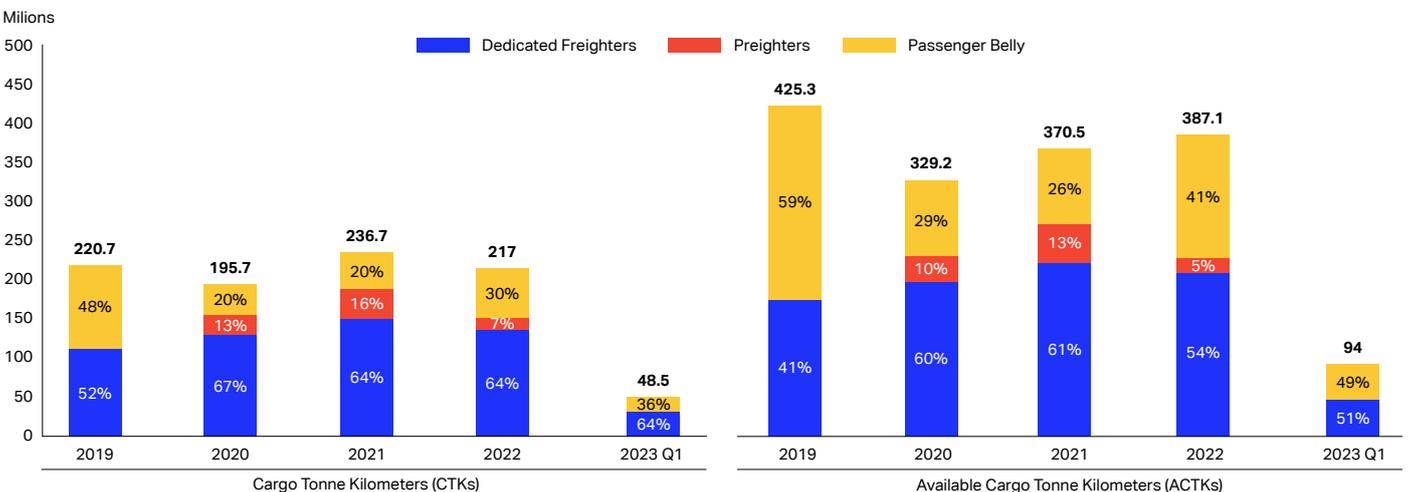
On the supply side, the cargo capacity provided by passenger carriers outweighed the capacity on dedicated freighters (59% to 41%) in 2019, reflecting the dominance of passenger airline operations. However, as passenger aircraft operations plummeted during the Covid-19 pandemic, total international cargo capacity (ACTKs) fell by 23% globally. In response, dedicated freighters ramped up operations to offset this capacity crunch. Their share of international ACTKs increased to around 60% in 2020 and 2021, meeting the elevated demand for cargo transportation during the pandemic. To address the critical capacity shortage, airlines also introduced passenger-freighters (referred to as “preighters”) in 2020, using passenger aircraft for cargo-only operations. With more belly-hold capacity coming back online in 2022 and in the first quarter of 2023, the share of international capacity by dedicated freighters declined, while still being higher than pre-pandemic levels. On the back of the recovering air passenger demand, preighters were phased out in 2022 and early 2023.

Chart 13: International CTKs by route area – top 5 route areas (indexed, 2019 = 100)



Sources: IATA Sustainability and Economics, IATA Monthly Statistics
 Notes: Rankings are based on the route area shares of 2019 global international CTKs (% shares are provided in parentheses)

Chart 14: Uneven recovery trends in air cargo traffic and capacity



Sources: IATA Sustainability and Economics, IATA Monthly Statistics

The recent decline in air cargo demand has also been influenced by the relative price of air cargo versus maritime cargo transportation becoming less favorable to air cargo (Chart 15). Between December 2020 and April 2022, yields of maritime cargo saw triple-digit annual increases, while air cargo yields rose by less though a still hefty 24% in 2021 and 7% in 2022. Since May 2022, however, ocean shipping prices have declined significantly faster than air cargo prices. By March 2023, container yields were only 8% above their 2019 levels, while air cargo yields remained 45% higher than in 2019. As a result, air cargo has lost its recent relative price advantage over ocean shipping.

Aircraft

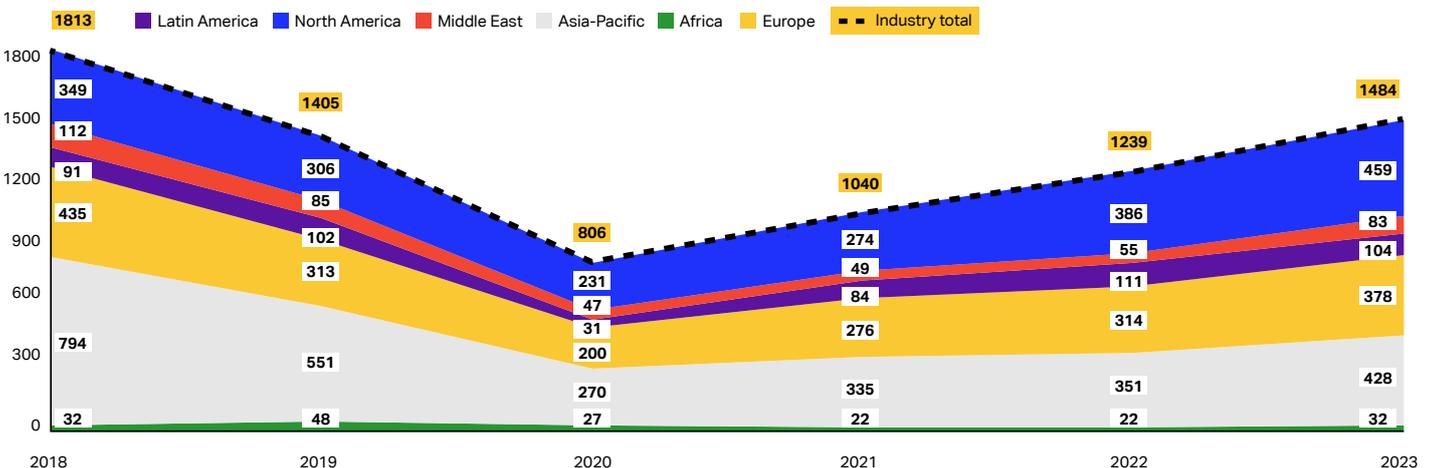
There were 1,239 aircraft deliveries worldwide in 2022, an increase of 19.1% compared to 2021. The vast majority of deliveries in 2022 and new orders for 2023 are new generation narrow body jets that will be delivered to airlines registered in the three main passenger markets, Asia Pacific, Europe and North America. Aircraft manufacturers have reported supply chain issues that will delay aircraft production and deliveries.

Chart 15: The relative price of shipping by air versus maritime cargo, ratio of air cargo yields to maritime cargo yields



Sources: Boeing, IATA CargoIS, Freightos Baltic Index

Chart 16: Aircraft deliveries by region, 2018-2024 (scheduled)



Sources: IATA Sustainability and Economics, Cirium Fleet Analyzer

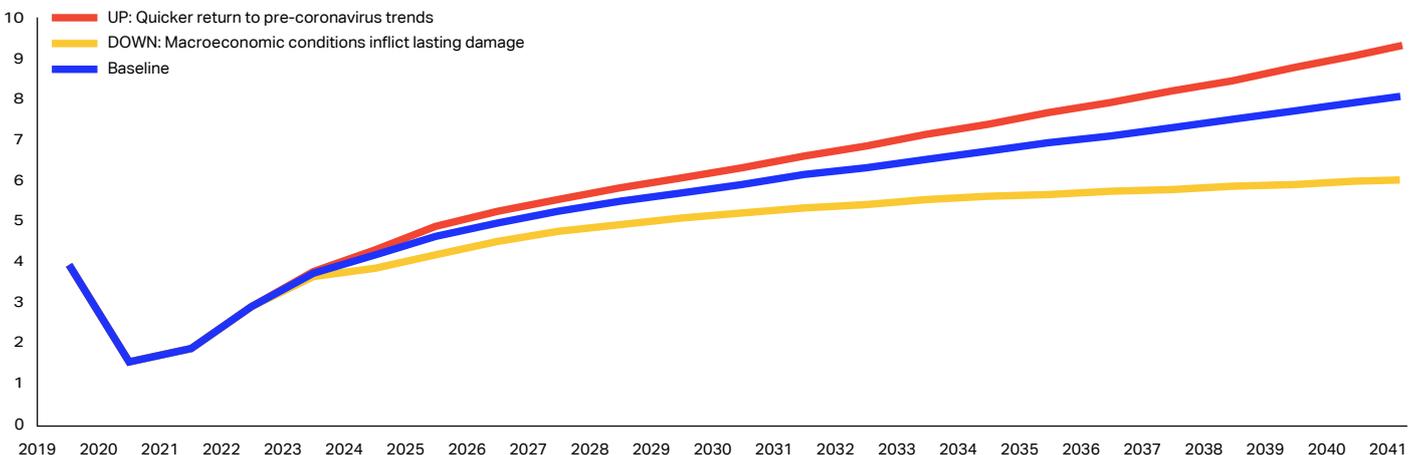
3. The Outlook for Air Transport

Our long-term view for passenger traffic growth remains unchanged. The demand for air travel is expected to double by 2040, growing at an annual average rate of 3.4%. Origin-destination passengers are projected to increase from around 4 billion in 2019 to just over 8 billion at the end of the forecast horizon (Chart 17). The balance of risks, however, remains tilted to the downside. This reflects our expectations that demand for air travel will face challenges in the near term, including pressures on airline costs, geopolitical uncertainty, and macro-economic headwinds that impact household income. Over the long run, the uncertainty around climate change and the costs associated with the net zero transition raise major concerns around the outlook.

Developments in regional markets have also prompted upgrades to our near-term outlook. While we previously expected North America to be the first region to fully recover to 2019 levels in 2023, we now project Latin America & Caribbean to also recover this year, given the robust international demand to-and-from the region and the strong performance of its airlines in meeting pent-up demand for air travel (Chart 18). The Asia Pacific region had recovered at a slower pace compared to the rest of the world, particularly after the prolonged travel restrictions that followed the region's Omicron wave in 2022. When travel restrictions were lifted throughout the region, and especially with China reopening earlier this year, the air passenger traffic recovery accelerated further, bringing the projected recovery year forward to 2024 from 2025. In the other regions, demand for air travel and traffic recovery remained resilient.

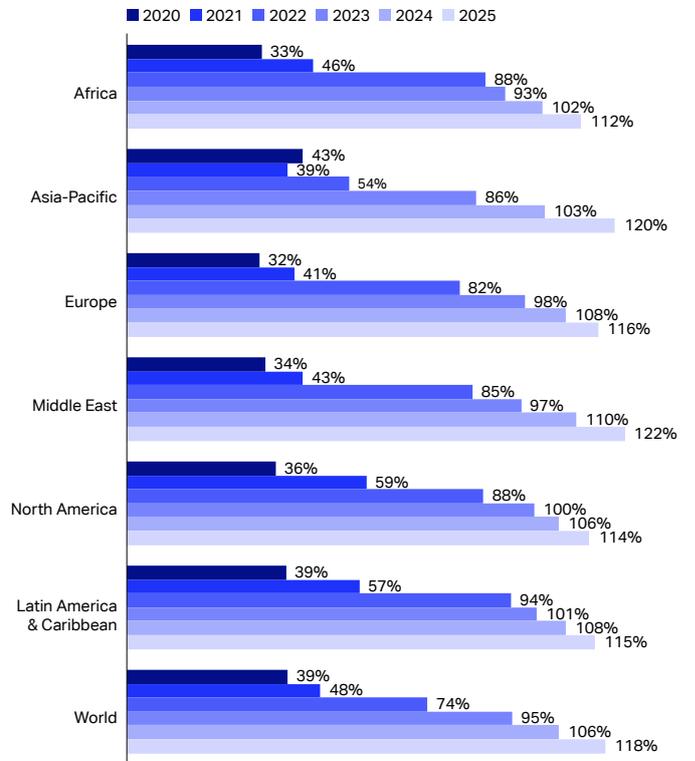
Over the full forecast horizon, origin-destination passengers are expected to increase by 3.9 billion. Asia Pacific is anticipated to contribute to more than half of the forecast growth, supported by favorable demographics and growth in household incomes. Regions with well-established aviation industries, such as North America and Europe, will continue to see growth but at a slower pace than other regions.

Chart 17: Global air passengers, billions



Sources: IATA Sustainability and Economics, Tourism Economics (March 2023 release)

Chart 18: Regional passenger totals, indexed 2019 level =100



	Recovery year	CAGR (2019 - 2040)	Additional passengers by 2040, millions
Africa	2024	3,4%	155,72
Asia Pacific	2024	4,6%	2 554,41
Europe	2024	2,1%	665,81
Middle East	2024	3,7%	276,03
North America	2023	2,2%	564,98
Latin America & Caribbean	2023	2,9%	313,47
World	2024	3,4%	3 940,80

Sources: IATA Sustainability and Economics, Tourism Economics (March 2023 release)

4. Airline Financial Performance

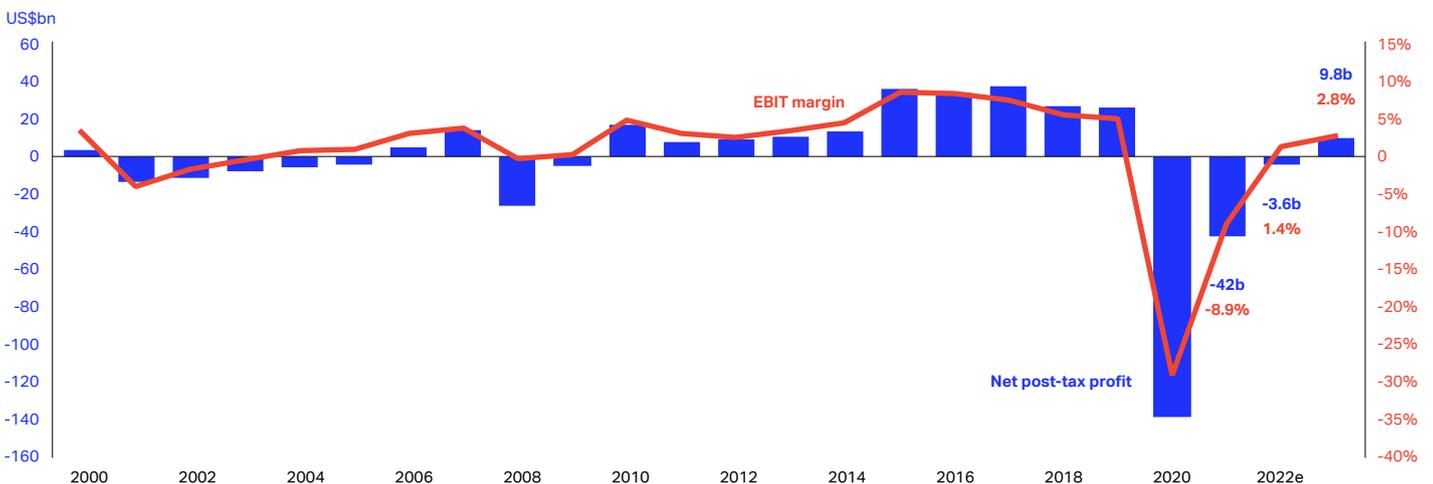
Overview

Despite oil price volatility, inflation, and geopolitical challenges seen in 2022, the financial performance of the airline industry at a global level continues to recover from the massive loss of almost USD 140 billion in 2020. Indeed, we expect the industry to return to a net profit position this year; a remarkable outcome, in a relatively short period of time.

In 2022, North America, Europe, and the Middle East surprised on the upside in terms of financial performance. The Asia Pacific region, however, was heavily impacted by the lingering travel restriction. At the industry level, we currently estimate the overall loss for 2022 at around USD 3.6 billion.

To the better than expected finish of 2022, we add the early re-opening of China, which together lift our forecast for 2023. At the global level, the industry is expected to generate a net profit of USD 9.8 billion this year, with a modest 1.2% net profit margin. Financial performance across regions remains quite divergent and continues to be led by North America. Europe and the Middle East are expected to also be profitable this year.

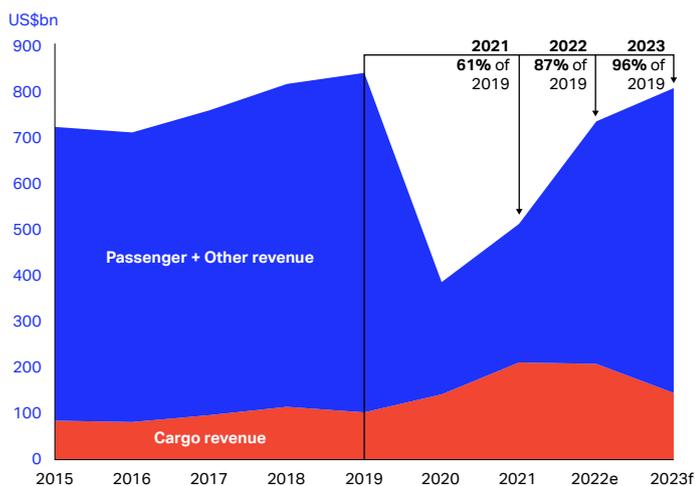
Chart 19: Global airline profitability



Source: IATA Sustainability and Economics

Industry wide, total airline revenue is expected to recover to around 96% of the pre-Covid level in 2023. Air passenger revenue is anticipated at USD 546 billion, which is approximately 90% of the 2019 level. Cargo revenue will likely ease somewhat, to USD 140 billion, a number that nevertheless is around 40% higher than in 2019.

Chart 20: Global airline revenue



Source: IATA Sustainability and Economics

Table 1: Key figures

Worldwide airline industry	2019	2020	2021	2022e	2023f
Spend on air transport, \$bn	876	396	523	759	837
% change over year	3.6%	-54.8%	32.1%	45.0%	10.3%
% global GDP	1.0%	0.4%	0.5%	0.7%	0.8%
Real return fare, \$/pax (2018\$)	315	216	231	285	253
compared to 2008	-61%	-73%	-71%	-65%	-69%
Real freight rate, \$/kg	1.79	2.69	3.25	3.21	2.14
compared to 2008	-65%	-48%	-37%	-37%	-58%
RPKs, billion	8688	2974	3623	5948	7633
% change over year	4.1%	-65.8%	21.8%	64.2%	28.3%
CTKs, billion	254	229	272	250	240
% change over year	-3.2%	-9.9%	18.8%	-8.1%	-3.8%
World GDP growth, %	2.5%	-3.5%	6.1%	3.4%	2.8%
World trade growth, %	0.3%	-5.1%	9.8%	2.7%	1.7%
Aircraft departures, million	38.9	16.9	20.1	27.7	34.4
% change over year	2.1%	-56.5%	18.5%	38.0%	24.4%
ASKs, % change over year	3.4%	-56.6%	18.7%	39.6%	24.8%
Passenger load factor, % ASK	82.6%	65.2%	66.9%	78.7%	80.9%
Freight load factor, % AFTK	46.8%	53.8%	56.1%	49.8%	43.3%
Weight load factor, % ATK	70.0%	59.5%	61.7%	66.8%	66.6%
Breakeven load factor, % ATK	66.4%	76.7%	67.2%	65.9%	64.7%

Source: IATA Sustainability and Economics

The key assumptions underpinning our financial forecast are:

- A global GDP growth rate of 2.8% this year, broadly in line with the long-run average rate of growth.
- Inflation pressures easing gradually throughout 2023 following a peak in 2022.
- Nominal policy interest rates to continue to rise, but real interest rates remain low.
- The USD has recently pulled back against most other currencies but an appreciating bias is expected as long as the war in Europe is ongoing.
- Labor markets remain robust and unemployment rates are exceptionally low. Later in 2023 one can foresee a trend reversal in response to slower GDP growth and tighter monetary policy.
- An average jet fuel price of around USD 98 per barrel in 2023. The jet fuel crack spread is expected to narrow but remain above its long-term historical average.
- This outlook is highly dependent on the continued strong recovery in the Chinese market and assumes that no more lockdowns or restrictions will be introduced.
- The passenger and fleet growth assumptions are a function of the sum of these assumptions.

Passenger demand

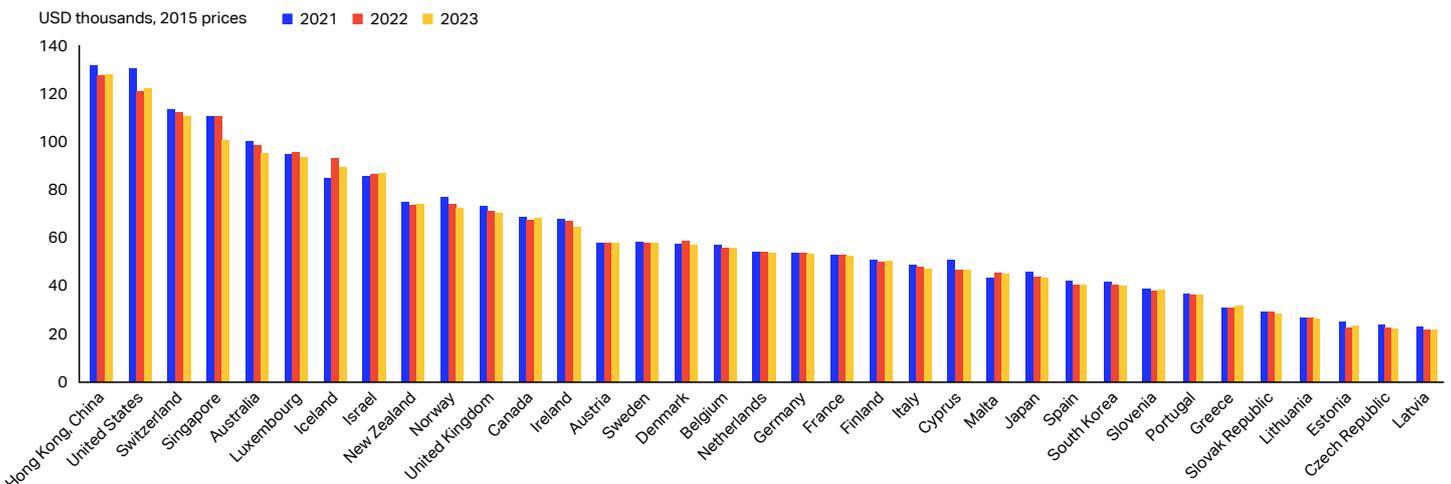
The recovery in air passenger demand in 2022 – RPKs increased by around 64%YoY – which underpinned the improvement in financial performance for the year, is further confirmation of the strong pent-up demand for air travel.

The strong performance is particularly noteworthy in light of the slight decrease in real purchasing power seen across numerous countries in 2022, compared to 2021 (Chart 21).

Despite expectations of only a modest, if any, increase in household disposable income in 2023, passenger revenues are likely to reach USD 546 billion (+27% from 2022 and around 10% below 2019). With Covid-19 restrictions now removed in all major markets, the industry is set to reach around 88% of 2019 levels of revenue passenger kilometers (RPKs) for the year with traffic climbing as the year progresses. The average passenger load factor will likely return to above 80% this year, supporting financial performance.

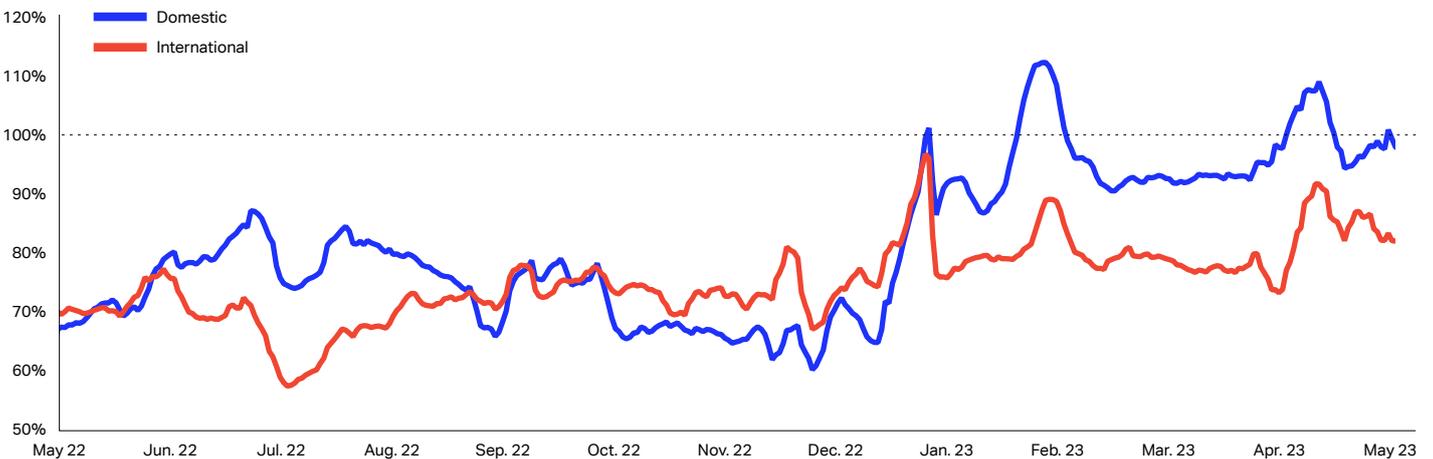
IATA's May 2023 passenger polling data supports this optimistic outlook, with 41% of travelers indicating they expect to travel more in the next 12 months than in the previous year and a further 49% expecting to maintain the same level of travel. Moreover, 77% of respondents indicated that they were already traveling as much or more than they did pre-pandemic. This is also reflected in strong ticket bookings, and overall domestic bookings already exceed the 2019 levels (Chart 22).

Chart 21: Average household personal disposable income, real USD



Source: Oxford Economics

Chart 22: Ticket bookings by purchase date, year-on-year vs 2019, 7-day moving average



Sources: IATA Sustainability and Economics, DDS

Continued contribution to the wider economy

Air transport is an important contributor to global economic development. Connectivity between countries and cities enable the flow of people, ideas, technology, goods, and capital (Chart 23).

The impact of Covid-19 saw an abrupt and substantial decline in connectivity in 2020, with the number of unique city pairs falling by more than 20% or almost 5,000 routes. The recovery since that time has been more gradual, as travel restrictions were removed and routes re-opened around the world. Despite the observed recovery in the number of city pair routes, it is important to note that, the frequency on those routes is unlikely to be immediately restored to pre-pandemic levels. In other words, the return of capacity will lag the recovery in the absolute number of city-pair connections.

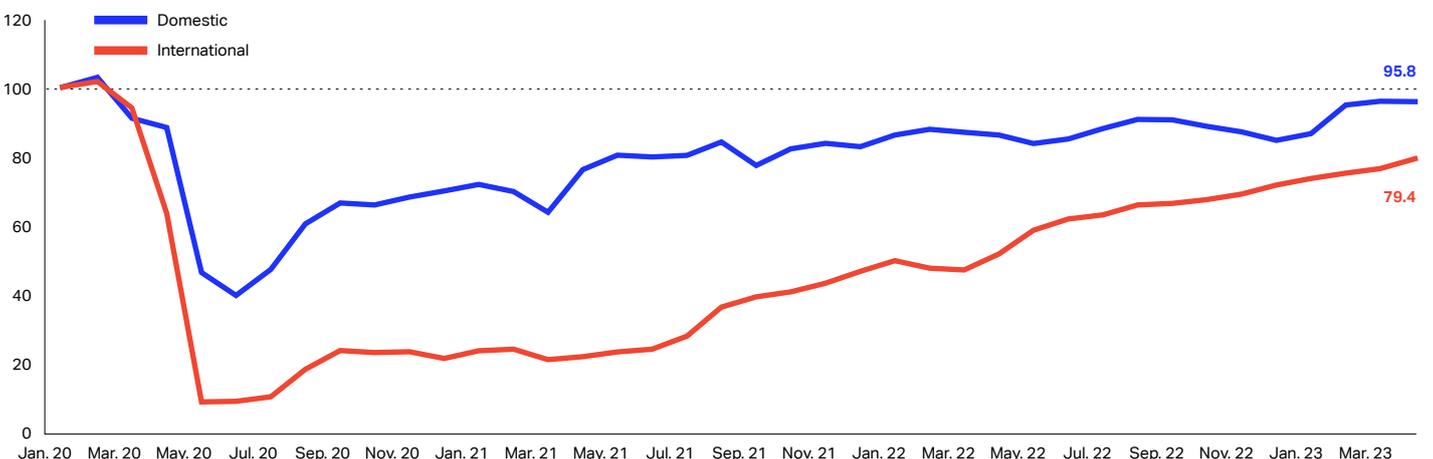
The IATA connectivity index measures scheduled passenger capacity weighted by the relative economic scale of destinations served. International connectivity has recovered to 79.4% of pre-pandemic levels and domestic connectivity to 95.8%. These results represent an approximate 10% increase when compared to the connectivity seen at the end of 2022. Connectivity patterns have also been significantly altered due to the restrictions related to flying to and from Russia. At a global level this impact is not significant, but regionally and for specific trading partners and key markets, the effects can be more substantial. Following the re-opening of the Chinese market, the international recovery in air connectivity, in particular, is expected to accelerate further throughout 2023.

Table 2: The wider economic contribution of air transport

Worldwide airline industry	2019	2020	2021	2022e	2023f
Unique city pairs	20886	16218	16259	18872	19642
compared to 1998	121%	71%	72%	100%	108%
Real price, US\$/RTK 2018\$	77.6	73.1	76.9	77.1	66.7
compared to 1998	-56%	-58%	-56%	-56%	-62%
Value of trade carried, \$bn	6 480	5 958	7 553	8 453	8 335
% change over year	-2.7%	-8.0%	26.8%	11.9%	-1.4%
Value of tourism spend, \$bn	850	310	377	613	777
% change over year	6.5%	-63.5%	21.6%	62.6%	26.8%

Source: IATA Sustainability and Economics

Chart 23: IATA Global Air Connectivity Index, Jan 2020 – Mar 2023



Sources: IATA Connectivity Index, using data from OAG

Capital providers

Historically the air transport industry has struggled to deliver the returns which equity investors expect for risking their capital. Put another way, the return on invested capital (ROIC) has typically been lower than the weighted average cost of capital (WACC).

At the regional level, however, equity investors in Europe and North America did receive returns in excess of the cost of capital over the 2016-2019 period. The industry as a whole also appeared to be moving towards a more sustainable financial future at that point in time.

The pandemic changed all of that, plunging the industry into a record loss in 2020 and significantly denting the ROIC. Since that low point, we have seen a recovery in industry financial performance as well as in traffic volumes. Recent financial results point to ROIC having returned to positive territory in 2022 for the industry as a whole, driven by results in North America and Europe in particular.

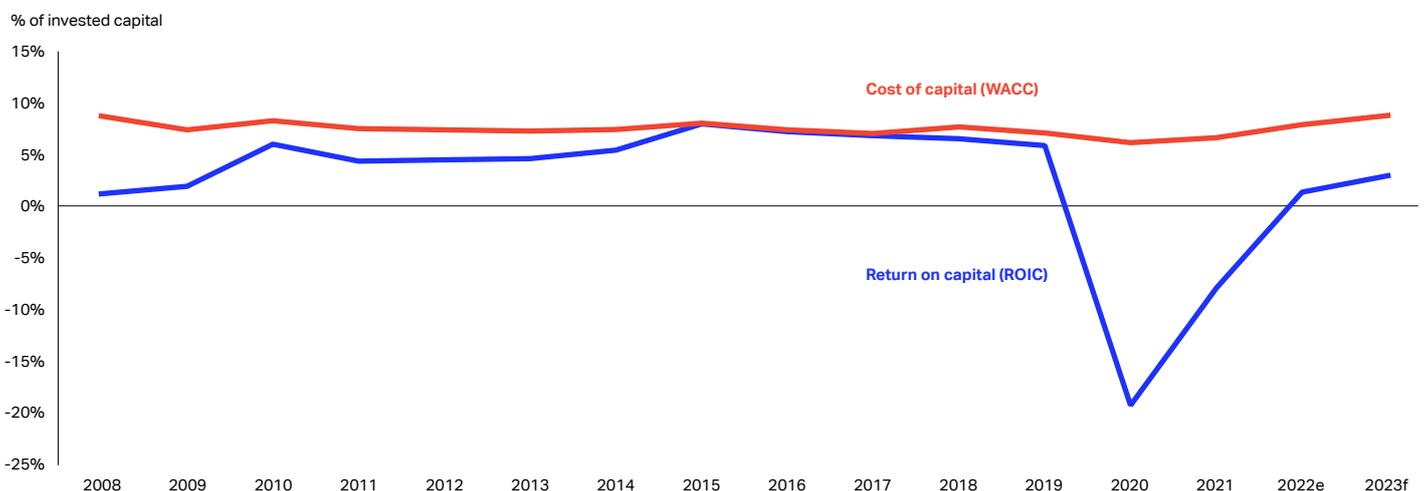
This is expected to be built upon with an improved financial performance across all regions in 2023, with ROIC forecast to reach 2.9%. At the same time, however, the cost of capital has increased in both 2022 and 2023, as interest rates around the world have risen in response to the sharp inflationary impulse. This has maintained a sizeable gap between ROIC and WACC.

Table 3: Summary of key financial metrics

Worldwide airline industry	2019	2020	2021	2022e	2023f
ROIC, % invested capital (IC)	5.8%	-19.3%	-8.0%	1.3%	2.9%
EBIT margin, % revenue (rev)	5.2%	-28.8%	-8.9%	1.4%	2.8%
Net post-tax profits, \$bn	26.4	-137.7	-41.9	-3.6	9.8
% revenues	3.1%	-35.8%	-8.2%	-0.5%	1.2%
\$ per passenger	5.80	-76.22	-19.19	-1.08	2.25

Source: IATA Sustainability and Economics

Chart 24: Return on capital invested in airlines globally, 2008-2023



Source: IATA Sustainability and Economics

Labor

As mentioned in section 2, at a global level unemployment rates are generally at or around historically low levels. This is contributing to labor and skill shortages in many countries and across a broad spectrum of industries, including aviation.

Such shortages resulted in significant disruption during the peak Northern Hemisphere summer period last year. While the situation is improving, the labor market shortages are likely to result in further disruption this year. The time taken to recruit, train, undertake the necessary security checks and other requirements before staff are “job-ready” will continue to present challenges for the industry in 2023. In some cases, employment delays may act as a constraint on an airline’s ability to meet passenger demand. Tight labor markets and skill shortages may, in turn, contribute to upwards pressure on wages in some markets (Table 4).

Fuel

The outbreak of war in Europe in February 2022 caused a sharp increase in oil prices. The price of jet fuel rose further still, exceeding USD 175 per barrel in the summer of 2022, and causing the spread between jet fuel and crude oil prices (called crack spread) to climb above USD 60 per barrel. For 2022 as a whole, the average price of crude oil was USD 101 per barrel and the average crack spread was around USD 35 per barrel.

This year has seen crude oil prices decline and the crack spread narrow to around USD 20 per barrel, returning to the higher end of historical values. Nonetheless we expect the jet fuel price in 2023 to remain relatively high, averaging around USD 98 per barrel, ensuring that fuel retains its large share of airline costs, nearly matched by labor costs, and the two making up around 50% of total costs.

Table 4: Key industry labor metrics

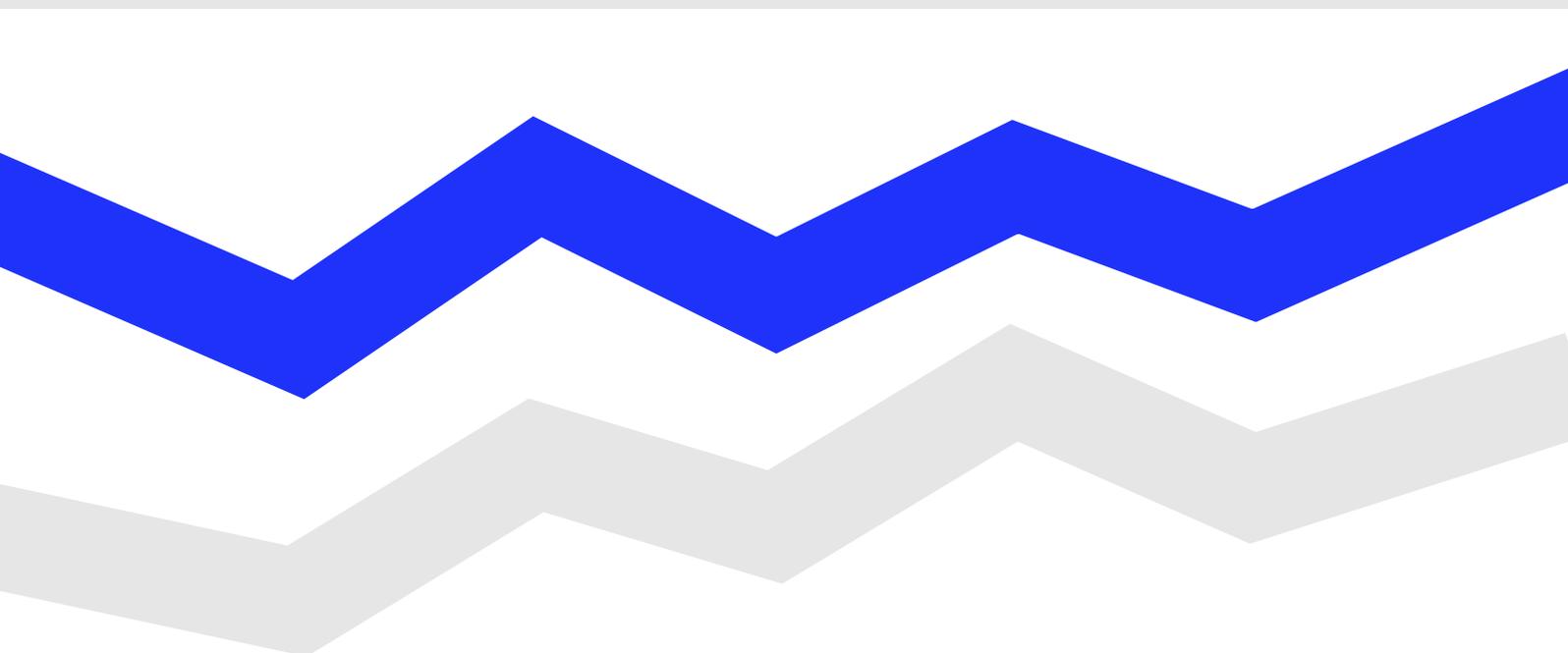
Worldwide airline industry	2019	2020	2021	2022e	2023f
Labour costs, \$bn	189	160	160	169	177
% change over year	3.5%	-15.2%	-0.1%	5.3%	5.2%
Employment, million	2.93	2.56	2.59	2.66	2.76
% change over year	0.3%	-12.6%	1.1%	2.8%	3.4%
Productivity, ATK/employee	526120	335264	385498	457724	526005
% change over year	2.8%	-36.3%	15.0%	18.7%	14.9%
Unit labour costs, \$/ATK	0.123	0.187	0.160	0.138	0.122
% change over year	0.4%	52.2%	-14.1%	-13.8%	-11.5%

Source: IATA Sustainability and Economics

Table 5: Fuel

Worldwide airline industry	2019	2020	2021	2022e	2023f
Fuel spend, \$bn	190	80	102	214	215
% change over year	6.8%	-58.0%	28.0%	109.4%	0.6%
% opex	23.9%	16.1%	18.5%	29.6%	27.6%
Fuel use, billion litres	359	196	229	281	327
% change over year	1.0%	-45.3%	16.5%	22.8%	16.5%
Fuel efficiency, fuel/100 ATK	22.0	21.7	21.7	21.8	21.4
% change over year	-2.0%	-1.7%	0.2%	0.6%	-2.4%
Fuel price, \$/barrel	79.7	46.6	77.8	135.6	98.5
% change over year	-7.4%	-41.5%	67.0%	74.3%	-27.4%
% spread over oil price	22.6%	11.6%	10.1%	34.3%	23.2%

Source: IATA Sustainability and Economics



Regions

Despite the economic headwinds, all regions delivered an improved financial performance in 2022 compared to 2021 (Table 6). Based on the latest data available, we estimate that three regions generated a net profit result in 2022, led by North America. Following the re-opening of the world's second largest air transport market – China P.R. – profitability will improve further in 2023 for the industry as a whole and for Asia Pacific in particular. Overall, the industry is forecast to return to profitability in 2023. All regions are expected to post improved financial results this year but not all will deliver a profit.

North America remains the standout region in terms of financial performance. As the first market to return to profitability in 2022 (estimated at USD 9.1 billion), the North American carriers are expected to build on this performance in 2023, delivering a double-digit net profit of USD 11.5 billion. Consumer spending has remained solid, despite cost-of-living pressures, and the demand for air travel remains robust; air passenger demand is forecast to exceed its pre-Covid (2019) level this year.

Europe ended 2022 with a stronger than expected performance, notwithstanding the various capacity issues and supply side constraints which were most apparent in the peak summer travel season. European carriers likely delivered a net profit of around USD 4 billion in 2022. With strong demand for air travel expected to continue in 2023, net profits should increase to around USD 5.1 billion, with a margin of 2.7%. The key risks to the region's performance relate to labor unrest, the war in Ukraine and ongoing concerns about the economic outlook in some key countries.

Asia Pacific airlines had a very mixed 2022. Those serving markets which lifted Covid restrictions earlier generally outperformed those in markets (including China P.R.) where restrictions had to be kept in place for longer. However, now that all markets have re-opened, the scope for catch-up – both in terms of traffic and financial performance – is significant. A strong improvement in financial performance is expected this year, but overall the region is not anticipated to return to profitability in 2023.

Latin America has seen a steady improvement in financial performance since 2020, but is expected to generate a moderate loss of around USD 1.4 billion in 2023. The performance of airlines across the region has been very mixed; some are performing strongly, while others find themselves in serious financial difficulties. In part, this reflects some of the economic and social turmoil observed in the region. The trend of financial improvement is clear and positive, with the net profit margin improving from -31.9% in 2021, to an estimated -10.6% in 2022 and a forecast -3.6% in 2023.

Table 6: Regions

Worldwide airline industry	2019	2020	2021	2022e	2023f
Africa					
Net post-tax profit, \$bn	-0.3	-1.8	-1.1	-0.8	-0.5
Per passenger, \$	-2.67	-39.71	-19.27	-9.46	-4.38
% revenues	-1.8%	-29.9%	-14.6%	-7.2%	-3.9%
RPK growth, %	4.7%	-68.2%	17.0%	84.8%	30.1%
ASK growth, %	4.5%	-62.1%	18.5%	51.4%	22.7%
Load factor, % ATK	56.2%	51.4%	53.3%	62.2%	65.0%
Breakeven load factor, % ATK	55.6%	60.1%	57.0%	64.2%	66.2%
Asia/Pacific					
Net post-tax profit, \$bn	4.9	-44.8	-14.6	-13.5	-6.9
Per passenger, \$	2.86	-50.72	-16.19	-13.09	-4.84
% revenues	1.9%	-39.6%	-11.4%	-8.7%	-3.5%
RPK growth, %	4.7%	-62.0%	-12.8%	31.9%	63.0%
ASK growth, %	4.4%	-53.8%	-6.1%	15.3%	48.5%
Load factor, % ATK	72.3%	63.8%	63.3%	65.2%	64.9%
Breakeven load factor, % ATK	68.9%	85.5%	70.9%	71.2%	67.3%
Middle East					
Net post-tax profit, \$bn	-1.5	-9.6	-4.9	1.4	2.0
Per passenger, \$	-6.75	-88.79	-38.80	7.13	9.41
% revenues	-2.7%	-35.1%	-15.0%	2.6%	3.8%
RPK growth, %	2.3%	-72.1%	8.5%	144.6%	20.8%
ASK growth, %	0.1%	-63.0%	21.2%	67.2%	15.9%
Load factor, % ATK	64.3%	54.7%	54.9%	62.9%	62.4%
Breakeven load factor, % ATK	67.7%	68.3%	61.5%	59.7%	58.5%
Latin America					
Net post-tax profit, \$bn	-0.7	-11.9	-7.0	-3.9	-1.4
Per passenger, \$	-2.26	-90.02	-40.27	-14.89	-4.92
% revenues	-1.8%	-77.3%	-31.9%	-10.6%	-3.6%
RPK growth, %	4.2%	-62.5%	40.5%	62.9%	14.2%
ASK growth, %	3.0%	-59.0%	37.3%	54.4%	13.5%
Load factor, % ATK	67.3%	64.4%	66.6%	68.9%	69.0%
Breakeven load factor, % ATK	65.3%	82.6%	72.6%	71.7%	70.4%
North America					
Net post-tax profit, \$bn	17.4	-35.1	-2.3	9.1	11.5
Per passenger, \$	16.95	-61.05	-2.68	8.48	9.53
% revenues	6.6%	-25.2%	-1.1%	3.0%	3.7%
RPK growth, %	4.0%	-65.1%	74.6%	45.6%	16.5%
ASK growth, %	2.9%	-50.3%	41.1%	28.6%	16.4%
Load factor, % ATK	64.0%	52.1%	59.2%	64.0%	65.1%
Breakeven load factor, % ATK	57.8%	66.3%	62.7%	60.1%	60.7%
Europe					
Net post-tax profit, \$bn	6.5	-34.5	-12.1	4.1	5.1
Per passenger, \$	5.42	-66.80	-18.45	4.03	4.36
% revenues	3.1%	-41.7%	-11.0%	2.3%	2.7%
RPK growth, %	4.2%	-69.5%	27.5%	101.7%	19.6%
ASK growth, %	3.5%	-62.3%	29.8%	68.1%	18.8%
Load factor, % ATK	74.9%	65.2%	66.2%	73.6%	71.6%
Breakeven load factor, % ATK	71.3%	82.8%	72.1%	70.6%	68.5%

Source: IATA Sustainability and Economics

The **Middle East** delivered a strong financial performance in 2022, likely recording a net profit of around USD 1.4 billion, with a 2.6% margin. The Middle East carriers have been swiftly rebuilding their international networks and the region's financial recovery was supported by a significant increase in the passenger load factor of almost 25 percentage points in 2022, outstripping the performance of the other regions. Net profit of around USD 2.0 billion at a 3.8% margin expected in 2023.

Carriers based in **Africa** are expected to generate a moderate loss of around USD 484 million in 2023. Africa remains a difficult market in which to operate an airline, with economic, infrastructure and connectivity challenges impacting the industry performance. Despite these challenges, there is robust demand for air travel. Underpinned by this demand, the industry continues to move towards profitability following the Covid disruption. This could be achieved as early as 2024.

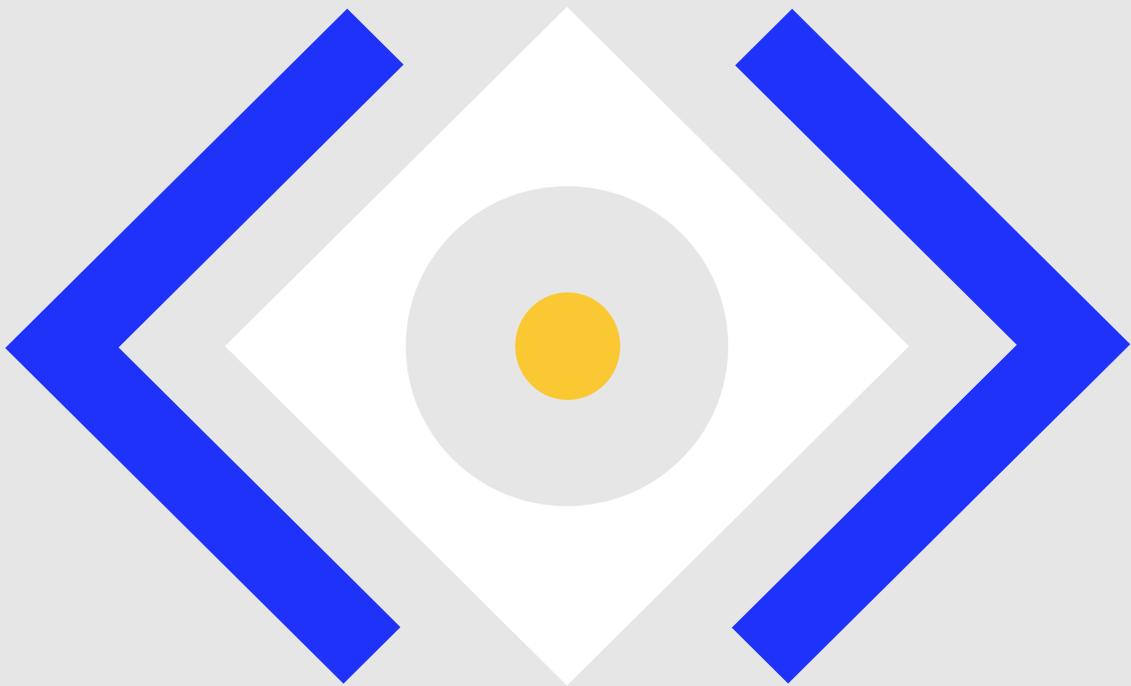
Risks

The economic and geopolitical environment presents various risks to the outlook. With just USD 22.4 billion of operating profit (2.8%) standing between USD 803 billion of revenues and USD 781 billion in expenses, industry profitability is fragile and could be affected (positively or negatively) by a number of factors. In particular, consideration should be given to:

- Inflation fighting measures are maturing at different rates in different markets. Central banks are calibrating the best levels for interest rates to have a maximum cooling effect on inflation while avoiding tipping economies into recession. An early end or a lower peak in central bank policy tightening could stimulate markets for a stronger year-end outlook. On the other hand, exceptionally strong labor markets could mean that policy interest rates will be higher for longer, potentially leading to a sharper slowdown in economic activity.
- War in Ukraine is not having a major impact on profitability for most airlines. An end to the war would be an unambiguous positive surprise for the world as a whole, as for our industry. Any potential escalation could have devastating effects. Between such scenarios, a fraught geopolitical environment is weighing on international trade and skewing risks to our industry outlook to the downside.
- Supply chain issues continue to impact global trade and business. Airlines have been directly impacted by aircraft parts supply chain ruptures which aircraft and engine manufacturers have been unable to fully address to date. This is negatively impacting the delivery of new aircraft and the ability of airlines to maintain and deploy existing fleets.
- Costs stemming from climate change impacts and various forms of regulation are most likely to rise. It should be noted that the industry paid around USD 300-500 million extra on its fuel bill in 2022 – a loss-making year for the industry – for the sustainable aviation fuel it bought, and that airline and their customers bought every drop of such fuel produced in 2022.

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