June 2022

Global Outlook for Air Transport

Times of Turbulence

IATA

Global Outlook for Air Transport
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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

- The global economy is facing two simultaneous and wholly global systemic crises: climate change and the COVID-19 pandemic. On top of that, war in Europe adds to human suffering and economic challenges. These all constitute important headwinds for the global economy and for aviation.
- Nevertheless, 2022 testifies to the resilience of the air transport industry. After the largest shock in aviation's history, recovery is well underway and forecast to continue through 2022 and beyond.
- The recovery in industry RPKs is expected to gather pace this year as vaccine rollouts continue, travel restrictions are lifted, and more routes are re-opened. Even so, global RPKs are forecast to remain below their pre-pandemic 2019 level until 2024.
- Cargo is expected to continue to support the industry's performance. We expect CTKs to rise in 2022 even as cargo yields moderate with the additional belly capacity from passenger aircraft coming online.
- Cost pressures will be a focus for airlines this year as oil and fuel prices have risen sharply, contributing to the global rise in inflation and pushing central banks to lift interest rates. In some markets, labor shortages create near-term challenges for costs and operations.
- The financial recovery will continue to lag that of traffic. The industry is likely to remain in a net loss position, losing USD 9.7 billion in 2022, a modest positive revision from our end-2021 forecast.
- Airline financial performance is expected to improve in all regions in 2022, with North America the only region expected to return to profitability this year.

Content

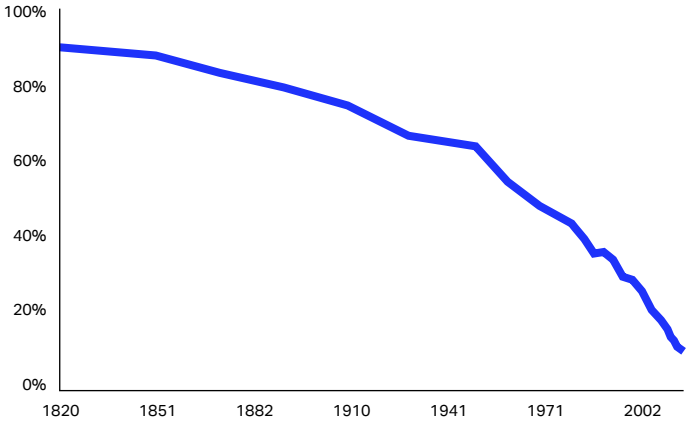
1. The Big Picture

The 20th century saw two World Wars and the Great Depression before going on to deliver the most spectacular global economic performance in human history. The acceleration in the improvement in global living standards is intimately correlated with the improvement in connectivity, and with the advent of global commercial aviation in particular, post-World War 2 (Chart 1). Real GDP grew 19-fold between the years 1900 and 2000, corresponding to an average annual rate of growth of 3% [1].

This unprecedented economic record has been interrupted in the 21st century. The 2008 Global Financial Crisis was the most severe recession globally since the Great Depression. Now, the world is facing two wholly global and systemic crises simultaneously – climate change and the COVID-19 pandemic. Moreover, there is again war in Europe. Together, these crises will dampen GDP growth in the near as well as in the long term. Prior to the outbreak of the war between Russia and Ukraine on 24 February 2022, GDP was expected to grow around 4-4.5% globally this year. Today, a growth rate in the vicinity of 3% appears more likely, and the probability of a global recession is still low. However, we can expect Russia's economy to contract by around 10% this year, and Ukraine's could shrink by 50%. Moreover, the US economy contracted by 0.35% in the first quarter of 2022 compared to the fourth quarter of 2021, the euro area's GDP growth slowed to 0.2% on the same basis, and China's will be heavily impacted in the second quarter of 2022 because of the extensive COVID-related lockdowns that were imposed in April this year. Clearly, the risks to GDP growth are skewed to the downside this year and next.

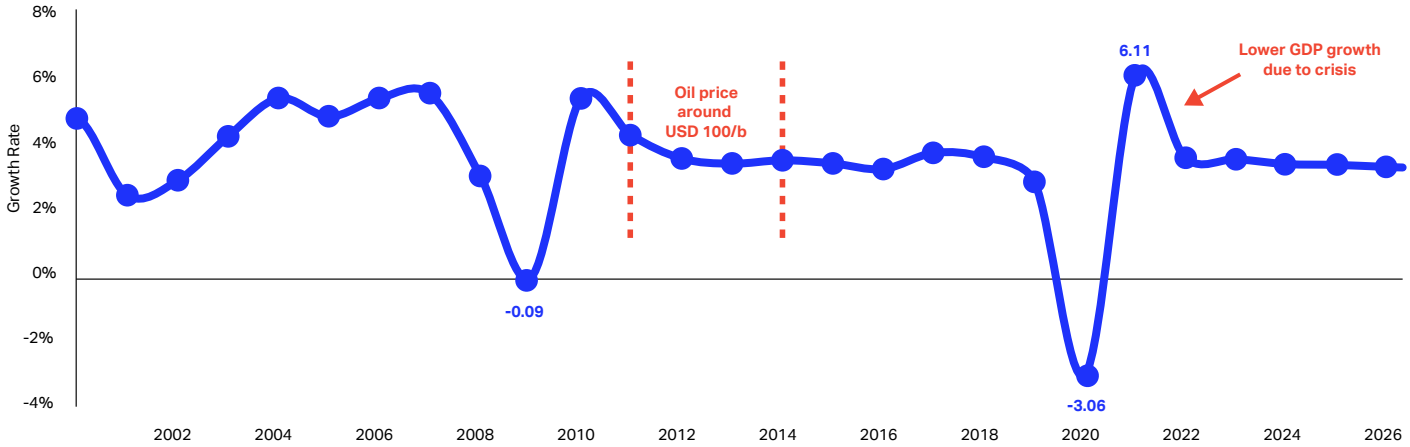
Oil prices too matter for global GDP and for the aviation industry. For the global economy, higher oil prices dampen growth in oil-importing countries though they boost activity in oil-exporting economies. As the latter represent less than 20% of the world economy, the net effect is negative for the world as a whole. Moreover, the US dollar tends to appreciate in times of geopolitical stress. This is a further negative for oil-importing countries paying for their energy imports (and their debts) in US dollars. In essence, a stronger US dollar is a bane for the world economy with the exception of the European Union. Nevertheless, the relationship between oil prices and growth is neither constant nor linear. We cannot say that a specific oil price will trigger a recession. Interestingly, the period 2011 – 2014 was one with oil prices at or above USD 100/barrel and global GDP growth in the vicinity of 3.5% (Chart 2). This was also a period characterized by strong demand for air travel and relatively profitable airlines.

Chart 1: Global Poverty Rate, % of total population



Source: https://cepr.shorthandstories.com/history-poverty

Chart 2: Global GDP



Source: IATA Economics using IMF data April 2022 update

[1] Provided World Economic Outlook, May 2000, IMF.

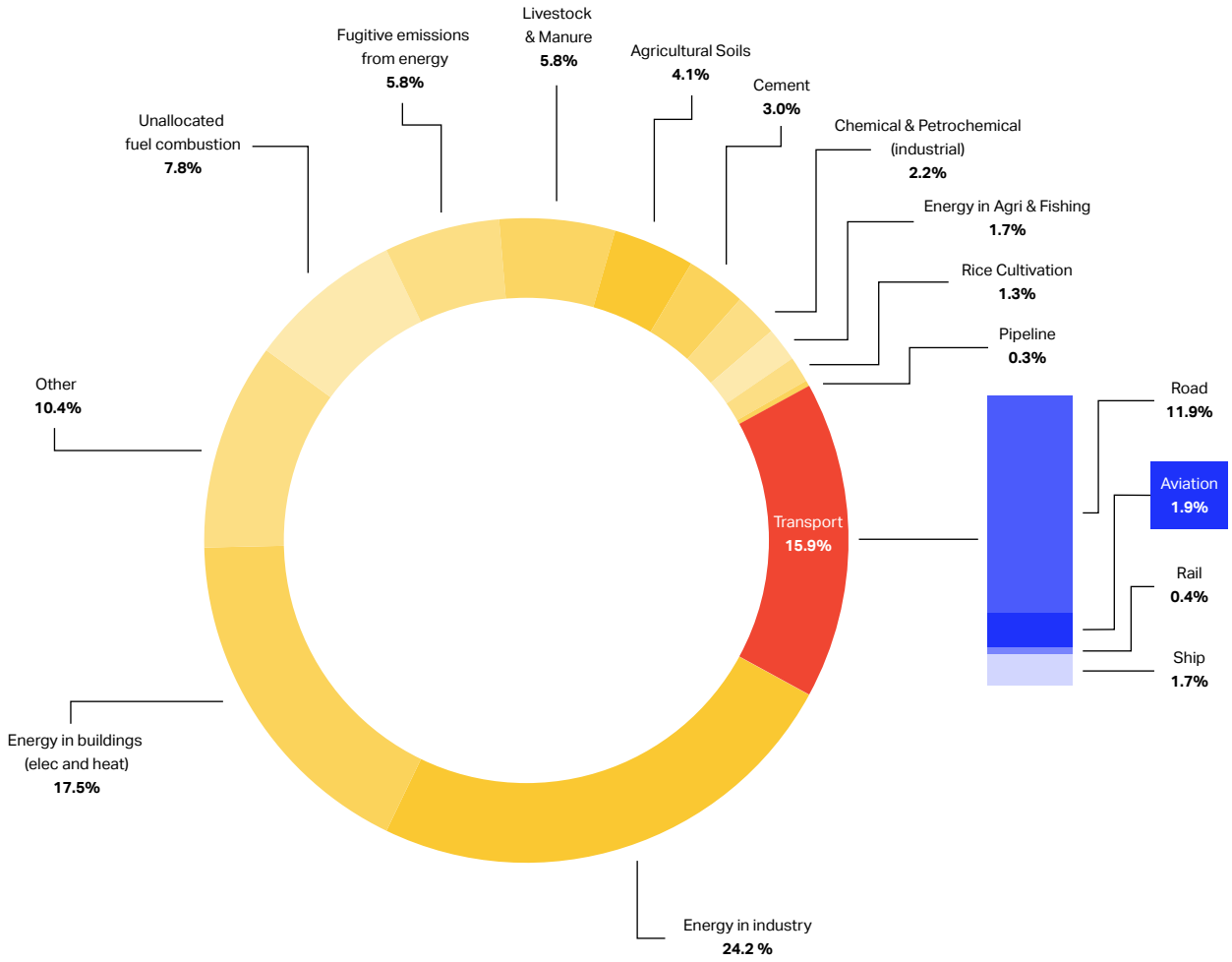
Climate Change

Since the world coalesced around the Paris Agreement in 2015, climate news has become progressively more alarming and related forecasts are steadily revised to show greater impacts over shortened horizons. Arguably, we have reached the limit of what the petroleum economy can produce in terms of welfare.

The transition away from fossil fuel is the greatest collective endeavor the world has ever set itself. Nearly ¾ of global CO_2 emissions stem from our use of fossil energy (Chart 3). Changing the way we do pretty much everything is daunting and often seemingly impossible. However, the lure of a future world economy free of any energy constraint is compelling. The day that the world can store and transport solar energy over greater time and distances, energy could become abundant, cheap, sustainable, and accessible to all. It would change every aspect of our lives and could usher in a new era of unprecedented economic progress and peace.

In the interim, rising jet fuel prices and rising sea levels – along with extreme weather events – imperil airlines' near-term profitability, aviation infrastructure, and global connectivity. The international air transport sector's commitment to net-zero CO_2 emissions in 2050 – the first industry-wide commitment of its kind - is of existential importance to the industry and to prospects of realizing a future global economic model which is sustainable, inclusive, and prosperous. Until we can see actual progress towards the goals of the Paris Agreement, climate change and its multiple consequences will in all probability weigh on the global potential growth rate.

Chart 3: Global Greenhouse Gas Emissions by Sector



Source: Our World in Data

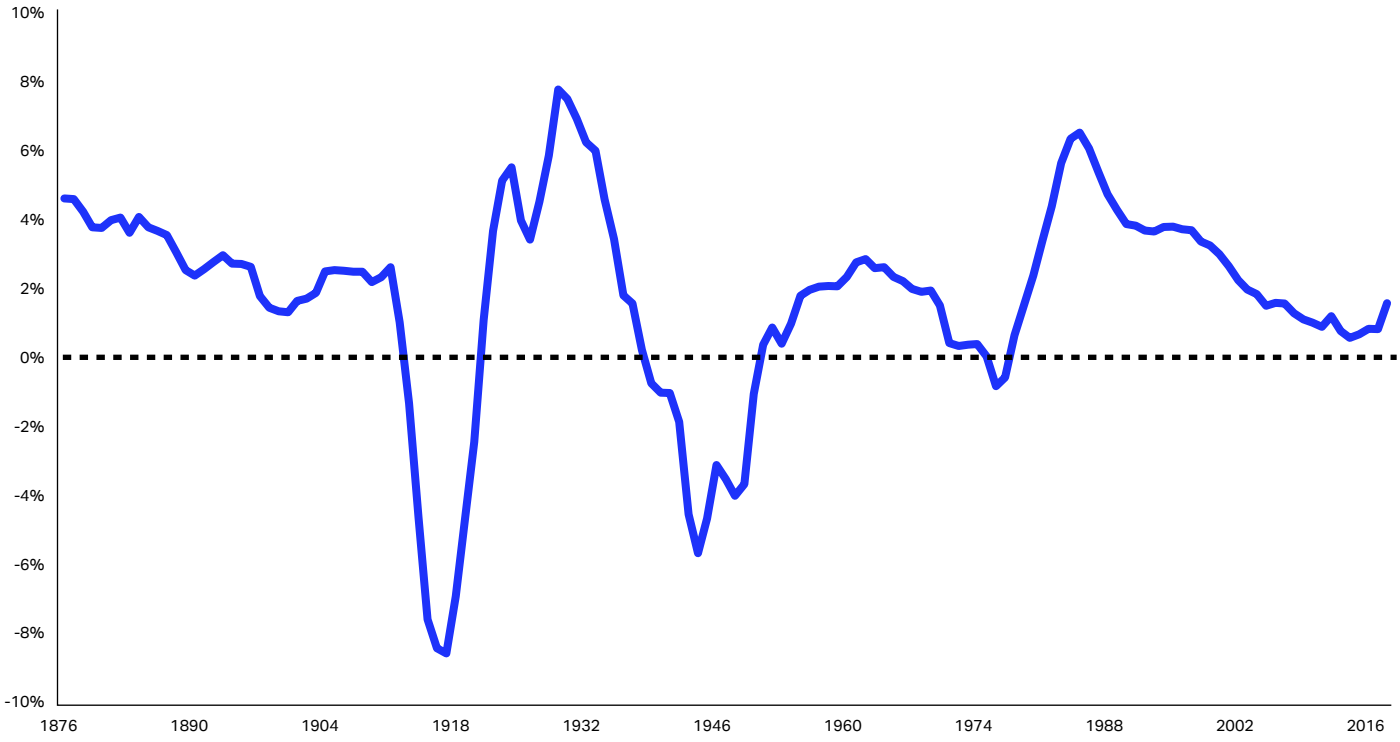
The COVID-19 Pandemic

The COVID-19 pandemic was unprecedented notably because of the policy response which involved the shutdown of much economic activity including the halt to airline traffic. It produced the sharpest global recession since the Great Depression. However, in its wake, the macro-economic performance has generally speaking been less dire than initially feared. It produced the shortest recession in US history, for instance, limited to two months. US unemployment spiked to 14.7% in April 2020 and few expected the rate to drop as swiftly as has been the case; the unemployment rate declined to 3.6% in May 2022 and thus basically back to the pre-crisis low.

One major long-term consequence of the pandemic recession and the policy response to it is the very sharp increase in global debt, adding USD 28 trillion in 2020, of which 90% originated in advanced economies and China. As a result, global debt represented 256% of global gross domestic product (GDP) in 2020, up from 195% in 2007, prior to the Global Financial Crisis [2]. This kind of debt burden cannot be characterized as sustainable, but it can be considered as potentially affordable. Inflation is actually helpful to those carrying debt because it reduces its real value and thus the real amount to be reimbursed. Similarly, inflation reduces the real interest rate paid on servicing debt. While nominal interest rates have started to increase in many countries around the world, they are still low by historic standards. From the nominal interest rate, we subtract the rate of inflation to obtain the real interest rate. For example, on 1 June 2022 the US 30-year fixed mortgage rate stood at 5.3% and the inflation rate was 8.3% year-on-year in April 2022, resulting in a negative real mortgage rate of 3%. This is, in effect, a subsidy in favor of debt holders.

Globally, real interest rates have been low and negative also in the past. Record lows were seen in the1920s, and real rates remained negative during approximately 20 years around the Second World War (Chart 4). The coming years are likely to see a similar evolution.

Chart 4: Global Real Interest Rates, 1876 to 2018, %

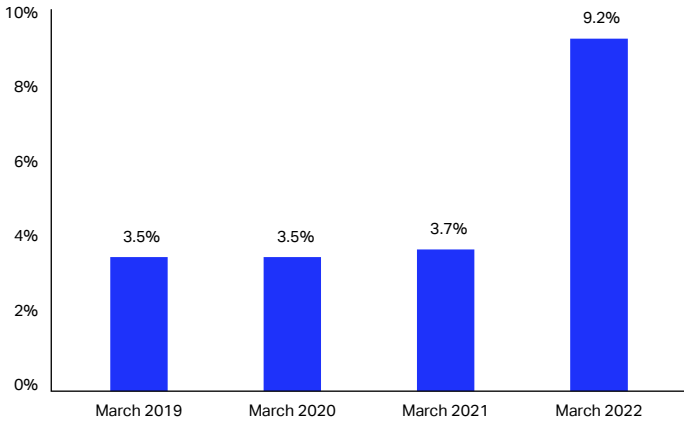


Source: Edward N. Bamber, "The Historical Decline in Real Interest Rates and Its Implications for CBO's Projections", CBO Working Paper 2020-09, December 2020

[2] IMF Global Debt Database.

If inflation is helpful to those with debt, it is harmful to everybody else and acts essentially as a tax. As such, it will have some dampening effect on economic growth as purchasing power is reduced in real terms, and this in an unusually global fashion, with Asia being the least affected region currently. Monetary and fiscal stimulus arguably plays a role in this context in advanced economies, though much less so in emerging economies. Much of the common challenge concerns the difficulties the world is facing in terms of adjusting supply to the sharp variations in demand that the pandemic and its consequences produced. Our industry is a good example of this in that we could stop flying instantaneously, but we cannot as swiftly return to the skies. Price volatility is likely to be a more prominent feature in coming years as commodity and other markets struggle with balancing supply and demand. We do not, however, expect a structural upward shift in the level of inflation, and this ought to become visible in 2023 when inflation should start declining again. As per March 2022 though, global inflation reached 9.2%, more than double the rate in March 2021 (Chart 5).

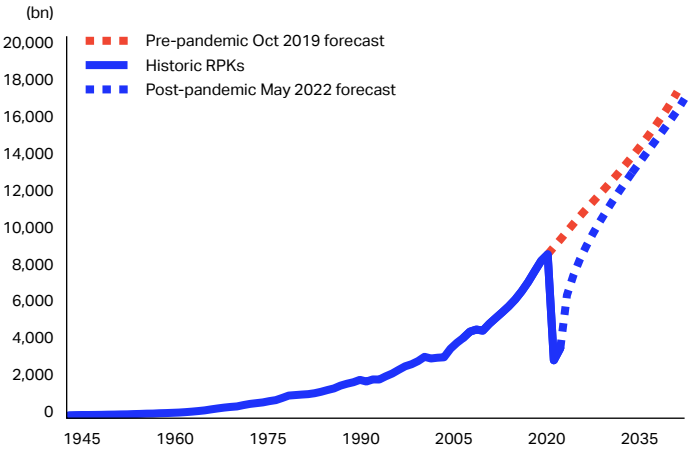
Chart 5: Global Inflation Rate (CPI all items), %



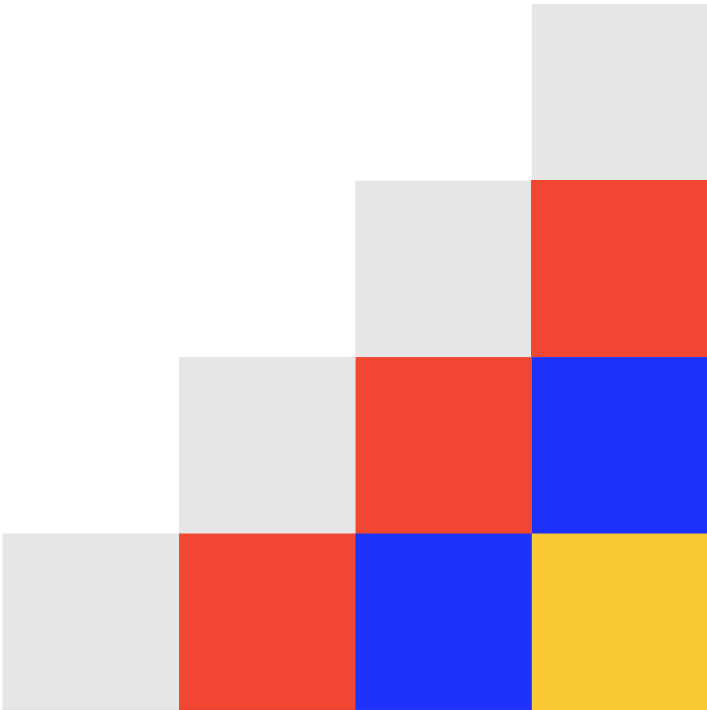
Source: ILO estimates based on CPI data from ILOSTAT

The pandemic is the greatest challenge the aviation industry has ever faced, making previous shocks such as the 1979 oil-price crisis, the Gulf War, 9/11, and the Global Financial Crisis look like minor incidents in comparison. The pandemic erased essentially 20 years of gains in passenger traffic in one sudden move. Compared to our pre-pandemic forecast, the "lost" travel between 2020 and 2022 is equivalent to 1.8 times achieved RPKs in 2019 (Chart 6). In 2040, if our current forecast is realized, traffic would still be 6% below our pre-pandemic forecast, highlighting the long-lasting effect of this historic crisis.

Chart 6: Global air passenger traffic: Historic Revenue Passenger-Kilometers and Forecasts



Source: IATA Economics/Tourism Economics



The War in Ukraine

The impact on aviation pales in comparison to the unfolding humanitarian crisis, though our industry promotes peace and freedom by bringing people together, and its implications need to be both assessed and addressed.

The Ukrainian airspace is closed, putting a halt to the movements by air of roughly 3.3% of total air passenger traffic in Europe, and to 0.8% of total traffic globally, as per 2021. Close to 40 countries, including EU countries, the UK and the US, have closed their airspace to Russian airlines. Russia has in turn banned airlines in most of those countries from entering or flying over Russia. Several airlines from countries not directly impacted by sanctions have also temporarily reduced flights to/from Russia, for example in Japan and South Korea. With Russian airspace closed, flights have been rerouted or cancelled. The most heavily impacted markets are Europe-Asia and Asia-North America. This includes flights between the US and Northeast Asia, and between Northern Europe and most of Asia. In 2021, RPKs flown between Asia-North America and Asia-Europe accounted for 3.0% and 4.5% of global international RPKs respectively, both below their shares prior to the pandemic, due to the slow international recovery in Asia.

In 2021, international traffic between Russia and the rest of the world accounted for 5.2% of global international traffic, but only 1.3% of global total traffic. Russian domestic RPKs (revenue passenger-kilometer) accounted for 4.5% of global RPKs in 2021.

International air traffic to and from Russia accounted for 5.7% of total European traffic in 2021 (Table 1). Most of Europe's aviation markets are not significantly exposed to Russia and Ukraine. Cyprus, Turkey, Poland, and Bulgaria had the highest share of total passenger numbers coming from those two countries in 2021, ranging from 5% to 12%. Countries neighboring Russia and Ukraine are clearly more exposed to these markets, notably Tajikistan and Kyrgyzstan, at 86% and 73% respectively of their total passenger numbers.

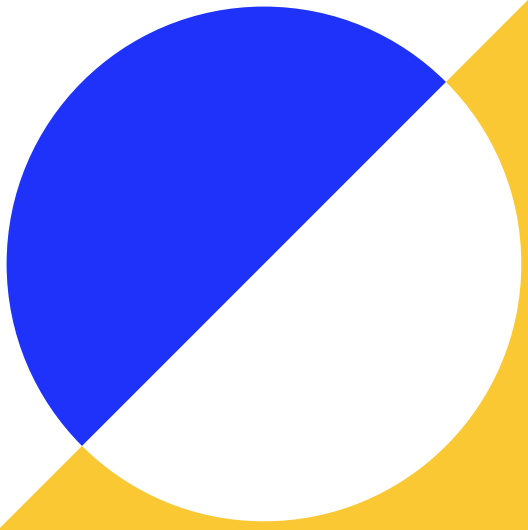
Total segment-based freight tonnes carried by air to, from and within Russia and Ukraine accounted for 0.9% of the global total cargo traffic in 2021. That number captures both traffic that starts in the two countries, and traffic which only transits there. Transit traffic is sizeable due to large air-cargo-only carriers based in both markets. Russia accounted for 2.5% of global total dedicated cargo flights in 2021 according to data provided by FlightRadar24. The importance of these flights for global heavy-weight cargo is significant, and the corresponding capacity will be difficult to replace. Both domestic and international dedicated cargo flights for Russia deteriorated markedly since the conflict escalated.

Though Russia and Ukraine are important to the world economy as large exporters of energy, precious metals, wheat, and other commodities, driving prices higher in all of these areas, the two together account for less than 2% of global GDP. Most major economies have only limited trade exposure to Russia. Only 0.5% of US trade is with Russia, and the latter represents 2.4% of China's trade. Longer term, Russia's war in Ukraine will almost certainly lead to increased military spending. Total global military expenditure rose to nearly USD 2 trillion in 2020, according to the Stockholm International Peace Research Institute (SIPRI), representing 2.4% of global GDP. Military spending adds to GDP growth but detracts from achieving development goals in a world already carrying record levels of debt.

Table 1: Traffic shares for selected markets impacted by the war in Ukraine

% share of passenger number in 2021	Total European traffic (excl. Russia domestic)	Global traffic
Ukraine	3.3%	0.8%
Belarus	0.3%	0.1%
Moldova	0.4%	0.1%
Russia international	5.7%	1.3%

Source: IATA Economics using DDS data



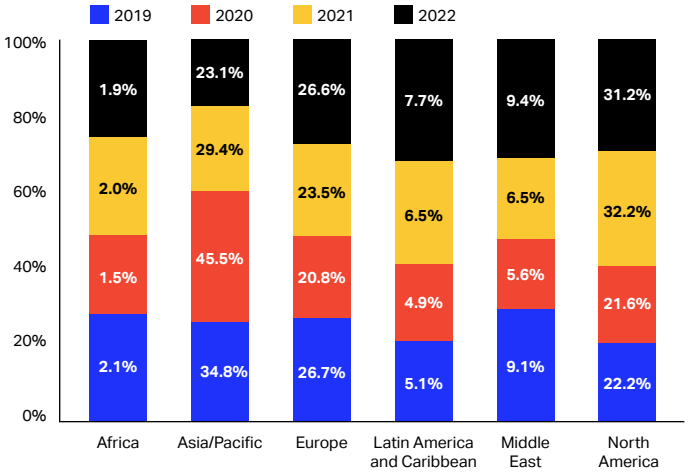
2. Recent Trends in Air Transport

Travel restrictions have been and remain the dominant driver of air traffic since the outbreak of the pandemic. Such policies also altered the regional composition (Chart 7). Initially, China's swift control over the earlier COVID-19 outbreaks allowed its domestic market to stay open which, in turn, boosted the Asia-Pacific region's global market share to over 45% in 2020. This share dropped, however, to 23% in the first quarter of 2022 as a result of renewed lockdowns. To be sure, we expect China to bounce back once restrictions are eased there, and the Asia-Pacific region to regain its dominant position in short order thereafter. As of the first quarter of 2022 though, this region's unrealized travel has increased the global market shares of North and South America.

The resilience of our industry remains impressive. Public sector support was of course instrumental in terms of preventing bankruptcies in our industry during the pandemic, though airlines' agility too played an important role, as evidenced by the newfound keen interest in air cargo. Cargo's share in total airline revenue in our analysis (Chart 8) more than tripled between 2016 and 2021, going from 11.4% to 40.3% of total revenue.

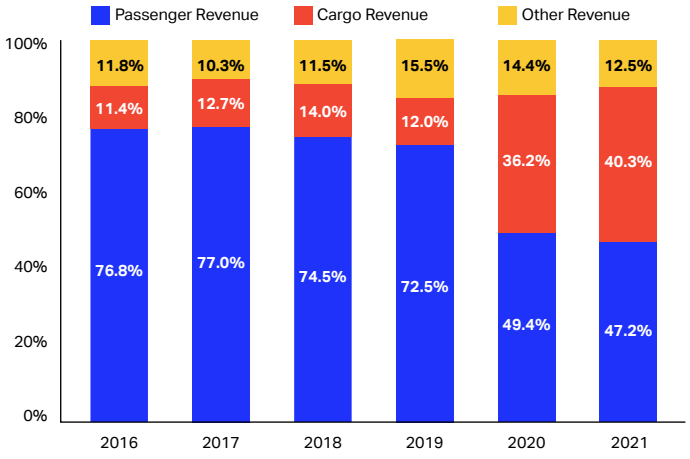
This larger share of cargo in airlines' total revenue is of course partly a function of the depressed state of passenger travel during the pandemic. Air cargo has, however, benefited from a rare and significant relative price advantage over maritime cargo since 2021 as the fees have risen more sharply among the latter (Chart 9).

Chart 7: Regional shares of global RPKs, 2019-2022 (Q1), % total



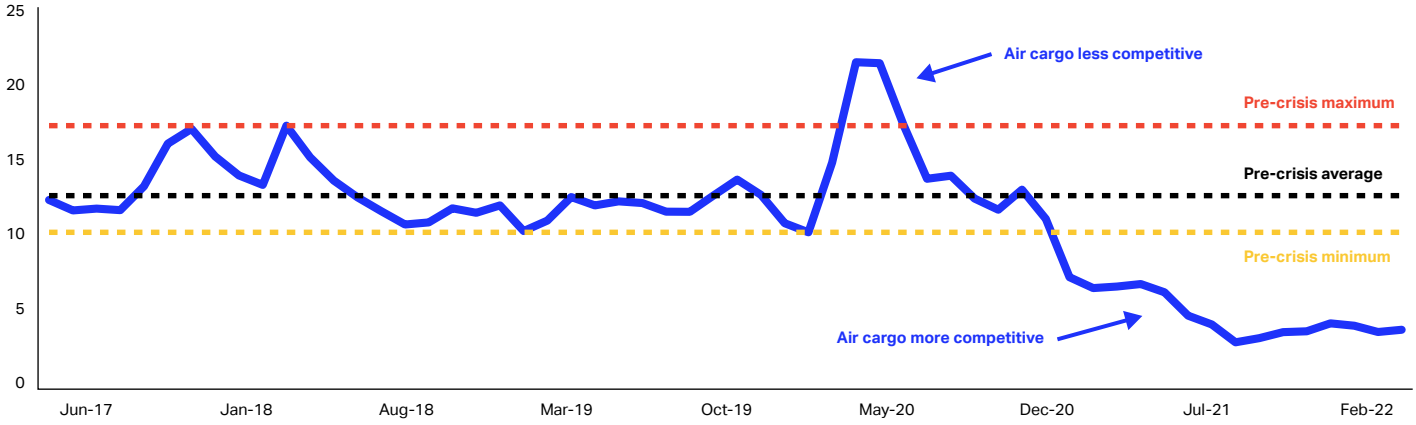
Source: IATA Monthly statistics

Chart 8: Airline revenue by source, 2016-2021, % of total



Source: IATA Economics

Chart 9: The relative price of air versus maritime cargo



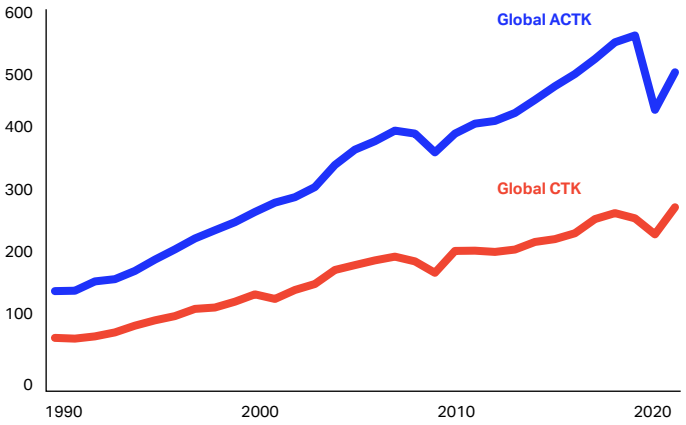
Source: Boeing, IATA CargoIS, Freightos Baltic Index

Global cargo tonne-kilometers (CTKs) were down 25.8% compared to 2019 levels in April 2020 but then rose steadily until the end of the year to reach full recovery. Global CTKs continued to climb and has since mostly held above 2019 levels (Chart 10).

Capacity has not seen quite as positive an evolution and remains below the pre-crisis level. This, coupled with the dearth of passengers, gave rise to much airline agility – maximizing belly capacity, operating passenger aircraft for cargo only, and sometimes loading cargo in the passenger cabin (with or without removing the seats). This latter development was authorized by civil aviation authorities during the pandemic. In the US, the FAA terminated exemptions for airlines that allowed them to use cabin space for cargo transport in passenger aircraft on 31 Dec 2021, and in the EU a similar exemption will end in summer 2022. Prior to the pandemic, cargo was evenly divided between being transported in aircraft belly and by dedicated freighters. In March 2020, belly cargo represented only 4% of global CTKs. This share has since risen to 28% (Chart 11).

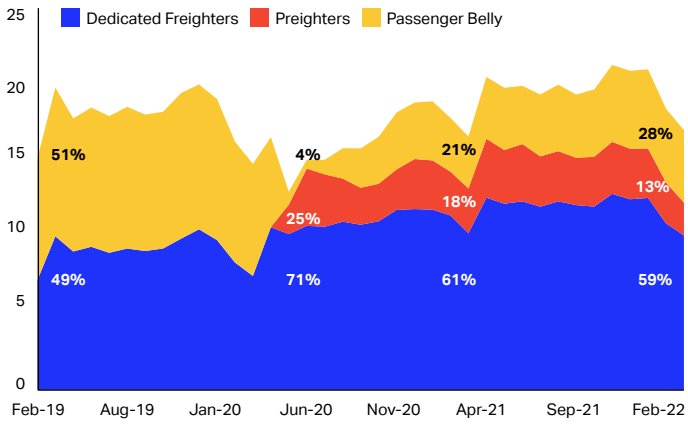
Aircraft deliveries to airlines having fallen sharply in 2020, recovered somewhat in 2021 (Chart 12). Deliveries are expected to increase further in 2022. This is very much a reflection of how the industry is viewing the recovery and traffic over coming years.

Chart 10: Global Available Cargo Tonne-Kilometers (ACTK) and global Cargo Tonne-Kilometers (CTK), billion



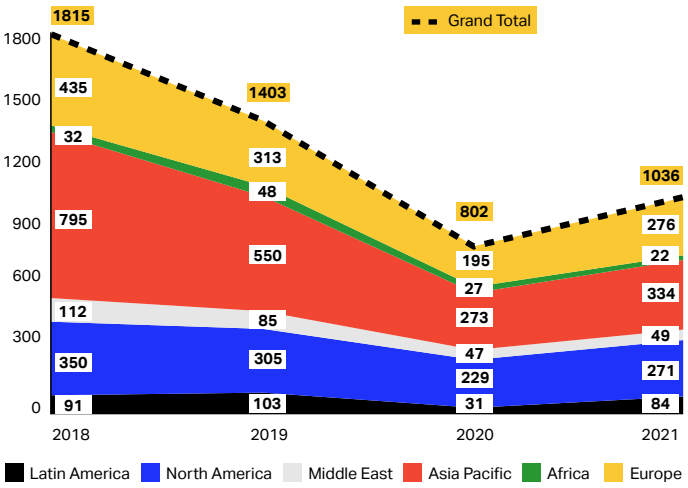
Source: IATA Monthly statistics

Chart 11: International CTKs, million



Source: IATA Economics, IATA Monthly statistics

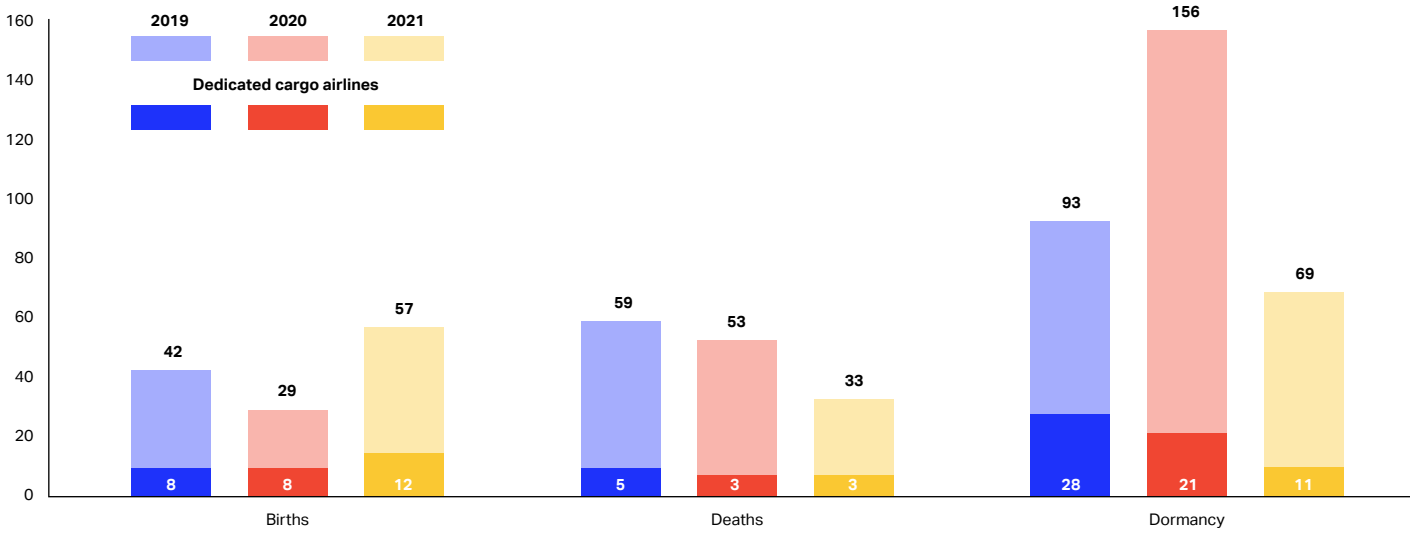
Chart 12: Aircraft deliveries per region



Source: IATA Economics using data from Cirium Fleet Analyzer

The habitually strong investor interest in aviation tends to revive in times of turbulence and therefore also contributes to the industry's resilience. One explanation for the heightened appeal is the greater availability of aircraft on the market during difficult times, and this at discounted prices, allowing investors to benefit from the lower capital investment required. Indeed, we can see in Chart 13 that there were more new airlines born, and fewer airlines being closed or going dormant in 2021 than in 2019.

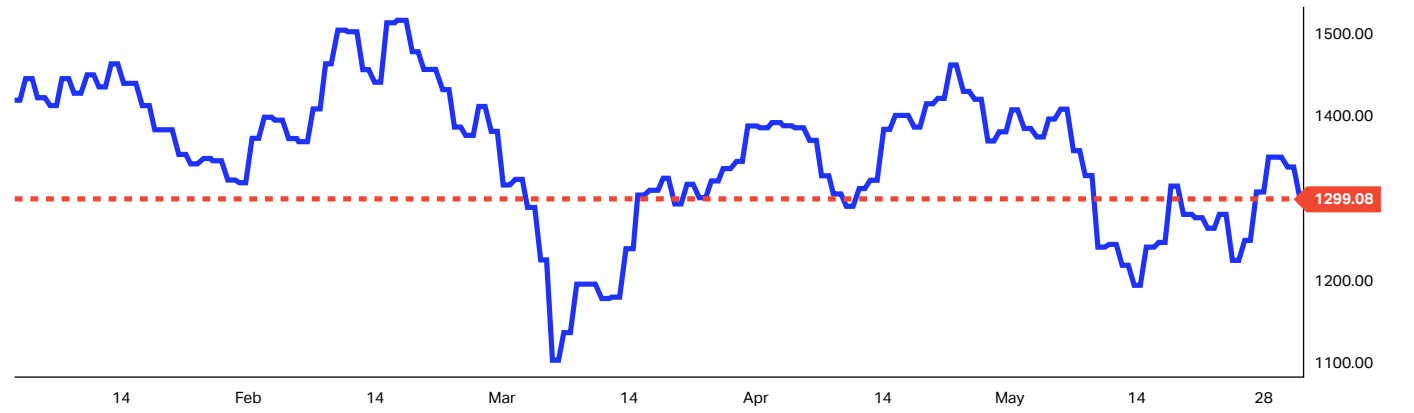
Chart 13: Number of airline births, deaths, and dormancy



Source: IATA using data from FR24, Cirium, public sources

Portfolio investors too show continued interest in the industry. The NYSE Arca Global Airline Index, (a modified equal-dollar weighted index which tracks the price performance of major US and overseas airlines), has risen by more than 18% since the low recorded on 7 March 2022 as the war began in Ukraine (Chart 14, as per 1 June 2022).

Chart 14: NYSE Arca Global Airline Index, year-to-date



Source: CNBC

3. The Outlook for Air Transport

The organization of the air transport value chain looks, certainly from the outside, as a global wealth-transfer project in favor of monopolistic or oligopolistic suppliers at one end and customers at the other end who benefit from hyper-transparent instant price discovery regarding the perishable products that airlines offer. In the middle sit the airlines with often limited freedom to evolve their business models. Change is nevertheless a constant and the global trends that commercial aviation can seek to benefit from include:

- Data and analytics
- Transparency
- Sustainability
- Customer experience

Change already underway in transportation and aviation, at least in part in response to these global trends, includes:

- Focus on cargo
- Partnerships and alliances
- Loyalty programs
- Energy efficiency
- Multi-modal transportation

All areas of our industry can improve with increased data capabilities. Vast quantities of data are available to airlines, and this is an underused asset. To be sure, competitive advantages for airlines such as cost base, scale, network, and product will continue to be important. However, increased use of data science and advanced analytics can allow airlines to capitalize further on their traditional advantages and capture substantial performance improvements.

The global customer of today demands transparency, is sustainability aware, and seeks a complete experience. This throws the door wide open to developing new partnerships and alliances, exploring multi-modal transportation, and to collaborations across the transportation industry and beyond.

On the sustainability side, the fact that emissions-free aviation is currently limited to planes carrying a small number of passengers will likely drive at least some demand in that direction, arguably favoring secondary airports. Hubs will remain important, though these represent vulnerabilities in a climate-challenged world. Some degree of “dehubbing” can be anticipated for both full-service and low-cost carriers.

Fleet management has already evolved to such an extent that leasing companies took delivery of the majority of aircraft in 2021. This is a sign of the quest for airline business models that are more “asset light”, in the image of ride-sharing businesses, for example. Clearly, this strategy can free up capital which can in turn be used for growth and investments in other areas. It can also allow for greater agility in this industry which is not only highly cyclical but also greatly exposed to global, regional, and local crises of all kinds.

Much product differentiation can be realized only on the ground. Loyalty programs represent a key marketing strategy and through these, the scope is great for collecting customer information and for tailoring an enhanced offering to personal travel histories and preferences. Programs that have in some cases been spun off might usefully be brought in-house again.

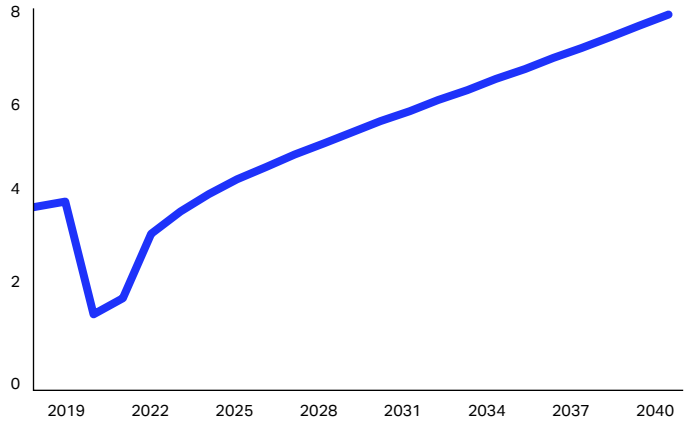
The COVID-19 pandemic has propelled cargo into the limelight. Logistics are rapidly evolving, apace with e-commerce, and the competitive environment is in mutation, of which maritime shipping companies purchasing aircraft is but one example.

Airlines do face a competitive environment that is in many ways forced upon them. In that context, global alliances are the go-to solution. Nevertheless, we can expect to see more bilateral or multilateral agreements with some potentially including equity stakes.

With all the uncertainty that these turbulent times and transformational developments bring in their wake, we still expect global passenger travel to return to the 2019 level of activity in 2024 (Chart 15) and to expand substantially over the next two decades. Between 2019 and 2040 we forecast that air passenger numbers will increase at an average annual rate of 3.3%, rising to 7.8 billion passenger journeys per year at the end of our forecast horizon. Notwithstanding the relatively slow pace of recovery to date, we anticipate Asia / Pacific will be the fastest growing region over the next two decades (Chart 16). Buoyed by favorable income growth and demographic factors, Asia / Pacific is expected to add around 2.5 billion additional passenger journeys per year by 2040, at an average annual rate of 4.5%.

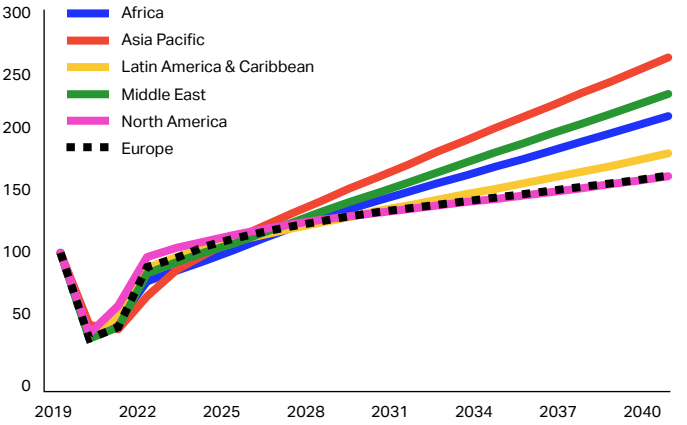
Our latest near-term forecasts incorporate a modest downgrade in the outlook for domestic travel, mainly reflecting developments in Russia and China, two large domestic markets. This downgrade is broadly offset by a modest upgrade to international travel which appears to be gathering momentum as routes are increasingly being reopened and the desire to travel again remains strong (Chart 17).

Chart 15: Global air passengers, past and forecast, billions



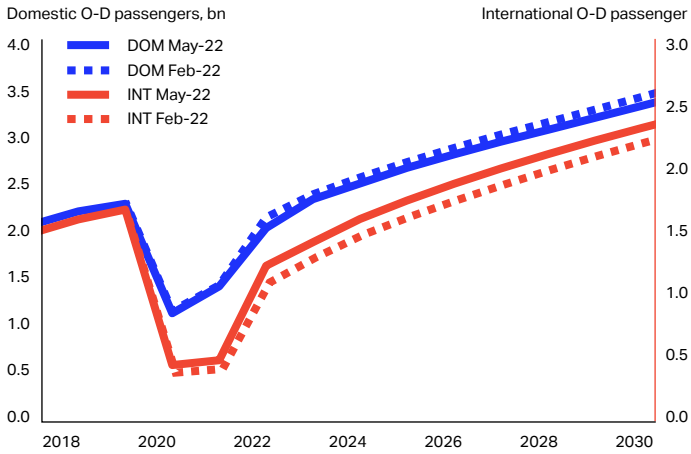
Source: IATA Air Passenger Forecast, IATA Economics/Tourism Economics

Chart 16: Passengers per region, 2019 – 2040, indexed 2019=100



Source: IATA Air Passenger Forecast, IATA Economics/Tourism Economics

Chart 17: Domestic and international passengers, past and forecast, billions



Source: IATA Air Passenger Forecast, IATA Economics/Tourism Economics

4. Industry Financial Performance

Exiting the worst crisis in the history of commercial aviation – the COVID-19 pandemic – our industry has been further impacted by war in Europe, broad-based global cost increases, and severe capacity constraints in many areas, not to mention climate change and extreme weather events. In spite of such phenomenal headwinds, airlines are inching closer to profitability. After a hit to net post-tax profits of close to USD 138 billion in 2020, the loss is likely to be limited to just under USD 10 billion in 2022. This would represent an EBIT (earnings before interest and taxes) margin of -1.9% this year, versus -29% in 2020 (Table 2) – a rather remarkable performance, all things considered.

Our scenario is based on a set of assumptions:

- A global GDP growth rate of 3.4% this year.
- Inflation remaining elevated in 2022 but waning over the course of next year.
- Nominal policy rates rising notably in the US, but real interest rates remaining low or negative.
- A trend appreciation of the USD versus most other currencies.
- An average jet fuel price of USD 125.5 per barrel in 2022.
- This outlook is highly dependent on the evolution of the war in Europe and related sanctions. The combined effect of which we assume will not significantly worsen from the current situation.
- The risks that these assumptions are too optimistic are greater than the chances that the outcome delivers any positive surprises.

Table 2: Key figures

Worldwide airline industry	2019	2020	2021e	2022f
ROIC. % invested capital (IC)	5.8%	-19.3%	-8.0%	-2.5%
North America	9.9%	-13.7%	-4.4%	2.0%
Europe	7.0%	-15.2%	-6.6%	-3.3%
Asia Pacific	3.5%	-13.8%	-6.1%	-4.3%
Latin America	3.9%	-37.9%	-16.9%	-8.8%
EBIT margin, % revenue (rev)	5.2%	-29.0%	-8.9%	-1.8%
Net post-tax profits, $bn	26.4	-137.7	-42.1	-9.7
% revenues	3.1%	-36.0%	-8.3%	-1.2%
$ per passenger	5.80	-76.22	-19.26	-2.58
Spend on air transport, $bn	876	394	521	813
% change over year	3.6%	-55.0%	32.2%	56.0%
% global GDP	1.0%	0.4%	0.5%	0.8%
Real return fare, $/pax (2018$)	310	242	243	240
compared to 2008	-62%	-70%	-70%	-70%
Real freight rate, $/tonne	1.79	2.66	3.16	2.64
compared to 2008	-65%	-48%	-38%	-48%
Passengers, million	4,543	1,807	2,185	3,781
% change over year	3.8%	-60.2%	20.9%	73.0%
RPK, billion	8,688	2,974	3,623	7,159
% change over year	4.1%	-65.8%	21.9%	97.6%
CTK, billion	254	229	272	284
% change over year	-3.2%	-9.9%	18.7%	4.4%
World GDP growth, %	2.5%	-3.5%	5.8%	3.4%
World trade growth, %	0.3%	-5.1%	9.8%	3.0%

Source: IATA Economics

Consumers

Consumers want to resume travel. Strong pent-up demand is evident in booking activity whenever travel restrictions are lifted and additional routes re-opened. Such demand is supported by low rates of unemployment and high levels of precautionary savings accumulated during the pandemic and will support the industry's recovery through 2022 (Chart 18). Global RPKs are expected to nearly double compared to 2021 and are forecast to reach 82% of pre-pandemic levels this year. After a lackluster 2021, given the widespread travel restrictions and border closures, growth in international RPKs is likely to outpace the ongoing recovery in domestic markets in 2022. As winter approaches, the risk of renewed outbreaks will rise, though we expect these to become less impactful over time, and so too the likely associated policy response.

The wider economy

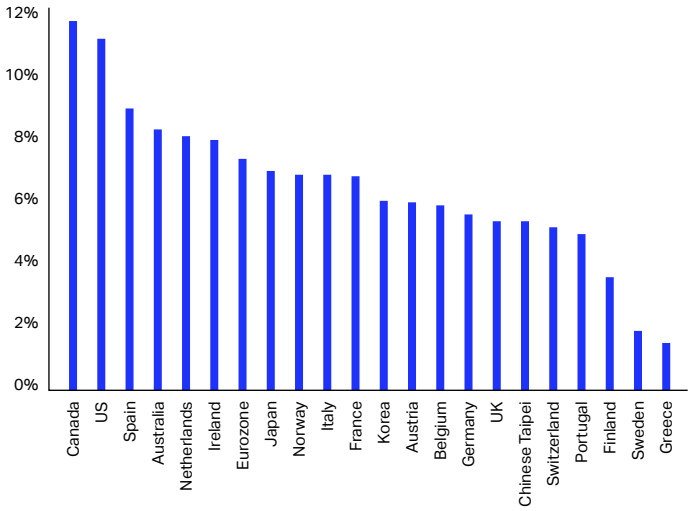
Air transport is an important contributor to global economic development. The wider economic benefits of the industry reflect both the rise in connectivity between countries and cities – enabling the flow of goods, people, capital, technology, and ideas – and the long-term decline in real air transport costs which facilitates these flows (Chart 19).

COVID-19 had a massive and immediate impact on connectivity. In 2020, the number of unique city pairs fell by 30% as international air travel came to almost a complete standstill and domestic travel was significantly reduced. Last year, a partial rebound in connectivity was observed, which is expected to continue in 2022 as the recovery in traffic volumes continues. Nevertheless, the number of unique city pairs is expected to remain below the pre-pandemic level this year (Table 3). Furthermore, although the number of routes has recovered quickly, the frequency of service on those routes will take longer to be fully restored to pre-pandemic levels.

The conflict between Russia and Ukraine has led to the imposition of sanctions and the creation of no-fly zones which is impacting travel. At a global level this impact is not significant, but regionally and for specific trading partners and key markets, the effect may be more substantial. The opportunity to find alternative source and destination markets will help to offset some of the potential impacts.

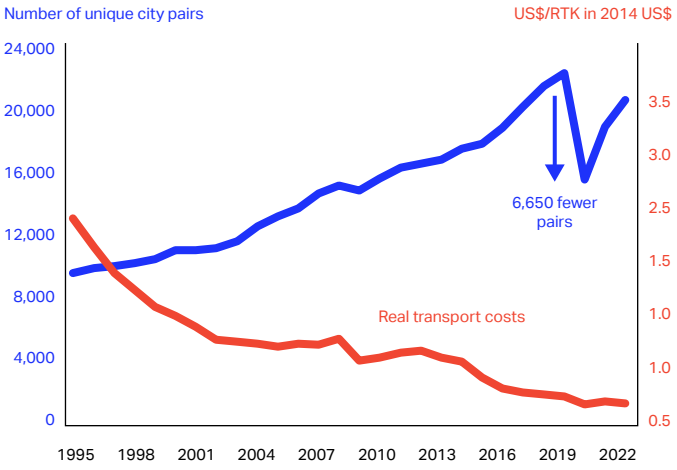
Air transport plays a vital role in global supply chains, especially for international trade in manufactured goods, a major part of cross-border trade. Trade flows have also been interrupted by the Russia-Ukraine conflict, as well as the COVID lockdowns in China. Even so, world merchandise trade volumes are forecast to increase by 3% in 2022, moderating after a very sharp rebound in 2021. The value of international trade shipped by air this year is forecast to be around USD 8.2 trillion, up from USD 7.5 trillion in 2021. Tourists travelling by air in 2022 are forecast to spend USD 672 billion – a sizeable increase on 2021, but still only around 80% of the pre-crisis (2019) level.

Chart 18: Excess household savings, advanced economies, % of GDP



Source: Oxford Economics/Haver Analytics

Chart 19: Unique city pairs and real transport costs



Source: IATA Economics, OAG

Table 3: Connectivity

Worldwide airline industry	2019	2020	2021e	2022f
Unique city pairs	22,104	15,473	18,791	20,424
compared to 1998	116%	51%	83%	99%
Real price, US$/RTK 2018$	77.6	72.7	76.6	70.6
compared to 1998	-56%	-58%	-56%	-60%
Value of trade carried, $bn	6,489	5,970	7,542	8,201
% change over year	-2.7%	-8.0%	26.3%	8.7%
Value of tourism spend, $bn	850	310	377	672
% change over year	6.5%	-63.5%	21.6%	78.2%

Source: IATA Economics, OAG

Governments

The role played by governments to support the air transport industry – amongst others – through the COVID-19 crisis has been critical to the survival of many airlines. It has prevented widespread airline failures and the broader, long-term adverse impacts that this would deliver throughout the global economy.

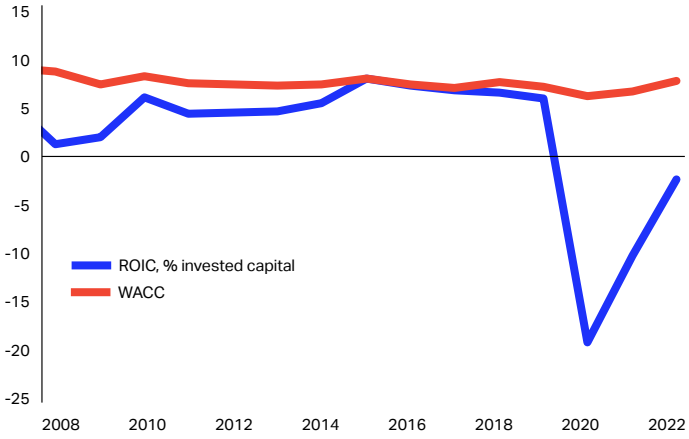
Support from governments has taken a variety of forms, including capital injections, loans, deferring the payment of taxes and reducing tax liabilities. Although the assistance has taken different forms and was unevenly distributed across regions, the objective of the government aid was to provide temporary relief to airlines until travel demand returned. As demand has recovered, many of the assistance programs have been withdrawn.

However, excluding wages support, around 70% - or more than USD 100 billion - of the total government assistance provided to airlines over the past two years is debt-based. In other words, it must be repaid. While this has ensured the industry is well-placed to support the economic recovery and the rebound in passenger demand, the support has added to the debt burden and will impact airline balance sheets for some time to come.

Capital Providers

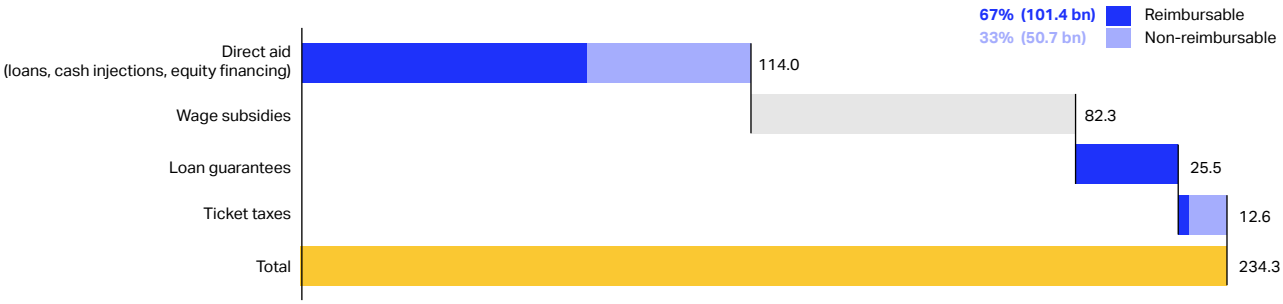
In general, investors in any industry expect to earn at least the return generated on comparable assets with similar risk profiles – in other words, the Weighted Average Cost of Capital (WACC). Historically, for the air transport industry, such returns have proven to be elusive (Chart 21). Debt providers have typically been rewarded for their investments, thanks to such debt being mostly backed by the security of mobile aircraft assets. Equity providers, on the other hand, have generally not received adequate reward for risking their capital. This was the case also prior to the COVID-19 pandemic, reflecting the intensity of competition and the challenges of doing business in such a dynamic industry. However, for the four years prior to the pandemic, equity investors in Europe and North America did receive returns in excess of the cost of capital and the industry appeared to be moving towards a more sustainable financial future.

Chart 21: Return on capital invested in airlines globally



Source: IATA Economics

Chart 20: Government aid made available to airlines due to COVID-19, by type, USD billion



Source: IATA Economics analysis using public information and data from OAG, DDS, TTBS, ACIC, Platts, Airline Analyst, annual reports

The COVID-19 pandemic abruptly altered the industry's operational and financial position. In 2022, we forecast that the industry will again generate a negative return on invested capital (ROIC) of -2.9%. While this is an improvement compared to 2021, it will be the third consecutive year of negative industry-wide returns. Across regions, North America and Europe are forecast to perform relatively better on this measure than their counterparts. In a similar way, the traffic recovery is expected to deliver a higher achieved (combined passenger and cargo) load factor across all regions in 2022 (Chart 22). However, the load factor is expected to remain below that required for financial breakeven in all regions except North America in 2022.

Both the operational and financial environments remain extremely challenging for airlines in this phase of recovery, not least because of the oil and fuel price shock which needs to be managed. While pent-up consumer demand will help to offset this risk in the near-term, the risk that oil prices remain elevated for an extended period heightens the financial risks and challenges for the industry in 2023.

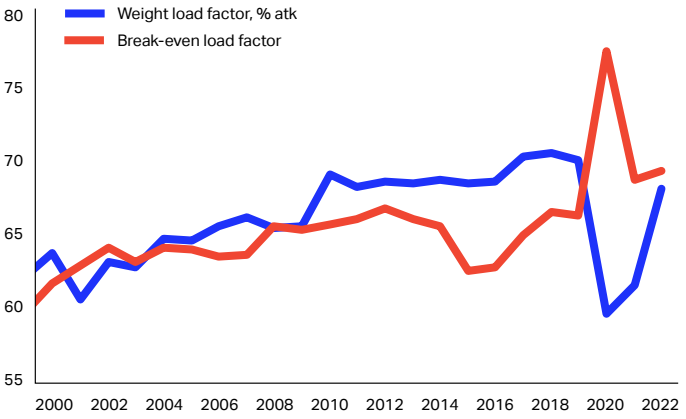
Aircraft

Highlighting the return of confidence within the industry, airlines are scheduled to take delivery of more than 1,200 aircraft this year, mostly narrowbodies. This figure is up around 50% from around 800 in 2020. The bulk of the deliveries in 2022 are scheduled for North America and Asia / Pacific. The new aircraft are more fuel efficient and less costly to operate, delivering benefits to both airline balance sheets and the environment.

Labor

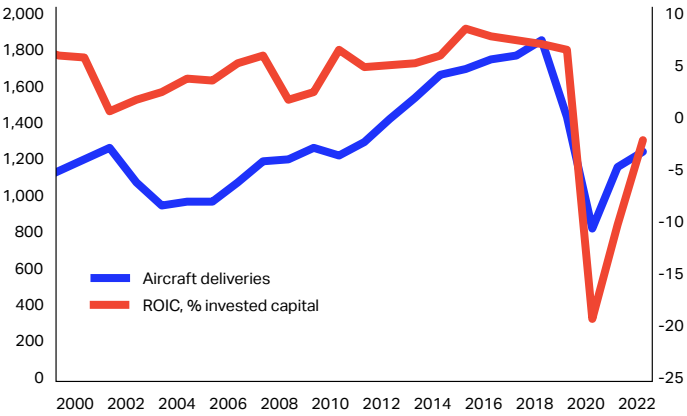
The industry is expected to increase employment further this year, continuing to rebuild the workforce following the significant decline observed in 2020. Total employment is nevertheless expected to remain below the pre-pandemic level for some time. The time taken to recruit, train, undertake the necessary security checks and other requirements before staff are "job-ready" is presenting a challenge for the industry in 2022. In some cases, employment delays may act as a constraint on an airline's ability to meet passenger demand. In countries where the economic recovery from the pandemic has been swift (V-shaped) and the unemployment rate is low, tight labor markets and skill shortages are likely to contribute to upwards pressure on wages (Table 4).

Chart 22: Breakeven and achieved cargo by passenger load factor



Source: IATA Economics, IATA Monthly statistics

Chart 23: Aircraft deliveries and airline industry ROIC



Source: IATA Economics, Cirium, Forecast International

Table 4: Labor

Worldwide airline industry	2019	2020	2021e	2022f
Labor costs, $bn	189	160	160	173
% change over year	3.5%	-15.2%	-0.1%	7.9%
Employment, million	2.93	2.56	2.59	2.70
% change over year	0.3%	-12.6%	1.1%	4.3%
Productivity, ATK/employee	526,120	335,264	385,508	524,168
% change over year	2.8%	-36.3%	15.0%	36.0%
Unit labor costs, $/ATK	0.123	0.187	0.160	0.122
% change over year	0.4%	52.2%	-14.1%	-23.8%

Source: IATA Economics

Fuel

In 2021, the airline fuel bill increased by almost 30% as a result of the easing of travel restrictions and the initial recovery in global passenger demand (Table 5). Fuel is one of the main operational cost items for an airline, typically accounting for 20-25% of the total. This year its share of total costs is likely to be significantly higher than in 2021 as the start of the Russia-Ukraine conflict prompted a further surge in world oil prices with Brent crude oil trading at USD120/b on 2 June 2022. A particular feature of this year's fuel market is the high spread between crude and jet fuel prices. This spread, the jet crack spread, remains well above historical norms, mostly due to capacity constraints at refineries. Under-investments in this area could mean that the spread remains elevated also in 2023.

The high fuel prices are seemingly not affecting people's thirst for travel at the current junction. However, once consumers have filled their travel deficit this relative price insensitivity of demand could fade in 2023 and airlines might find it more challenging to manage the fuel price increase with respect to demand next year.

Table 5: Fuel

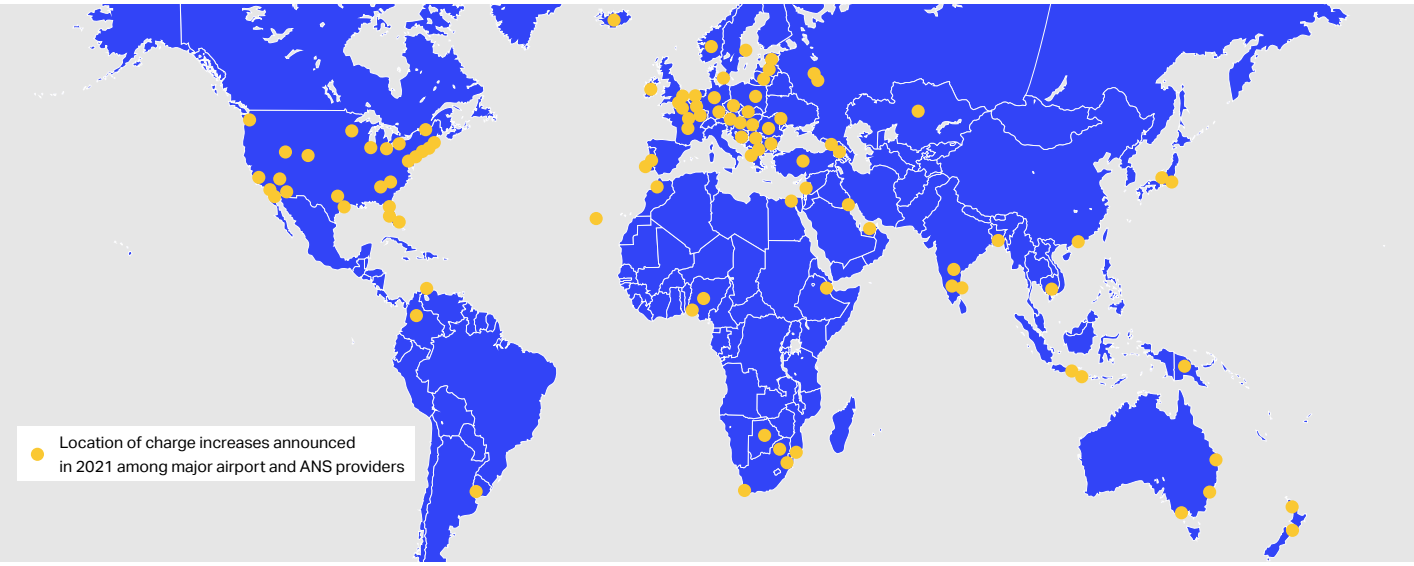
Worldwide airline industry	2019	2020	2021e	2022f
Fuel spend, $bn	190	80	103	192
% change over year	6.8%	-58.0%	29.2%	86.2%
% opex	23.9%	16.2%	18.7%	24.1%
Fuel use, billion litres	359	196	229	321
% change over year	1.0%	-45.3%	16.5%	40.4%
Fuel efficiency, fuel/100 ATK	22.0	21.7	21.7	21.5
% change over year	-2.0%	-1.7%	0.2%	-1.4%
CO_2, million tonnes	905	495	577	809
% change over year	1.0%	-45.3%	16.5%	40.4%
Fuel price, $/barrel	79.7	46.6	77.8	125.5
% change over year	-7.4%	-41.5%	67.0%	61.3%
% spread over oil price	22.6%	11.6%	10.1%	24.0%

Source : IATA Economics

Infrastructure

Infrastructure providers, notably airports and ANSPs (Air Navigation Service Providers) are a critical part of the industry value chain. Both have suffered financially, along with airlines, throughout the pandemic. Monopolistic infrastructure providers with outsized pricing power might seek to recover some of their financial losses by sharply raising their fees and charges to airlines. Indeed, this impulse is already well underway, as can be seen in Chart 24. Increased collaboration with a view to safeguard the entire aviation value chain is in the interests of all industry stakeholders.

Chart 24: Location of charge increases announced in 2021 by airports and ANS providers



Source: IATA

Regions

Financial performance in all regions is expected to improve in 2022 compared to 2021 (Table 6). At the industry level, however, net losses will extend to 2022. North America is expected to continue to be the strongest performing region and the only region to return to profitability in 2022. Supported by the large US domestic market and the opening of additional markets worldwide, including the North Atlantic, net profit is forecast to be USD 8.8 billion in 2022.

In Europe, the Russia-Ukraine conflict will continue to disrupt travel patterns within Europe and between Europe and Asia / Pacific. However, the dispute is not expected to derail the travel recovery, with the region edging closer to profitability in 2022, with a net loss of USD 3.9 billion forecast.

For Asia / Pacific airlines, strict and enduring travel restrictions (notably in China), along with an uneven vaccine rollout, have seen the region lag in the recovery to date. As the restrictions diminish, travel demand is expected to increase quickly. Net losses in 2022 are forecast to decline to USD 8.9 billion.

Traffic volumes in Latin America recovered robustly in 2021, supported by domestic markets and relatively fewer travel restrictions in a number of countries. The financial outlook for some airlines nevertheless remains fragile and the region is expected to record a net loss of USD 3.2 billion this year.

In the Middle East, this year's re-opening of international routes and long-haul in particular will provide a welcome boost for many. Region-wide, net losses are expected to narrow to USD 1.9 billion in 2022, from USD 4.7 billion last year.

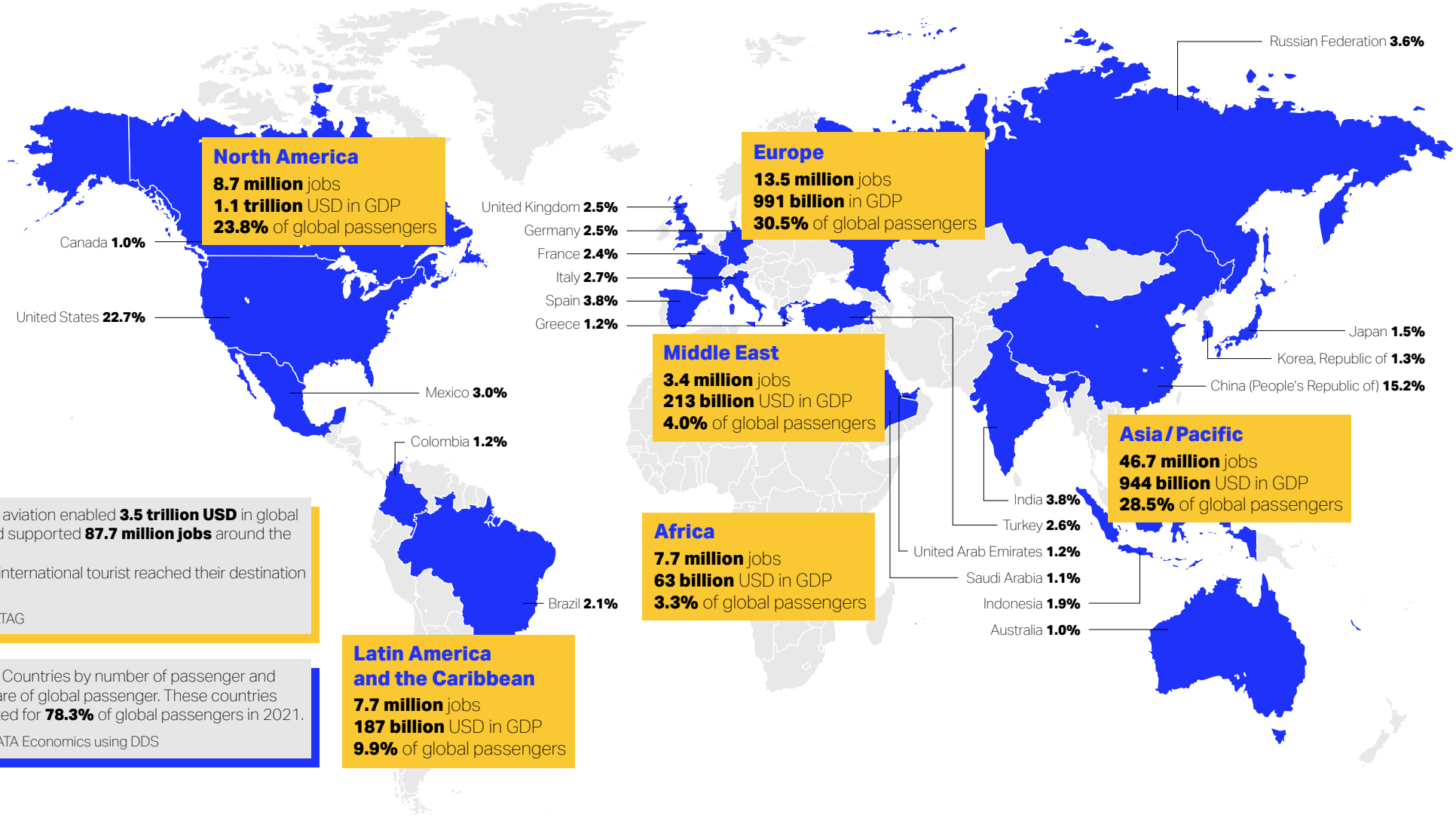
In Africa, lower vaccination rates have dampened the region's air travel recovery to date. However, some catching up is likely this year, which will contribute to an improved financial performance. Net losses are forecast to be USD 0.7 billion in 2022.

Table 6: Regions

Worldwide airline industry	2019	2020	2021e	2022f
Africa				
Net post-tax profit. $bn	-0.3	-1.8	-1.1	-0.7
Per passenger. $	-2.67	-39.73	-19.30	-7.90
% revenues	-1.8%	-30.1%	-14.7%	-6.1%
RPK growth. %	4.7%	-68.2%	16.8%	94.0%
ASK growth. %	4.5%	-62.1%	18.4%	67.6%
Load factor. % ATK	56.2%	51.4%	53.3%	59.4%
Breakeven load factor. % ATK	55.6%	60.1%	57.0%	61.0%
Asia / Pacific				
Net post-tax profit. $bn	4.9	-45.0	-15.2	-8.9
Per passenger. $	2.86	-50.89	-16.83	-5.87
% revenues	1.9%	-40.0%	-11.9%	-4.4%
RPK growth. %	4.7%	-62.0%	-12.7%	122.0%
ASK growth. %	4.4%	-53.8%	-6.0%	87.7%
Load factor. % ATK	72.3%	63.8%	63.2%	68.2%
Breakeven load factor. % ATK	68.9%	85.8%	71.0%	71.6%
Middle East				
Net post-tax profit. $bn	-1.5	-9.4	-4.7	-1.9
Per passenger. $	-6.75	-87.43	-37.30	-9.12
% revenues	-2.7%	-34.5%	-14.4%	-3.5%
RPK growth. %	2.3%	-72.1%	7.9%	153.4%
ASK growth. %	0.1%	-63.0%	20.4%	80.8%
Load factor. % ATK	64.3%	54.7%	54.9%	61.8%
Breakeven load factor. % ATK	67.7%	68.0%	61.1%	63.6%
Latin America and Caribbean				
Net post-tax profit. $bn	-0.7	-11.9	-6.9	-3.2
Per passenger. $	-2.26	-90.02	-40.27	-11.43
% revenues	-1.8%	-77.7%	-32.0%	-8.9%
RPK growth. %	4.2%	-62.5%	40.2%	79.0%
ASK growth. %	3.0%	-59.0%	36.8%	66.0%
Load factor. % ATK	67.3%	64.4%	66.7%	73.6%
Breakeven load factor. % ATK	65.3%	82.7%	72.7%	75.7%
North America				
Net post-tax profit. $bn	17.4	-35.1	-2.2	8.8
Per passenger. $	16.95	-61.05	-2.65	7.50
% revenues	6.6%	-25.3%	-1.1%	3.0%
RPK growth. %	4.0%	-65.1%	75.0%	57.6%
ASK growth. %	2.9%	-50.3%	41.2%	41.8%
Load factor. % ATK	64.0%	52.1%	59.2%	66.1%
Breakeven load factor. % ATK	57.8%	66.3%	62.7%	64.9%
Europe				
Net post-tax profit. $bn	6.5	-34.5	-11.9	-3.9
Per passenger. $	5.42	-66.80	-18.19	-3.50
% revenues	3.1%	-41.9%	-10.9%	-2.1%
RPK growth. %	4.2%	-69.5%	27.3%	113.4%
ASK growth. %	3.5%	-62.3%	29.4%	84.4%
Load factor. % ATK	74.9%	65.2%	66.3%	72.7%
Breakeven load factor. % ATK	71.3%	82.8%	72.1%	74.6%

Source : IATA Economics

5. Aviation by the numbers



In 2018, aviation enabled **3.5 trillion USD** in global GDP and supported **87.7 million jobs** around the world.
58% of international tourist reached their destination by air.

Source: ATAG

TOP 21 Countries by number of passenger and their share of global passenger. These countries accounted for **78.3%** of global passengers in 2021.

Source: IATA Economics using DDS

Regional global passenger shares
Source: IATA Economics using DDS

2021 TOP 15 Airlines:
Total Traffic
(Scheduled Revenue Tonne-Kilometers)

Rank	Airline	RTK ('000)	Note
1	American Airlines	22,965,832	
2	United Airlines	22,831,661	5
3	Qatar Airways	22,608,678	
4	Federal Express	20,660,338	
5	Delta Air Lines	19,672,520	
6	Emirates	18,567,308	
7	Turkish Airlines	18,256,847	
8	China Southern Airlines	17,873,380	5
9	Southwest Airlines	16,877,261	2
10	United Parcel Service	15,529,781	
11	Air China	12,999,967	5
12	Korean Air	11,202,526	
13	China Eastern Airlines	11,129,989	5
14	Lufthansa	10,137,385	5
15	Air France	9,866,343	

Source : IATA Annual Statistics

2021 TOP 15 Airlines:
Ranked by Passenger Traffic
(Scheduled Revenue Passenger-Kilometers)

Rank	Airline	RPK ('000)	Note
1	American Airlines	219,663,307	
2	Delta Air Lines	194,849,202	
3	United Airlines	178,084,383	
4	Southwest Airlines	166,669,160	2
5	China Southern Airlines	110,644,093	
6	China Eastern Airlines	88,544,824	
7	Ryanair	86,137,596	1-4-5
8	Turkish Airlines	84,957,376	
9	Qatar Airways	72,292,975	
10	Emirates	69,383,570	
11	Air China	67,474,198	5
12	JetBlue	66,242,647	2
13	Air France	62,346,568	
14	Alaska Airlines	57,482,480	
15	Spirit Airlines	51,700,978	2

Source : IATA Annual Statistics

2021 TOP 15 Airlines:
Ranked by Cargo Traffic
(Scheduled Cargo Tonne-Kilometers)

Rank	Airline	CTK ('000)	Note
1	Federal Express	20,660,338	
2	Qatar Airways	16,102,310	
3	United Parcel Service	15,529,781	
4	Emirates	11,842,165	
5	Korean Air	10,429,500	
6	Turkish Airlines	9,223,074	
7	Cargolux	8,587,877	
8	Atlas Air	8,441,966	4
9	Cathay Pacific Airways	8,215,371	
10	China Southern Airlines	8,078,118	4
11	China Airlines	7,513,236,	
12	Air China	7,016,283	4
13	Kalitta Air	6,597,280	1-4
14	AeroLogic	6,244,932	1
15	AirBridgeCargo Airlines	5,541,419	

Source : IATA Annual Statistics

Notes

1 IATA Estimate

2 Source: United States Department of Transportation

3 Source: Civil Aviation Authority - UK Airline Statistics

4 Passenger data include 'no-shows' on non-refundable and non-changeable tickets

5 Airline has individual coverage note:

Air China	Includes operations of Dalian Airlines (CCD), Air China Inner Mongolia (CNM); all international cargo operations considered as scheduled traffic
China Eastern Airlines	All international cargo operations considered as scheduled traffic
China Southern Airlines	All international cargo operations considered as scheduled traffic
Lufthansa	Includes operations of Lufthansa CityLine (CL)
Ryanair	Includes operations of Buzz (RR), Ryanair (FR), Ryanair UK (RK)
United Airlines	All cargo operations considered as scheduled traffic

TOP 20 Country pairs:
Ranked by passenger numbers recovery

Rank	Country pair*	Passenger numbers % change Q1 2022 vs Q1 2019
1	Pakistan - United Arab Emirates	12.9%
2	Mexico - United States	10.7%
3	Netherlands - Spain	0.8%
4	Dominican Republic - United States	-2.1%
5	Germany - Turkey	-6.0%
6	United Arab Emirates - United Kingdom	-8.8%
7	Costa Rica - United States	-10.0%
8	France - Portugal	-14.6%
9	Jamaica - United States	-15.8%
10	France - Spain	-16.5%
11	India - United Arab Emirates	-18.4%
12	Belgium - Spain	-19.1%
13	Portugal - Spain	-23.3%
14	Italy - Romania	-26.7%
15	United Arab Emirates - Saudi Arabia	-27.2%
16	Italy - Spain	-27.8%
17	Egypt - Saudi Arabia	-28.7%
18	Portugal - United Kingdom	-28.9%
19	India - United States	-29.4%
20	France - Italy	-30.5%

*Country pairs where passenger numbers exceeded 500,000 in Q1 2019

Source: IATA Economics using DDS

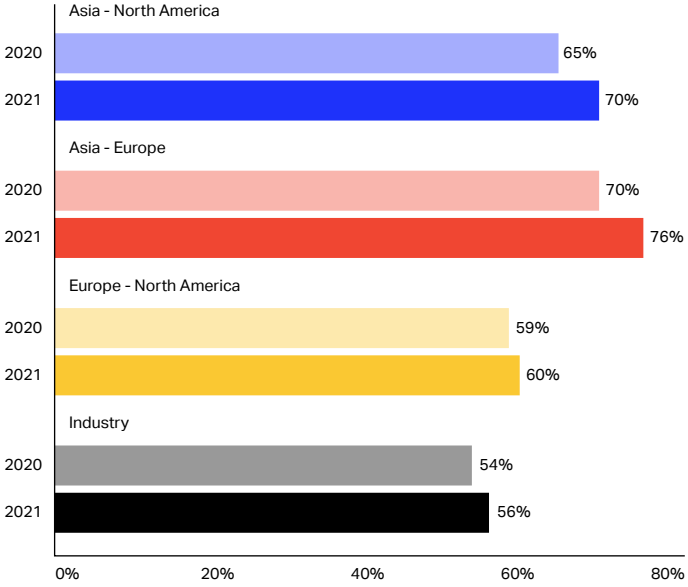
TOP 20 Domestic markets:
Ranked by passenger numbers recovery

Rank	Country*	Passenger numbers % change Q1 2022 vs Q1 2019
1	Colombia	31.7%
2	Nigeria	25.9%
3	South Korea	7.5%
4	Vietnam	5.4%
5	Italy	1.4%
6	Bolivia	-1.1%
7	Mexico	-2.6%
8	Ethiopia	-4.0%
9	Portugal	-7.3%
10	Saudi Arabia	-7.4%
11	Brazil	-9.2%
12	United States	-12.6%
13	Chile	-14.1%
14	Kazakhstan	-16.4%
15	Peru	-16.6%
16	Greece	-18.7%
17	Spain	-19.0%
18	South Africa	-19.9%
19	Pakistan	-20.8%
20	Norway	-23.6%

*Countries where passenger numbers exceeded 500,000 in Q1 2019

Source: IATA Economics using DDS

Cargo Load Factors - Major Trade Lanes



Note: Statistics refer to scheduled operations
Source: IATA Statistics

Passenger Load Factors - Major Markets