



Economic Performance of the Airline Industry

This semi-annual report takes a broad look at how the airline industry is adding value for its consumers, the wider economy and governments, as well as for its investors.

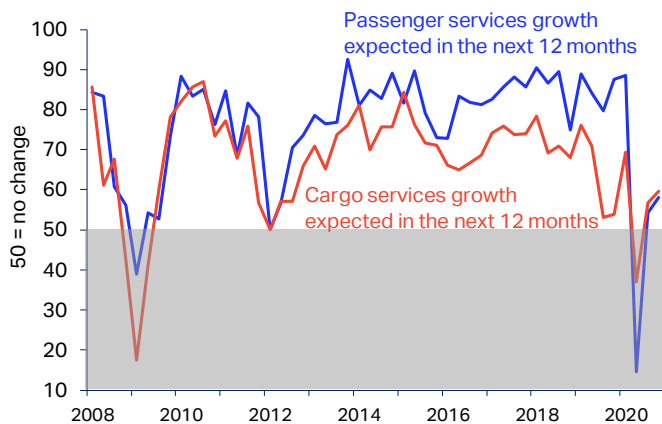
Key Points

- COVID-19 decimated air connectivity and the economic benefits that generates. It is now recovering but still down one-third.
- Air cargo has supported global supply chains and should recover 2019 levels next year, but air travel will take several years.
- Vaccines and testing expected to support global travel at 50% of 2019 levels next year, with significant gains later in the year.
- Airlines have been cutting costs substantially, but cash burn is forecast to continue until the fourth quarter of next year.
- The industry is forecast to make net losses of \$118 billion this year, cutting these losses to \$38 billion in 2021.
- A number of airlines have substantial cash reserves to survive until revenues rise strongly late next year. But many airlines do not.
- Airlines typically pay governments \$111 billion pa in tax revenue, but COVID-19 required life support from aid totaling \$173 billion.
- Airline financial performance is expected to recover first in Asia Pacific, followed by airlines in the developed market regions.

Consumers

The airline industry has been virtually grounded by COVID-19 and recovery has been muted in most markets due to travel restrictions. Deep recession and weak consumer confidence also hampered the recovery. Global RPKs are estimated to decline by 66% in 2020, which is the largest decline since the 2nd world war. In 2021, the availability of a vaccine in the 2nd half of the year is anticipated to be a turning point but the recovery will be gradual since phased distribution of vaccine will take time. Global RPKs are forecast to improve by 50% in 2021 following the steep decline in 2020. Consumers will face lower real travel costs as airlines will continue to significantly discount ticket prices to stimulate demand. We expect the share of world GDP spent on air transport to be 0.5% in 2021, half of the pre-crisis levels. On the other hand, world trade is expected to rebound strongly in 2021, which will be supportive for air cargo volumes.

IATA survey of airline CFOs and heads of cargo



Source: IATA

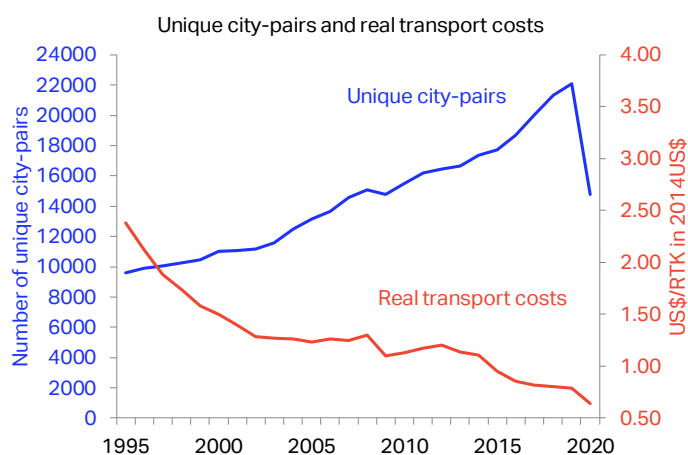
Worldwide airline Industry	2019	2020F	2021F
Spend on air transport*, \$billion	876	340	476
% change over year	3.6%	-61.2%	40.2%
% global GDP	1.0%	0.4%	0.5%
Return fare, \$/pax. (2018\$)	317	284	276
Compared to 1998	-61%	-65%	-66%
Freight rate, \$/kg (2018\$)	1.82	2.31	2.35
Compared to 1998	-64%	-54%	-53%
Passenger departures, million	4,543	1,795	2,808
% change over year	3.8%	-60.5%	56.5%
RPKs, billion	8680	2921	4393
% change over year	4.2%	-66.3%	50.4%
CTKs, billion	254	225	254
% change over year	-3.2%	-11.5%	13.1%
World GDP growth, %	2.5%	-4.2%	4.9%
World trade growth, %	0.2%	-9.2%	7.2%

Note: RPK = Revenue Passenger Km, CTK = Cargo & mail Tonne Km
 GVA = Gross Valued Added (firm-level GDP). *Airline revenue + indirect taxes.
 Sources: IATA, ICAO, OE, CPB, PaxIS, CargoIS, WTO

Industry sentiment regarding the prospects for both air passenger travel and cargo has improved following the initial lock-down period. However, views of the respondents are mixed. While half of the respondents expect recovery in passenger demand on the back of efficient coordination and gradual network reopening, the other half anticipate a further deterioration due to the continuation of the pandemic.

Wider Economy

Air transport is key to global economic development. This wider economic benefit is underpinned by both direct connections between cities — enabling the flow of goods, people, capital, technology and ideas — and falling air transport costs. However, COVID-19 has caused a significant loss in city-pair connectivity. As of the end of October, the number of unique city-pairs was 33% lower than its level a year ago and we do not expect connectivity to recover in the remaining part of the year. Hence, unique city-pair connectivity will decline for the first time since the global financial crisis. There is also a risk that the number of unique city-pair connections is not fully recovered, which would undo some of the gains of recent years.



Government

Over the past decade, governments benefited from the solid performance of the industry with airlines and their customers generating \$111 billion per year on average in tax revenues. However, the COVID-19 shock has caused unprecedented loss in revenues and threatened widespread airline failures. Recognising the importance of aviation, governments stepped up to help overcome this unprecedented shock.

Support from governments has taken a variety of forms, including capital injections, loans, deferring the payment of taxes and reducing tax liabilities. Some governments have also provided wage subsidies (\$46bn) to preserve jobs. As of the end of November, government aid has totaled \$173bn.

However, government aid has been unevenly distributed across regions. While airlines in US, Europe and parts of Asia have generally received substantial government support, the assistance for airlines in Latin America, the Middle East and Africa was limited. The initial objective of government aid was to provide a temporary relief to airlines until travel demand comes back. However, the industry remains exposed to a resurgence of the pandemic and financial support from governments remains critical for survival for some airlines.

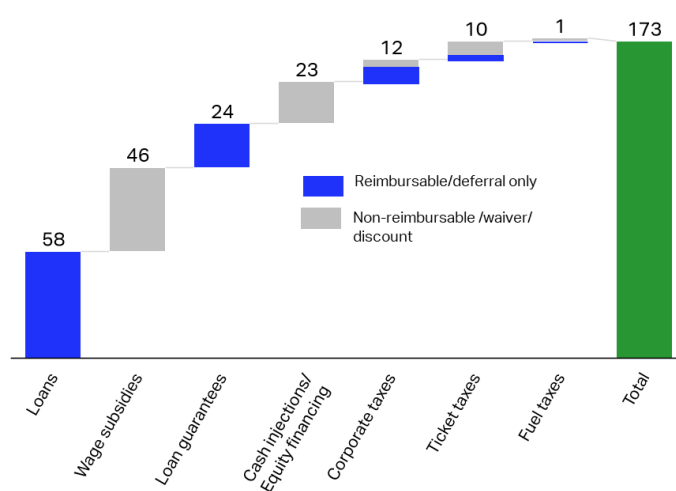
Worldwide airline Industry	2019	2020F	2021F
Unique city pairs	22104	14765	
Compared to 1998	116%	44%	
Transport cost, US\$/RTK (2018\$)	78.6	64.0	65.2
Compared to 1998	-55%	-63%	-62%
Value of trade carried, \$billion	6,496	5,847	6,530
% change over year	-2.6%	-10.0%	11.7%
Value of tourism spend, \$billion	855	347	559
% change over year	7.1%	-59.4%	61.0%

Note: RTK = Revenue Tonne Kilometers, GVA = Gross Value Added. The total number of 'routes' or airport pairs is much higher due to multiple airports in some cities and connections are counted both ways. City-pairs: jets + turbo-props larger than 19 seats, at least 1 flight a week from SRS Analyser. Supply chain jobs and GVA from ATAG ABBB 2018 report appendix.

Air transport is vital for international trade in manufactured goods, particularly for the components industry that accounts for a major part of cross border trade today. We forecast that the value of international trade shipped by air this year will be \$5.8 trillion, 10% lower compared to 2019. However, it will be above 2019 levels in 2021. Tourists travelling by air in 2020 are forecast to spend \$347 billion, 59% less than the previous year. Next year, tourists travelling by air are forecast to spend \$559 billion, equivalent to the level last seen in 2012.

Another adverse impact of the crisis will be on jobs. Total employment supported (directly and indirectly) by the air transport sector is expected to decline to 42.8 million in 2020; a 51% reduction relative to 2019.

Government aid made available to airlines due to COVID-19, by type (USD bn)



Sources: IATA, ATAG, Oxford Economics, ICAO, UNWTO, WTO, public information and data from SRS Analyser, DDS, FlightRadar 24, TTBS, ACIC, Platts, Airline Analyst, annual reports. In the gov. aid chart, measures included up to 13 Nov 2020.

Capital Providers

Historically, debt providers to the airline industry have been rewarded for their capital, usually invested with the security of a very mobile aircraft asset to back it. On average during previous business cycles, the airline industry has been able to generate enough revenue to pay its suppliers' bills and service its debt.

On the other hand, even prior to the COVID-19 crisis, equity owners had not been rewarded adequately for risking their capital in all regions. In normal times, investors should expect to earn at least the return generated by assets of a similar risk profile; the weighted average cost of capital (WACC). Such has been the intensity of competition, and the challenges to doing business, that average airline returns have rarely been as high as the industry's cost of capital. That said, for North America and Europe in the last four years, equity investors have received a return above the cost of capital. On the other hand, airlines in the Asia Pacific and Latin America have consistently generated below-WACC returns. The highly competitive nature of the market in Asia Pacific has prevented airlines from fully reflecting the increase in costs resulting in narrower operating margins.

The situation has changed considerably with the COVID-19. The unprecedented decline in air passenger traffic had a severe impact in all regions. We forecast the industry to generate an overall negative ROIC (-17.7%) in 2020. North America and Europe, which were the best performers among all regions prior to the crisis, are expected to post double-digit negative ROIC in 2020. Looking forward, we expect airline operating margins to be under pressure in 2021 since airlines will continue to have difficulty to downsize their costs to match with lower revenues. We expect to see a moderate improvement stemming from the gradual recovery in demand conditions, but ROIC is still expected to remain in negative territory. As North America and Asia are expected to recover faster than the other regions with the support of large domestic markets, this will be reflected in their ROIC, which will be relatively better than other regions.

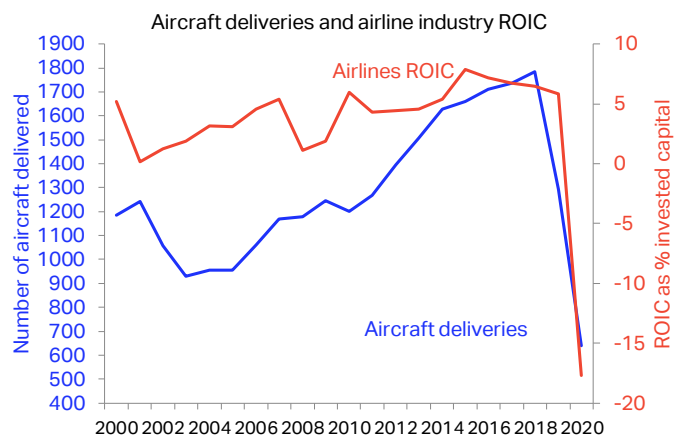
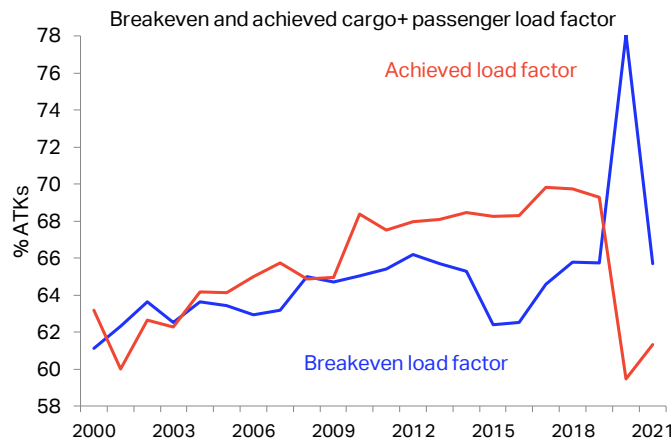
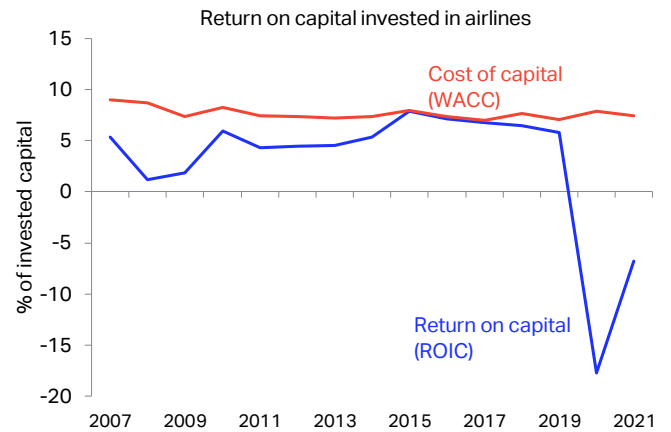
Aircraft

In 2020, commercial airlines are estimated to take delivery off c. 800 new aircraft. This is approximately half of the number originally planned at the beginning of this year.

For 2021, airlines are currently scheduled to take delivery of 1302 new aircraft, which is close to the number of deliveries in 2019. However, in light of the very challenging industry outlook, we expect that airlines will consider further cancellations or postponements. Looking forward, the investment appetite for new aircraft is likely to remain subdued as the demand is not expected to recover to pre-crisis levels before 2024.

Worldwide airline Industry	2019	2020F	2021F
Industry ROIC, % invested capital	5.8%	-17.7%	-6.8%
North America	9.9%	-15.8%	-4.0%
Europe	7.0%	-18.0%	-7.5%
Asia Pacific	3.5%	-6.7%	-2.7%
Latin America	3.9%	-16.4%	-14.0%
EBIT margin, % revenue	5.2%	-31.3%	-7.1%
Net post-tax profits, \$billion	26.4	-118.5	-38.7
% revenues	3.1%	-36.2%	-8.4%
\$ per passenger	5.80	-66.04	-13.78
Adjusted net debt/EBITDAR	4.60	-7.89	37.17

Note: ROIC = Return on Invested Capital, EBIT = Earnings Before Interest and Tax. Debt adjusted for operating leases. **Current year or forward-looking industry financial assessments should not be taken as reflecting the performance of individual airlines, which can differ significantly.**



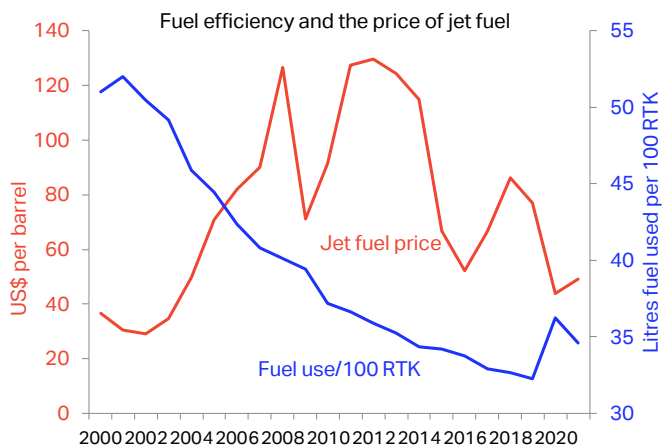
Sources for charts on this page: IATA, ICAO, McKinsey, Ascend.

Aircraft retirement plans are expected to be accelerated in 2021. Although in normal times low fuel prices give less of an incentive to retire old aircraft, in the current business conditions airlines will look to retire or put their older aircraft into storage given a view that the market will not recover pre-crisis level before 2024. Overall, the increase in fleet retirements is expected to make a positive contribution to fleet fuel efficiency, as described below.

The in-service fleet is expected to decrease to 24,500 aircraft this year. The average size of aircraft in the fleet will also decline as airlines focus on short and medium-haul travel initially. Hence, by the end of 2020, we estimate that there will be around 3.4 million available seats, more 23% lower than in 2019. In addition, the passenger load factor is expected to ease substantially in 2020 and recover slowly in 2021, stemming from weak travelers confidence.

Fuel

This year, we forecast the industry fuel bill to decline to \$55 billion, which will represent around 13% of average operating costs. This decline is a reflection of muted traffic (kilometers flown) given the collapse in demand and the sharp decrease in fuel prices. In 2021, we forecast the airlines fuel bill to increase to \$78 billion, with the recovery in demand and fuel prices. We expect the jet fuel crack spread, which has turned negative during the second quarter of 2020, to increase in 2021. We base our forecast on \$45.5/b for the Brent crude oil price and an average jet price of \$49.1/b for 2021.



Fuel is such a large cost for airlines that it is the focus of intense efforts across the industry to find efficiency improvements. Such gains can take a variety of forms including replacing fleet with new aircraft, more efficient operations and efforts to persuade governments to remove the airspace and airport inefficiencies that waste around 5% of fuel burned each year.

Worldwide airline Industry	2019	2020F	2021F
Aircraft fleet	29,697	24,500	
% change over year	0.7%	-17.5%	
Available seats, million	4.5	3.4	
% change over year	1.5%	-23.0%	
Average aircraft size, seats	150	140	
% change over year	0.9%	-6.7%	
Scheduled flights, million	38.9	16.4	22.2
% change over year	2.2%	-57.8%	35.3%
ASKs, % change over year	3.4%	-57.6%	35.5%
Passenger load factor, % ASK	82.5%	65.5%	72.7%
Cargo load factor, % ACTK	46.8%	54.6%	50.0%
Weight load factor, % ATK	69.3%	59.5%	61.3%
Breakeven load factor, % ATK	65.7%	78.1%	65.7%

Note: ASK = Available Seat Kilometers, AFTK = Available Cargo Tonne Kilometers
ATK = Available Tonne Kilometers. Sources: Ascend, ICAO, IATA.

Worldwide airline Industry	2019	2020F	2021F
Fuel spend, \$billion	188	55	78
% change over year	4.6%	-71.0%	42.2%
% operating costs	23.7%	12.7%	15.8%
Fuel use, billion litres	363	194	246
% change over year	1.0%	-46.6%	26.9%
Fuel efficiency, litre fuel/100atk	22.4	21.9	21.5
% change over year	-1.9%	-2.0%	-2.0%
CO ₂ , million tonnes	914	488	619
% change over year	1.0%	-46.6%	26.9%
Fuel price, \$/barrel	77.0	43.9	49.1
% change over year	-10.6%	-43.0%	12.0%
% spread over oil price	18.5%	2.0%	8.0%

Note: ATK = Available Tonne Kilometers. Sources: Ascend, ICAO, IATA.

We forecast that fuel efficiency, in terms of capacity use i.e. per ATK, will improve by 2.0% in 2020 and 2021 as older aircraft will be retired or put into storage.

As much of the industry was grounded throughout the second quarter of the year and capacity has not fully recovered, CO₂ emissions are expected to be 47% lower in 2020 compared to 2019. In 2021, with the increased use of fuel efficient aircraft and slowly recovering air transport services, CO₂ emissions will rise but are still forecast to be 33% lower than pre-crisis levels.

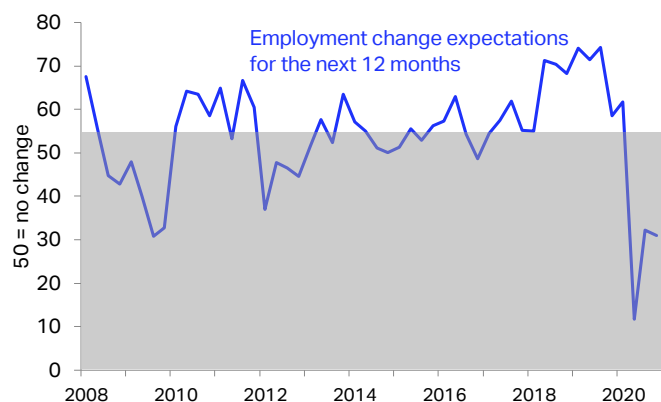
Sources for charts on this page: IATA, ICAO, Platts.

Labour

Airlines are facing pressure to limit their rate of cash burn, which is expected to continue through 2021. As air travel is not recovering quickly, total employment in the airline industry has also come under increasing pressure.

We estimate that total employment by airlines will decline to 1.9 million in 2020 and improve slightly in 2021. Productivity is likely to fall with the average employee generating 448,328 ATKs a year. Wages will decline in the industry but despite declining unit labour costs, the squeeze on airline profit margins will continue.

IATA survey of airline CFOs



Worldwide airline Industry	2019	2020F	2021F
Labour costs, \$ billion	187	117	123
% change over year	3.5%	-37.4%	5.0%
Employment, million	2.89	1.87	1.96
% change over year	0.3%	-35.5%	5.0%
Productivity, atk/employee	531,171	448,328	552,849
% change over year	2.6%	-15.6%	23.3%
Unit labour cost, \$/ATK	0.122	0.140	0.113
% change over year	0.5%	14.9%	-18.9%
GVA/employee, \$	98,778	64,344	85,434
% change over year	2.5%	-34.9%	32.8%

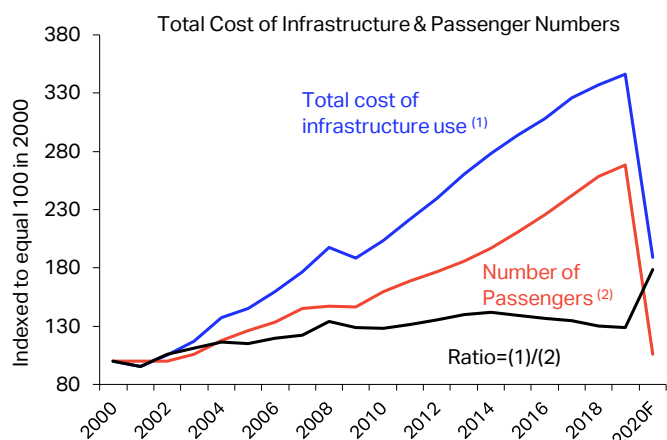
Note: ATK = Available Tonne Kilometers, GVA = Gross Value Added (firm-level GDP). Sources: IATA, ICAO, ATAG, Oxford Economics

The jobs being created are not just productive for their airline employers; they are also highly productive for the economies in which they are employed. However, COVID-19 has damaged this benefit. We estimate that the direct GVA for national economies, generated by the average airline employee will decline year-on-year by 34.9% to \$64,344 in 2020 but will improve to \$85,434 in 2021.

Infrastructure

Infrastructure partners play an important role in the service that airlines provide to their customers, affecting the experience, the timeliness of the journey, and its cost.

The direct cost paid for using infrastructure has increasingly been transferred to the airlines and passengers. Overall, the cost of using airport and ANSP infrastructure has risen steeply over past decades, partly because competitive pressures are very weak in this part of the supply chain. This sits in contrast with the relatively limited rise in non-fuel airline costs.



The decrease in infrastructure costs is less than proportionate compared to the fall in passenger traffic. While the global passenger volume is forecast to contract by 60.5%, the total cost of infrastructure use is estimated to fall by a lesser extent (-45.4%) in 2020, increasing unit costs.

Airspace inefficiency had increased dramatically in Europe prior to the start of the COVID-19 crisis. Delays, as measured by total delay minutes, fell sharply as the number of flights in Europe plunged with the spread of COVID-19 in the region. In the coming period, a key challenge will be to limit airspace inefficiency while traffic is recovering.

EU airspace	2018	2019	Q1-Q3
inefficiency			2020
Delay minutes, million	25.6	24.2	2.6
% change over year	61.2%	-5.7%	
Operating cost to airlines, US\$m	3,025	2,705	293
Passenger time value loss, US\$m	3,505	3,216	211

Sources for charts on this page: ACI (aeronautical revenues), ICAO (en-route charges), Eurocontrol, IPRB, FAA, ATA.

Regions

The COVID-19 crisis has reached an unprecedented level for airlines and the airline industry faces a long road to recovery in all regions. Net losses will extend in 2021, albeit to a lesser extent in all regions.

Airlines in North America, the strongest performer in the pre-crisis period, are estimated to post a net loss of \$45.8bn in 2020. Nevertheless, in 2021 the recovery in North America is expected to be prompt compared to other regions. Net profit margin will improve to -6.8% from -41.4% in 2020. The presence of large domestic markets will drive the improvement.

The recovery in Europe will be more gradual due to a slower economic recovery and the importance of international services. Net losses are estimated to be \$26.9 billion for the region in 2020 as intra-regional travel in Europe stalled as the second wave led to renewed travel restrictions. In 2021, net losses are forecast to be \$11.9 billion, which corresponds to 12% of forecast revenues.

Asia-Pacific was the first region exposed to the COVID-19 outbreak and the recovery started earlier in this region. Asia-Pacific is expected to benefit from the recovery in large domestic markets such as China and India and also the strong economic rebound in China. China domestic market has already recovered to pre-crisis levels in 2020. Although airlines are lowering fares to stimulate demand, they are expected to cash breakeven by the year-end in China. In addition, the Asia Pacific region as a manufacturing hub benefits from the strength of cargo revenues. Overall, net losses in 2021 are forecast to decline to \$7.5 billion, almost one fourth of the losses in 2020.

Middle Eastern airlines faced this crisis while a number of them were transitioning through a restructuring process which included a planned slowdown in capacity growth. Following the impact of the pandemic, Middle Eastern airlines are expected to see their losses rise to \$7.1 billion in 2020. Dependence of airlines in this region on connecting international flights and lack of large domestic markets will delay the recovery in the region. The net loss margin will be at double digit levels (-10.8%) in 2021.

In Latin America, airline performance was mixed prior to the crisis, with some airlines facing an already difficult economic and operating backdrop which has been compounded by the COVID-19 impact. Improvement in 2021 is expected to be slow and the region is forecast to post a \$3.3 billion net loss in 2021.

24th November 2020

IATA Economics, economics@iata.org

Worldwide airline Industry	2019	2020F	2021F
Africa			
Net post-tax profit, \$billion	-0.3	-2.0	-1.7
Per passenger, \$	-2.67	-41.63	-28.07
% revenue	-1.8%	-39.1%	-27.6%
RPK growth, %	4.7%	-72.0%	35.0%
ASK growth, %	4.5%	-62.8%	21.5%
Load factor, % ATK	55.4%	48.8%	49.0%
Breakeven load factor, % ATK	54.9%	66.9%	58.5%
Asia-Pacific			
Net post-tax profit, \$billion	4.9	-31.7	-7.5
Per passenger, \$	2.90	-36.40	-6.30
% revenue	1.9%	-30.2%	-5.3%
RPK growth, %	4.7%	-62.0%	50.0%
ASK growth, %	4.4%	-55.1%	38.4%
Load factor, % ATK	72.5%	65.8%	67.5%
Breakeven load factor, % ATK	69.1%	77.6%	69.9%
Middle East			
Net post-tax profit, \$billion	-1.5	-7.1	-3.3
Per passenger, \$	-6.75	-68.47	-25.56
% revenue	-2.7%	-30.0%	-10.8%
RPK growth, %	2.3%	-73.0%	43.0%
ASK growth, %	0.1%	-64.5%	23.6%
Load factor, % ATK	65.0%	54.4%	56.4%
Breakeven load factor, % ATK	68.4%	73.0%	64.2%
Latin America			
Net post-tax profit, \$billion	-0.7	-5.0	-3.3
Per passenger, \$	-2.23	-39.38	-20.11
% revenue	-1.8%	-37.1%	-18.4%
RPK growth, %	4.2%	-64.0%	39.0%
ASK growth, %	3.0%	-60.0%	34.3%
Load factor, % ATK	67.9%	62.1%	62.5%
Breakeven load factor, % ATK	65.9%	78.2%	70.5%
North America			
Net post-tax profit, \$billion	17.4	-45.8	-11.0
Per passenger, \$	16.95	-86.37	-14.99
% revenue	6.6%	-41.4%	-6.8%
RPK growth, %	4.0%	-66.0%	60.5%
ASK growth, %	2.9%	-51.6%	36.4%
Load factor, % ATK	65.6%	52.8%	55.0%
Breakeven load factor, % ATK	59.3%	73.6%	58.1%
Europe			
Net post-tax profit, \$billion	6.5	-26.9	-11.9
Per passenger, \$	5.42	-51.25	-16.66
% revenue	3.1%	-38.6%	-12.0%
RPK growth, %	4.2%	-70.0%	47.5%
ASK growth, %	3.5%	-62.4%	35.5%
Load factor, % ATK	73.0%	63.8%	65.6%
Breakeven load factor, % ATK	69.5%	88.0%	71.9%

Note: RPK = Revenue Passenger Kilometers, ASK = Available Seat Kilometers, ATK = Available Tonne Kilometers. **Current year or forward-looking industry financial assessments should not be taken as reflecting the performance of individual airlines, which can differ significantly.** Sources: ICAO, IATA.

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