



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

- Consumers benefit from lower real travel costs, more routes, and will spend 1% of world GDP on air transport in 2018.
- Economic development is a big winner from the doubling of city pairs and halving of air transport costs over the past 20 years.
- Governments gain substantially from \$136bn of tax in 2018 and from over 70 million ‘supply chain’ jobs.
- Stronger economic growth is pushing traffic ahead of capacity growth, but breakeven loads rising as unit costs grow significantly.
- Equity owners see further gains in 2018; industry ROIC falls from record 2016 levels, but remains above the cost of capital.
- Credit metrics in 2018 not quite as good as 2016, but free cash flow yield is positive and balance sheet metrics are improving.
- Jobs in the industry should exceed 2.7 million, and GVA/employee is over \$109,000, but unit labour costs are rising.
- Infrastructure use costs are high, plus inefficiencies in Europe alone add €3bn to airline costs next year.
- N American airlines perform best with a forecast 7.1% net post-tax profit margin in 2018. Africa is the weakest with a 0.3% loss.

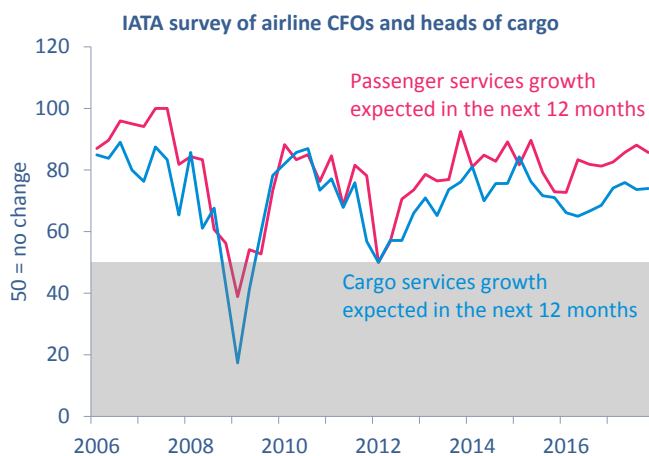
CONSUMERS

Consumers will see a substantial increase in the value they derive from air transport in 2018, including stability in what they pay airlines, after allowing for inflation. New destinations are forecast to rise next year, with frequencies up too; both boosting consumer benefits. We expect 1% of world GDP to be spent on air transport in 2018, totaling \$861 billion. RPKs, which have been growing well above trend helped by the economic upturn, are forecast to remain strong in 2018 as stronger economic growth offsets the drag from the rise in oil prices. Falling travel costs have been adding several % points to RPK growth over the past several years. The average return fare (before surcharges and tax) of \$355 in 2018 is forecast to be 64% lower than in 1996, after adjusting for inflation.

Worldwide airline Industry	2016	2017	2018
Spend on air transport*, \$billion	741	787	861
% change over year	-1.6%	6.3%	9.4%
% global GDP	0.9%	1.0%	1.0%
Return fare, \$/pax. (2016\$)	371	355	355
Compared to 1996	-63%	-64%	-64%
Freight rate, \$/kg (2016\$)	1.58	1.61	1.62
Compared to 1996	-68%	-68%	-67%
Passenger departures, million	3,810	4,081	4,311
% change over year	7.0%	7.1%	5.6%
RPKs, billion	7164	7702	8167
% change over year	7.4%	7.5%	6.0%
Freight tonnes, million	54.9	59.9	62.5
% change over year	4.0%	9.1%	4.3%
World GDP growth, %	2.5%	3.0%	3.1%
World trade growth, %	2.3%	4.3%	4.1%

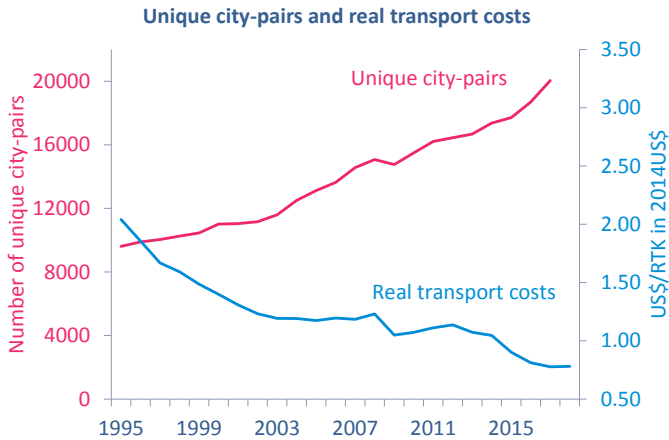
Note: RPK = Revenue Passenger Km, FTK = Freight Tonne Km, y-o-y = year on year change. GVA = Gross Valued Added (firm-level GDP). *Airline revenue + indirect taxes. Sources: IATA, ICAO, OE, Neth CPB, PaxIS, CargoIS.

Airline CFOs and heads of cargo reported in October that they were positive about future growth in air travel, and were also positive about cargo. This reflects a more general optimism amongst business worldwide about economic prospects. Consumer confidence has risen too. Despite the uncertainties about US economic policy and wider protectionist rhetoric, the easing in fiscal policy as well as continued loose monetary policy is producing stronger economic growth and some revival in world trade.



WIDER ECONOMY

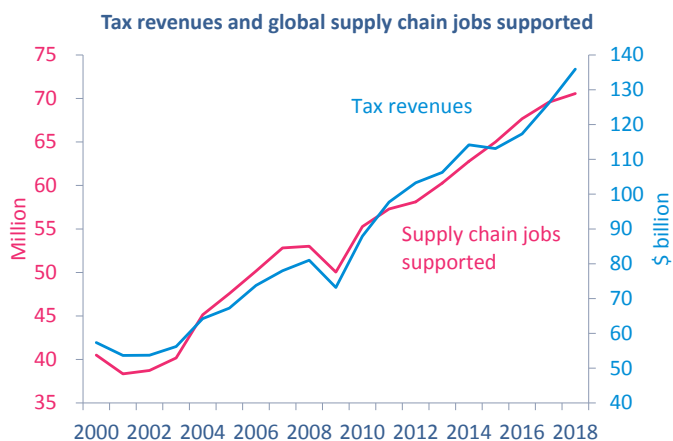
Economic development worldwide is getting a significant boost from air transport. This wider economic benefit is being generated by increasing connections between cities - enabling the flow of goods, people, capital, technology and ideas - and falling air transport costs. The number of unique city-pair connections is estimated to have exceeded 20,000 this year, more than double the connectivity by air twenty years ago. The price of air transport for users continues to fall, after adjusting for inflation. Compared to twenty years ago real transport costs have more than halved.



Lower transport costs and improving connectivity have boosted trade flows; trade itself has resulted from globalizing supply chains and associated investment.

GOVERNMENT

Governments have also gained substantially from the good performance of the airline industry. Airlines and their customers are forecast to generate \$136 billion in tax revenues next year. That's the equivalent of 45% of the industry's GVA (Gross Value Added, which is the firm-level equivalent to GDP), paid to governments in payroll, social security, corporate and product taxes (Note that charges for services are excluded). In addition the industry continues to create high value added jobs.



Worldwide airline Industry	2016	2017	2018
Unique city pairs	18691	20041	
Compared to 1996	89%	103%	
Transport cost, US\$/RTK (2016\$)	81.2	77.7	78.1
Compared to 1996	-56%	-58%	-58%
Value of trade carried, \$billion	5,441	5,934	6,243
% change over year	-2.9%	9.1%	5.2%
Value of tourism spend, \$billion	671	711	776
% change over year	0.9%	5.9%	9.2%
Supply chain jobs, million	67.7	69.6	70.6
% change over year	4.1%	2.8%	2.9%
Supply chain GVA, \$ trillion	3.0	3.3	3.4
% change over year	5.9%	9.4%	4.9%

Note: RTK = Revenue Tonne Kilometers, GVA = Gross Value Added. The total number of 'routes' or airport pairs is much higher because of multiple airports in some cities and connections are counted both ways. City-pairs: jets + turbo-props larger than 20 seats, at least 1 flight a week; from SRS Analyzer database.

Air transport is vital for manufactures trade, particularly trade in components which is a major part of cross border trade today. We forecast that the value of international trade shipped by air next year will be \$6.2 trillion. Tourists travelling by air in 2018 are forecast to spend \$776 billion.

Another impact on the wider economy comes through the influence increased airline activity has on jobs in the sector, in its supply chain, and the jobs generated as spending ripples through the economy. These 'supply chain' jobs around the world are estimated to rise to over 70 million in 2018.

Worldwide airline Industry	2016	2017	2018
Tax revenues, \$billion	117	126	136
% change over year	3.7%	7.5%	7.8%
% GVA	45.2%	45.0%	45.2%
# of ticket taxes	234	236	239
% of countries requiring full visas	58	58	58

Note: GVA = Gross Value Added (firm-level GDP).
Source: IATA, Oxford Economics.

But in many countries the value that aviation generates is not well understood. The commercial activities of the industry remain highly constrained by bilateral and other regulations. Moreover, regulation is far from 'smart', leading to unnecessarily high costs. Visa requirements discourage inbound tourism and business travel. Encouragingly visa openness levels are improving. Unfortunately, the number of individual ticket taxes is expected to rise to 239 next year, while the level of many existing taxes continues to ratchet upwards.

Sources: IATA, ATAG, Oxford Economics, ICAO, SRS Analyser, UNWTO, WTO.

CAPITAL PROVIDERS

Debt providers to the airline industry are well rewarded for their capital, usually invested with the security of a very mobile aircraft asset to back it. On average during the business cycle the airline industry has been able to generate enough revenue to pay its suppliers' bills and service its debt. Credit metrics have improved with recent significant free cash flows, particularly in North America, and a decline in debt ratios.

Equity owners have not been rewarded adequately for risking their capital in most years, except at a handful of airlines. Investors should expect to earn at least the normal return generated by assets of a similar risk profile, the weighted average cost of capital (WACC). Such is the intensity of competition, and the challenges to doing business, that average airline returns are rarely as high as the industry's cost of capital. Equity investors have typically seen their capital shrink. But next year we forecast the industry to generate a return on invested capital (ROIC) of 9.4%, which does, for the fourth consecutive year, adequately reward equity owners. On invested capital of almost \$600 billion, the industry is forecast to generate \$11.5 billion of value for investors next year. But it should be clear that \$38.4 billion net profit, while exceptional for the airline industry, is only a little higher than a 'normal' return for risking their capital. Moreover, above-WACC returns have only started to be generated outside North America in the past year or two and are still not widespread across all regions.

The decline in airline margins and ROIC in 2018 is being driven by a rise in breakeven load factors, as unit costs are now rising, offset partly by a rise in achieved load factors, as capacity slows more than demand growth. Nevertheless, the level of profitability is still the fourth highest on record; a soft-landing brought about by changes to industry structure and behavior, with much more focus on generating an adequate ROIC.

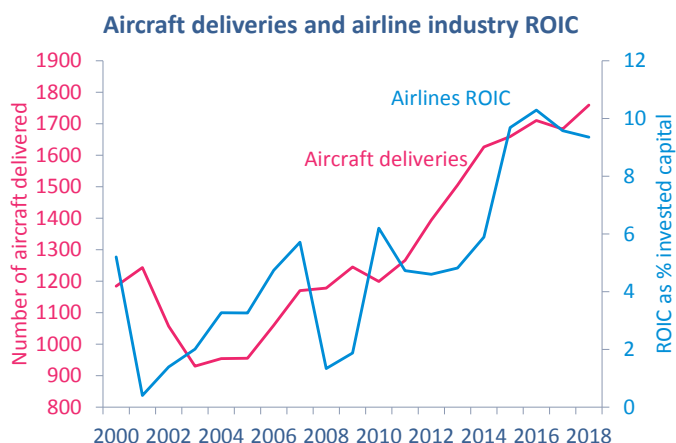
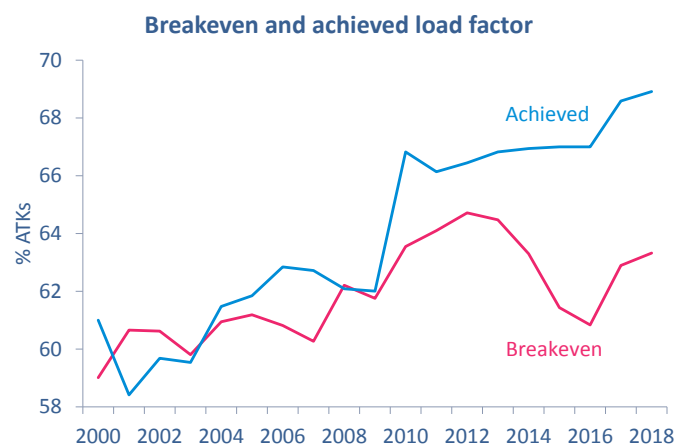
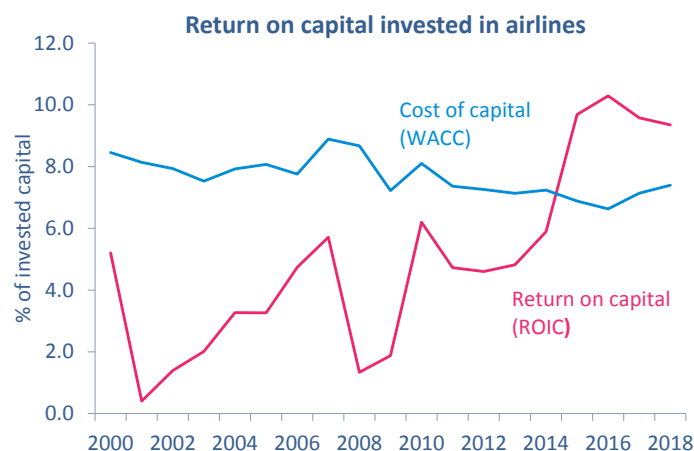
AIRCRAFT

This year commercial airlines are expected to take delivery of around 1,683 new aircraft, a substantial investment by the industry, though less than expected earlier in the year. The trend improvement in average returns (ROIC) has given the industry the confidence to invest on this scale. Sustained high fuel costs had also made it economic to retire older aircraft at a higher rate, but that effect has weakened. Around half of this year's deliveries will replace existing fleet, making a significant contribution to increasing fleet fuel efficiency, as described below.

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

Worldwide airline Industry	2016	2017	2018
ROIC, % invested capital	10.3%	9.6%	9.4%
ROIC-WACC, % invested capital	3.7%	2.4%	2.0%
Investor value, \$ billion	19.2	13.2	11.5
EBIT margin, % revenue	9.2%	8.3%	8.1%
Net post-tax profits, \$billion	35.3	34.5	38.4
% revenues	5.0%	4.6%	4.7%
\$ per passenger	9.26	8.45	8.90
Free cash flow, % invested capital	1.1%	1.0%	1.2%
Adjusted net debt/EBITDAR	3.70	3.51	3.47

Note: ROIC = Return on Invested Capital, WACC = Weighted Average Cost of 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.** Source: IATA, McKinsey, ICAO.



The fleet is forecast to increase by over 1000 aircraft to end next year at over 30,000 aircraft; expansion continues as markets have expanded strongly and the outlook remains positive. The average size of aircraft in the fleet is continuing to rise slowly. So by the end of 2018 there will be around 4.4 million available seats. These seats are also being used more intensively, which is critical for profitability in a capital intensive industry – and it also reduces environmental impact. Passenger load factors are expected to rise from 2017 levels to 81.4% on average in 2018. Aircraft are also being flown more intensively. The number of scheduled aircraft departures is forecast to exceed more than 38 million next year. That’s an average of 73 aircraft departing each minute of 2017.

Worldwide airline Industry	2016	2017	2018
Aircraft fleet	27,585	28,992	30,095
% change over year	3.7%	5.1%	3.8%
Available seats, million	3.9	4.2	4.4
% change over year	6.2%	6.8%	5.1%
Average aircraft size, seats	143	145	147
% change over year	2.4%	1.6%	1.2%
Scheduled flights, million	35.4	36.8	38.6
% change over year	4.2%	3.8%	4.8%
ASKs, % change over year	7.5%	6.3%	5.7%
Passenger load factor, % ASK	80.3%	81.2%	81.4%
Freight load factor, % AFTK	46.9%	49.3%	49.4%
Weight load factor, % ATK	67.0%	68.6%	68.9%
Breakeven load factor, % ATK	60.8%	62.9%	63.3%

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

FUEL

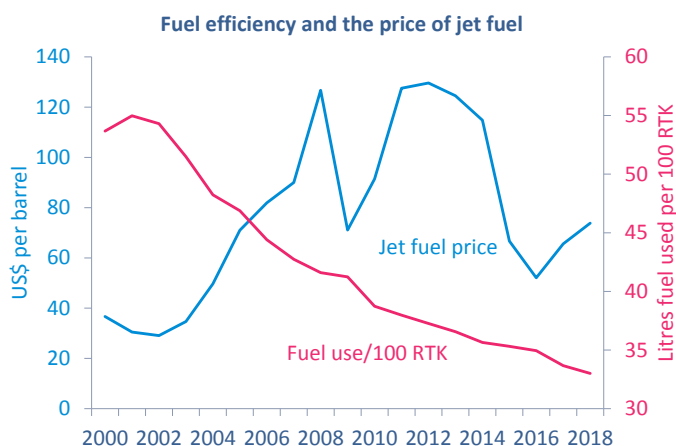
Next year we forecast the airlines fuel bill will rise to \$156 billion, which will represent 19.6% of average operating costs. Jet fuel prices have continued to rise with oil prices and we base our forecast on an average price of \$73.8/b next year, and \$60/b for the Brent crude oil price. The slow rise in prices is being driven by OPEC cutbacks, and the realization that inventories need to remain higher than before now that OPEC’s buffer role has gone. The impact on the industry’s fuel bill was dampened this year by the continuing impacts of fuel hedging in some regions, with some of last year’s spot price decline offsetting this year’s increase.

Worldwide airline Industry	2016	2017	2018
Fuel spend, \$billion	132	130	156
% change over year	-24.1%	-1.7%	19.6%
% operating costs	20.6%	18.8%	20.5%
Fuel use, billion litres	322	335	347
% change over year	5.3%	4.0%	3.6%
Fuel efficiency, litre fuel/100atk	23.4	23.1	22.7
% change over year	-1.1%	-1.4%	-1.5%
CO ₂ , million tonnes	811	844	874
% change over year	5.3%	4.0%	3.6%
Fuel price, \$/barrel	52.1	65.6	73.8
% change over year	-21.9%	25.9%	12.5%
% spread over oil price	16.8%	21.0%	23.0%
Upstream oil profits, \$billion	12	14	15

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 1.5% in 2018 as deliveries of new aircraft grow and fuel prices start to trend upwards slowly. The annual average per RTK fuel efficiency improvement from 2009-14 currently stands at 2.4%, versus the 1.5% industry target.

Continued fuel efficiency gains have partially decoupled CO₂ emissions from expanding air transport services. Without the expected fuel efficiency gain this year, fuel burn and CO₂ emissions would be 1.4% higher in 2017. That represents a saving of over 11 million tonnes of CO₂, as well as saving on fuel that would have cost the industry and its consumers an additional \$1.8 billion.



Fuel is such a large cost that it focuses intense effort in the industry to improve fuel efficiency, through replacing fleet with new aircraft, better operations and efforts to persuade governments to remove the airspace and airport inefficiencies that waste around 5% of fuel burn each year.

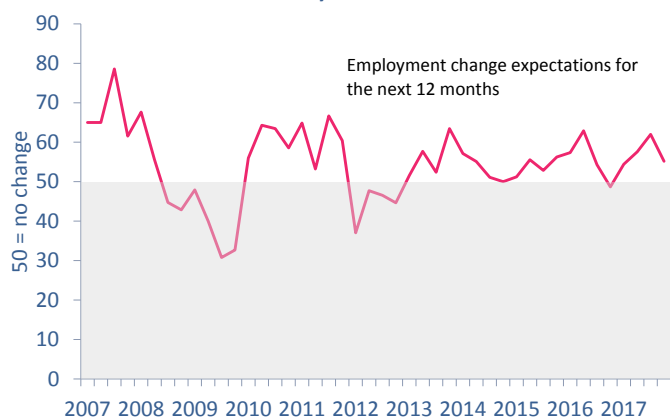
Sources for charts on this page: IATA, ICAO, Platts.

LABOUR

Airlines are expecting to accelerate hiring over the next twelve months, as capacity and traffic are expected to grow strongly, after a dip in hiring expectations in the middle of 2016.

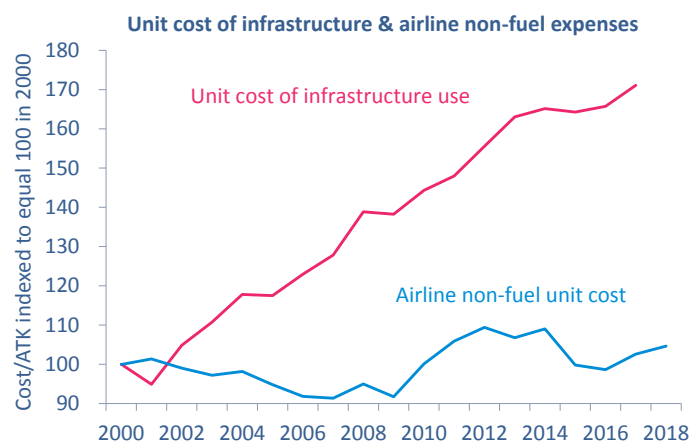
We estimate that total employment by airlines will exceed 2.7 million in 2018, a gain of 2.6% compared to 2017. Productivity is likely to slow a little, with the average employee generating just under 530,000 ATKs a year, which is a 2.5% improvement over this year. Wages and jobs will rise as employees share the benefits of improved performance. However, having declined or been stable in the past two years, unit labour costs are now rising significantly and we forecast an average rise of 1.4% in 2018. Along with rising fuel costs this is one of the major contributions to the upward pressure on unit costs this year and the squeeze on airline profit margins.

IATA survey of airline CFOs



INFRASTRUCTURE

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



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

Worldwide airline Industry	2016	2017	2018
Labour costs, \$ billion	158	169	180
% change over year	5.3%	6.9%	6.7%
Employment, million	2.62	2.69	2.76
% change over year	2.3%	2.8%	2.6%
Productivity, atk/employee	498,145	510,938	523,776
% change over year	4.0%	2.6%	2.5%
Unit labour cost, \$/ATK	0.121	0.123	0.125
% change over year	-1.0%	1.4%	1.4%
GVA/employee, \$	99,226	104,349	109,071
% change over year	3.2%	5.2%	4.5%

Note: ATK = Available Tonne Kilometers, GVA = Gross Value Added (firm-level)

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. We estimate that the direct GVA for national economies, generated by the average airline employee, will rise 5.5% next year to over \$109,000 a year, which is well above the economy-wide average. Additional jobs in the airline sector will raise average levels of productivity in an economy.

Worldwide airline Industry	2016	2017	2018
European airspace inefficiency			
Airline costs, € million	2,778	2,937	3081
Passenger time loss, € million	4,813	5,029	5170

Sources: IATA 2015-16 forecast Eurocontrol PRC's European ANS Performance Review for the 2014 airline cost estimate. Value of time from Eurocontrol.

The direct cost paid for using infrastructure has increasingly been transferred to the passenger. Overall the cost of using airport and ANSP infrastructure has risen steeply over the past decade, partly because competitive pressures are very weak in this part of the supply chain. This contrasts with the relatively limited rise in other non-fuel airline costs. Moreover, inefficiencies causing delay and inefficient routings add to the direct cost. We forecast that the delays caused by inefficient airspace management in Europe alone will cost the industry over €3 billion next year, as well as generating unnecessary CO₂ emissions. The time passengers waste in these delays is a consumer cost worth an estimated €5.2 billion.

REGIONS

The strongest financial performance is being delivered by airlines in North America. Net post-tax profits will be the highest at \$16.4 billion next year. That represents a net profit of \$16.67 per passenger, which is a marked improvement from just 5 years earlier. Net margins, forecast at 7.1%, are down from the previous 3 years, though not by much. The limited downside has been underpinned by consolidation, helping to sustain load factors (passenger + cargo) close to 65%, and ancillaries, which limits the impact of higher fuel costs, keeping breakeven load factors close to 57% next year.

Breakeven load factors are highest in Europe, caused by low yields due to the competitive open aviation area, and high regulatory costs. Growth in this region was damaged in 2016 by terrorist attacks, but a rebound has been seen this year. Net profits are forecast to rise to \$11.5 billion next year representing \$9.99 per passenger and a margin of 5.2%.

Airlines in Asia-Pacific have very diverse performances. Average profit per passenger next year is forecast at \$5.52 as higher fuel costs are partly offset by improved cargo markets, particularly important in this manufacturing region, helping to boost net profits to \$9 billion and underpin net margins at 3.7%.

Middle Eastern airlines have one of the lower breakeven load factors. However, the region has been challenged by the impact of low oil revenues and conflict leading to a sharp slowdown in capacity growth, forecast at 4.9% next year. Post-tax profits are expected to recover a little to \$0.6 billion in 2018, representing a profit of \$2.65 per passenger and a net margin of 0.9%.

Latin American airlines have faced a harsh environment, with weak home markets and currencies, but that is turning around and further recovery is expected in 2018. A net profit of \$0.9 billion is forecast next year, following losses of \$1.6 billion in 2015 and profits of \$0.7 billion last year.

Africa is the weakest region, as in the past 4 years. Losses have emerged again due to regional conflict and the impact of low commodity prices. Breakeven load factors are relatively low, as yields are a little higher than average and costs are lower. However, few airlines in the region are able to achieve adequate load factors, which average the lowest globally at 58.6% in 2018. Performance is improving, but only slowly.

5th December 2017

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Worldwide airline Industry	2016	2017	2018
Africa			
Net post-tax profit, \$billion	-0.1	-0.1	-0.1
Per passenger, \$	-1.61	-0.83	-0.55
% revenue	-1.0%	-0.5%	-0.3%
RPK growth, %	9.4%	7.0%	8.0%
ASK growth, %	8.2%	3.3%	7.5%
Load factor, % ATK	56.2%	58.3%	58.6%
Breakeven load factor, % ATK	56.1%	58.0%	58.4%
Asia-Pacific			
Net post-tax profit, \$billion	8.1	8.3	9.0
Per passenger, \$	6.07	5.51	5.52
% revenue	4.0%	3.8%	3.7%
RPK growth, %	10.9%	10.0%	7.0%
ASK growth, %	9.9%	8.3%	6.8%
Load factor, % ATK	68.8%	70.7%	70.9%
Breakeven load factor, % ATK	61.4%	63.0%	63.0%
Middle East			
Net post-tax profit, \$billion	1.3	0.3	0.6
Per passenger, \$	6.47	1.15	2.65
% revenue	2.1%	0.4%	0.9%
RPK growth, %	11.3%	6.5%	7.0%
ASK growth, %	13.1%	6.6%	4.9%
Load factor, % ATK	59.1%	60.3%	61.0%
Breakeven load factor, % ATK	57.7%	57.5%	57.5%
Latin America			
Net post-tax profit, \$billion	0.7	0.7	0.9
Per passenger, \$	2.42	2.40	3.00
% revenue	2.1%	2.1%	2.5%
RPK growth, %	4.5%	7.5%	8.0%
ASK growth, %	3.4%	5.9%	7.5%
Load factor, % ATK	62.3%	63.4%	63.8%
Breakeven load factor, % ATK	58.6%	60.9%	60.9%
North America			
Net post-tax profit, \$billion	16.5	15.6	16.4
Per passenger, \$	18.10	16.32	16.67
% revenue	7.9%	7.2%	7.1%
RPK growth, %	4.2%	4.0%	3.5%
ASK growth, %	4.6%	3.9%	3.4%
Load factor, % ATK	64.0%	65.2%	65.3%
Breakeven load factor, % ATK	54.8%	56.6%	57.0%
Europe			
Net post-tax profit, \$billion	8.8	9.8	11.5
Per passenger, \$	8.86	9.03	9.99
% revenue	4.6%	4.8%	5.2%
RPK growth, %	5.4%	8.0%	6.0%
ASK growth, %	5.7%	6.2%	5.5%
Load factor, % ATK	67.7%	69.4%	69.7%
Breakeven load factor, % ATK	63.5%	63.7%	63.7%

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