



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 0.9% of world GDP on air transport in 2017.
- 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 \$123bn of tax next year and from over 69 million 'supply chain' jobs.
- Load factors are forecast to slip a little as demand slows faster than capacity, and breakeven rises as unit costs start to rise.
- Equity owners see further gains in 2017; industry ROIC falls from record 2016 levels, but remains above the cost of capital.
- Credit metrics in 2017 not quite as good as 2016, but free cash flow yield remains positive and balance sheet metrics are stable.
- Jobs in the industry should reach 2.67 million, productivity improves by 2.8% and GVA/employee is over \$100,000.
- Infrastructure use costs are high, plus inefficiencies in Europe alone add €2.8bn to airline costs next year.
- N American airlines perform best with a forecast 8.5% net post-tax profit margin in 2017. Africa is the weakest with a 5.7% loss.

CONSUMERS

Consumers will see a substantial increase in the value they derive from air transport in 2017, including a further reduction in what they pay, after allowing for inflation. New destinations are forecast to rise by 4% this year, with frequencies up too; both boosting consumer benefits. We expect 0.9% of world GDP to be spent on air transport in 2017, totaling \$769 billion. RPKs, which have been growing well above trend despite a sluggish world economy, are forecast to slow further in 2017 as the price stimulus from lower fuel prices starts to reverse. Next year we expect air travel to be growing close to its 20-year trend. Falling travel costs have been adding several % points to RPK growth over the several years. The average return fare (before surcharges and tax) of \$351 in 2017 is forecast to be 63% lower than 22 years earlier, after adjusting for inflation.

Worldwide airline Industry	2015	2016	2017
Spend on air transport*, \$billion	750	732	769
% change over year	-4.4%	-2.4%	5.0%
% global GDP	1.0%	0.9%	0.9%
Return fare, \$/pax. (2015\$)	407	363	351
Compared to 1995	-57%	-62%	-63%
Freight rate, \$/kg (2015\$)	1.80	1.53	1.48
Compared to 1995	-61%	-67%	-68%
Passenger departures, million	3,568	3,773	3,959
% change over year	7.2%	5.7%	4.9%
RPKs, billion	6679	7075	7438
% change over year	7.4%	5.9%	5.1%
Freight tonnes, million	52.2	53.9	55.7
% change over year	1.5%	3.2%	3.3%
World GDP growth, %	2.6%	2.2%	2.5%
World trade growth, %	2.7%	1.7%	2.6%

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.

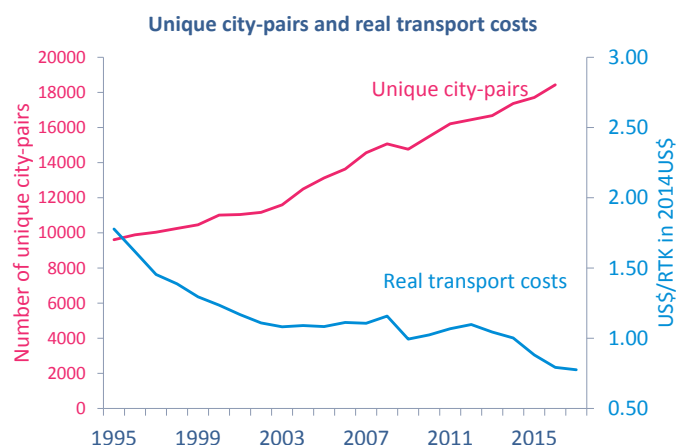
Airline CFOs and heads of cargo reported in October that they were still positive about future growth in air travel, and were a bit more positive about cargo. But there is much uncertainty about the outlook: price stimulus from lower oil prices is moving into reverse, the impact on growth of Brexit and the economic policies of the new US President are not yet clear, while world trade remains much weaker than before the GFC. In this forecast we have assumed that economic growth will accelerate moderately in 2017, as fiscal policies ease a little.

IATA survey of airline CFOs and heads of cargo



WIDER ECONOMY

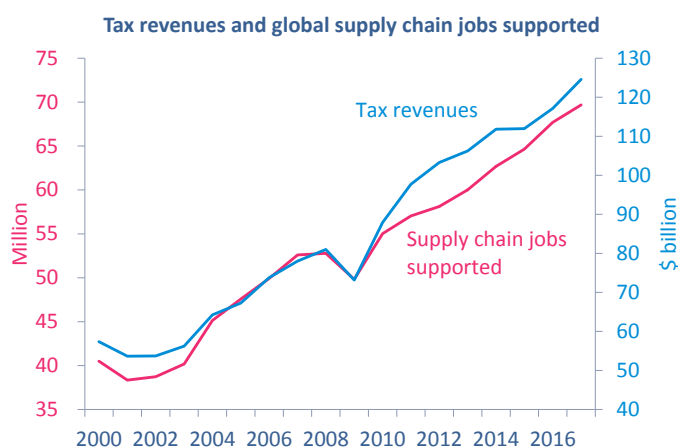
Economic development worldwide is getting a significant boost from air transport. This wider economic benefit is being generated by increasing connections between cities - enabling the flow of goods, people, capital, technology and ideas - and falling air transport costs. The number of unique city-pair connections is expected to reach more than 18,000 this year, almost 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 \$123 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	2015	2016	2017
Unique city pairs	17711	18429	
Compared to 1995	84%	92%	
Transport cost, US\$/RTK (2015\$)	88.1	79.1	76.8
Compared to 1995	-50%	-56%	-57%
Value of trade carried, \$billion	5,609	5,470	5,738
% change over year	-13.3%	-2.5%	4.9%
Value of tourism spend, \$billion	665	648	681
% change over year	-1.0%	-2.5%	5.1%
Supply chain jobs, million	64.7	67.7	69.7
% change over year	4.2%	4.6%	3.4%
Supply chain GVA, \$ billion	2.8	3.0	3.1
% change over year	5.5%	5.9%	4.7%

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 \$5.7 trillion. Tourists travelling by air in 2017 are forecast to spend \$681 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 69.7 million in 2017.

Worldwide airline Industry	2015	2016	2017
Tax revenues, \$billion	112	117	123
% change over year	0.1%	4.5%	5.2%
% GVA	46.2%	45.0%	45.0%
# of ticket taxes	230	234	
% of countries requiring full visas	61	61	

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 has risen to 234, 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 7.9%, which does, for the third consecutive year, adequately reward equity owners. On invested capital of almost \$600 billion, the industry is forecast to generate \$5.8 billion of value for investors this year. But it should be clear that \$29.8 billion net profit, while exceptional for the airline industry, is really only sufficient to pay investors a 'normal' return for risking their capital. Moreover, above-WACC returns have only started to be generated outside North America in the past year and are still not widespread across all regions.

The decline in airline profits and ROIC in 2017 is being driven by a rise in breakeven load factors, as unit costs are now rising, and a moderate fall in achieved load factors, as demand slows more than capacity growth. Nevertheless, the level of profitability is still the third highest on record; a soft-landing brought about by changes to industry structure and behavior, with much more focus on generating an adequate ROIC.

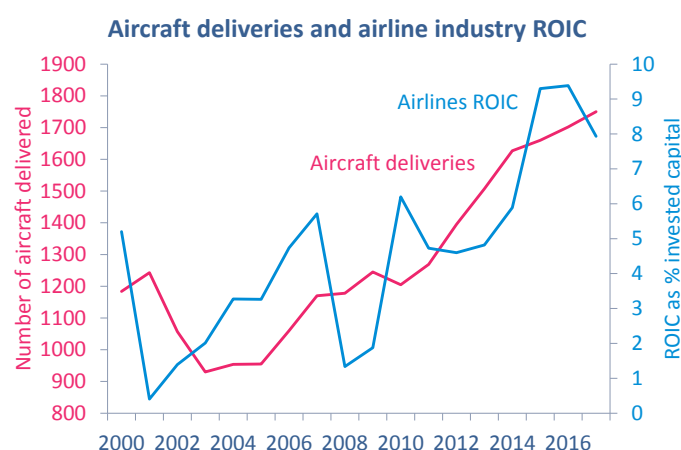
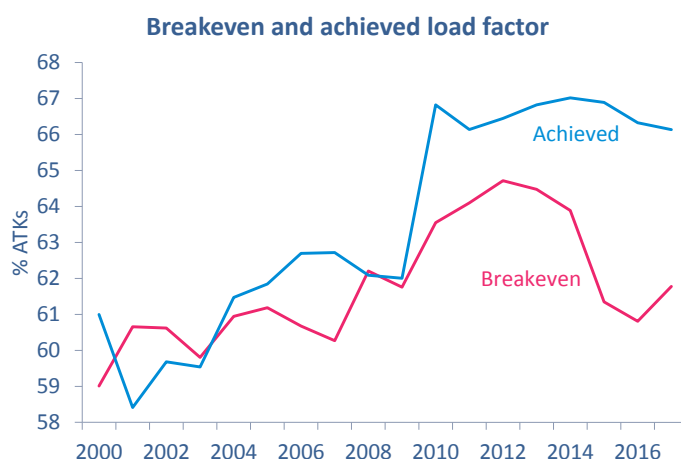
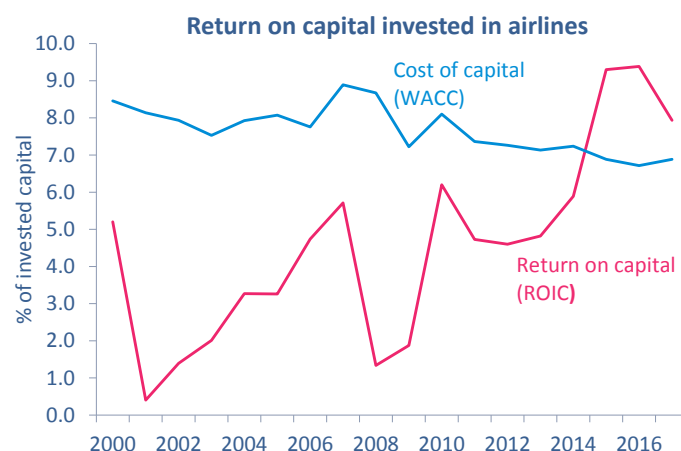
AIRCRAFT

This year commercial airlines are expected to take delivery of around 1,700 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	2015	2016	2017
ROIC, % invested capital	9.3%	9.4%	7.9%
ROIC-WACC, % invested capital	2.4%	2.7%	1.0%
Investor value, \$ billion	13.2	14.2	5.8
EBIT margin, % revenue	8.3%	8.3%	6.6%
Net post-tax profits, \$billion	35.3	35.6	29.8
% revenues	4.9%	5.1%	4.1%
\$ per passenger	9.89	9.43	7.54
Free cash flow, % invested capital	1.6%	1.7%	0.1%
Adjusted net debt/EBITDAR	4.0	3.5	3.5

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 almost 29,000 aircraft; expansion has slowed as fuel prices start to rise and the outlook has become less positive. The average size of aircraft in the fleet is continuing to rise slowly. So by the end of 2017 there will be around 4.1 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 slip from 2016 levels to just under 80% on average next year. 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	2015	2016	2017
Aircraft fleet	26,704	27,712	28,718
% change over year	3.3%	3.8%	3.6%
Available seats, million	3.7	3.9	4.1
% change over year	5.0%	5.2%	5.1%
Average aircraft size, seats	139	141	143
% change over year	1.7%	1.4%	1.4%
Scheduled flights, million	34.8	36.6	38.4
% change over year	5.5%	4.9%	4.9%
ASKs, % change over year	6.7%	6.2%	5.6%
Passenger load factor, % ASK	80.4%	80.2%	79.8%
Freight load factor, % AFTK	47.4%	46.0%	45.8%
Weight load factor, % ATK	66.9%	66.3%	66.1%
Breakeven load factor, % ATK	61.3%	60.8%	61.8%

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

FUEL

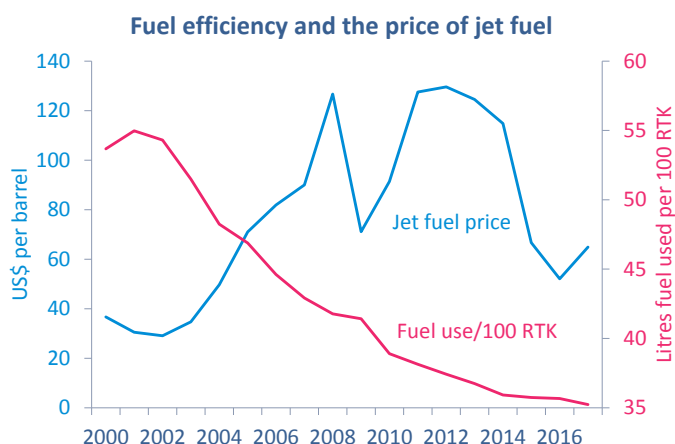
Next year we forecast the airlines fuel bill will rise to \$129 billion, which will represent 18.7% of average operating costs. Jet fuel prices have started to rise with oil prices and we base our forecast on an average price of \$64.9/b next year, and \$55/b for the Brent crude oil price. The slow rise in prices is being driven by evidence that high-cost oil supply is now being cut back, 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 is dampened by the continuing impacts of fuel hedging in some regions, with some of last year's spot price decline moderating this year's increase.

Worldwide airline Industry	2015	2016	2017
Fuel spend, \$billion	180	124	129
% change over year	-19.9%	-31.2%	4.1%
% operating costs	27.3%	19.2%	18.7%
Fuel use, billion litres	307	323	334
% change over year	5.6%	5.1%	3.4%
Fuel efficiency, litre fuel/100atk	23.9	23.7	23.3
% change over year	-0.7%	-1.0%	-1.5%
CO ₂ , million tonnes	775	814	842
% change over year	5.6%	5.1%	3.4%
Fuel price, \$/barrel	66.7	52.1	64.9
% change over year	-41.9%	-21.9%	24.6%
% spread over oil price	23.7%	16.8%	18.0%
Upstream oil profits, \$billion	15	12	14

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 2017 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 1.5% higher in 2017. That represents a saving of over 12 million tonnes of CO₂, as well as saving on fuel that would have cost the industry and its consumers an additional \$1.9 billion.



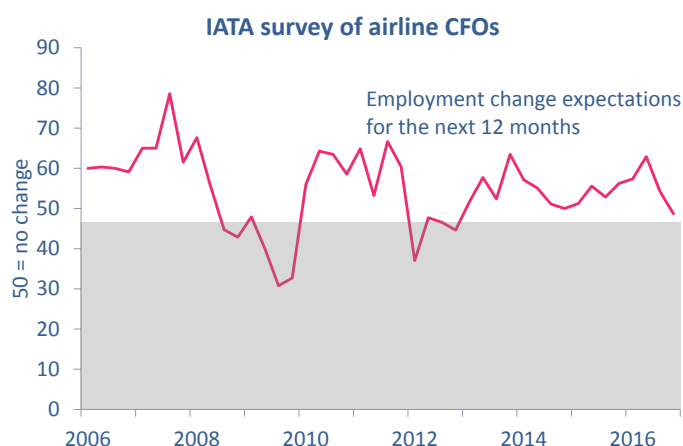
Fuel is such a large cost that it focuses intense effort in the industry to improve fuel efficiency, through replacing fleet with new aircraft, better operations and efforts to persuade governments to remove the airspace and airport inefficiencies that waste around 5% of fuel burn each year.

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

LABOUR

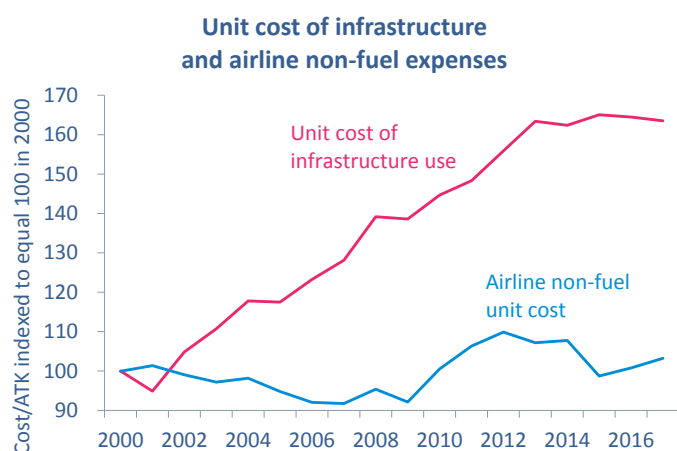
Airlines are expected to slow the previously strong pace of hiring over the coming year, as they seek to improve productivity to keep control over costs. Growth in employment was strong in 2016, and IATA's survey of airline CFOs in October showed a decline in the net balance of those saying they would increase hiring over the next 12 months.

We estimate that total employment by airlines will reach 2.67 million in 2017, a gain of over 2% compared to 2015. Productivity is expected to strengthen, as airlines seek improvements in 2017, with the average employee generating over 500,000 ATKs a year, which is a 2.8% improvement over this year. Wages and jobs will rise as employees share the benefits of improved performance. There are risks if labour costs become unsustainable when the next downturn arrives.



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	2015	2016	2017
Labour costs, \$ billion	144	153	163
% change over year	0.6%	6.5%	6.4%
Employment, million	2.54	2.62	2.67
% change over year	2.8%	2.9%	2.2%
Productivity, atk/employee	479,745	494,974	508,802
% change over year	3.4%	3.2%	2.8%
Unit labour cost, \$/ATK	0.118	0.118	0.120
% change over year	-5.4%	0.3%	1.3%
GVA/employee, \$	95,389	99,319	102,246
% change over year	-0.6%	4.1%	2.9%

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. We estimate that the direct GVA for national economies, generated by the average airline employee, will rise 2.9% next year to over \$100,000 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	2015	2016	2017
European airspace inefficiency			
Airline costs, € million	2,864	2,775	2,847
Passenger time loss, € million	4,682	4,808	4,875

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 €2.8 billion next year, as well as generating unnecessary CO₂ emissions. The time passengers waste in these delays is a consumer cost worth an estimated €4.8 billion.

REGIONS

The strongest financial performance is being delivered by airlines in North America. Net post-tax profits will be the highest at \$18.1 billion next year. That represents a net profit of \$19.58 per passenger, which is a marked improvement from just 4 years earlier. Net margins, forecast at 8.5%, are down from the previous 2 years, though not by much. The limited downside has been underpinned by consolidation, helping to sustain load factors (passenger + cargo) above 64%, and ancillaries, which limits the impact of higher fuel costs, keeping breakeven load factors close to 56% 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 by terrorist attacks, but a modest rebound is anticipated next year. Net profits are forecast to fall to \$5.6 billion next year representing \$5.65 per passenger and a margin of 2.9%.

Airlines in Asia-Pacific have very diverse performances. Average profit per passenger next year is forecast at \$4.44 as higher fuel costs are partly offset by improved cargo markets, particularly important in this manufacturing region, helping to limit the fall in net margins to 2.9% and net profits to \$6.3 billion.

Middle Eastern airlines have one of the lower breakeven load factors. Average yields are low but unit costs are even lower, partly driven by the strength of capacity growth; forecast at 10.1% this year. Post-tax profits are expected to slip to \$0.3 billion in 2017, representing a profit of \$1.56 per passenger and a net margin of 0.5%.

Latin American airlines have faced a harsh environment, with weak home markets and currencies, but that is starting to turn around and some recovery is expected in 2017. A net profit of \$0.2 billion is forecast next year, following losses of \$1.7 billion in 2015 and profits of \$0.3 billion this year.

Africa is the weakest region, as in the past 3 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 50.8% in 2017. Performance is improving, but only slowly.

8th December 2016

Brian Pearce - IATA Economics, pearceb@iata.org

Worldwide airline Industry	2015	2016	2017
Africa			
Net post-tax profit, \$billion	-0.9	-0.8	-0.8
Per passenger, \$	-11.04	-9.60	-9.97
% revenue	-6.1%	-5.5%	-5.7%
RPK growth, %	0.0%	5.8%	4.5%
ASK growth, %	-0.2%	6.2%	4.7%
Load factor, % ATK	55.4%	51.1%	50.8%
Breakeven load factor, % ATK	57.5%	52.8%	52.9%
Asia-Pacific			
Net post-tax profit, \$billion	7.8	7.3	6.3
Per passenger, \$	6.46	5.53	4.44
% revenue	3.9%	3.6%	2.9%
RPK growth, %	10.1%	8.9%	7.0%
ASK growth, %	8.4%	8.2%	7.6%
Load factor, % ATK	68.6%	68.7%	68.2%
Breakeven load factor, % ATK	62.5%	62.5%	63.0%
Middle East			
Net post-tax profit, \$billion	1.1	0.9	0.3
Per passenger, \$	5.86	4.43	1.56
% revenue	1.8%	1.4%	0.5%
RPK growth, %	10.4%	10.8%	9.0%
ASK growth, %	12.9%	13.9%	10.1%
Load factor, % ATK	60.1%	58.4%	57.9%
Breakeven load factor, % ATK	58.8%	57.4%	57.5%
Latin America			
Net post-tax profit, \$billion	-1.7	0.3	0.2
Per passenger, \$	-6.12	1.12	0.76
% revenue	-5.3%	1.1%	0.7%
RPK growth, %	7.6%	3.5%	4.0%
ASK growth, %	6.9%	2.2%	4.8%
Load factor, % ATK	62.1%	62.7%	62.3%
Breakeven load factor, % ATK	61.3%	60.6%	60.9%
North America			
Net post-tax profit, \$billion	21.5	20.3	18.1
Per passenger, \$	24.49	22.40	19.58
% revenue	9.8%	9.7%	8.5%
RPK growth, %	5.3%	3.2%	2.5%
ASK growth, %	5.0%	3.8%	2.6%
Load factor, % ATK	64.3%	64.4%	64.4%
Breakeven load factor, % ATK	54.8%	55.2%	56.1%
Europe			
Net post-tax profit, \$billion	7.5	7.5	5.6
Per passenger, \$	8.11	7.84	5.65
% revenue	3.8%	4.0%	2.9%
RPK growth, %	6.0%	3.8%	4.0%
ASK growth, %	4.8%	3.8%	4.3%
Load factor, % ATK	67.4%	67.0%	66.8%
Breakeven load factor, % ATK	63.8%	63.2%	63.7%

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